

## Edwards Aquifer Application Cover Page

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with [30 TAC 213](#).

### Administrative Review

1. [Edwards Aquifer applications](#) must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: <http://www.tceq.texas.gov/field/eapp>.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

### Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be



clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

### Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a “Mid-Review Modification”. Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ’s Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ’s San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

|                                                              |             |     |                                 |     |                                 |                                |           |                         |                            |
|--------------------------------------------------------------|-------------|-----|---------------------------------|-----|---------------------------------|--------------------------------|-----------|-------------------------|----------------------------|
| <b>1. Regulated Entity Name: Berry Lane C-Store</b>          |             |     |                                 |     | <b>2. Regulated Entity No.:</b> |                                |           |                         |                            |
| <b>3. Customer Name: Silver Gate Taylor Investments, LLC</b> |             |     |                                 |     | <b>4. Customer No.:</b>         |                                |           |                         |                            |
| <b>5. Project Type:</b><br>(Please circle/check one)         | New         |     | Modification                    |     | Extension                       |                                | Exception |                         |                            |
| <b>6. Plan Type:</b><br>(Please circle/check one)            | WPAP        | CZP | SCS                             | UST | AST                             | EXP                            | EXT       | Technical Clarification | Optional Enhanced Measures |
| <b>7. Land Use:</b><br>(Please circle/check one)             | Residential |     | Non-residential                 |     |                                 | <b>8. Site (acres):</b>        |           | ~1.98                   |                            |
| <b>9. Application Fee:</b>                                   | \$650.00    |     | <b>10. Permanent BMP(s):</b>    |     |                                 | NA                             |           |                         |                            |
| <b>11. SCS (Linear Ft.):</b>                                 | NA          |     | <b>12. AST/UST (No. Tanks):</b> |     |                                 | 1 - UST                        |           |                         |                            |
| <b>13. County:</b>                                           | Williamson  |     | <b>14. Watershed:</b>           |     |                                 | Granger Lake-San Gabriel River |           |                         |                            |

# Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the “Texas Groundwater Conservation Districts within the EAPP Boundaries” map found at:

[http://www.tceq.texas.gov/assets/public/compliance/field\\_ops/eapp/EAPP%20GWCD%20map.pdf](http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf)

For more detailed boundaries, please contact the conservation district directly.

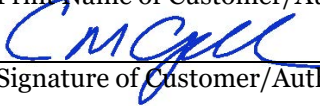
| Austin Region                        |                                                                                                                             |                                                                                                                          |                                                                                                                                                  |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| County:                              | Hays                                                                                                                        | Travis                                                                                                                   | Williamson                                                                                                                                       |
| Original (1 req.)                    | —                                                                                                                           | —                                                                                                                        | __x__                                                                                                                                            |
| Region (1 req.)                      | —                                                                                                                           | —                                                                                                                        | __x__                                                                                                                                            |
| County(ies)                          | —                                                                                                                           | —                                                                                                                        | __x__                                                                                                                                            |
| Groundwater Conservation District(s) | __ Edwards Aquifer Authority<br>__ Barton Springs/ Edwards Aquifer<br>__ Hays Trinity<br>__ Plum Creek                      | __ Barton Springs/ Edwards Aquifer                                                                                       | NA                                                                                                                                               |
| City(ies) Jurisdiction               | __ Austin<br>__ Buda<br>__ Dripping Springs<br>__ Kyle<br>__ Mountain City<br>__ San Marcos<br>__ Wimberley<br>__ Woodcreek | __ Austin<br>__ Bee Cave<br>__ Pflugerville<br>__ Rollingwood<br>__ Round Rock<br>__ Sunset Valley<br>__ West Lake Hills | __ Austin<br>__ Cedar Park<br>__ Florence<br>__x__ Georgetown<br>__ Jerrell<br>__ Leander<br>__ Liberty Hill<br>__ Pflugerville<br>__ Round Rock |

| San Antonio Region                   |                                                                                                                                                 |                                                                                        |           |                           |                     |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------|---------------------------|---------------------|
| County:                              | Bexar                                                                                                                                           | Comal                                                                                  | Kinney    | Medina                    | Uvalde              |
| Original (1 req.)                    | —                                                                                                                                               | —                                                                                      | —         | —                         | —                   |
| Region (1 req.)                      | —                                                                                                                                               | —                                                                                      | —         | —                         | —                   |
| County(ies)                          | —                                                                                                                                               | —                                                                                      | —         | —                         | —                   |
| Groundwater Conservation District(s) | __ Edwards Aquifer Authority<br>__ Trinity-Glen Rose                                                                                            | __ Edwards Aquifer Authority                                                           | __ Kinney | __ EAA<br>__ Medina       | __ EAA<br>__ Uvalde |
| City(ies) Jurisdiction               | __ Castle Hills<br>__ Fair Oaks Ranch<br>__ Helotes<br>__ Hill Country Village<br>__ Hollywood Park<br>__ San Antonio (SAWS)<br>__ Shavano Park | __ Bulverde<br>__ Fair Oaks Ranch<br>__ Garden Ridge<br>__ New Braunfels<br>__ Schertz | NA        | __ San Antonio ETJ (SAWS) | NA                  |

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

Chad M. Copeland, P.G., PWS

Print Name of Customer/Authorized Agent



10/7/2025

Signature of Customer/Authorized Agent

Date

**\*\*FOR TCEQ INTERNAL USE ONLY\*\***

|                                               |  |                                 |                              |
|-----------------------------------------------|--|---------------------------------|------------------------------|
| Date(s) Reviewed:                             |  | Date Administratively Complete: |                              |
| Received From:                                |  | Correct Number of Copies:       |                              |
| Received By:                                  |  | Distribution Date:              |                              |
| EAPP File Number:                             |  | Complex:                        |                              |
| Admin. Review(s) (No.):                       |  | No. AR Rounds:                  |                              |
| Delinquent Fees (Y/N):                        |  | Review Time Spent:              |                              |
| Lat./Long. Verified:                          |  | SOS Customer Verification:      |                              |
| Agent Authorization Complete/Notarized (Y/N): |  | Fee Check:                      | Payable to TCEQ (Y/N):       |
| Core Data Form Complete (Y/N):                |  |                                 | Signed (Y/N):                |
| Core Data Form Incomplete Nos.:               |  |                                 | Less than 90 days old (Y/N): |

**Underground Storage Tank Facility Plan Application – Checklist**  
**TCEQ-0583**

# Underground Storage Tank Facility Plan Checklist

- ☒ **Edwards Aquifer Application Cover Page (TCEQ-20705)**
- ☒ **General Information Form (TCEQ-0587)**
  - I Attachment A - Road Map
  - Attachment B - USGS / Edwards Recharge Zone
  - Map Attachment C - Project Description
- ☒ **Geologic Assessment Form (TCEQ-0585)**
  - Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
  - Attachment B - Stratigraphic Column
  - Attachment C - Site Geology
  - Attachment D - Site Geologic Map(s)
- ☒ **Underground Storage Tank Facility Plan (TCEQ-0583)**
  - Attachment A - Detailed Narrative of UST Facility
  - Attachment B – Manufacturer Information for Tanks
  - ~~Attachment C – Alternative Design and Protection Method for Tanks (if proposed)~~
  - Attachment D – Manufacturer Information for Piping
  - ~~Attachment E – Alternative Design and Protection Method for Piping (if proposed)~~
  - ~~Attachment F – Tertiary Containment Method~~
  - Attachment G - Exception to the Geologic Assessment (if requested)
  - Attachment H - Profile Drawing(s)
  - Attachment I - Initial and Continuing Training
  - Attachment J - Release Detection Maintenance
  - Site Plan
- ☒ **Temporary Stormwater Section (TCEQ-0602)**
  - Attachment A - Spill Response Actions
  - Attachment B - Potential Sources of Contamination
  - Attachment C - Sequence of Major Activities
  - Attachment D - Temporary Best Management Practices and Measures
  - Attachment E - Request to Temporarily Seal a Feature (if requested)
  - Attachment F - Structural Practices
  - Attachment G - Drainage Area Map
  - Attachment H - Temporary Sediment Pond(s) Plans and Calculations
  - Attachment I - Inspection and Maintenance for BMPs
  - Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices
- ☒ **Agent Authorization Form (TCEQ-0599), if application submitted by agent**
- ☒ **Application Fee Form (TCEQ-0574)**
- ☒ **Check Payable to the “Texas Commission on Environmental Quality”**
- ☒ **Core Data Form (TCEQ-10400)**

