

Pit Permit Application

APPROVED

p1-06581

North Brine Pond Jal LPG Storage Facility Lea County, New Mexico

Prepared for and submitted by:

Western Refining, LLP



6501 Trowbridge Drive

El Paso, Texas

(915)775-3206

Prepared by:

JCB Engineering, Inc.



89 Camino Alto

Sandia Park, New Mexico

(505)281-6694

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This document is the Western Refining Company, L. P. permit application for the north pond at the Jal LPG Storage facility. In addition to the Form C-144, the required supporting documents are included as part of this permit application package. This application has been organized into the following sections:

Section 1 – Form C-144

Section 2 – Hydrologic Report

Section 3 – Siting Criteria Compliance Determination

Section 4 – Climatological Factors Assessment

Section 5 – Certified Design (including dike integrity, leak detection, liner specifications, construction QA/QC, and freeboard/overtopping protection)

Section 6 – Operations and Maintenance Plan

Section 7 – Emergency Response Plan

Section 8 – Waste Stream Characterization

Section 9 – Monitoring and Inspection Plan

Section 10 – Closure Plan

Appendix A – Letter Terminating Discharge Permit

Appendix B – Original Design Plans

Appendix C – Non-H₂S Determination Letter

Appendix D – Brine Analysis

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

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

Form C-144
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOC District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOC District Office.

Pit, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☐ Below grade tank registration
☒ Permit of a pit or proposed alternative method
☐ Closure of a pit, below-grade tank, or proposed alternative method
☒ Modification to an existing permit/or registration
☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please 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: Western Refining Company, L. P. _____ OGRID #:248440 _____
Address: 6501 Trowbridge Drive, El Paso, Texas _____
Facility or well name: Jal LPG Storage Facility
API Number: _____ OCD Permit Number: Former Discharge Permit GW-07
U/L or Qtr/Qtr SW/4, SW/4 Section 32 _____ Township 23S _____ Range 37E _____ County: Lea _____
Center of Existing Design: Latitude 32° 15'25.02 " Longitude 103° 11' 22.16" NAD: ☐ 1927 ☒ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.

☒ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☒ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☐ no
☒ Lined ☐ Unlined Liner type: Thickness 40/30 mil ☐ LLDPE ☐ HDPE ☒ PVC ☒ Other 30 mil HDPE over 30 mil PVC
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☒ Other solvent/adhesive welds per manufacturer Volume: 112,000 bbl Dimensions: L 500' W 220' x D 5'

3.

☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____ bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____ mil ☐ HDPE ☐ PVC ☐ Other _____

4.

☒ **Alternative Method:** An exemption is requested to permit as an existing pit that was previously permitted under Discharge Permit GW-07
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.

Fencing: Subsection D of 19.15.17.11 NMAC (*Applies to permanent pits, temporary pits, and below-grade tanks*)
☐ Chain link, six feet in height, two strands of barbed wire at top (*Required if located within 1000 feet of a permanent residence, school, hospital, institution or church*)
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☒ Alternate. Please specify: Remote facility with some fencing to prevent public access.

6.

Netting: Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

☐ Screen ☐ Netting ☒ Other: Fresh water is applied over brine water surface for bird protection

☒ Monthly inspections (If netting or screening is not physically feasible)

7.

Signs: Subsection C of 19.15.17.11 NMAC

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

☐ Signed in compliance with 19.15.16.8 NMAC

8.

Variations and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.

- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

☐ Yes ☐ No
☒ NA

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☒ No
☐ NA

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks)**

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☒ No

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)**

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☒ No

Within an unstable area. **(Does not apply to below grade tanks)**

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☒ No

Within a 100-year floodplain. **(Does not apply to below grade tanks)**

- FEMA map

☐ Yes ☒ No

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 100 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Temporary Pit Non-low chloride drilling fluid

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Permanent Pit or Multi-Well Fluid Management Pit

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☒ No

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

10.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ A List of wells with approved application for permit to drill associated with the pit.
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- ☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☒ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Climatological Factors Assessment
- ☒ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Quality Control/Quality Assurance Construction and Installation Plan
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☒ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Nuisance or Hazardous Odors, including H₂S, Prevention Plan
- ☒ Emergency Response Plan
- ☒ Oil Field Waste Stream Characterization
- ☒ Monitoring and Inspection Plan
- ☒ Erosion Control Plan
- ☒ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.

Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

- Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit
☐ Alternative
- Proposed Closure Method: ☐ Waste Excavation and Removal
☐ Waste Removal (Closed-loop systems only)
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
☐ In-place Burial ☐ On-site Trench Burial
☐ Alternative Closure Method

14.

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 100 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). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Bruce D. Davis Title: Director

Signature: Bruce D. Davis Date: 11-17-15

e-mail address: bruce.davis@WNR.com Telephone: 602-286-1929

18.
OCD Approval: ☐ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: [Signature] **Approval Date:** 02/08/2016

Title: Environmental Specialist **OCD Permit Number:** P1-06581

19.
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:** _____

20.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

21.
Closure Report Attachment Checklist: *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

☐ Proof of Closure Notice (surface owner and division)
☐ Proof of Deed Notice (required for on-site closure for private land only)
☐ Plot Plan (for on-site closures and temporary pits)
☐ Confirmation Sampling Analytical Results (if applicable)
☐ Waste Material Sampling Analytical Results (required for on-site closure)
☐ Disposal Facility Name and Permit Number
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique
☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

1.0 INTRODUCTION AND PURPOSE

This Hydrologic Report has been prepared to address the pit permitting requirements of 19.15.17.9(B)(1) NMAC for hydrologic reports. Western Refining, Inc. (WNR) operates a Liquefied Petroleum Gas (LPG) storage facility approximately 10 miles north of Jal, New Mexico, just west of New Mexico Highway 18 (Figure 1). The facility, formerly owned and operated by El Paso Natural Gas Company, contains two brine ponds which WNR wishes to permit under the OCD Pit Rule, 19.15.17 NMAC. This Hydrologic Report addresses the north brine storage pond at the facility, which is located in the SW1/4, SW1/4 Section 32, T23S, R37E, Lea County, New Mexico (Figure 2). The pond was previously regulated by a discharge permit (GW-007), which was terminated by the Oil Conservation Division (OCD) on April 16, 2013 (Appendix A). This pond is now to be permitted as a permanent pit under the Pit Rule. The pond is used for the storage of brine displaced from the underground storage caverns by LPG. The pit is 220 ft wide and 500 ft long. The depth from the top of the berm is 5 ft with the bottom elevation approximately 3306 ft. above mean sea level (MSL). The pond was constructed before WNR acquired the facility, and no construction documents have been found. However, the 1982 drawings from El Paso Natural Gas have been visually compared to the existing pond and found to be consistent with current conditions. Copies of the available drawings are included as Appendix B.

2.0 GEOLOGY AND SOILS

2.1 Soils

The facility is within the Eunice Plain subdivision of the Great Plains Physiographic Province. The Eunice Plain is in the Delaware Basin, part of the Permian Basin, and is underlain by a hard caliche surface and almost entirely covered by a reddish-brown dune sand. The soils on the site are of the Berino-Cacique Association (BE) and Pyoto-Maljamar Association (PU) (NRCS, 2014). Figure 3 is a soil map of the site.

The Berino soil is typically a reddish brown, loamy fine sand surface layer and a red, light sandy clay loam subsoil, becoming strongly limy at a depth of 48 inches. The Cacique soils are reddish-brown to yellowish-red, loamy fine sand in the surface layer and red sandy clay loam subsoil with indurated caliche at about 28 inches. These soils formed in sandy alluvium and mixed wind deposited sediments. They are classified as SC on the Unified Soil Classification (USC) System, with 100% passing #10 and 35% to 45% passing #200. They are Hydrologic Group C soils, with infiltration rates in the range of 0.63 to 2.0 in/hr.

The Pyoto has a thick, light brown, fine sand surface layer over reddish-yellow to light brown, fine sandy loam subsoil. The Maljamar soils have yellowish-red, fine sand to loamy sand surface layer, and a red sandy clay loam subsoil. Both soil associations are well drained. The Berino-Cacique is present on relatively level to gently sloping areas, while the Pyoto-Maljamar is found on gently undulating uplands (USDA, 1974). The USC classification is SP-SM, with 100% passing #10 and 30% to 50% passing #200. They are Hydrologic Group A soils, with infiltration rates in the range of 2.0 to 20.0 in/hr.