**General Information Form**  
**TCEQ-0587**

# General Information Form

## Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

***To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.***

***Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.***

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Chad M. Copeland, P.G., PWS

Date: 10/7/2025

Signature of Customer/Agent:



## Project Information

1. Regulated Entity Name: Berry Lane C-Store
2. County: Williamson
3. Stream Basin: San Gabriel
4. Groundwater Conservation District (If applicable): NA
5. Edwards Aquifer Zone:

- ☐ Recharge Zone  
☒ Transition Zone

6. Plan Type:

- ☐ WPAP  
☐ SCS  
☐ Modification

- ☐ AST  
☒ UST  
☐ Exception Request

7. Customer (Applicant):

Contact Person: Mr. Dhaval Sheth

Entity: Silver Gate Taylor Investments, LLC

Mailing Address: 1508 Dessau Ridge Lane

City, State: Austin, Texas

Zip: 78754

Telephone: 732-589-9272

FAX: \_\_\_\_\_

Email Address: dhaval.sheth88@gmail.com

8. Agent/Representative (If any):

Contact Person: Chad M. Copeland, P.G., PWS

Entity: Ranger Environmental Services, LLC

Mailing Address: PO Box 201179

City, State: Austin, Texas

Zip: 78720

Telephone: 512-335-1785x3

FAX: \_\_\_\_\_

Email Address: chad.copeland11@gmail.com

9. Project Location:

- ☒ The project site is located inside the city limits of Georgetown, Texas.
- ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of \_\_\_\_\_.
- ☐ The project site is not located within any city's limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

The site is located at the northwest corner of Berry Lane and E. University Avenue (E. SH 29) in Georgetown, Texas. The site address is 3711 E. University Avenue, Georgetown, Texas 78626.

11. ☒ **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.
12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
- ☒ Project site boundaries.
- ☒ USGS Quadrangle Name(s).
- ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
- ☐ Drainage path from the project site to the boundary of the Recharge Zone.
13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned.** Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.



☒ Survey staking will be completed by this date: Reportedly completed

14. ☒ **Attachment C – Project Description.** Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

- ☒ Area of the site
- ☒ Offsite areas
- ☒ Impervious cover
- ☐ Permanent BMP(s)
- ☒ Proposed site use
- ☒ Site history
- ☐ Previous development
- ☐ Area(s) to be demolished

15. Existing project site conditions are noted below:

- ☐ Existing commercial site
- ☐ Existing industrial site
- ☐ Existing residential site
- ☐ Existing paved and/or unpaved roads
- ☐ Undeveloped (Cleared)
- ☒ Undeveloped (Undisturbed/Uncleared)
- ☐ Other: \_\_\_\_\_

### ***Prohibited Activities***

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
- (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
- (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
- (4) The use of sewage holding tanks as parts of organized collection systems; and
- (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
- (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

### ***Administrative Information***

18. The fee for the plan(s) is based on:

- ☐ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☒ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☒ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

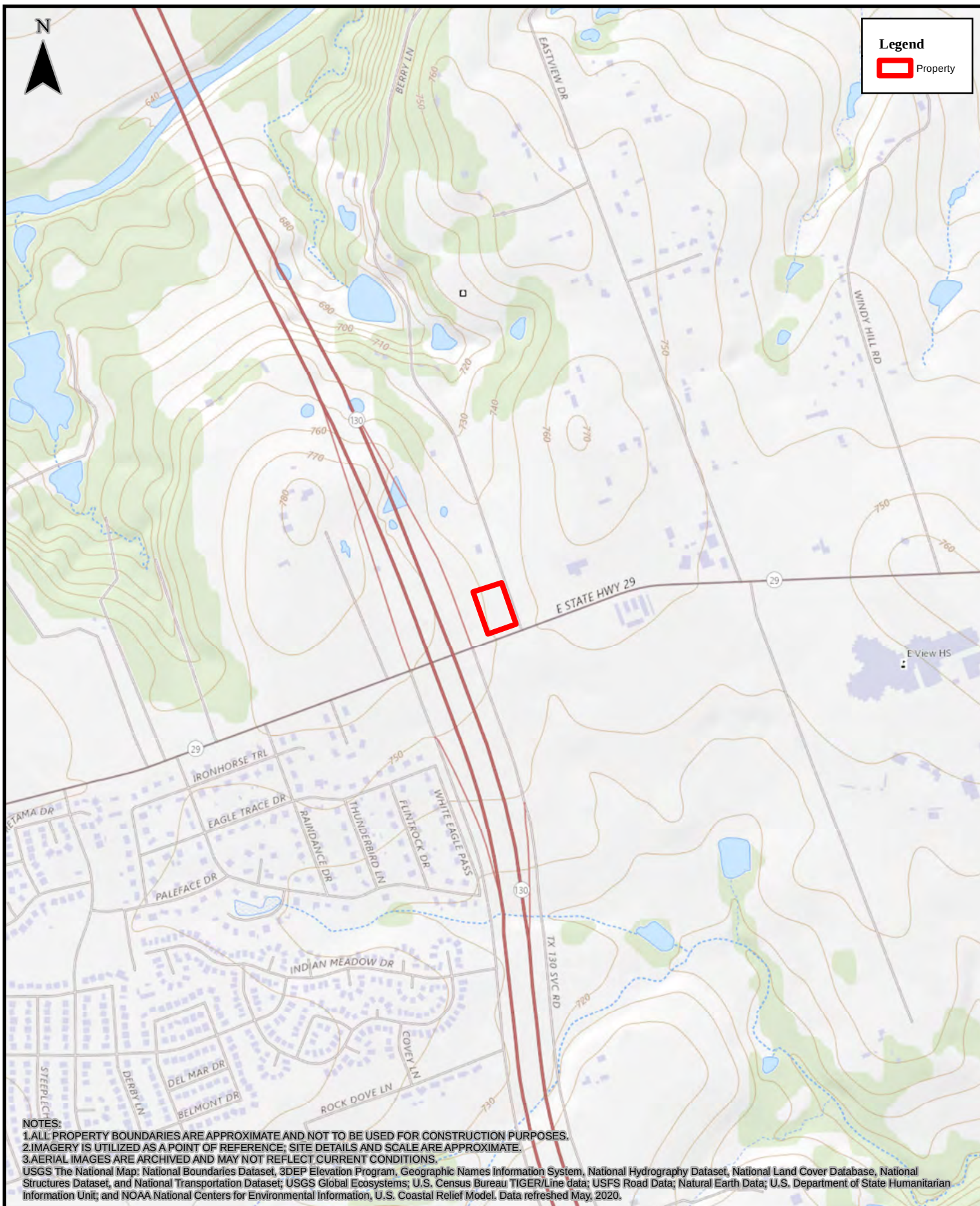
## ATTACHMENT A

### Road Map



ATTACHMENT B  
USGS / Edwards Recharge Zone Map





NOTES:

1. ALL PROPERTY BOUNDARIES ARE APPROXIMATE AND NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. IMAGERY IS UTILIZED AS A POINT OF REFERENCE; SITE DETAILS AND SCALE ARE APPROXIMATE.
3. AERIAL IMAGES ARE ARCHIVED AND MAY NOT REFLECT CURRENT CONDITIONS.

USGS The National Map; National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.

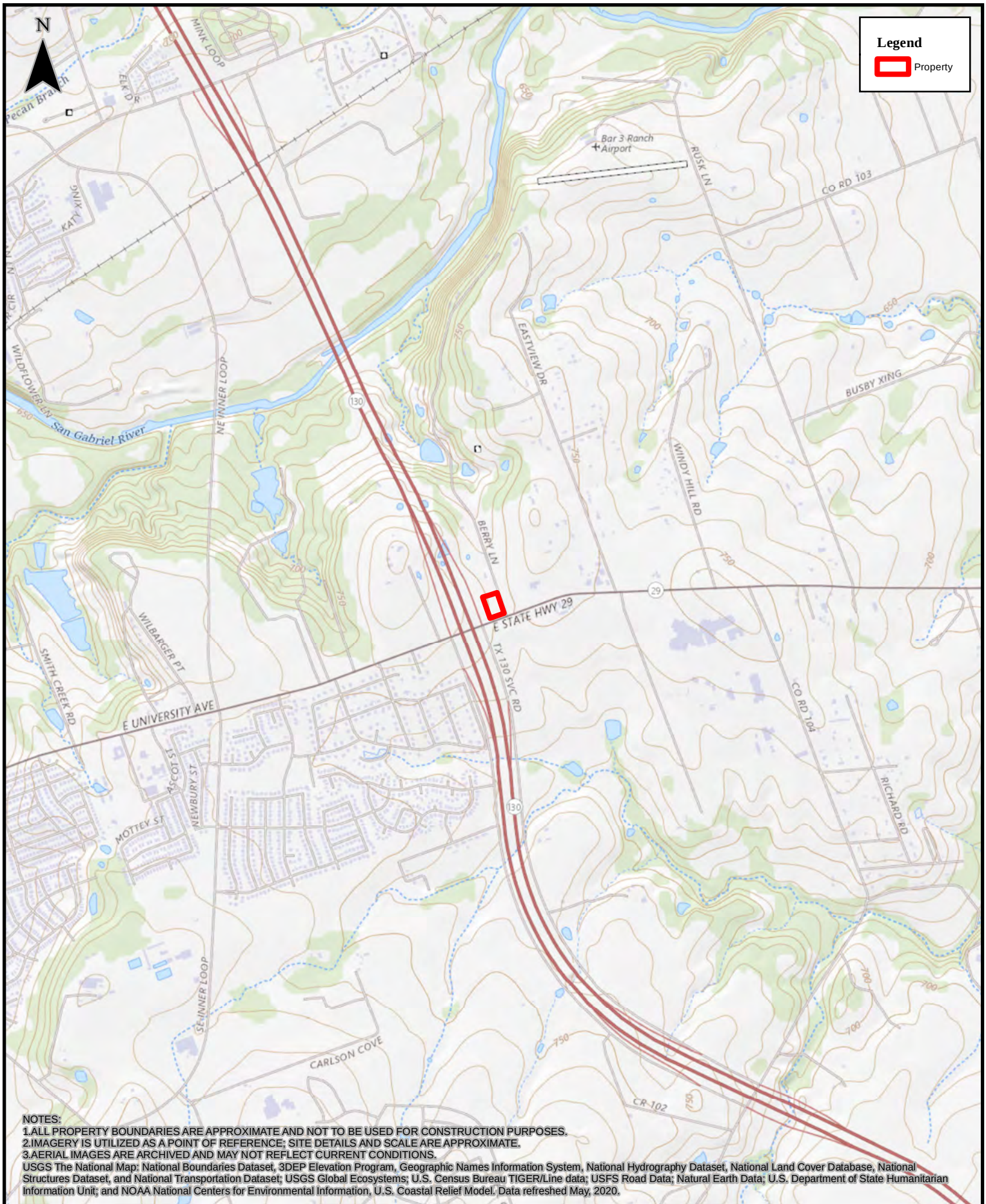


0 300 600 1,200 1,800 2,400 Feet

1:12,000

**Topographic Map (Georgetown Quadrangle)**  
Berry Lane C-Store  
SH 29 & University Georgetown, TX





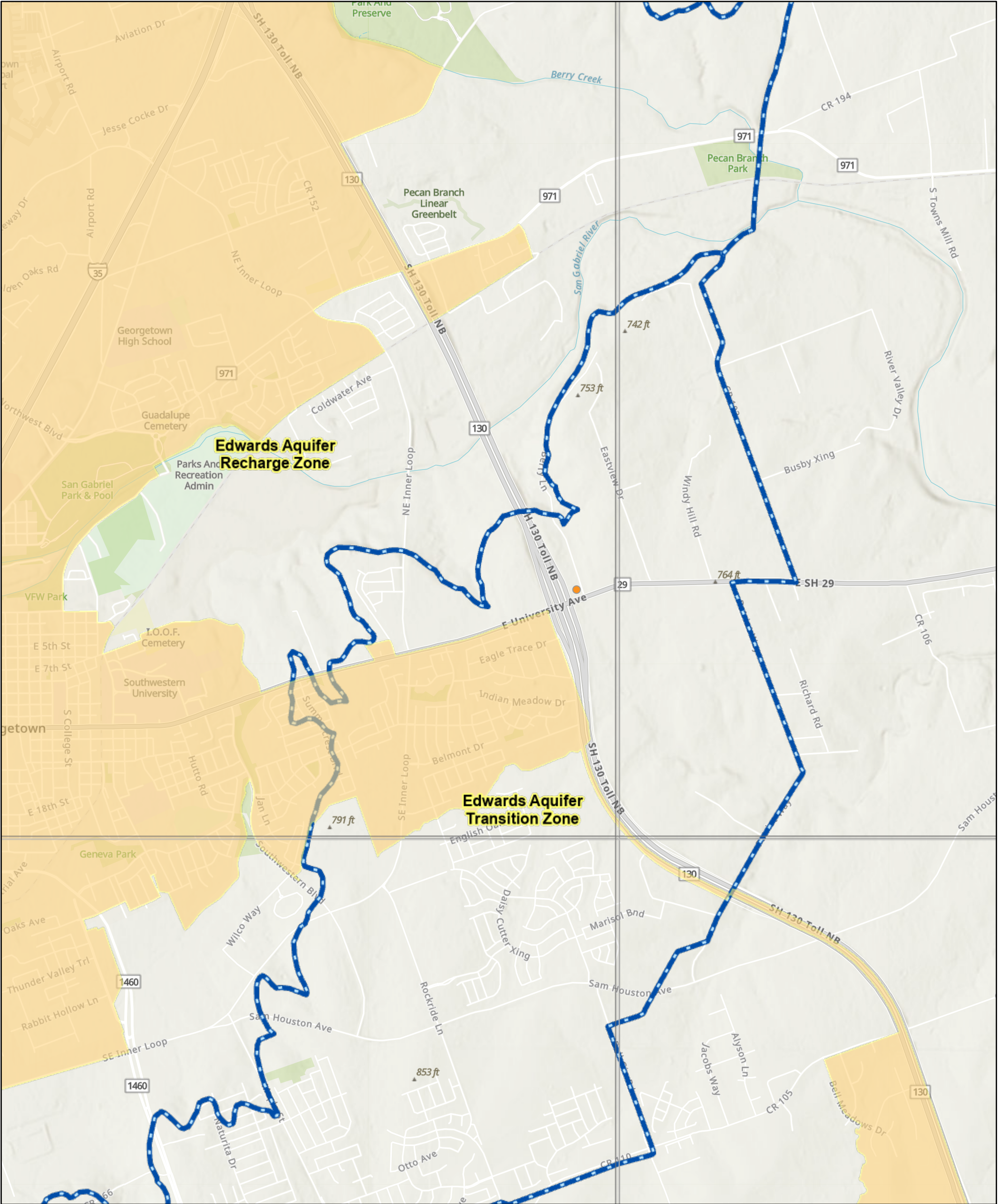
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USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model, Data refreshed May, 2020.