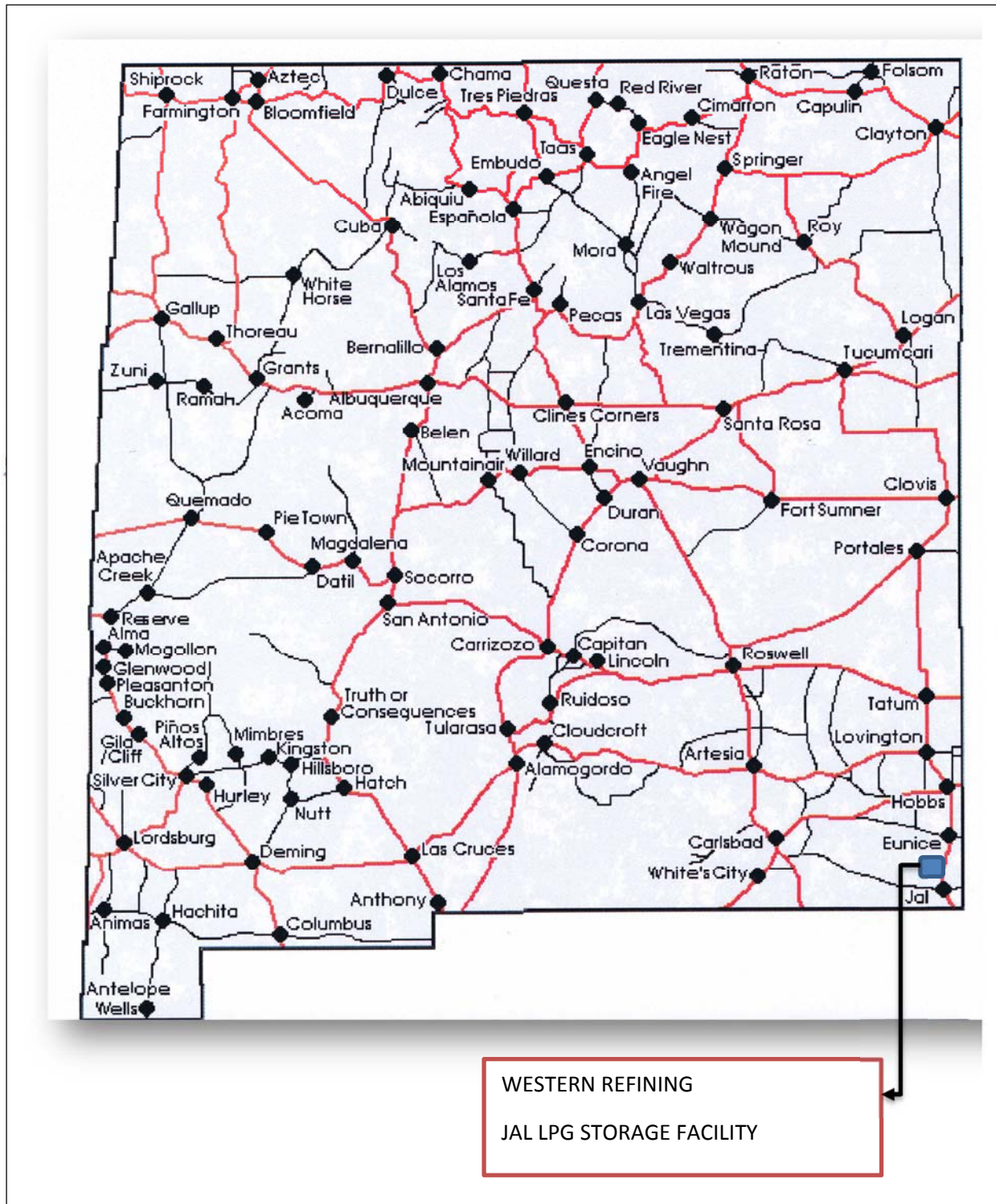


Figure 1 – LOCATION MAP

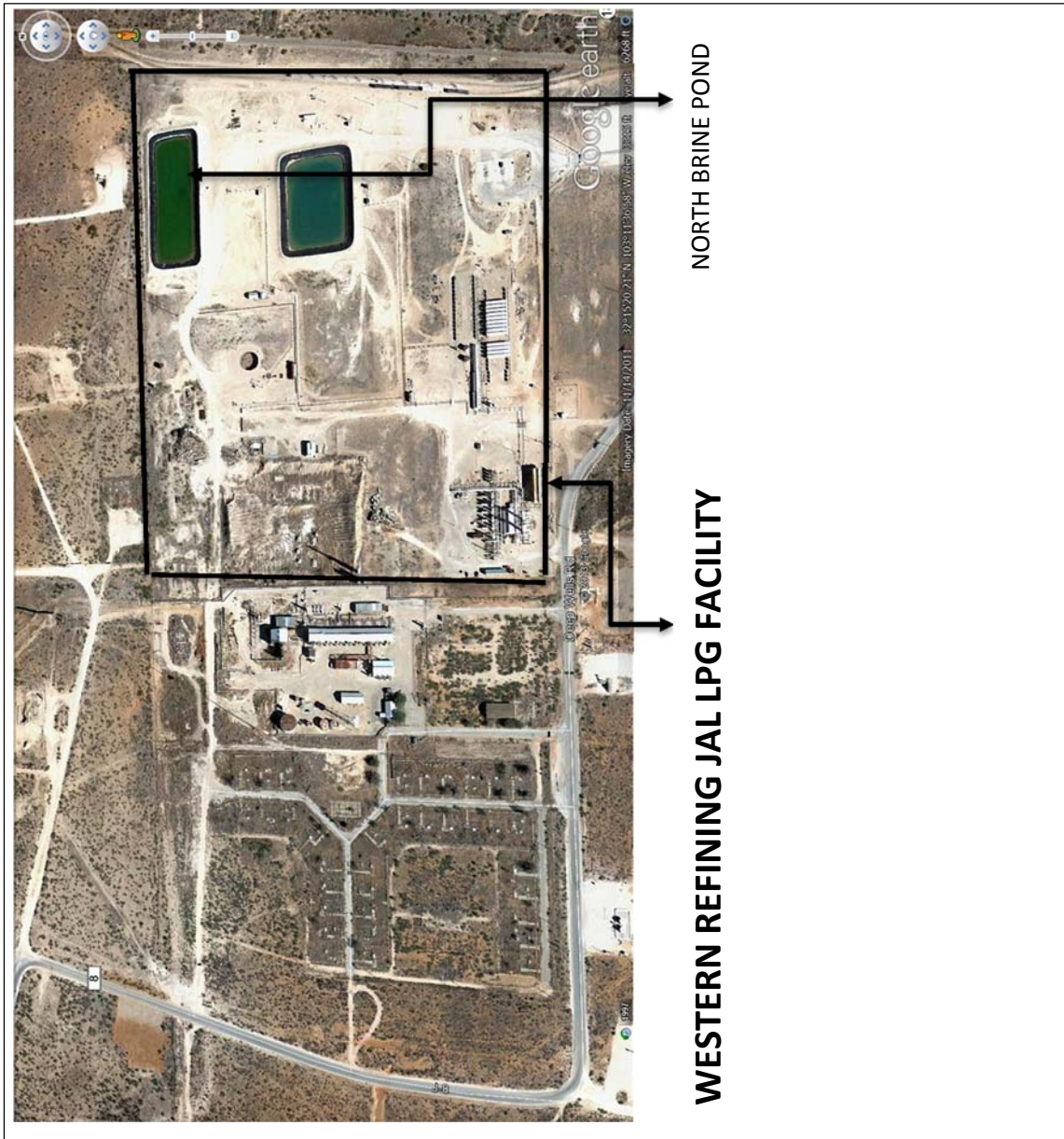


Figure 2 – SITE MAP

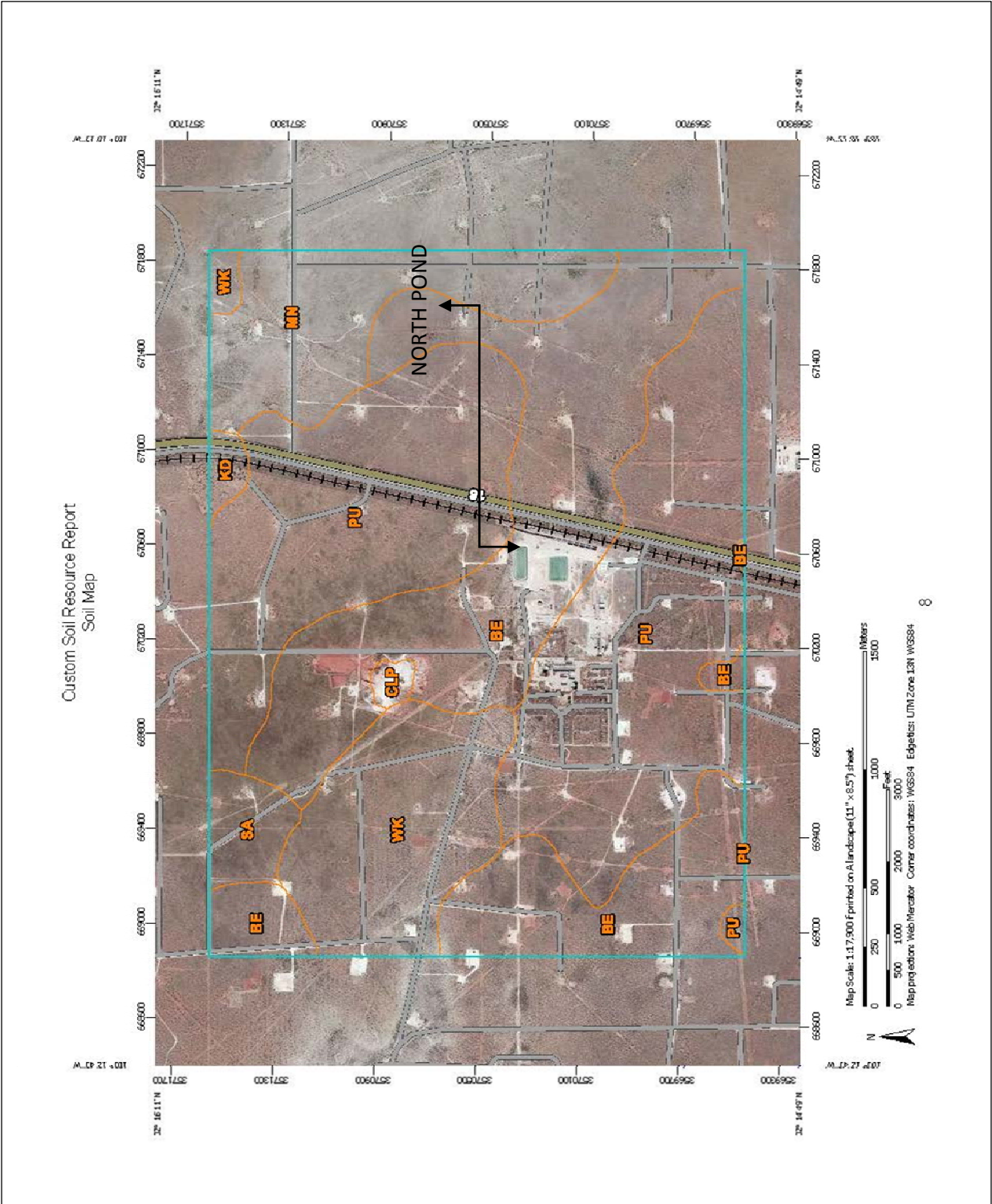


Figure 3- Soil Map

There is no surface water in the vicinity of the site, and ground water is at approximately 105 feet in the Tertiary Ogallala formation. The site is underlain by clastic and chemical rocks ranging in age from Ordovician through Triassic overlain by Tertiary and Quaternary Age alluvial sediments (Brown and Assoc., 1990).

2.2 Stratigraphy

Figure 4 is a geologic map of the facility, and Figure 5 a geologic cross section. The Delaware Basin, part of the Permian Basin, was an extensive inland sea in which huge quantities of sediment and organic material accumulated during most of the Paleozoic. The basin deposits range in age from Ordovician through Permian. The older rocks are comprised of mainly limestone, shaley limestone and dolomite. There is an unconformity at the base of the Pennsylvanian Age, and Mississippian sediments are missing in Lea County. On the Central Basin Platform the Pennsylvanian rocks are a lower shale and a mixed sequence of limestone, shale and conglomerate, in the basin they are dark shale and limestone. As the basin subsided faster than the platform in the east, the sediments are thicker in the basin and the Permian is represented by a fine-grained sandstone, black shale and argillaceous limestone ringed on the edge of the basin with reef deposits. The Central Basin Platform was covered with dolomite and limestone. As the sea retreated in the Permian, the sea water evaporated, depositing thick layers of gypsum, salt, anhydrite, and potash. At the end of the Permian into the beginning of the Triassic the basin was filled with clastic sediments, called "Red Beds." After this, several periods of emergence and inundation occurred. During one of the inundations the Triassic Dockum Group was deposited consisting of the Santa Rosa, a fine to coarse grained red sandstone and the Chinle, a red and green claystone with interbedded sandstones and siltstones. The Dockum Group is a source of ground water. Rocks of the Jurassic have not been found in southern Lea County and only remnants of the Cretaceous are present. The last inundation, in the Pleistocene Age, resulted in the deposition of the Tertiary Ogallala Formation, which is one of the principal sources of ground water in the area. The Ogallala is a semi-consolidated fine grained calcareous sand capped with caliche. The beginning of the Quaternary period started a new cycle of erosion, which has continued to this day (Nicholson, Clebsch, 1961).

3.0 Structural Geology

Figure 6 shows the major geologic structural features in the area of the site. The Delaware Basin and the Central Basin Arch are the major structural features of southern Lea County. The only other structural features are major unconformities and collapse structures. The unconformity before the Permian removed the Mississippian Age rocks in this part of the basin and is an angular unconformity across the Arch. There was folding in the Pennsylvanian and the basin subsided faster compared to the Arch. In the Permian the sea began to recede, due to the filling of the basin and a lessening in subsidence in the basin. In the early Triassic the area was emergent and this unconformity slopes at less than 1 degree to the southeast. Since the close of the Permian there has been almost no tectonic movement in the Permian Basin, thus the large structural features of the basin are reflected only indirectly in the Mesozoic and Cenozoic rock (Nicholson and Clebsch, 1961). No active faults have been identified in the area of the site, and the maximum anticipated earthquake acceleration is 0.2 g, from Figure 7 (U. S. Geological Survey, 2008). Therefore, the site is in a geologically stable area. Because of the very flat terrain, slope stability is not an issue.

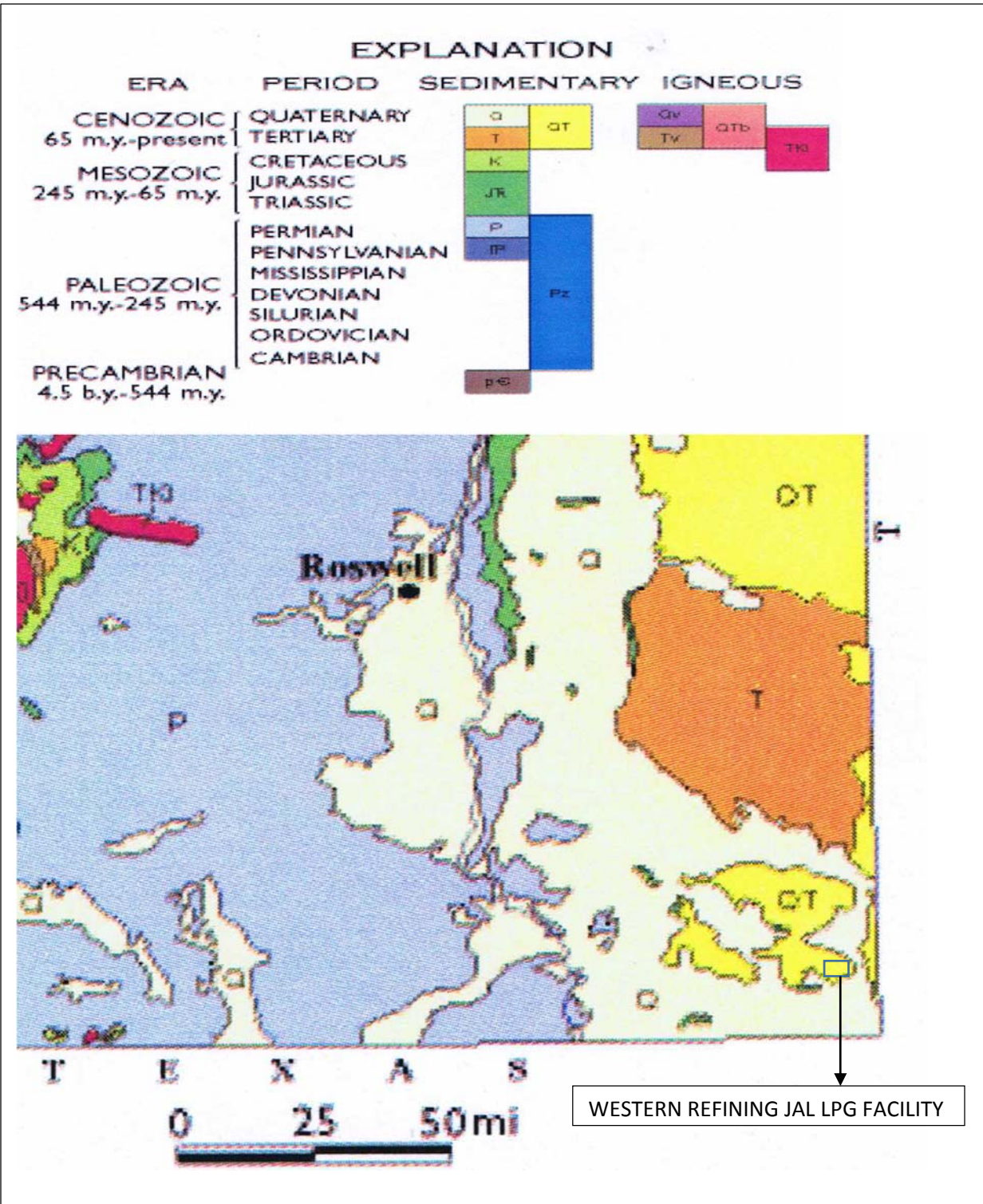


Figure 4: Geologic Map

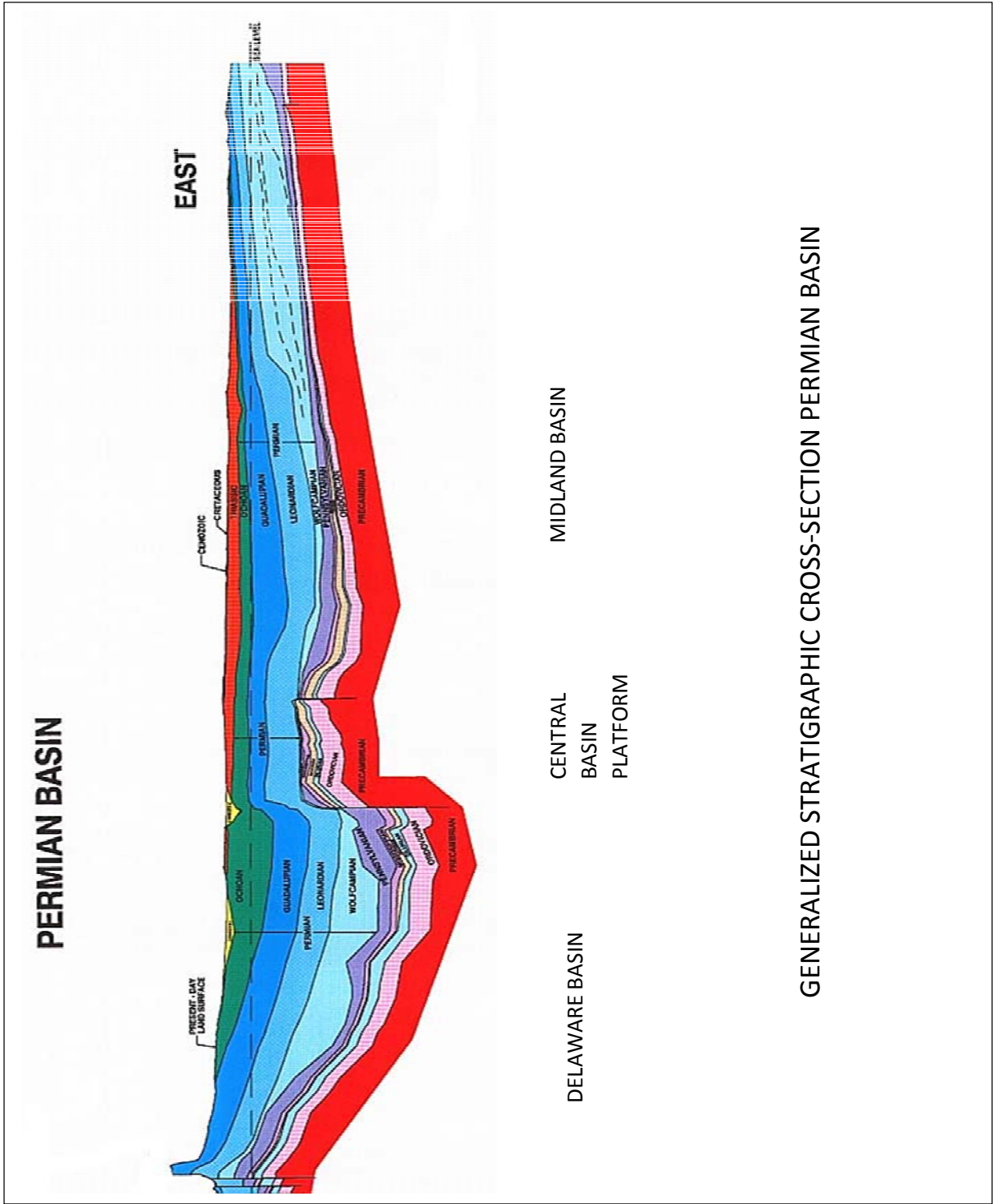
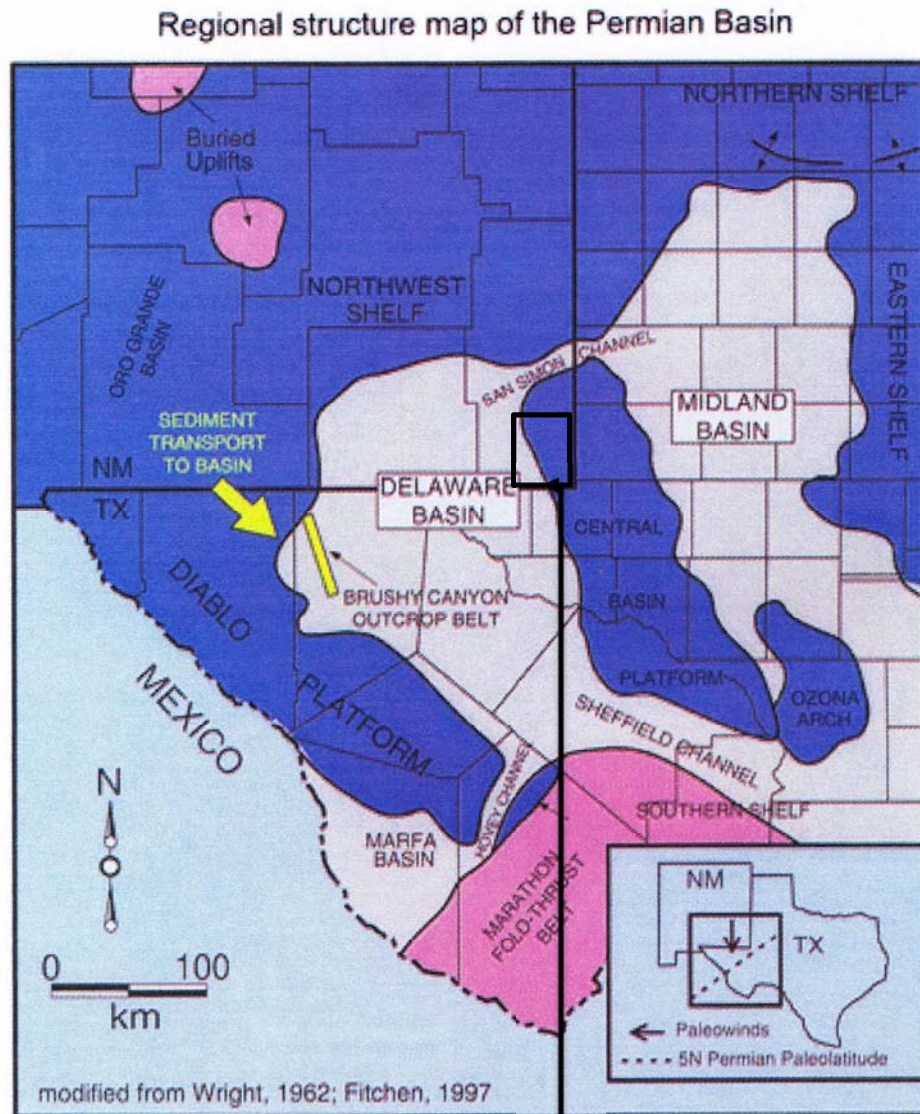