# Edwards Aquifer Viewer Custom Print



9/18/2025, 1:43:35 PM

- Site Location

TCEQ\_EDWARDS\_OFFICIAL\_MAPS

7.5 Minute Quad Grid

TX Counties

City/Place

Edwards Aquifer Boundary central line

Edwards Aquifer Label

World\_Hillshade
- 1:33,790

00.330.651.3

00.512

mi

00.512

km

Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, TCEQ





NOTES:

1. ALL PROPERTY BOUNDARIES ARE APPROXIMATE AND NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. IMAGERY IS UTILIZED AS A POINT OF REFERENCE; SITE DETAILS AND SCALE ARE APPROXIMATE.
3. AERIAL IMAGES ARE ARCHIVED AND MAY NOT REFLECT CURRENT CONDITIONS.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



0 62.5 125 250 375 500 Feet

1:2,500

**Edwards Aquifer Map**  
Berry Lane C-Store  
SH 29 & University Georgetown, TX

ATTACHMENT C  
Project Description

## PROJECT DESCRIPTION

The subject site is located at the 3711 E. University Avenue in Georgetown, Texas (Williamson County). The site is located within the Edwards Aquifer Transition Zone. This subject site consists undeveloped land. A proposed retail fueling facility and convenience store is proposed for the site. The project lies within the Georgetown City Limits and the Granger Lake-San Gabriel watershed. The site is unimproved/undeveloped.

The proposed underground storage tank systems will include one (1) True North Steel ACT-100/FRP underground storage tank. The tank will be a 30,000-gallon compartmentalized tank (UL 58 & UL 1746). The compartments will store 18,000 gallons of gasoline (regular), 6,000 gallons of gasoline (super), and 6,000 gallons of diesel. Associated with these tanks will be five (5) new Gilbarco Encore 700 S dispensers along with double wall FRP piping.

The 18,000 gallon unleaded gasoline compartment will be equipped with 2 hp Franklin submersible pump. The two 6,000 gallon super gasoline and diesel compartments will be equipped with 1.5 hp Franklin submersible pumps. Overfill prevention for each tank compartment will be provided by a valve assembly which will be installed in the tank below the vapor recovery fitting and will be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity.

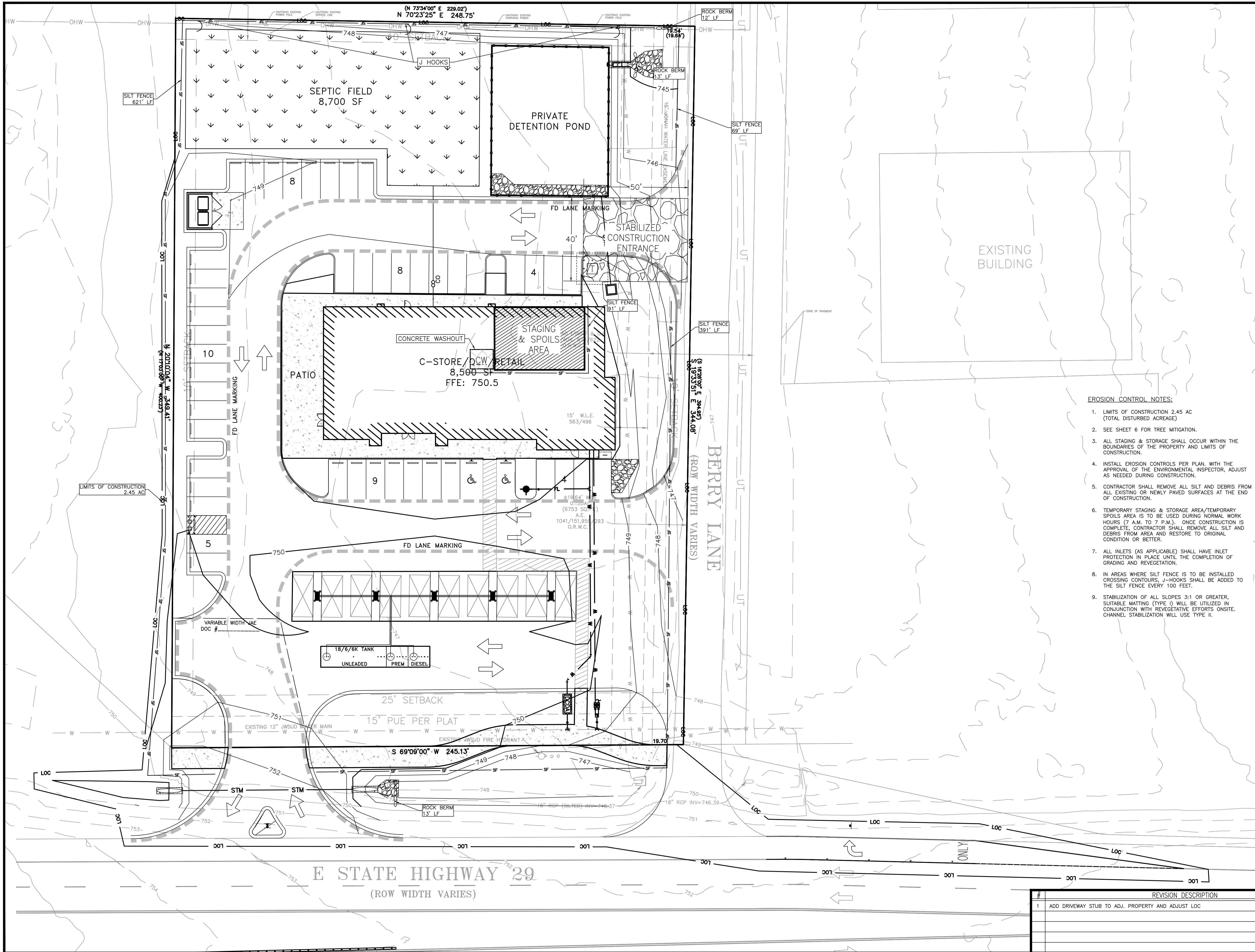
Product piping will be UL listed AO Smith Red Thread IIA fiberglass-reinforced plastic piping. Vent lines will be 2-inch diameter single-wall pipe. Under each dispenser for each product grade there will be a shear valve mounted to a rigid framework and installed at the dispenser island surface level to assure automatic shut-off of product flow during impact or fire emergencies. In addition, FLEX-ING flexible connectors will be installed at both ends of each product line in isolation sumps to connect to the dispenser unit and submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within single wall sumps, which will provide isolation from the backfill material. The dispenser-end flexible connector will be similarly isolated by enclosure within a PCI single wall fiberglass sumps under the dispenser. The vapor recovery riser and the fill tube riser will be installed within a PCI single wall sump and thoroughly wrapped with a suitable dielectric material and are isolated from the tank by the use of isolation bushings.

The proposed tank and piping will be monitored for leaks by means of inventory control, sump and interstitial leak detection, and mechanical line leak detection. The tank will be equipped with a liquid discrimination sensor which will be installed adjacent to the submersible pumps in the sumps and in all dispenser sumps. The tanks will also be equipped with an electronic automatic tank gauging inventory probe for inventory of the product volume in the tank.

The controller will use interstitial monitoring viewed by the Sensor Status Report to meet TCEQ release detection requirements. The tank interstitial is monitored with an interstitial sensor which will set off an alarm if liquid either enters the tank interstitial or is lost within the interstitial space. This central monitoring unit is designed to provide visual and audible alarms when the changes within the interstitials are detected. Each product piping line will be equipped with electronic line leak detection. The probes and sensors from all tanks will be connected to a Franklin Evo 1 programmable control unit to be located in the store building.