Figure 5 – STRATIGRAPHIC CROSS-SECTION

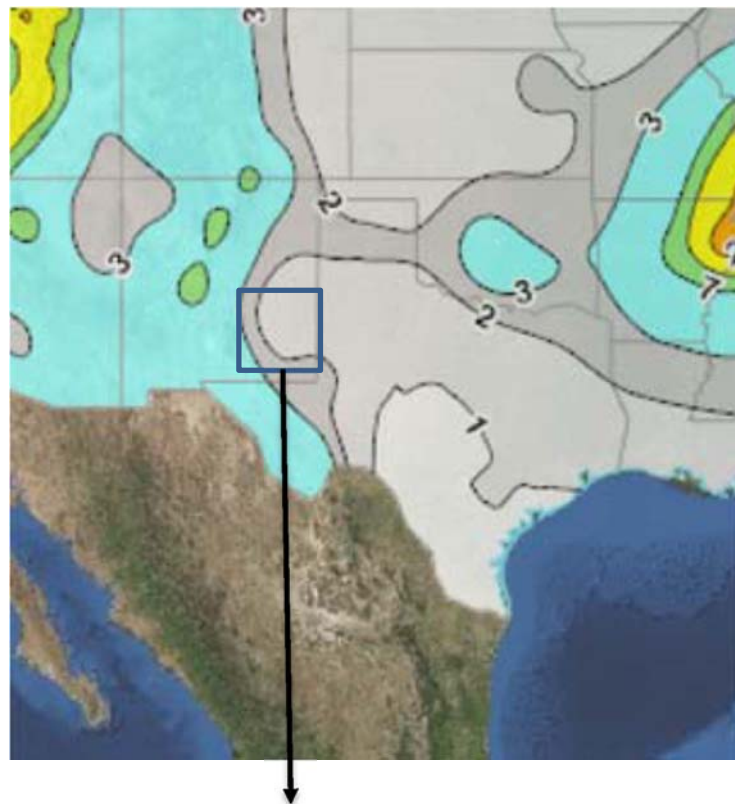


Regional structure map of the Permian Basin illustrating the major subsurface structural features of the Permian Basin during Lower Guadalupian stage. Modified by Beaubouef et al. (1999) from Wright, 1962 and Fitch, 1997).

AREA OF INTEREST

Figure 6 – STRUCTURAL MAP

Earthquake Hazards Program
US Seismic Hazard 2008
U. S. GEOLOGICAL SURVEY



AREA
OF
INTEREST

Figure 7 – SEISMIC HAZARD MAP

4.0 GROUNDWATER

The Tertiary Ogallala Formation and Quaternary alluvium are the principal sources of ground water in the area. The Tertiary Dockum is a source of ground water, primarily farther west. Its water is of lesser quality and quantity (Nicholson and Clebsch, 1961). Depth to ground water is 100-115 feet as seen in the monitoring wells documented in the 2011 annual groundwater remediation report prepared for El Paso Natural Gas (SAIC, 2012). The ground water is recharged solely by direct precipitation and infiltration. The ground water flow is in an east-southeast direction. The ground water has been undergoing remediation by Kinder-Morgan (formerly El Paso Natural Gas) (ENSR, 1989). The USGS 7.5 minute topographic maps for Rattlesnake Ridge and Jal NW quadrangles show no surface water bodies or perennial streams within a mile of the site, no ground water wells within a ¼ mile of the facility, and no springs within several miles. There are no wetlands shown anywhere near the pond. Visual inspection of the site and surrounding area have confirmed the lack of surface water bodies near the facility.

5.0 TOPOGRAPHY AND DRAINAGE

The general elevation of the site is 3310 feet above MSL, and there is approximately 8 ft of relief from the west boundary to the east boundary of the site. The natural ground surface generally slopes down to the east at .005 feet per foot. Drainage is to the east, with site drainage conveyed beneath NM 18, through a highway culvert. There is no perennial surface water in the vicinity. The nearest surface water body is the Pecos River, approximately 50 miles to the southwest. Figure 8 shows the site topography.

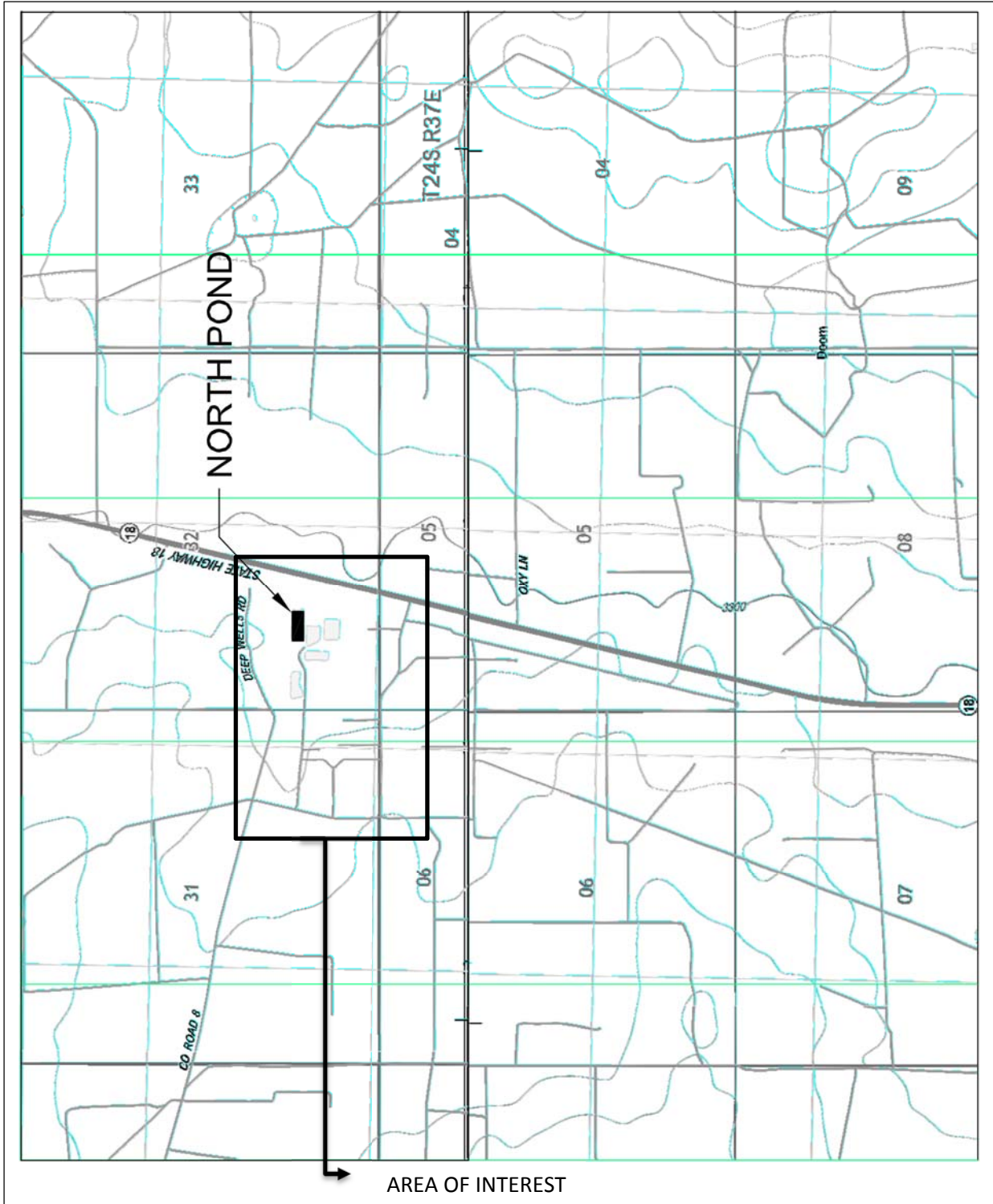


Figure 8 – TOPOGRAPHIC MAP

6.0 REFERENCES

- ENSR Consulting and Engineering, 1989, Ground Water Quality Assessment *prepared for* El Paso Natural Gas Company Jal Number 4 Facility, Jal New Mexico, ENSR Consulting and Engineering Document Number 2467-003, 120 p.
- K. W. Brown and Assoc., 1990, Expanded Hydrogeology Study for the El Paso Natural Gas Company Jal 4 Facility, 103 p.
- Nicholson, A. Jr., and A. Clebsch, Jr., 1961, Geology and Ground-Water Conditions in Southern Lea County, New Mexico: State Bureau of Mines and Mineral Resources, Ground-water Report 6, 120 p.
- SAIC Energy, Environment & Infrastructure, LLC, 2012, Annual Groundwater Remediation Report Jal No. 4 Plant, Lea County, New Mexico: NMOCD Case AP-101, Prepared for El Paso Natural Gas Company, 132 p.
- U. S. Department of Agriculture, Natural Resources Conservation Service, 2014, Soil Resource Report for Lea County, New Mexico (www.nrcs.usda.gov), 23 p.
- U. S. Department of Agriculture, Natural Resources Conservation Service In Cooperation with New Mexico Agricultural Experiment Station, 1974, Soil Survey Lea County, New Mexico, USDA Soil Conservation Services, 96 p.
- U. S. Department of Commerce, NOAA, Data Jal Climate Summaries, 2014, (www.climate.gov)
- U. S. Geological Survey, 2013, Rattlesnake Canyon Quadrangle Map, 1:24,000
- U. S. Geological Survey, 2013, Jal NW Quadrangle Map, 1:24,000

1.0 SITING CRITERIA

This section addresses the specific siting criteria under 19.15.17.10.A(5) NMAC. The ground water under the pond is at a depth of approximately 100 to 115 ft as documented in the monitoring wells used for the groundwater remediation currently being done by Kinder-Morgan. Examination of the USGS Rattlesnake Canyon and Jal NW Quadrangles (Figure 1) shows no continuously flowing water courses, lakebeds, sinkholes or playas within 300 feet of the site. Neither are there springs, domestic wells, or wetlands within 500 feet of the north pond. The site is not in any municipal area, as the closest town, Jal, is approximately 10 miles south, nor are there any residences, schools, institutions, or hospitals within 1000 ft. The site is outside of the potash mining area (Barker, 2008), but there is a caliche pit to the north. There are no known unstable areas. The area is outside the 100 year floodplain, as indicated by the absence of FEMA panels.

2.0 GROUND WATER DEPTH - 19.15.17.10.A(5)(a) NMAC

As stated in Section 1.0, groundwater has been measured at a depth of 100 to 115 feet below the ground surface in monitor wells at the site. This corresponds to an elevation of approximately 3190 ft above mean sea level. The elevation of the bottom of the pit is approximately 3306. Therefore, groundwater is at a depth of more than 50 ft below the bottom of the pit. This satisfies the siting criteria of 19.15.17.10.A(5)(a) NMAC for groundwater depth.

3.0 SURFACE WATER - 19.15.17.10.A(5)(b) NMAC

The nearest flowing watercourse is the Pecos River, which is approximately 50 miles from the site. There are no permanent streams in southern Lea County, only ephemeral swales and storm run-off (Lansford, 1982). Therefore, the site is more than 300 ft from the nearest continuously flowing watercourse. The nearest lakebed is the manmade Jal Lake in the City of Jal, approximately 10 miles south of the site. Therefore, the site is more than 200 ft from the nearest lakebed. No sinkholes or playas have been mapped or observed within 200 ft. of the site. Both topographic maps and recent aerial photos were examined to determine the possible locations of these features. This satisfies the siting criteria of 19.15.17.10.A(5)(b) NMAC for distance from surface water bodies.

4.0 NEAREST STRUCTURES – 19.15.17.10.A(5)(c) NMAC

The nearest structures are more than 1000 ft from the site. The nearest occupied residence is located is approximately 2 miles from the site. The nearest school is located in Jal, which is approximately 10 miles from the site. The nearest hospital is in Kermit Texas, approximately 20 miles from the site. The nearest institution or church is located in Jal, approximately 10 miles from the site. Therefore, this satisfies the siting criteria of 19.15.17.10.A(5)(c) NMAC for distance of more than 1000 ft from the nearest structure.

5.0 WELLS AND SPRINGS – 19.15.17.10.A(5)(d) NMAC

Topographic maps and well data from the New Mexico Office of the State Engineer website, show no domestic wells or fresh water springs within 500 ft of the site, nor are there any fresh water well or springs at all within 1000 ft of the north pond. Ground water contamination beneath the site has resulted from previous site use, and is being remediated by Kinder-Morgan. In addition to the program monitoring wells, groundwater samples are also collected from three nearby water supply wells. One is located in the SE, SE of Section 31, T23S, R37E, the second well is in the center of Section 5, T24S, R37E, and the third well is the Doom Production Well, which supplies water to a residence, and is located in the approximate center of the NW 1/4 of Section 8, T24S, R37E (SAIC, 2012). None of these three wells has been impacted from that contamination. Therefore, the site satisfies the requirements of 19.15.17.A(5)(d) NMAC.

6.0 Municipal Boundaries – 19.15.17.10.A(5)(e) NMAC

The closest incorporated municipalities are the Cities of Jal to the south and Eunice to the north. Jal is approximately 10 miles south of the site, while Eunice is approximately 13 miles to the north. The Eunice municipal fresh water well field is north of Eunice and west of Hobbs. The Jal municipal fresh water field is in Sections 18 and 19 of T26S, R36E (Nicholson, 1961). The brine pond is not in any municipal boundaries or above a municipal fresh water field. Therefore, the site meets the requirements of 19.15.17.10.A(5)(e) NMAC.

7.0 Wetlands – 19.15.17.10.A(5)(f) NMAC

No wetlands are shown within 500 feet of the site on the USGS Rattlesnake Canyon Quadrangle map and none are visible in recent aerial photographs of the site. No wetlands have been observed in site reconnaissance. Therefore, the site meets the requirements of 19.15.17.10.A(5)(f) NMAC.

8.0 Subsurface Mines – 19.15.17.10.A(5)(g) NMAC

The north brine pond is outside of the potash mining area (Figure 2) (Barker, 2008). There is a caliche pit (surface, not underground) about a half mile to the northeast of the site. No other mining exists in the area.

9.0 Stability – 19.15.17.10.A(5)(h) NMAC

No instability has been exhibited in the area. The caverns for storage are slender with a maximum circumference of 130 ft. and are overlain by 1300 ft. of competent rock. The salt at the casing shoe is protected from dissolution by LPG (Western Refining, 2012). Regular subsidence monitoring of surveyed monuments conducted at the site confirms that there has been no subsidence at the site. There are no unstable areas that would impact the integrity of the north pond.

10.0 Floodplains – 19.15.17.A(5)(i) NMAC

There are no FEMA panels for this area, and no channels or tributaries that would be delineated as having a floodplain. This indicates that it is outside a 100 year floodplain. Therefore, the site meets the criteria of 19.15.17.A(5)(i).

11.0 Summary

Based on the information presented in the previous sections, the site meets the siting criteria for a permanent pit. Because no site exception is needed, the provisions of 19.15.17.a(6) do not apply. Because the north pond was constructed several years ago and no additional construction is being proposed, the provisions of 19.15.17.A(7) do not apply.

12.0 References

Barker, James and Ibrahim Gundiler, 2008, New Mexico Potash—Past, Present and Future, NM Earth Matters: NM Bureau of Geology and Mineral Resources. p. 1-3.

Jal LPG Storage Facility Permit (GW-007) NMOCD Discharge Plan Renewal, August 27, 2007.

Lansford, R. R., et. al., 1982, High Plains-Ogallala Aquifer Study Lea County, New Mexico, Partial Technical Completion Report, Project No WRRI 1423697 and 1345681: New Mexico Water Resources Research Institute, 8 p.

Nicholson, A. Jr., and A. Clebsch, Jr., 1961, Geology and Ground-Water Conditions in Southern Lea County, New Mexico: State Bureau of Mines and Mineral Resources, Ground-water Report 6, 120 p.

SAIC Energy, Environment & Infrastructure, LLC, 2012, Annual Groundwater Remediation Report Jal No. 4 Plant, Lea County, New Mexico: NMOCD Case AP-101, Prepared for El Paso Natural Gas Company, 132 p.

Pettigrew & Associates, P. A., 2011, Subsidence Monument Monitoring.

Western Refining Company, L. P., 2012, Draft Application For Authorization To Inject.

U. S. Geological Survey, 2013, Rattlesnake Canyon Quadrangle Map, 1:24,000

U. S. Geological Survey, 2013, Jal NW Quadrangle Map, 1:24,000

1.0 CLIMATE

The site sits in the semi-arid Pecos River Drainage on the edge of the Southern High Plains. The area generally has clear days, low humidity and moderately low rainfall (Lansford, 1982). The average high temperature is 79.5 degrees Fahrenheit and the average low is 48.3 degrees Fahrenheit. The average total precipitation from 1919 to 2005 is 12.49 inches, with annual precipitation typically ranging from 10 to 15 inches. This data is collected at the weather station in Jal. The 100-year, 24-hour storm event is 6.19 in. (NOAA, 2014).

Wind is a major factor in this area. It has affected soil formation in both the deposition of sand originally and the shifting of those sands currently. The dry climate and relative moderate winter temperatures contribute to very active evaporation processes. This limits the leaching of lime and other materials from the soil.

2.0 REFERENCES

U. S. Department of Commerce, NOAA, Data Jal Climate Summaries, 2013,

Lansford, R. R., et. al., 1982, High Plains-Ogallala Aquifer Study Lea County, New Mexico, Partial Technical Completion Report, Project No WRRRI 1423697 and 1345681: New Mexico Water Resources Research Institute, 8 p.

1.0 CERTIFIED ENGINEERING DESIGN

Because the north pond was in existence at the time the facility was acquired by WRN, no stamped drawings are available. Based on the best available drawings, the pond was designed by in-house engineers of the original owner/operator, El Paso Natural Gas Company. §61-23-22 of the New Mexico Engineering and Surveying Practice Act Provides:

An engineer employed by a firm, association or corporation who performs only the engineering services involved in the operation of the employer's business shall be exempt from the provisions of the Engineering and Surveying Practice Act, provided that neither the employee nor the employer offers engineering services to the public.

Therefore, the original pond having met this exemption, no certification or sealing of design plans was required. The as-let construction drawings included IN Appendix B of the application package are the best available design drawings for the pond. Based on visual observation, these drawings appear to accurately represent the construction of the north pond.

2.0 DIKE PROTECTION AND STRUCTURAL INTEGRITY

Sheet IJ4-I-M35 of the enclosed drawings shows the dike construction. As can be seen from this drawing, the side slopes are 3:1 (H:V) in compliance with 19.15.17.11.G(1). The foundation of the pond was recompacted to 95% of Maximum Proctor Density, and the berms incorporate an anchor trench for the liner and underliner. The top of the levee is 8 ft wide to allow for inspection and maintenance.

3.0 LEAK DETECTION

Sheet IJ4-I-M35 of the enclosed drawings shows the leak detection system. The pond has a double liner with a leak detection system between the upper and lower liners. These drawings show a 45 mil Hypalon upper liner and a 30 mil oil-resistant PVC lower liner, with a sand and PVC lateral layer between, to serve as a leak detector. However, since the original installation, the Hypalon liner has been replaced with a 40 mil HDPE liner. The anchor trench for the geomembrane liners is 18" deep, 9" wide, with a 6" uplay, as shown on Sheet IJ4-I-M37. This meets the requirements of 19.15.17.11(G)(2) and (3) NMAC.

Any leaks from the primary liner will be collected in the sand layer and can be monitored and removed through the PVC pipes before the underliner is breached. According to the drawings, the Hypalon liner was heat sealed, but the PVC liner had solvent welds in accordance with manufacturer's specifications. No seam or pull test results are available from that original installation, but based on the drawings it appears the liner meets the requirements of 19.15.17.11(G)(5) and (7) NMAC.

4.0 LINER SPECIFICATION AND COMPATIBILITY

The current upper liner is HDPE, which is compatible with the brine water being placed in the pond. It is also resistant to any petroleum hydrocarbons that might be associated with the brine water. The lower liner, below the leak detection system is PVC that has been treated to resist oil. Because the purpose of

the lower liner is to contain any leaks from the upper liner while the leak is repaired and the leaked materials removed, the treated PVC is compatible with the intended purpose. Therefore the liner appears to meet the requirements of 19.15.17(G)(3) NMAC

5.0 QUALITY CONTROL/QUALITY ASSURANCE CONSTRUCTION AND INSTALLATION PLAN

No construction QA/QC plan, specifications, or inspection reports have been found for the north pond. However, the enclosed drawings and build notes indicate standard liner construction techniques were used in the construction of the pond liner and leak detection system.

This pond has been in service for 30+ years and was originally designed and built by a previous operator of the facility. Appendix B contains the existing design plans. Because the pond and liner have functioned as originally designed, the quality of the materials and construction appear to have been adequate.

6.0 OPERATING AND MAINTENANCE PLAN

The O&M Plan for the north pond is in section 6 of this permit application package

7.0 FREEBOARD AND OVERTOPPING PREVENTION

The pond was designed and constructed with 1 ft of freeboard, but operationally WNR maintains 3 ft of freeboard. Because the pond is a bermed, surface impoundment there are only two ways of overtopping: 1) direct precipitation; and 2) overfilling of brine water into the pond. As discussed in the climatological report, the 100-year 24-hour rainfall is 6.19 inches, so 3 ft of freeboard is more than adequate to prevent overtopping in the event of a 100-year precipitation event. As discussed in the O&M Plan, overfilling is prevented by routing overflow to the adjacent pond or trucking to a Class II Salt Water Disposal Well, as the brine is RCRA-exempt waste.

8.0 NUISANCE AND HAZARDOUS ODORS

There is no H₂S associated with the operations at this site. This is confirmed by analytical data and has been previously recognized by the OCD (Appendix C).

9.0 EMERGENCY RESPONSE PLAN

The Emergency Response Plan is found in section 8 of this permit application package.

10.0 WASTE STREAM CHARACTERIZATION

There is no waste stream, as the ponds contain only brine with no or minimum hydrocarbons, as documented in Appendix D. Excess brine is disposed of in Class II Salt Water Disposal Well, as the brine is RCRA-exempt waste.

11.0 MONITORING AND INSPECTION PLAN

The leak detection system shall be inspected monthly to determine if the primary containment is leaking. All channels and culverts will be periodically inspected, at least twice annually and after any major precipitation event. Any sediment deposits and debris will be removed from the channels and culverts as necessary, and any erosion damage, if present, will be repaired or controlled. The inspection will also note any dead migratory birds or other wildlife and report on such within 30 days of the observation.

12.0 EROSION CONTROL

Because the north pond construction was completed several years ago and all disturbed areas have been reclaimed, there is no need for erosion control.

13.0 CLOSURE PLAN

The Closure Plan is found in section 12 of this permit application package.

1.0 GENERAL OPERATIONS

The facility is permitted to store LPG in underground storage caverns. It is manned whenever loading and unloading operations are in progress. The facility operations involve the underground LPG storage caverns, truck and rail car loading/unloading operations, maintenance of two double-lined brine storage ponds, LPG aboveground storage tanks, and the associated pumps, valves, and piping. LPG is transported to and from the facility by means of tanker trucks, rail cars, and pipeline. The facility operations also include a permitted off-site disposal well.

Underground storage facilities allow for storage of surplus LPG during periods of low demand and provide availability of these products during periods of high demand. The storage of pressurized LPG products underground is much more economical than the surface storage in high pressure containers, and many hazards of above ground storage are eliminated.

Salt Caverns are essentially impermeable meaning no fluid or gas can escape through the surrounding rock salt. This fact makes a salt cavern ideal for storing hydrocarbon products. The cavern is always filled with liquid, either brine or LPG. Once the cavern was ready to store LPG, injection operations were initiated. Because LPG is lighter than brine, it will float on the top of the brine within the cavern. To inject, LPG is pumped down the annulus and the brine is displaced through tubing to the surface. The displaced brine is stored in a brine pond. While in the annulus and cavern, the LPG remains in liquid state due to the hydrostatic pressure created by the heavier brine within the tubing. To recover LPG, the reverse operation is initiated by pumping brine into the cavern through the tubing causing the product to be displaced through the annulus to the surface.

Since the injected LPG volume and the displaced brine volume stored in the pond is a 1:1 ratio, the LPG inventory records and planning are used to ensure that the pond is not overfilled. Additionally, the pond is visually inspected daily to ensure a 3-foot freeboard. At the maximum injection rate, over-topping of the freeboard is unlikely because it would take approximately 35 hours.

2.0 WASTE GENERATION

Both exempt and non-exempt wastes are generated at the facility. Exempt wastes include domestic waste and trash, certain absorbents, and oil field brine water. The brine water typically contains no hazardous components, and when it does it is at *de minimis* concentrations. Non-exempt wastes include used oil filters and brine/oil mixtures. Only oil field brine water is placed in the north pond.

3.0 INSPECTIONS

The facility is manned on a business-day basis, at least 5 days per week. The pit (pond) is inspected daily. The inspection consists of the following:

- Visual check of pond level (maintain a 3 foot freeboard),
- Visual check of the leak detection system,

- Visual check of the berms and liner for damage, and
- Visual check of the operating liquid transfer equipment.

4.0 MAINTENANCE

Maintenance is performed as a result of a visual inspection.

1.0 TYPES OF EMERGENCIES

Two types of emergencies may occur at the north pond, overtopping and leakage. Overtopping is prevented by ensuring that a 3-foot freeboard and inventory control are maintained. Potential leakage is monitored with the leak detection system. Should brine liquids be detected in the leak detection system, the lower liner will prevent further leakage while the leak is being repaired.

2.0 NOTIFICATIONS

When a release is discovered, immediate steps will be taken to contain the release and prevent further discharge. Then, as soon as possible, notification will be made to the following contacts, in the order presented.

- 1) Jal LPG Storage Facility: 575-395-2632(office)
 - 1.a) 915-471-1607 (cell Ken Parker)
 - 1.b) 888-656-8006(Bloomfield 24 Hr.)
- 2) The contact number for the Hobbs' OCD is 575-393-6161(a 24 hr. line is given if needed)

The notification should include the following information:

- The time and date of the release
- Estimate of the volume released
- Nature and cause of the release
- Steps that were taken to contain the release and their effectiveness

3.0 PROCEDURES

In the unlikely event of a failure of the overflow protection devices, the operator in attendance will immediately cease the discharge into the north pond and divert flow, if necessary, into the south pond. The release from overtopping will be contained with temporary soil berms or absorbent berms to prevent offsite discharge. The spilled brine water will be recovered and the soil tested to determine the need for soil remediation. Should remediation be required, a remediation plan will have to be approved by the OCD before remedial measures are undertaken.

In the unlikely event of a liner leak, the operator will make the notifications listed in Section 2.0, and cease all further discharge to the north pond. The brine water will be pumped out and placed in the south pond, or Jal if that pond lacks sufficient capacity the brine will be disposed of in a Class II Salt Water Disposal Well, as the brine is RCRA-exempt waste. The liner will then be tested to locate the source of the leak. Repair will then be made in accordance with the recommendations of the liner manufacturer or engineer. Once the repairs have been made, the repair will be tested to ensure the repaired liner integrity has been restored before additional brine water is placed into the pond. The OCD may require additional measures, depending on the size and nature of the leak.

1.0 WASTE STREAM CHARACTERIZATION

There is no waste stream, as the ponds contain only brine with no or minimum hydrocarbons, as documented in Appendix D. Excess brine is disposed of in Class II Salt Water Disposal Well, as the brine is RCRA-exempt waste.

1.0 MONITORING

Records of LPG delivery and storage are maintained as part of the normal site operations. Since the injected LPG volume and the displaced brine volume stored in the pond is a 1:1 ratio, the LPG inventory records are monitored to ensure that the pond is not overfilled. At the maximum injection rate, over-topping of the freeboard is unlikely because it would take approximately 35 hours. Very little maintenance is required for the ponds beyond normal housekeeping type activities and maintenance of the pumps and valves. Maintenance to the ponds is performed when inspections indicate work is necessary.