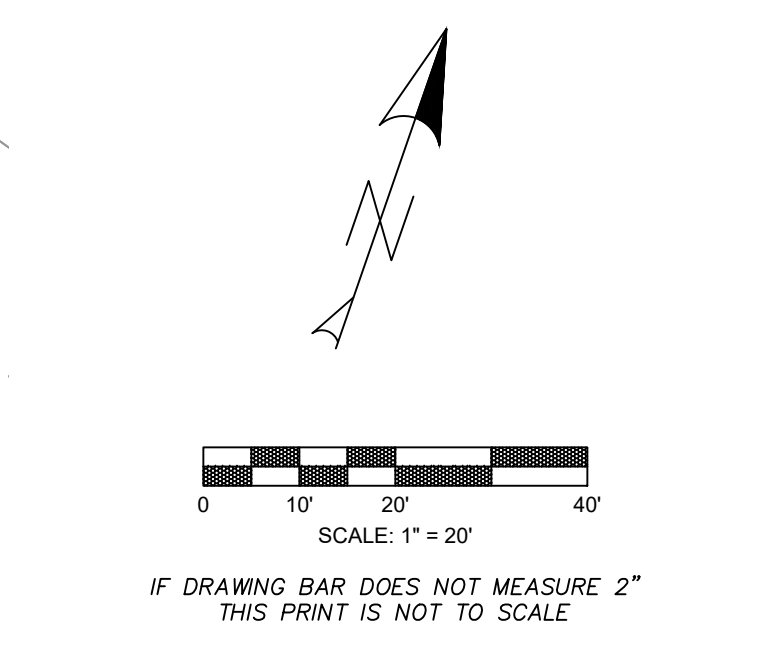
10/31/2024  
NICHOLAS R. SANDLIN  
124404  
LICENSED PROFESSIONAL ENGINEER  
NRS

**EROSION CONTROL LEGEND**

- PROPOSED PROPERTY / PROJECT BOUNDARY LINE
- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- PROPOSED CURB & GUTTER
- LIMITS OF CONSTRUCTION
- SILT FENCE
- TREE PROTECTION FENCE
- STAGING & TEMPORARY SPOILS AREA
- STABILIZED CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT
- TEMPORARY ROCK BERM
- AREA INLET PROTECTION
- CURB INLET PROTECTION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREE (TO REMAIN)
- EXISTING TREE (TO BE REMOVED)

NOTE: ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.

- EROSION CONTROL NOTES:**
- LIMITS OF CONSTRUCTION 2.45 AC (TOTAL DISTURBED ACREAGE)
  - SEE SHEET 6 FOR TREE MITIGATION.
  - ALL STAGING & STORAGE SHALL OCCUR WITHIN THE BOUNDARIES OF THE PROPERTY AND LIMITS OF CONSTRUCTION.
  - INSTALL EROSION CONTROLS PER PLAN, WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, ADJUST AS NEEDED DURING CONSTRUCTION.
  - CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM ALL EXISTING OR NEWLY PAVED SURFACES AT THE END OF CONSTRUCTION.
  - TEMPORARY STAGING & STORAGE AREA/TEMPORARY SPOILS AREA IS TO BE USED DURING NORMAL WORK HOURS (7 A.M. TO 7 P.M.). ONCE CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM AREA AND RESTORE TO ORIGINAL CONDITION OR BETTER.
  - ALL INLETS (AS APPLICABLE) SHALL HAVE INLET PROTECTION IN PLACE UNTIL THE COMPLETION OF GRADING AND REVEGETATION.
  - IN AREAS WHERE SILT FENCE IS TO BE INSTALLED CROSSING CONTOURS, J-HOOKS SHALL BE ADDED TO THE SILT FENCE EVERY 100 FEET.
  - STABILIZATION OF ALL SLOPES 3:1 OR GREATER, SUITABLE MATTING (TYPE I) WILL BE UTILIZED IN CONJUNCTION WITH REVEGETATIVE EFFORTS ONSITE. CHANNEL STABILIZATION WILL USE TYPE II.



WARNING !!! CONTRACTOR TO FIELD VERIFY ALL EXIST. UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO CONTACT ENGINEER IF ANY EXISTING UTILITY INFORMATION DIFFERS FROM DATA SHOWN IN THE PLANS. CALL 811 BEFORE YOU DIG.

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ENGINEERING | CONSULTING  
**SANDLIN**  
SERVICES, LLC

TBPELS FIRM #21356  
9111 JOLLYVILLE RD. STE 212 AUSTIN, TX 78759

**EROSION CONTROL PLAN**

PROJECT CASE: 2024-25-SDP  
**BERRY LANE C-STORE**

| # | REVISION DESCRIPTION                              | SIGNATURE | DATE    | SHEET |
|---|---------------------------------------------------|-----------|---------|-------|
| 1 | ADD DRIVEWAY STUB TO ADJ. PROPERTY AND ADJUST LOC | NS        | 4/28/25 | 8     |
|   |                                                   |           |         | OF    |
|   |                                                   |           |         | 29    |



**Geologic Assessment  
TCEQ-0585**



# Geologic Assessment

## Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

***To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.***

***Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.***

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Chad M. Copeland,  
P.G., PWS

Telephone: 512-335-1785x124

Fax: 512-335-0527

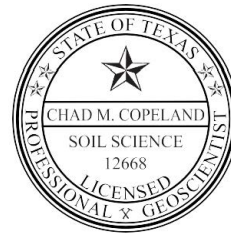
Date: 10/7/2025

Representing: Ranger Environmental Services, LLC (Reg No. 50140) (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Berry Lane C-Store





## Project Information

1. Date(s) Geologic Assessment was performed: 11/20/2024

2. Type of Project:

☐ WPAP  
☐ SCS

☐ AST  
☒ UST

3. Location of Project:

☐ Recharge Zone  
☒ Transition Zone  
☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table.** Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
5. ☒ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups\* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

**Table 1 - Soil Units, Infiltration Characteristics and Thickness**

| Soil Name                                      | Group* | Thickness(feet) |
|------------------------------------------------|--------|-----------------|
| Austin silty clay, 1 to 3 percent slopes (AsB) | D      | 1.83-3.25       |
|                                                |        |                 |
|                                                |        |                 |
|                                                |        |                 |

| Soil Name | Group* | Thickness(feet) |
|-----------|--------|-----------------|
|           |        |                 |

*\* Soil Group Definitions (Abbreviated)*

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7. ☒ **Attachment C – Site Geology.** A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8. ☒ **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'  
Applicant's Site Plan Scale: 1" = 20'  
Site Geologic Map Scale: 1" = 20'  
Site Soils Map Scale (if more than 1 soil type): 1" = 72' & 121'
9. Method of collecting positional data:
☒ Global Positioning System (GPS) technology.  
☐ Other method(s). Please describe method of data collection: \_\_\_\_\_

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.
12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
- ☐ Geologic or manmade features were not discovered on the project site during the field investigation.
13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.
- ☐ There are \_\_\_\_\_ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
- ☐ The wells are not in use and have been properly abandoned.
- ☐ The wells are not in use and will be properly abandoned.
- ☐ The wells are in use and comply with 16 TAC Chapter 76.
- ☒ There are no wells or test holes of any kind known to exist on the project site.

### ***Administrative Information***

15. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

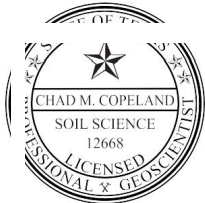
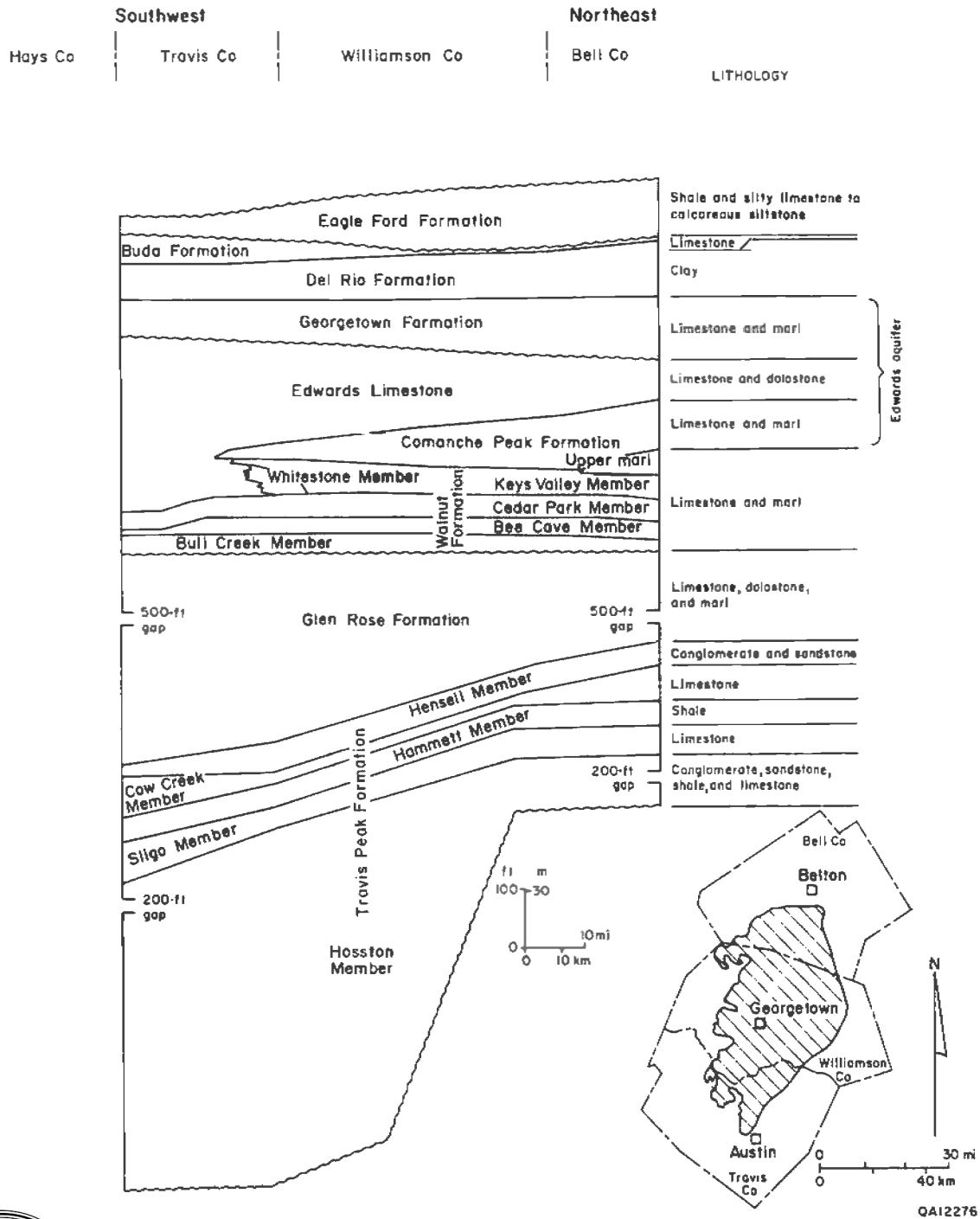
ATTACHMENT A  
Geological Assessment Table  
TCEQ-0585 Table



10/7/2025

ATTACHMENT B  
Stratigraphic Column

Stratigraphic column of Cretaceous rocks of the northern segment of the Edwards aquifer, Austin region.



*CMC*

10/7/2025

\*FIGURE ADAPTED AND EDITED BY RANGER ENVIRONMETAL SERVICES

\*ORIGINAL SOURCE: Senger, R., Collins E., Kreitler C. (1990). Hydrology of the Northern Segment of the Edwards Aquifer, Austin Region. The University of Texas at Austin, Texas 78713. Bureau of Economic Geology.

**RANGER ENVIRONMENTAL SERVICES, LLC**

Berry Lane C-Store  
3711 E. University Ave.  
Georgetown, Tx 78626

**RANGER REFERENCE 6595**

## ATTACHMENT C

### Site Geology





## **GEOLOGIC ASSESSMENT**

**Berry Lane C-Store  
3711 E. University Avenue  
Georgetown, Texas 78626  
Williamson County  
November 2024**

### **INTRODUCTION**

Ranger Environmental Services, LLC (Ranger) was contracted to conduct a Geologic Assessment of the referenced property. This location lies within the designated Edwards Aquifer Transition Zone. The site was noted to be undeveloped. A short concrete drive was observed off Berry Lane to the east allowing access to the property. Since the subject site is located over the Edwards Aquifer Transition Zone, site development should adhere to the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection Program Rules in accordance with Title 30 of the Texas Administrative Code, Section 213 (30 TAC§ 213).

### **PROJECT DESCRIPTION**

The subject site consists of one approximate 1.98-acre lot, more or less, located at 3711 E. University Avenue, Georgetown, Williamson County, Texas at approximately N 30.643176 and approximately W 97.628847.

The surrounding areas around the subject site were noted to be vacant properties, undeveloped properties, and commercial/industrial properties.

### **METHODOLOGY**

This assessment follows general guidelines contained in Texas Commission on Environmental Quality (TCEQ) guidance "*Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones*" (TCEQ Guidance 0585). The site is located on an area of the transition zone that may contain karst features within the outcropping limestone. Karst features may be expressed as surface features but more commonly tend to persist with depth.

A field geologic assessment was conducted by Chad M. Copeland, P.G. on November 20, 2024.

The walking geologic survey was conducted on 50-foot center transects, where possible. No intrusive testing was conducted. If present, features identified in the field were photographed and recorded with a hand held global positioning system (GPS). Features include, but were not limited to, caves, solution cavities, solution-enlarged fractures, faults, manmade features in bedrock, swallow holes, sinkholes, non-karst closed depressions, and zone clustered or aligned features. The geologic assessment table, stratigraphic column, geologic, soils and topographic maps are included herein.

## RESEARCH INFORMATION

Prior to conducting the geologic survey, Ranger conducted a review of existing geologic data and maps to prepare for the field survey. Reviewed references included, but are not limited to:

- Barnes, V.E. 1974. *Geologic Atlas of Texas, Austin Sheet*. The University of Texas at Austin, Bureau of Economic Geology.
- Senger, R.K., E.W. Collins and C.W. Kreidler. 1990. Hydrogeology of the Northern Segment of the Edwards Aquifer, Austin Region, Report of Investigations 192. The University of Texas at Austin, Bureau of Economic Geology.
- Texas Commission on Environmental Quality. 1999. Complying with the Edwards Aquifer Rules: Administrative Guidance.
- Texas Commission on Environmental Quality. Revised 2004. Instructions to Geologist for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones.
- Sellards, E.H., W.S. Adkins and F.B. Plummer. 1932. The University of Texas Bulletin No. 3232. The Geology of Texas. Volume 1, Stratigraphy.
- U.S. Department of Agriculture National Resources Conservation Services ([www.nrcs.usda.gov](http://www.nrcs.usda.gov)).
- Texas Commission on Environmental Quality ([www.tceq.state.tx.us](http://www.tceq.state.tx.us)).
- FEMA Flood Plain Maps.
- Center for Geospatial Technology, Texas Tech University, obtained from the Texas Geologic Atlas of Texas.
- USGS Topographic Maps – Terrain Navigator Pro 2015.
- ESRI - GIS

## SITE GEOLOGY

Referencing the Geologic Atlas of Texas, Austin Sheet, and The University of Texas Bulletin No. 3232, The Geology of Texas, Volume 1, the subject site is underlain by Upper Cretaceous sedimentary strata. In general, the Cretaceous strata dip regionally one degree towards the east-southeast. The area lies along the Balcones Fault Zone, a geologic province characterized in this region by north-northeast trending en echelon normal faults with the downthrown side most commonly to the east of the fault planes.