2.0 INSPECTIONS

The facility is manned on a business-day basis, at least 5 days per week. The pond and liquid transfer equipment are inspected daily. The inspection consists of the following:

- Visual check of pond level (to maintain a 3 foot freeboard);
- Visual check of the leak detection system;
- Visual check of the berms and liner for damage; and
- Visual check of the operating liquid transfer equipment.

Required maintenance is performed as a result of findings of the visual inspection. More information can be found in the Operations and Maintenance Section (Section 6).

1.0 SITE LOCATION AND DESCRIPTION

This closure plan has been developed for the north pond at the Western Refining, Inc. (WNR) Liquified Petroleum Gas (LPG) storage facility located approximately 10 miles north of Jal, New Mexico, just west of New Mexico Highway 18 (Figure 1). The facility, formerly owned and operated by El Paso Natural Gas Company, contains two brine ponds which WNR wishes to permit under the OCD Pit Rule, 19.15.17 NMAC. This Closure Plan addresses the north brine storage pond at the facility, which is located in the SW1/4, SW1/4 Section 32, T23S, R37E, Lea County, New Mexico (Figure 2). The pond was previously regulated by a discharge permit (GW-007), which was terminated by the Oil Conservation Division (OCD) on April 16, 2013 (Appendix A). This pond is now to be permitted as a permanent pit under the Pit Rule. The pond is used for the storage of brine displaced from the underground storage caverns by LPG. The pit is 220 ft wide and 500 ft long. The depth from the top of the berm is 5 ft with the bottom elevation approximately 3306 ft above mean sea level (MSL).

The north pond has been constructed with a double liner and leak detection system. The principal (or upper) liner consists of 40 mil High Density Polyethylene (HDPE), and the lower, or underliner, is an oil-resistant Polyvinyl Chloride (PVC) liner. Between the two liners is a layer of clean sand and 4" PVC perforated pipe, which serves to detect and allow removal of any fluids that may leak through the upper liner. Closure of the pond will involve evaporation of the remaining fluids in the pond, removal of the liner system components, along with any residual solids in the pond bottom, removal of the berms, and regrading and restoration of the site.

2.0 POST CLOSURE LAND USE

Facility closure is not anticipated at this time, but this closure plan has been prepared to meet the requirements for a pit rule permit for the north pond. The post-closure land use is, therefore, unknown, but is expected to revert back to the open rangeland that existed prior to facility construction and be compatible with current surrounding land use.

3.0 CLOSURE PLAN COMPONENTS

This section describes the various components that will be involved in closing the north pond. These will include removal of the pond contents and associated structures, determination of the need for soil remediation, final grading, and revegetation. WNR shall notify OCD at least 60 days in advance of the proposed closure of the north pond.

3.1 Potential for Site Remediation

After the contents of the pond have been removed, the soil beneath the pond will be sampled and analyzed in accordance with the provisions of 19.15.17.13 NMAC. Five soil samples will be collected and composited in the field to provide a single composite sample for chemical analysis. One sample will be collected from near each of the four corners of the pond, and one sample will be taken from near the center of the pond. The samples will be collected from the soil beneath the bottom liner of the pond. The samples will be analyzed for the parameters listed in Table 1.

Table 1 - Closure Criteria for North Pond Soils		
Constituent	Analytical Method¹	Limit²
Chloride	EPA 300.0	20,000 mg/kg
Total Petroleum Hydrocarbons	EPA SW-8946 Method 418.1	2,500 mg/kg
GRO + DRO	EPA SW-846 Method 8015M	1,000 mg/kg
BTEX Compounds	EPA SW-846 Method 8021B or 8260B	50 mg/kg
Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

¹ Or other test method approved by the OCD

² Numerical limits or natural background levels, whichever is greater

If any of the constituents in the soil sample exceed the limits shown in Table 1, WNR shall report the results to the OCD and await ODC approval before proceeding with the site closure. OCD may require additional testing or remediation to implement full site closure.

If all of the constituents in the sample are below the limits shown in Table 1, WNR may proceed with final pond filling, grading, and other site closure activities, per this closure plan.

3.2 Water Evaporation

As part of the pond closure operations, brine water will cease to be discharged into the pond. The water remaining in the pond will then be allowed to evaporate. WNR may elect to enhance the evaporation with the use of spray evaporators, or may simply allow the water to evaporate naturally. Once the water has evaporated, the residual solids will be removed along with the liner materials to prevent their being discharged onto the site.

3.3 Geomembrane Liner Removal and Disposal

The geomembrane liner will be folded up over the pond residuals and removed for disposal at an approved disposal facility, or covered with clean soil and closed in place.

3.4 Site Grading and Drainage

After the water has been evaporated and the liner removed or covered for closure in place, the pond site will be regraded to approximately the original contours prior to construction, and consistent with the surrounding grade. No drainage structures will be required at closure. The final grade will provide a general slope of about 0.5 to 1.0 percent, consistent with the natural contours and drainage pattern of the area. Post-closure drainage will be by natural sheet flow to the eastern boundary of the property, following the natural drainage pattern. Because of the very low grade and the revegetation at closure, no erosion protection other than site vegetation is necessary or planned.

3.5 Revegetation

The area impacted by grading and other disturbances during closure operations will be revegetated. The revegetation is intended to reduce impacts to surface water by establishing a self-sustaining native plant community which will provide protection against soil erosion and enhance the natural aesthetics of the closed site. The need for soil amendments will be determined based on site-specific evaluations at the time of closure. Inorganic fertilizer may be added to increase nitrogen, phosphate, and potassium available to plants, if required by the analytical results of the soil. Mulch may be applied after seeding to conserve soil moisture and protect against soil erosion until the plants have taken root. Planting will be performed between April and October. Amended areas will be seeded with a mixture of native grasses and forbs that will not depend on external application of water or fertilizer. The plant species native to the area, as listed in the NRCS *Soil Survey of Lea County, New Mexico*, are shown on Table 2. Specific species, composition percentages, and seeding rates, will be determined during a vegetation survey conducted as part of the closure operations.

Table 2 – Native Plant Species				
Black grama	Side-oats grama	Bluestem	Bush muhly	Plains bristlegrass
Sand bluestem	Blue grama	Hairy grama	Shin oak	Yucca
Dropseed	Three-awn	Sand Paspalum	Sand sagebrush	Broom snakeweed

3.6 Regulatory Compliance

A storm water discharge permit (NPDES) will be required for construction activities during site closure, and must be obtained prior to implementing closure operations. Temporary erosion controls, such as silt fence, compost socks, or hay bales, will be placed around the construction zone during construction, but will be removed upon completion of the site closure. Dust will be controlled periodically during earthwork operations by watering haul roads and other dust generating areas, as necessary.

3.7 Closure Operations and Schedule

Although a specific schedule of operations will be prepared by the construction contractor selected to perform the closure, a general schedule follows.

Week 1:

- Notify OCD that closure operations will commence (advance notice will have been given 60 days prior)
- Stop brine water delivery into the pond
- Prepare Storm Water Pollution Prevention Plan (SWPPP)

Weeks 1-4:

- Evaporate water from pond
- Mobilize construction equipment
- Install sediment controls

Weeks 5-8:

- Remove liners and residuals, or complete closure in place
- Sample and analyze underlying soil
- Perform vegetation survey and soil analysis for amendments and seed mix
- Regrade pond area to final contours

Week 9:

- Revegetate site

APPENDIX

A

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John Bemis
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division



APRIL 16, 2013

Mr. Ron Weaver
Regional Terminals Manager
Western Refining Company, L.P.
111 County Road 4990
Bloomfield, New Mexico 87413

**RE: CLOSURE REPORT
FORMER CLASSIFIER SYSTEM
WESTERN REFINING COMPANY, L.P.
JAL LPG STORAGE TERMINAL
LEA COUNTY, NEW MEXICO**

TERMINATION OF DISCHARGE PERMIT GW-007

Dear Mr. Weaver:

The Oil Conservation Division (OCD) has reviewed Western's Closure Report submitted via email on February 8, 2013. This closure report documents the closure activities that Western implemented in accordance with its approved closure plan of November 2012. Based on our review, OCD hereby approves Western's closure activities for the former Classifier System at its Jal LPG Storage Terminal.

In addition, based on your responses given in the "Oil & Gas Facilities Questionnaire for Determination of a WQCC Discharge Permit" and a file review, the Oil Conservation Division (OCD) has determined that one of your facilities with an expired or soon to be expired permit do not require a Water Quality Control Commission (WQCC) Discharge Permit. This means that WQCC Discharge Permit **GW-007 (formerly known as Christie Jal GP)** is hereby terminated and you are not required to proceed with the renewal of this expired WQCC Discharge Permit. OCD will close this permit in its database.

Previously, Western has conducted abatement of ground water contamination at this facility under the authority of its WQCC Discharge Permit, pursuant to 20.6.2.4000 through 20.6.2.4115 NMAC (PREVENTION AND ABATEMENT OF WATER POLLUTION). OCD has determined that Western does not intentionally discharge at this facility; therefore, no WQCC Discharge Permit is required. However, because of existing ground water contamination at this facility, OCD is requiring Western to continue to abate pollution of ground water pursuant to 19.15.30 NMAC (REMEDIATION). The new Abatement Plan case number for the former **GW - 007** facility is **AP - 117**. Please use this Abatement Plan case number in all future correspondence.

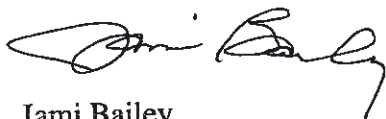
April 16, 2013

Page 2

Because this WQCC Discharge Permit is no longer valid, you may be required to obtain a separate permit(s) for other processes at your facility, such as: pits, ponds, impoundments, below-grade tanks; waste treatment, storage and disposal operations; and landfarms and landfills. OCD will make an inspection of your facility to determine if any of these existing processes may require a separate permit under OCD's Oil, Gas, and Geothermal regulations. If OCD determines that a separate permit(s) is required, then a letter will be sent to you indicating what type of permit is required.

Please keep in mind, if your facility has any discharges that would require a WQCC Discharge Permit now or in the future, then you will be required to renew or obtain a WQCC Discharge Permit. If you have any questions regarding this matter, please contact Glenn von Gonten at 505-476-3488.

Thank you for your cooperation.

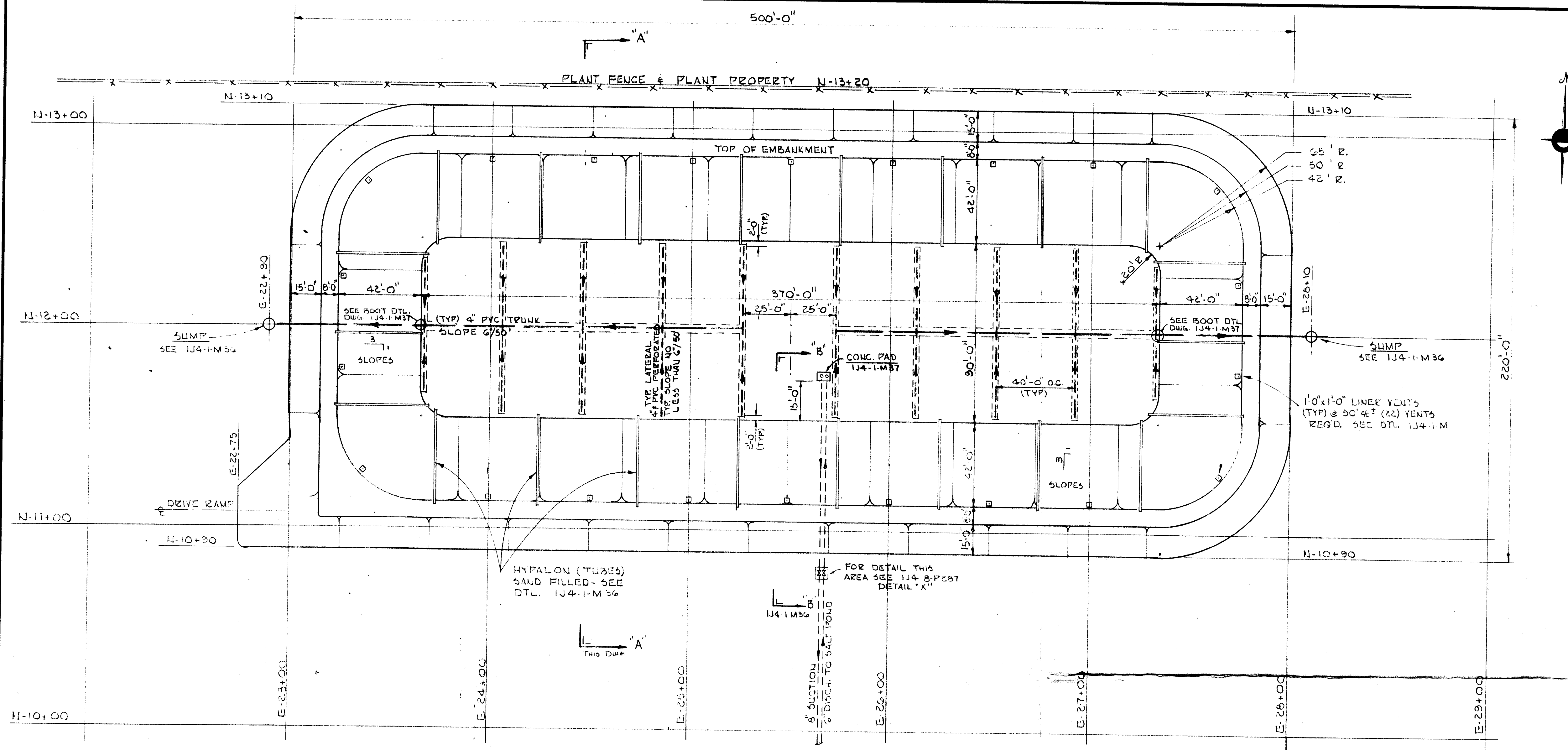
A handwritten signature in black ink, appearing to read "Jami Bailey", is positioned above the printed name and title.

Jami Bailey
Director

JB/ll

APPENDIX

B

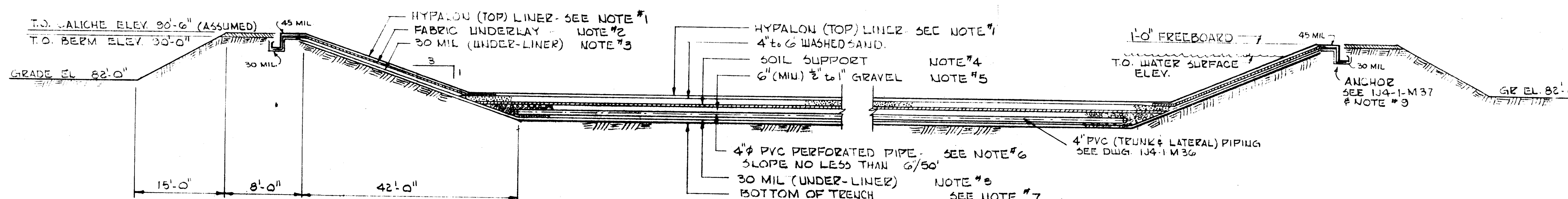


PLAN
SCALE: 1"=30'

NOTES:

1. TOP LINER: - HYPALON 45 MIL. 6x6
2. FABRIC UNDERLAY: - FIBRETEX GRADE "600" GEOTEXTILE 190 MIL. (MIN) SEE SPEC. SHEET
3. UNDER-LINER: - 30 MIL. OIL RESISTANT PVC LINER (SEE SPEC. SHEET)
4. SOIL SUPPORT: - MIRAFT 140 DRAINAGE FABRIC (SEE SPEC.)
5. GRAVEL: - 1/2 to 1" WASHED GRAVEL, NO CRUSHED ROCK
6. PVC PIPE: - (LATERAL) 4" PVC (PERFORATED) SDR-41 1/2" (2) HOLES @ 120" ON 5' (2) (22) VENTS REQ'D. SEE DTL. 134-I-M37
7. B.O. POND: - USE (EXISTING) BASE & WALLS, ALL CUTS THRU BASE, WALL OR BERM TO BE RE-COMPACTED TO 95% (MIN) COMPACTION.
8. SUMP: - MANUFACTURED FIBERGLASS WELL w/ FITTED 1/2" (MIN) 1/4" WALL THICKNESS, 48" OD & 12" W.
9. ANCHOR: - AN ANCHOR TRENCH SHOULD BE LOCATED FM. EDGE OF BERM TO PROVIDE A SUFFICIENT ANCHOR FOR LINER & UNDERLINER.