The Balcones Fault Zone trend closely follows the structural trend of the late Paleozoic Ouachita fold and thrust belt. Faulting may have been initiated in the Late Cretaceous with the majority of movement taking place during the late Oligocene and early Miocene. Minor isostatic adjustments resulting from sediment loading in the Gulf of Mexico continue to the present.

The local stratigraphic section which outcrops at the site is the undivided Eagle Ford Group. The Eagle Ford Group generally consists of five facies including shale, flagstone, clay, chalky limestone and marginal facies. The shale facies is a well laminated black or pinkish black shale that weathers to gray. Throughout central and east Texas, the Eagle Ford Group contains much bentonite and similar clayey material in thin seams interbedded with the flagstones and shale.

The Eagle Ford is underlain generally by the Woodbine as far south as the Brazos River where the Woodbine disappears at the outcrop. South of the Brazos River the Eagle Ford Group is generally underlain by either the Pepper Shale or the Buda Limestone.

There was no observed surface outcropping of the Eagle Ford Group during the field inspection. No vugs, faults, caves or fractures were observed during the site geologic inspection. No springs or streams were observed at the site.

## **SITE SPECIFIC GEOLOGIC FEATURES**

The following geologic features, as defined in Texas Commission on Environmental Quality (TCEQ) guidance "*Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones*" (TCEQ Guidance 0585), were observed at the site:

**G-1 (MB)** – Manmade Feature in Bedrock\*. Ranger observed a manmade feature at the subject site. The feature appeared to be a small excavated, likely utility based, and was noted to have a pile of soil adjacent to it. The excavation was noted to be older as the adjacent stockpiled soil was dried out and supporting vegetative growth. The feature was noted to be approximately seven feet wide by five feet long with an approximate depth of two feet. The manmade feature contained weathered soil and native vegetation at the base. No exposed bedrock or outcrops were identified within the depression. There was minimal signs of rapid infiltration and the catchment area for the depression is less than 1.6 acres.

\*Note: The definition of a Manmade Feature in Bedrock (MB), according to Texas Commission on Environmental Quality (TCEQ) guidance "*Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones*" (TCEQ Guidance 0585) states "...features that intersect bedrock..." This feature was not observed to "intersect" bedrock.

## **SOIL DESCRIPTION**

According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) *Web Soil Survey*, the soil at the subject site was noted to be the following: Austin silty clay, 1 to 3 percent slopes (AsB).

Please see attached USDA NRCS Custom Soil Resource Report.

## **TOPOGRAPHY AND DRAINAGE**

The property is relatively flat. Surface flow appears to be towards the east/southeast. No springs or streams were observed.

## **CONCLUSIONS AND RECOMMENDATIONS**

Ranger Environmental Services, LLC conducted a Geologic Assessment of the site in accordance with 30 TAC§ 213. Ranger concludes that no sensitive features as defined by the TCEQ (30 TAC§ 213) were observed at the site.

This assessment does not address the possible presence of subsurface conditions that may be exposed during future construction and/or development. Should solution features or conditions be exposed during site construction activities that indicate a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer, operations in the vicinity of the feature should be halted and the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection Program should be contacted immediately in accordance with 30 TAC §213.5(f)(2).

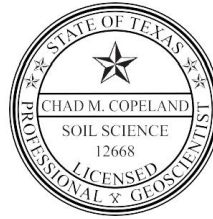
## **LIMITATIONS**

It should be noted that only areas readily accessible were inspected. There may be geologic features present that were not identified as part of this study. This non-intrusive visual field assessment cannot wholly eliminate the possibility of sensitive features at the site.

Prepared by:



Chad M. Copeland, P.G.  
**Ranger Environmental Services, LLC**



10/7/2025

### Photographic Documentation



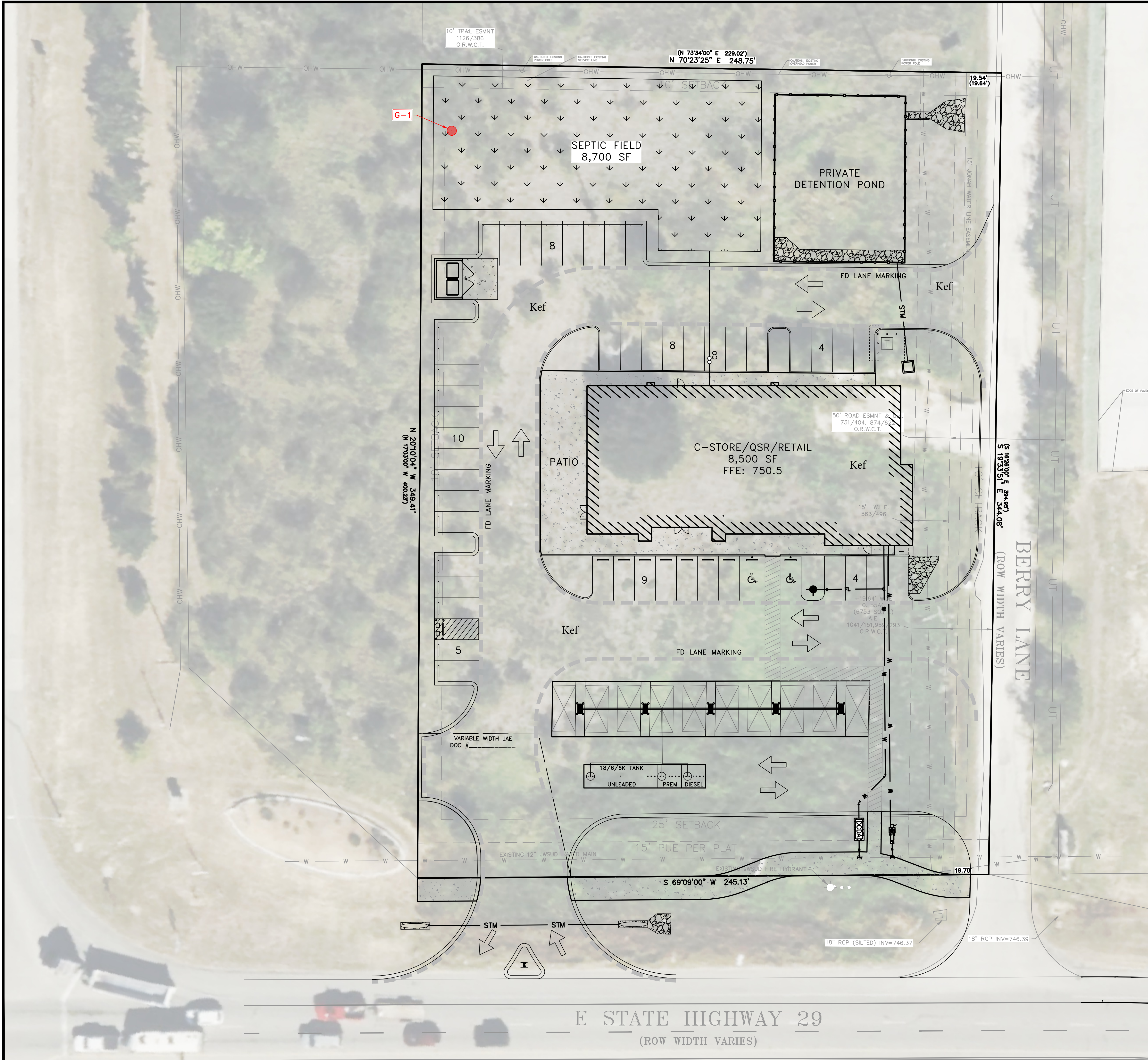
Photograph 1: Photograph documenting G-1 (MB). The views is towards the west.