ELEVATION NOTE AS SHOWN ON 134-I-M36



SECTION "A-A"
NOTE: SECTION CUT THRU EMBANKMENT

ITEMS	QUANTITIES	UNIT
BRINE CAPACITY	112,333	BBL'S
INSIDE SURFACE LINER - HYPALON (45 MIL)	58,641	SQ. FT.
SAND	1,410	C.Y.
SOIL SUPPORT	8,760	SQ. FT.
GRAVEL	130	C.Y.
INSIDE UNDERLINER (30 MIL)	93,159	SQ. FT.
NON-WOVEN FABRIC (190 MIL)	54,488	SQ. FT.
4" PVC PERFORATED (SDR-41)	200	L.F.
4" PVC (SDR-26)	470	L.F.
ANCHOR	150	C.Y.
EXCAVATION	4,800	C.Y.

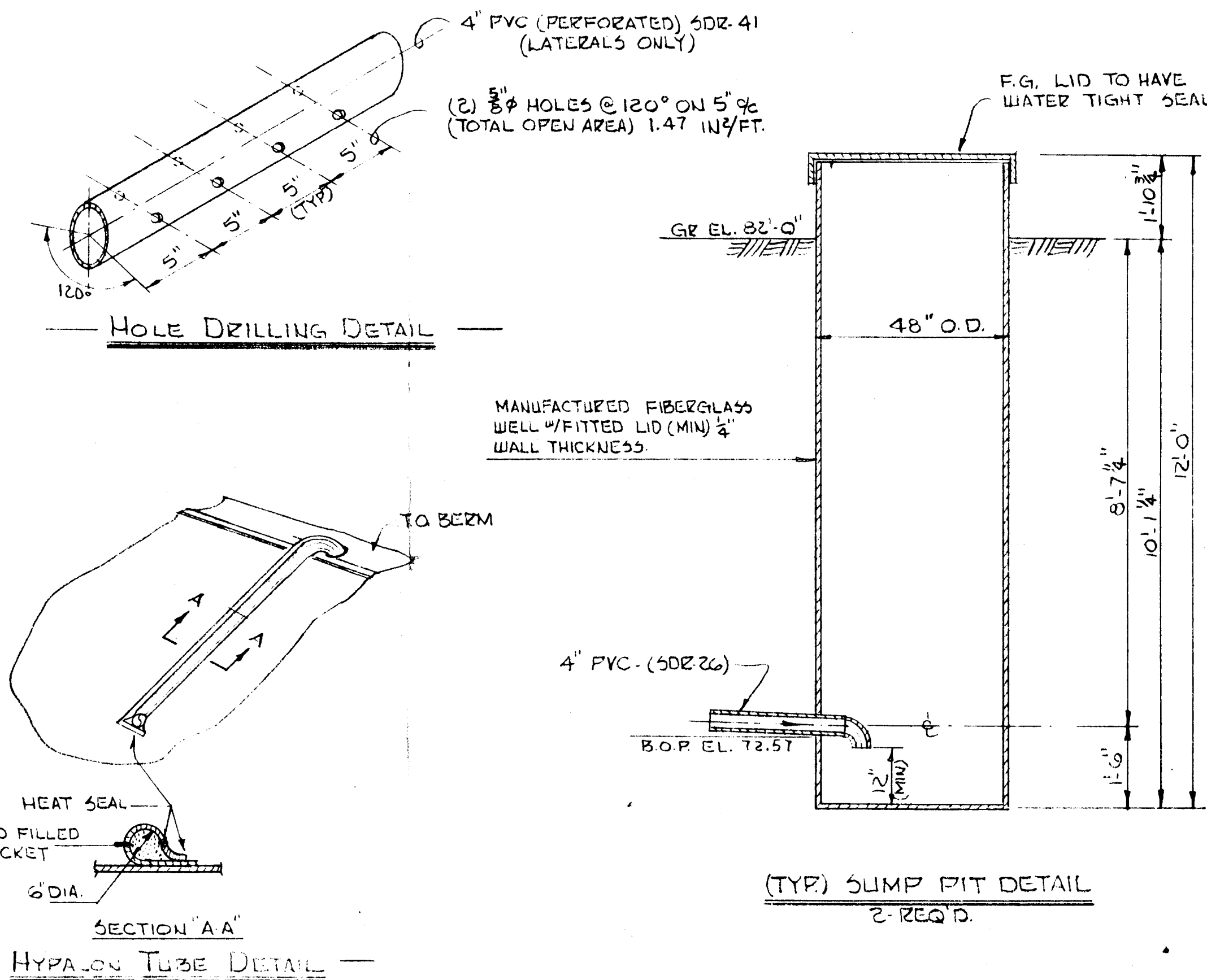
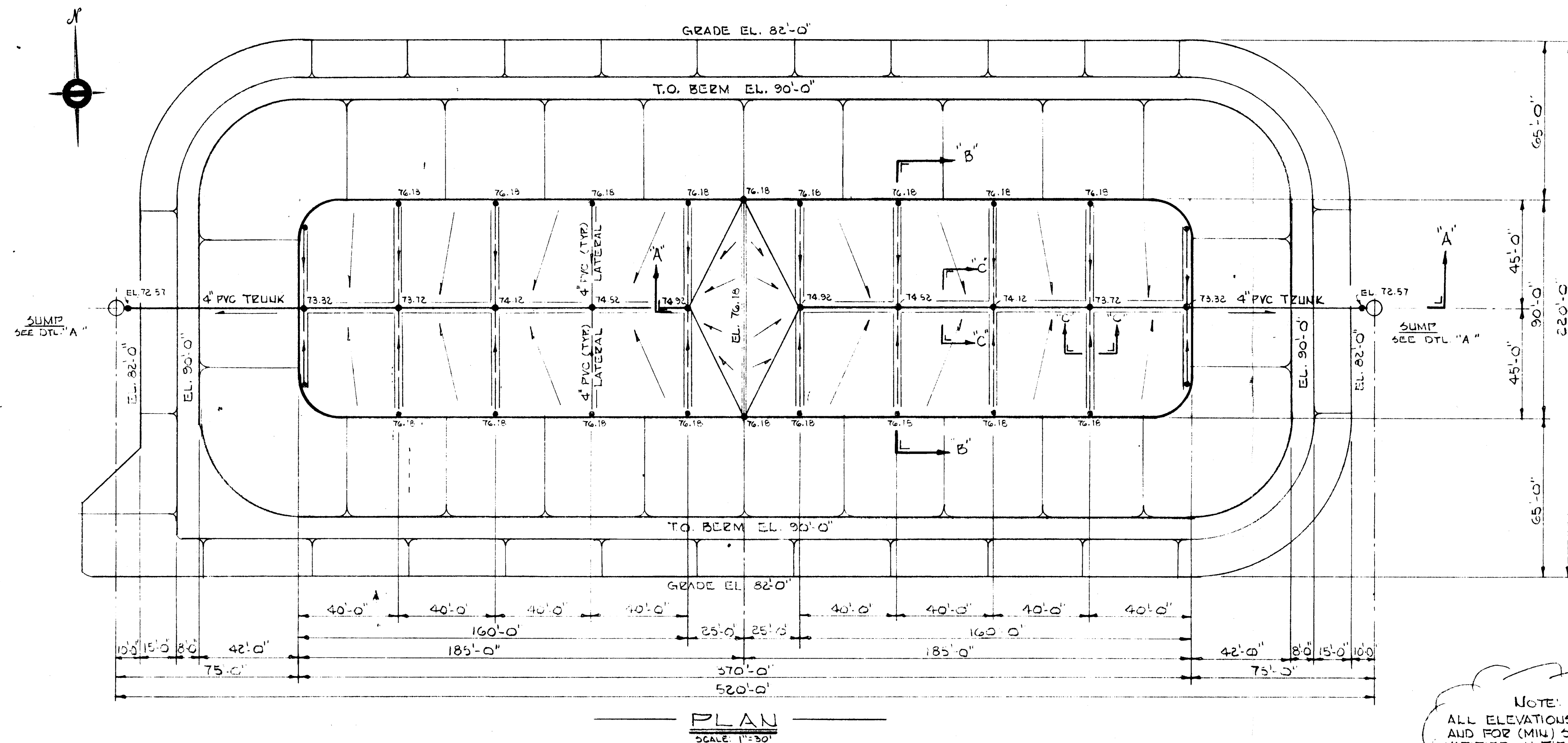
LEGEND		REFERENCE DRAWINGS		REVISIONS		PRINT RECORD	
134-I-M36 LEAK DETECTION SYS - PLAN DWG. NO. 134-I-M37 TITLE NO. DATE BY DESCRIPTION W.O. APP. PRT. SER. DATE TO W.O. PRT. SER. DATE TO W.O.		134-I-M36 LEAK DETECTION SYS - PLAN DWG. NO. 134-I-M37 TITLE NO. DATE BY DESCRIPTION W.O. APP. PRT. SER. DATE TO W.O. PRT. SER. DATE TO W.O.		134-I-M36 LEAK DETECTION SYS - PLAN DWG. NO. 134-I-M37 TITLE NO. DATE BY DESCRIPTION W.O. APP. PRT. SER. DATE TO W.O. PRT. SER. DATE TO W.O.		134-I-M36 LEAK DETECTION SYS - PLAN DWG. NO. 134-I-M37 TITLE NO. DATE BY DESCRIPTION W.O. APP. PRT. SER. DATE TO W.O. PRT. SER. DATE TO W.O.	

ENG. RECORD	DATE
DRAWN	127 5-17-82
CHECKED	
CHECKED	
PROJ. APP.	
DESIGN APP.	

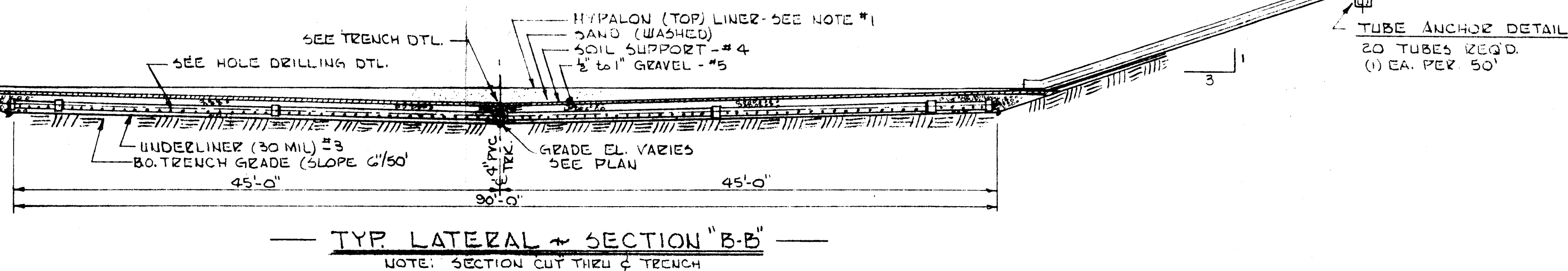
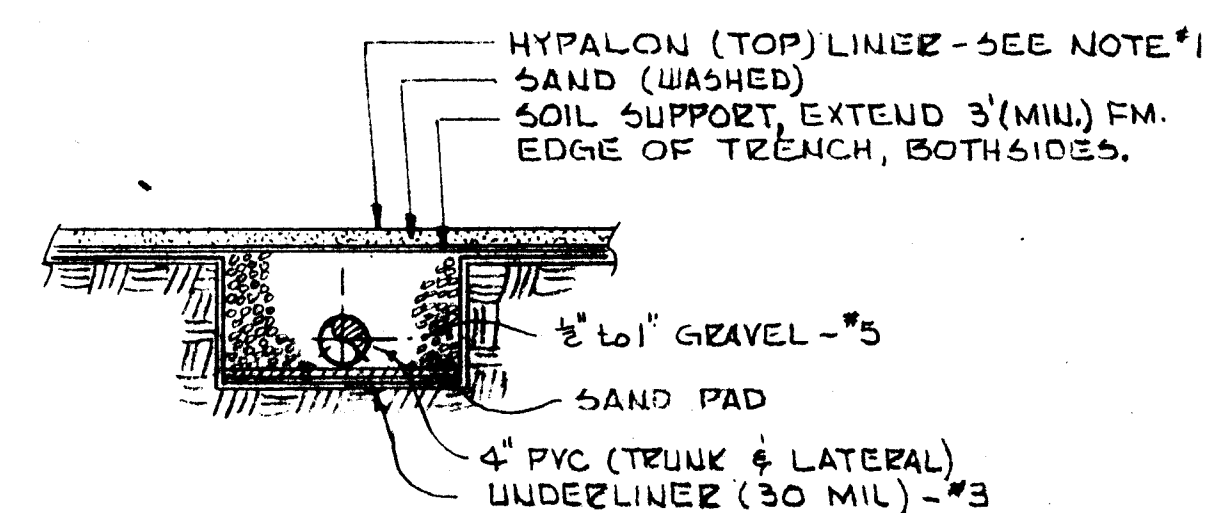
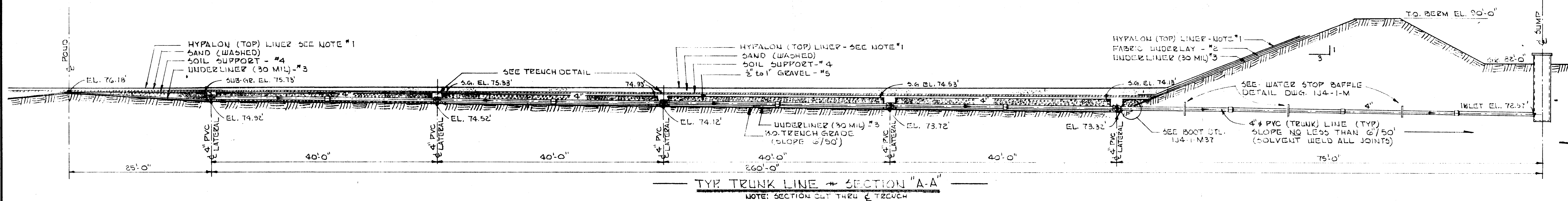


JAL No 4 GASOLINE PLANT
BRINE POND - NORTH
- PLAN & PROFILE -

SCALE: NOTED DWG. NO. 134-I-M35 REV. B.



NOTE:
ALL ELEVATIONS ARE FROM AN ASSUMED ELEV. AND FOR (MIN) SLOPE 6"/50'. ALL ELEV. TO BE VERIFIED IN FIELD BEFORE LEAK DETECTION SYSTEM IS INSTALLED.



LEGEND

REFERENCE DRAWINGS

REVISIONS

PRINT RECORD

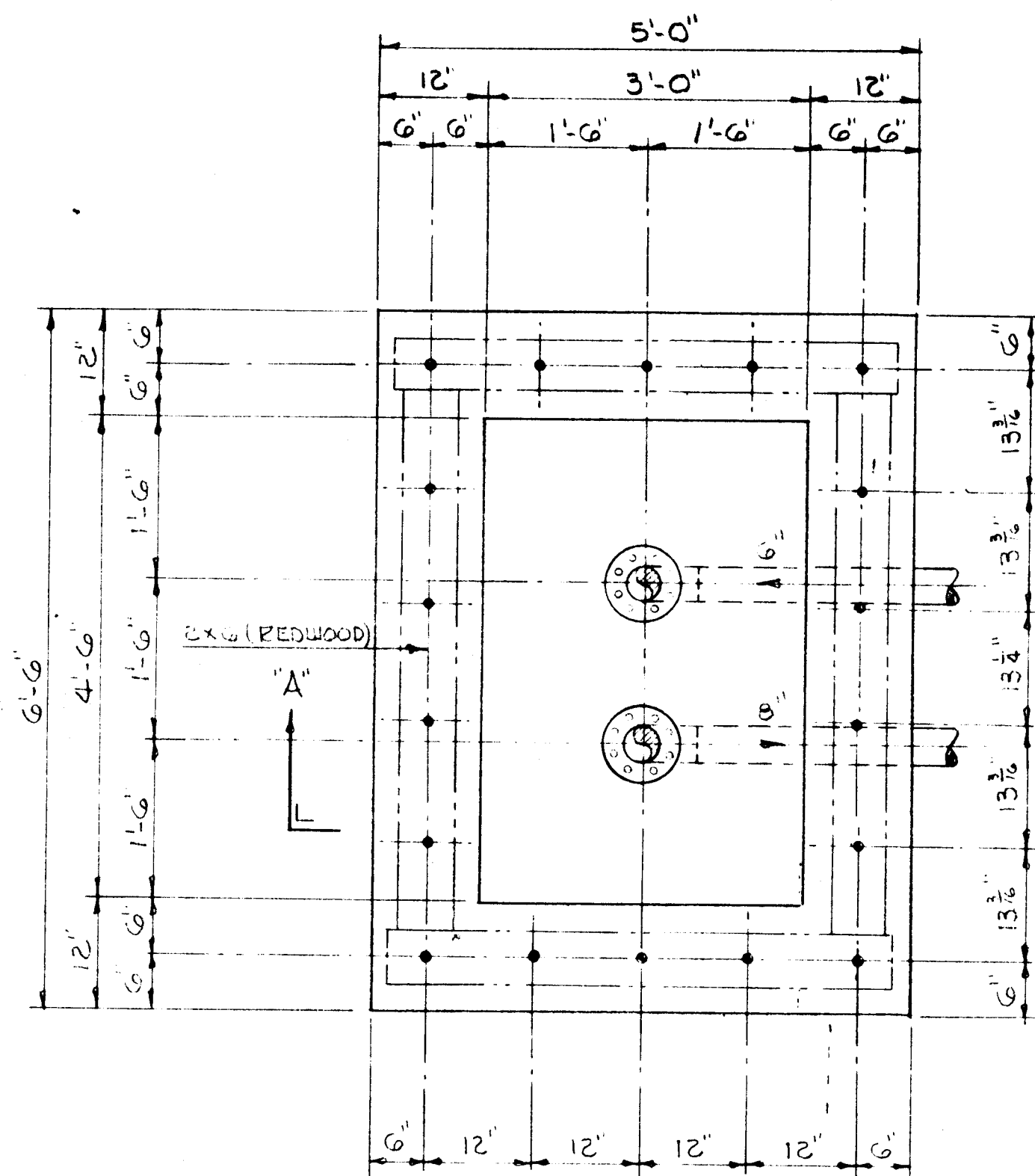
ENG. RECORD		DATE
DRAWN	LT	5-19-82
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PROJ. APP.		
DESIGN APP.		

EIPaso NATURAL GAS COMPANY

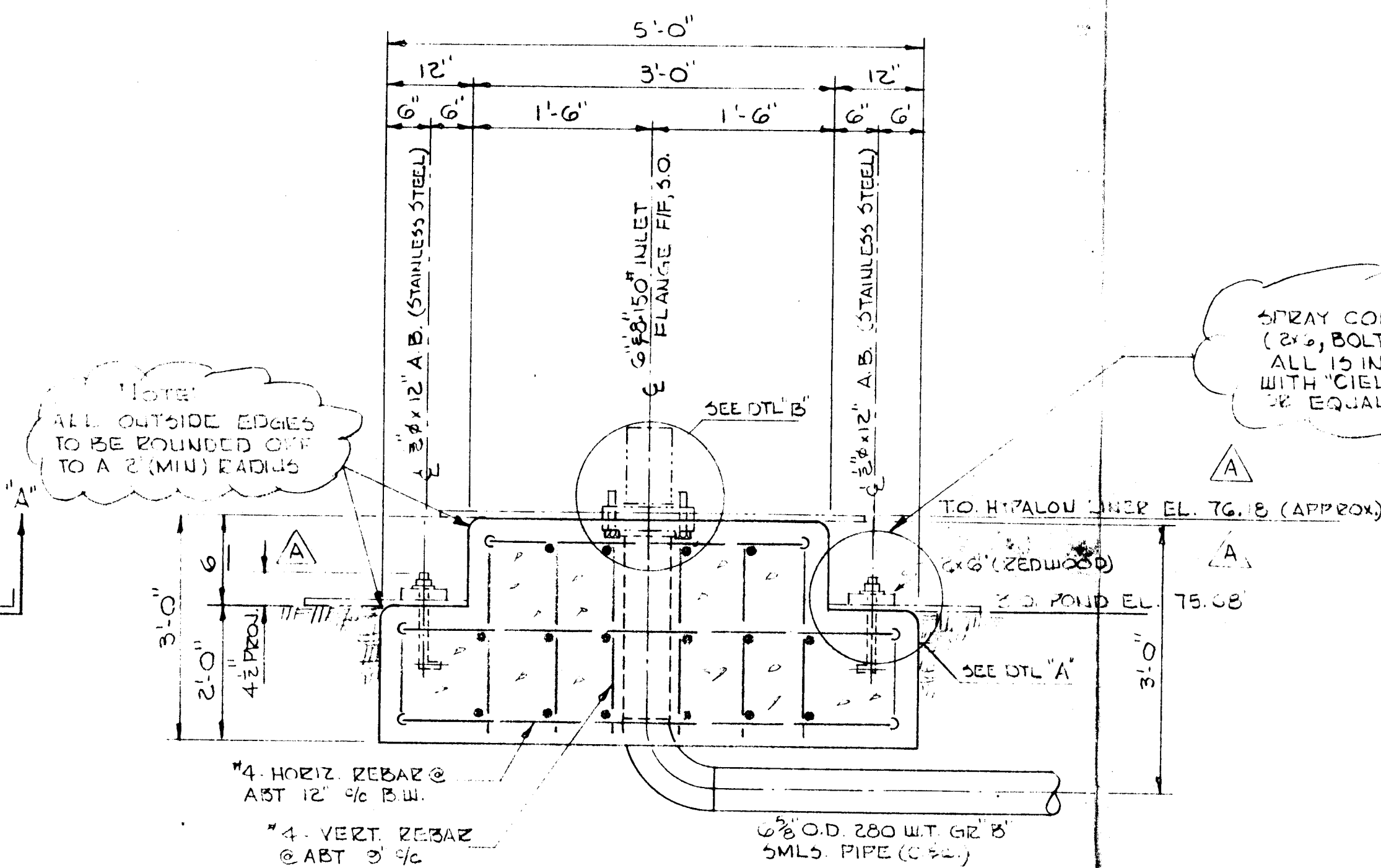
JAL N°4 GASOLINE PLANT
BRINE POND-NORTH - LEAK DETECTION
PLAN, SECTION & DTL'S

SCALE: NOTED DWG. NO. 1J4-1-M36 REV. 8
W.O. K-4275

FORM 7-337R (REV. 6-79)

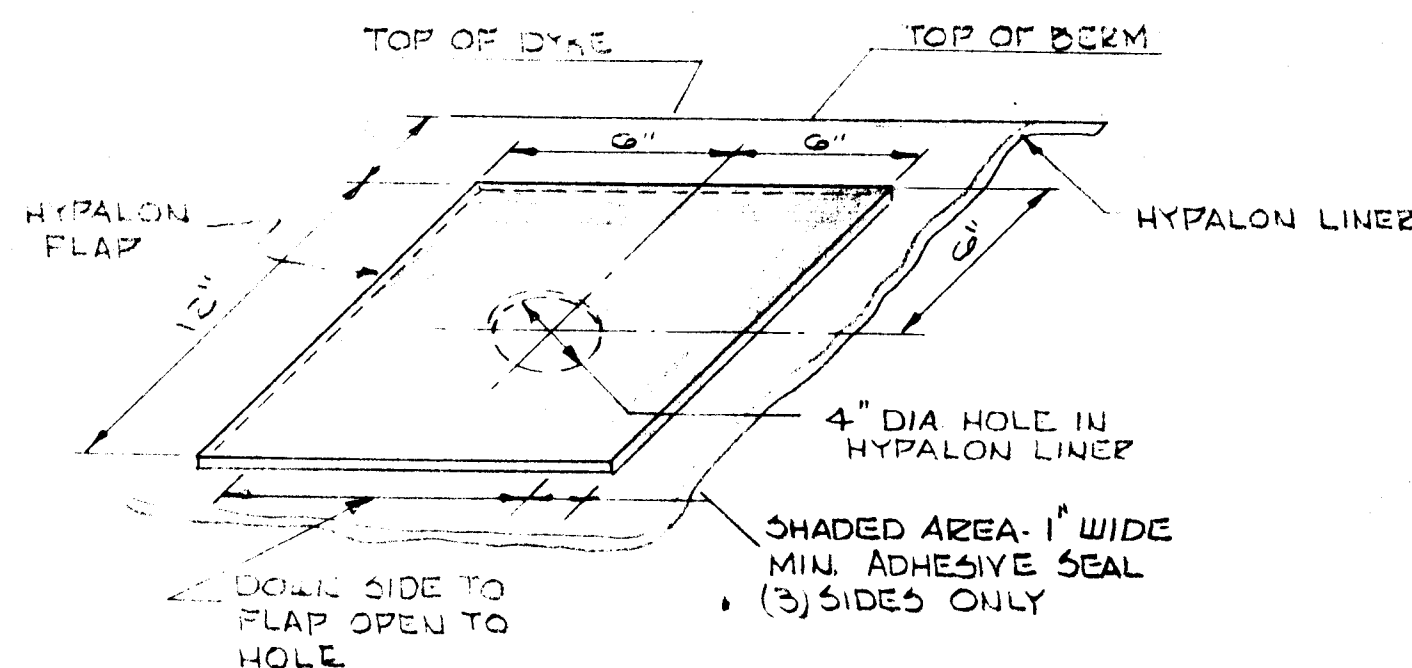


PLAN



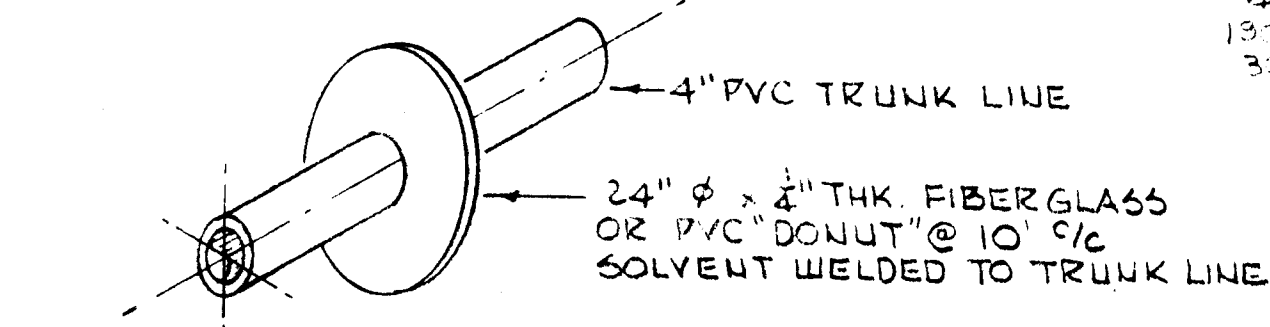
SECTION "A-A"

* ALL MATERIAL NOTES - REFER TO DWG. 134-1-M35

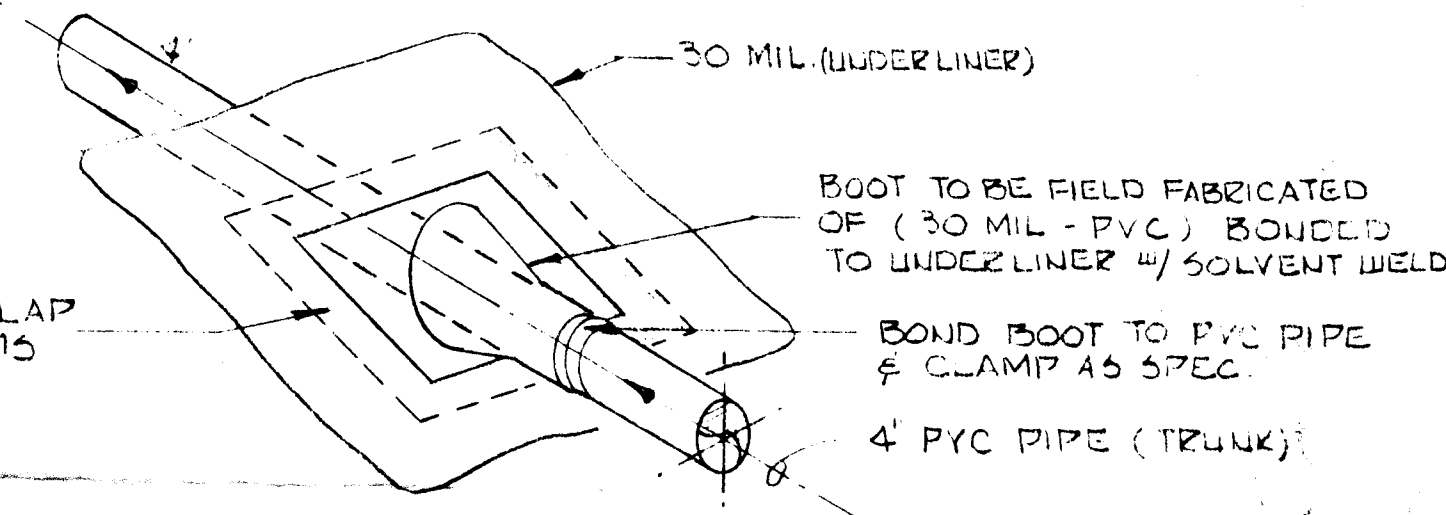


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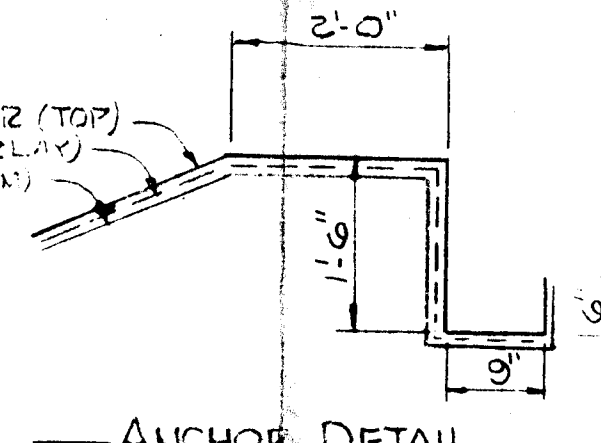
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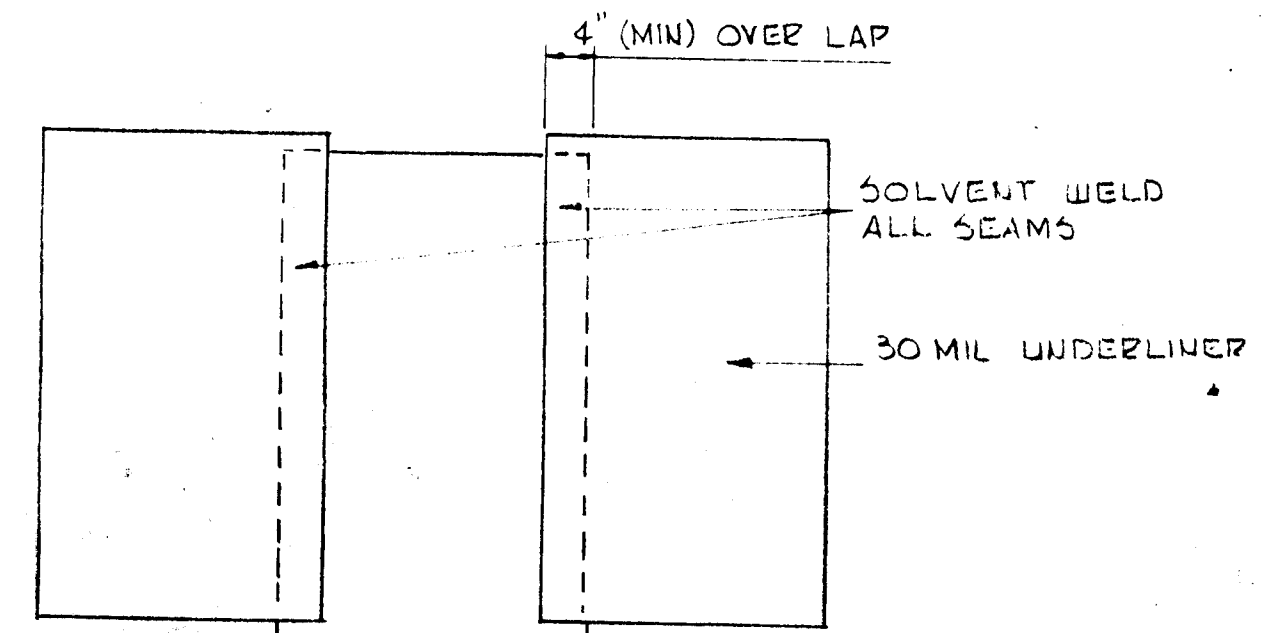
WATER STOP Baffle DETAIL



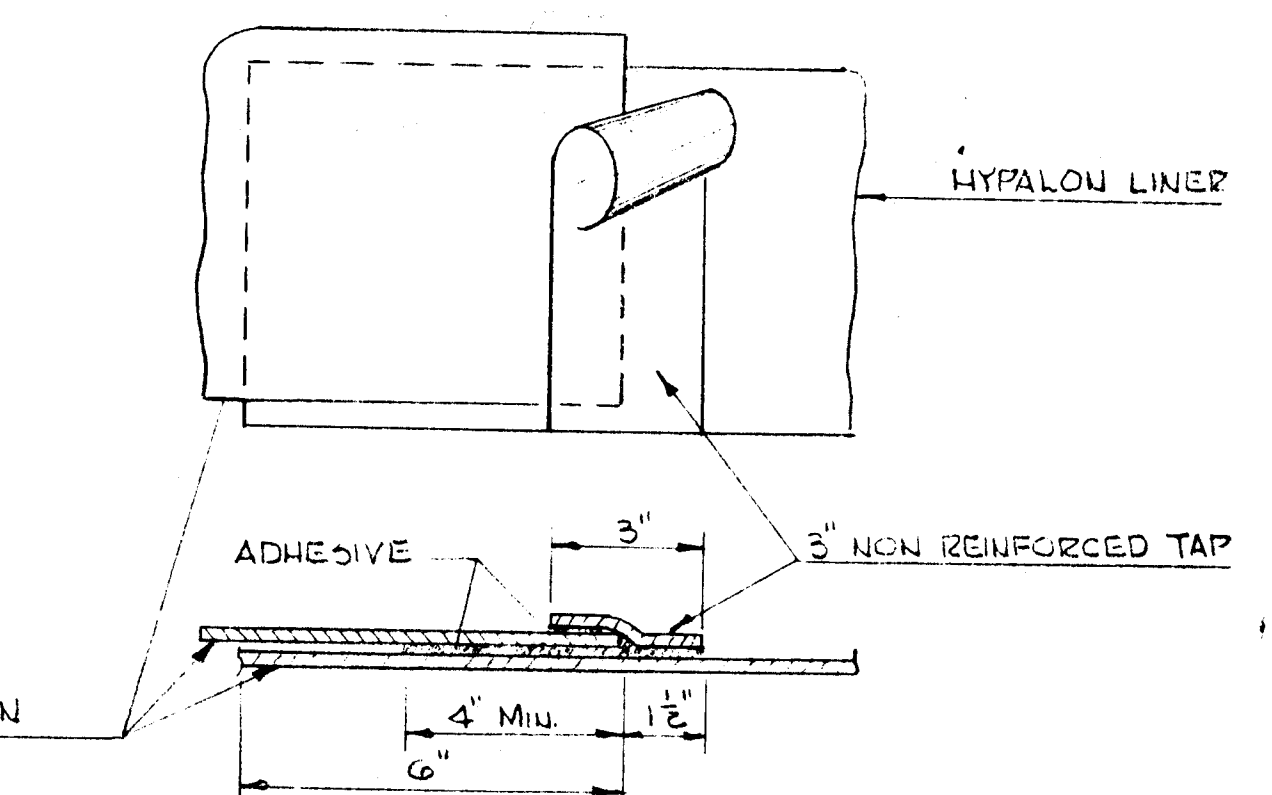
UNDERLINER BOOT DETAIL



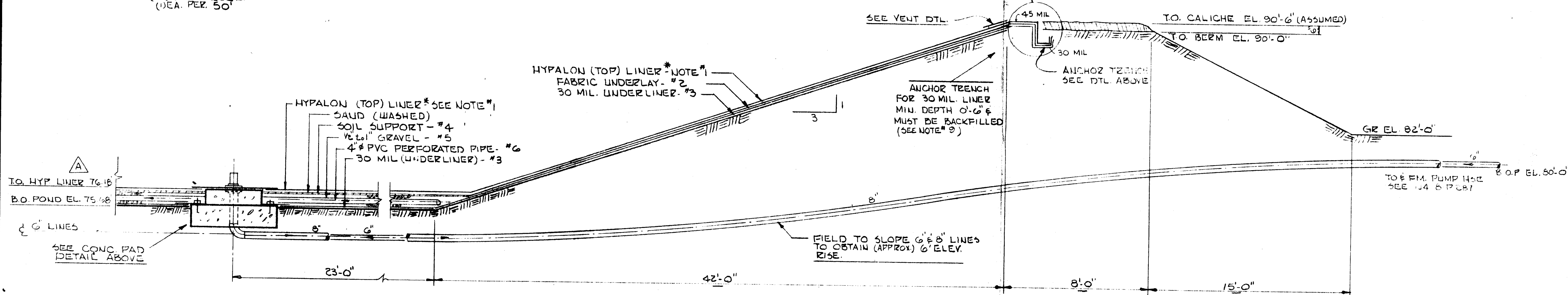
ANCHOR DETAIL



SEAM SEALING DETAIL



45 MIL - HYPALON LINER SEAM SEALING DETAIL



SECTION "B-B"

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APPENDIX

C

Chavez, Carl J, E_MNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, September 27, 2011 8:27 AM
To: 'Weaver, Ron'
Cc: Parker, Ken; Schmaltz, Randy; Gonzales, Elidia L, EMNRD
Subject: RE: GW-007 H2S Contingency Plan Requirements
Attachments: Jal typical GC 9-27-2011.pdf

Ron, et al.:

The New Mexico Oil Conservation Division (OCD) is in receipt of your analytical data confirming that an H2S Contingency Plan is **not** required under the OCD Regulations (§ 19.15.11 NMAC- Hydrogen Sulfide Gas).

Please retain this message for your records.

Please notify the OCD if conditions change.

Thank you.

File: OCD Online "GW-007 H2S Contingency Plan"

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Dr., Santa Fe, New Mexico 87505

Office: (505) 476-3490

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:

<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Weaver, Ron [mailto:Ron.Weaver@wnr.com]
Sent: Tuesday, September 27, 2011 8:16 AM
To: Chavez, Carl J, EMNRD
Cc: Parker, Ken; Schmaltz, Randy
Subject: RE: GW-007 H2S Contingency Plan Requirements

Helps if you actually attach the file, doesn't it? Sorry about that.

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, September 27, 2011 7:26 AM
To: Weaver, Ron
Cc: Parker, Ken; Schmaltz, Randy
Subject: RE: GW-007 H2S Contingency Plan Requirements

Ron:

Good morning. The attachment was not received. Could you resend it? Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

WESTERN REFINING - EL PASO, TX

Sample Report

Sample Number: 64143
 Product: TKFLDLPG2
 Tank No.: 0158
 Batch ID:
 Comment:
 Date Sampled: 9/26/20 11:04:48:27

Pass/Fail

Analysis ID	Component Name	Result	Units	
GCVOU1	Hexanes_Plus_(C6+)	0.00	%vol	Pass
GCVOU1	Methane_(C1)	0.19	%vol	Pass
GCVOU1	Ethane_(C2)	0.03	%vol	Pass
GCVOU1	Ethylene_(C2=)	0.00	%vol	Pass
GCVOU1	Propane_(C3)	2.01	%vol	Pass
GCVOU1	Propylene_(C3=)		%vol	Pass
GCVOU1	Isobutane_(IC4)	2.40	%vol	Pass
GCVOU1	N-Butane_(NC4)	7.09	%vol	Pass
GCVOU1	2-Butene_(TC4=2)	0.00	%vol	Pass
GCVOU1	1-Butene_(C4=1)	0.05	%vol	Pass
GCVOU1	Isobutylene_(IC4=1)	0.06	%vol	Pass
GCVOU1	C-2-Butene_(CC4=2)	0.18	%vol	Pass
GCVOU1	Isopentane_(IC5)	0.02	%vol	Pass
GCVOU1	N-Pentane_(NC5)	0.00	%vol	Pass
GCVOU1	1,3-Butadiene	0.00	%vol	Pass
GCVOU1	3MEC4=1	0.00	%vol	Pass
GCVOU1	TC5=2	0.00	%vol	Pass
GCVOU1	2ME=1	0.00	%vol	Pass
GCVOU1	CC5=2	0.00	%vol	Pass
GCVOU1	2ME=2	0.00	%vol	Pass
GCVOU1	C5=1	0.00	%vol	Pass
GCVOL/1	Total_Volume_Percent	100.0	%vol	Pass
GCVOL/1	Specific_Gravity	0.5775		Pass
GCVOL/1	Total_Olefins	0.3	%vol	Pass
OXY_LOWOX/1	Total_Oxygenates_ppm	20.1	ppm	Pass
SULF_4045/1	Sulfur_ppm	2.7	ppm	Pass

WESTERN REFINING - EL PASO, TX

Sample Report

Sample Number: 64153
Product: TKFLDLPG2
Tank No.: 0158
Batch ID:
Comment: Special
Date Sampled: 9/26/2011 07:57:00

Analysis ID	Component Name	Result	Units	Pass/Fail
H2S/1	H2S_ppm	0.25	ppm	Pass

APPENDIX

D



Project Name: North Brine Pond Water
Certificate of Analysis Summary 435161
Western Refining, Jal, NM

Project Id:
Contact: Ken Parker
Project Location:

Date Received in Lab: Tue Jan-17-12 02:16 pm
Report Date: 26-JAN-12
Print Manager: Brent Barron II

Analysis Requested	Lab Id:	435161-001					
	Field Id:	North Pond					
	Dept:						
	Matrix:	WATER					
	Sampled:	Jan-17-12 10:18					
Alkalinity by SM23208 SUB: E871002	Extracted:						
	Analyzed:	Jan-20-12 16:54					
	Units/RL:	mg/L RL					
Alkalinity, Total (as CaCO3)		ND 4.00					
Anions by E300	Extracted:						
	Analyzed:	Jan-20-12 09:57					
	Units/RL:	mg/L RL					
Chloride		167000 D 5000					
BTEX by SW 82608 SUB: E871002	Extracted:	Jan-20-12 13:46					
	Analyzed:	Jan-20-12 18:53					
	Units/RL:	mg/L RL					
Benzene		ND 0.00100					
Toluene		ND 0.00100					
Ethylbenzene		ND 0.00100					
m,p-Xylenes		ND 0.00200					
o-Xylene		ND 0.00100					
Total Xylenes		ND 0.00100					
Total BTEX		ND 0.00100					
Mercury by EPA 7470A SUB: E871002	Extracted:	Jan-20-12 11:00					
	Analyzed:	Jan-20-12 14:5					
	Units/RL:	mg/L RL					
Mercury		ND 0.000100					

This is a preliminary report, and the entire data package is subject to change. It is to be used for your reference and confidential use.
The interpretations and results expressed throughout this analytical report are the best judgment of XENCO Laboratories, Inc. (XENCO) and its employees. XENCO Laboratories, Inc. does not assume any responsibility for the use of the data presented here. Our liability is limited to the amount of the fee paid for the analysis and for the cost of the analysis. We do not assume any liability for the use of the data presented here.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - La1111 America - Odessa - Corpus Christi

Brent Barron II
Odessa Laboratory Manager



Certificate of Analysis Summary 435161

Western Refining, Jal, NM
Project Name: North Brine Pond Water



Project Id:
Contact: Ken Parker
Project Location:

Date Received in Lab: Tue Jan-17-12 02:16 pm
Report Date: 26-JAN-12

Analysis Requested	lab Id: 435 161-001 Fidd Id: North Pond Depclt: Matrix: WATER Sampled: Jan -17-12 10:18					
Metals per ICP by SW846 60108 SUB:T104704295-TX	Extracted: Jan -26-12 06:00 Analy:cJ: Jan -26-12 1027 U11its/RL: m!!/L RL					
Arsenic	ND 0.500					
Barium	ND 0.500					
Cadmium	ND 0.20					
Calcium	693 5.00					
Chromium	ND 0.250					
Lead	ND 0.600					
Magnesium	1410 5.00					
Potassium	3780 25.0					
Selenium	ND 0.500					
Silver	ND 0200					
Sodium	132000 D 1250					
TDS by SM2540C SUB: E871002	Extracted: Analyzed: Jan -23-12 13:00 Unitl'/RL: mg/L RL					
Total dissolved solids	329000 5.00					
pH, Electrometric by EPA 150.2	Extracted: Analyzed: Jan-17-12 17:30 Units/RL: SU RL					
pH	1.60 1.00					
Temperature	10.2 2.00					

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Brent Barron II
Odessa Laboratory Manager