ATTACHMENT D  
Site Geologic Map(s)



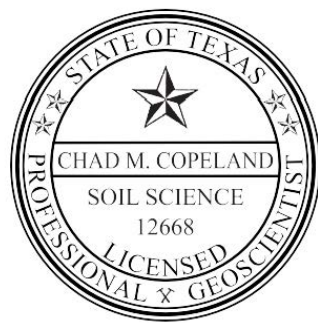
C:\Shared drives\Sandlin Services Projects\Land Development Division\01-0077-001 Berry Lane C-Store\Map-Site PLAN Picked May 19, 2025 at 1:48pm by Engineer | Last Saved by: Engineer



THESE PLANS ARE RELEASED  
UNDER THE AUTHORITY OF  
NICHOLAS R. SANDLIN, P.E.,  
TBPELS#124404, FOR THE  
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CONSTRUCTION PRIOR TO  
APPROVAL BY THE APPLICABLE  
GOVERNMENT AUTHORITIES

THIS PLAN SET FOR REVIEW ONLY  
NOT FOR CONSTRUCTION

Kef - Eagle Ford Formation  
G-x - Geologic Feature  
Note: Map adapted by Ranger Env.



*CMC/PL*

10/7/2025



0 10' 20' 40'  
SCALE: 1" = 20'

IF DRAWING BAR DOES NOT MEASURE 2"  
THIS PRINT IS NOT TO SCALE



WARNING !!! CONTRACTOR TO FIELD VERIFY  
ALL EXIST. UTILITIES VERTICALLY AND  
HORIZONTALLY PRIOR TO CONSTRUCTION.  
THE CONTRACTOR IS TO CONTACT ENGINEER  
IF ANY EXISTING UTILITY INFORMATION  
DIFFERS FROM DATA SHOWN IN THE PLANS.  
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**SANDLIN**  
SERVICES, LLC

TBPELS FIRM #21356  
9111 JOLLYVILLE RD. STE 212 AUSTIN, TX 78759

GEOLOGIC FEATURE EXHIBIT

PROJECT CASE: 2024-25-SDP  
**BERRY LANE C-STORE**

| # | REVISION DESCRIPTION | SIGNATURE | DATE | SHEET |
|---|----------------------|-----------|------|-------|
|   |                      |           |      | 9     |
|   |                      |           |      | OF    |
|   |                      |           |      | 29    |





### Legend

-  Property
-  Kef-Eagle Ford Formation



Kef

### NOTES:

1. ALL PROPERTY BOUNDARIES ARE APPROXIMATE AND NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. IMAGERY IS UTILIZED AS A POINT OF REFERENCE; SITE DETAILS AND SCALE ARE APPROXIMATE.
3. AERIAL IMAGES ARE ARCHIVED AND MAY NOT REFLECT CURRENT CONDITIONS.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



0 50 100 200 300 400 Feet

1:2,000

**Geologic Site Map**  
Berry Lane C-Store  
SH 29 & University Georgetown, TX





NOTES:

1. ALL PROPERTY BOUNDARIES ARE APPROXIMATE AND NOT TO BE USED FOR CONSTRUCTION PURPOSES.
2. IMAGERY IS UTILIZED AS A POINT OF REFERENCE; SITE DETAILS AND SCALE ARE APPROXIMATE.
3. AERIAL IMAGES ARE ARCHIVED AND MAY NOT REFLECT CURRENT CONDITIONS.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



0 62.5 125 250 375 500 Feet

1:2,500

**Edwards Aquifer Map**  
Berry Lane C-Store  
SH 29 & University Georgetown, TX





United States  
Department of  
Agriculture

NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Williamson County, Texas**



September 6, 2022



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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# How Soil Surveys Are Made

---

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Custom Soil Resource Report  
Soil Map



# Custom Soil Resource Report

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals

### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Texas  
Survey Area Data: Version 22, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 18, 2020—Dec 4, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name                            | Acres in AOI | Percent of AOI |
|------------------------------------|------------------------------------------|--------------|----------------|
| AsB                                | Austin silty clay, 1 to 3 percent slopes | 2.0          | 100.0%         |
| <b>Totals for Area of Interest</b> |                                          | <b>2.0</b>   | <b>100.0%</b>  |

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

## Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Williamson County, Texas

### AsB—Austin silty clay, 1 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2vtgj  
*Elevation:* 440 to 810 feet  
*Mean annual precipitation:* 30 to 40 inches  
*Mean annual air temperature:* 63 to 70 degrees F  
*Frost-free period:* 228 to 293 days  
*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Austin and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Austin

##### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from chalk

##### Typical profile

*Ap - 0 to 16 inches:* silty clay  
*Bw - 16 to 22 inches:* silty clay  
*Bk - 22 to 29 inches:* silty clay  
*Cr - 29 to 57 inches:* bedrock

##### Properties and qualities

*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 22 to 39 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately high  
(0.00 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 85 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.5 to 2.1 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water supply, 0 to 60 inches:* Low (about 4.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* D  
*Ecological site:* R086AY007TX - Southern Clay Loam  
*Hydric soil rating:* No

## Minor Components

### **Houston black**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve

*Microfeatures of landform position:* Linear gilgai

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex, linear

*Ecological site:* R086AY011TX - Southern Blackland

*Hydric soil rating:* No

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**Underground Storage Tank Facility Plan Application**  
**TCEQ-0583**

# Underground Storage Tank Facility Plan Application

## Texas Commission on Environmental Quality

for Storage on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.5(d), Effective June 1, 1999

*To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.*

*Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.*

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. All components used for this facility are U.L. listed or certified by a 3rd party and are compatible and will function pursuant to 30 TAC §213.5(d) and 30 TAC Chapter 334 Subchapter C. This **Underground Storage Tank Facility Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Chad M. Copeland, P.G., PWS

Date: 10/7/2025

Signature of Customer/Agent:



Regulated Entity Name: Berry Lane C-Store

## Underground Storage Tank (UST) System Information

- ☒ **Attachment A – Detailed Narrative of UST Facility.** A detailed narrative description of the proposed UST Facility is attached. Note: Example descriptions are provided in the instructions (TCEQ-0583-Instructions)
- Tanks and substance to be stored:

**Table 1 - Tanks and Substances Stored**

| <i>UST Number</i> | <i>Size(Gallons)</i> | <i>Substance to be Stored</i>                          | <i>Double-wall Tank Material</i>                                              |
|-------------------|----------------------|--------------------------------------------------------|-------------------------------------------------------------------------------|
| 1                 | 30,000               | 18,000 - gasoline,<br>6,000 - diesel, 6,000 - gasoline | True North Steel -<br>ACT-100 Steel/FRP<br>Triple Wall Tank (UL<br>58 & 1746) |
| 2                 |                      |                                                        |                                                                               |
| 3                 |                      |                                                        |                                                                               |
| 4                 |                      |                                                        |                                                                               |
| 5                 |                      |                                                        |                                                                               |

## 3. Tanks:

- ☒ **Attachment B – Manufacturer Information for Tanks.** New or replacement systems for the underground storage of static hydrocarbons or hazardous substances must be double-walled or provide an equivalent method of protection approved by the executive director. Tanks must comply with technical standards as required by 30 TAC 334.45(b) relating to technical standards for new tanks. Manufacturer information is attached.
- ☐ **Attachment C – Alternative Design and Protection Method for Tanks.** Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

## 4. Piping:

- ☒ **Attachment D – Manufacturer Information for Piping.** Piping must comply with technical standards as required by 30 TAC 334.45(c) relating to technical standards for new piping. Manufacturer information is attached.
- ☐ **Attachment E – Alternative Design and Protection Method for Piping.** Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

5. ☒ Any new underground storage tank system that does not incorporate a method for tertiary containment shall be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature as required by 30 TAC §213.5(d)(1)(B).
- ☒ The UST system(s) will not be installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- ☐ **Attachment F - Tertiary Containment Method.** The UST system(s) will be required to have tertiary containment provided. A description of the method proposed to provide tertiary containment is attached.
6. ☒ Corrosion protection equipment to be installed or type of non-corrodible materials:

**Table 2 - Corrosion Protection**

| <b>Equipment</b>               | <b>Corrosion Protection (Method)</b>                                 |
|--------------------------------|----------------------------------------------------------------------|
| Tanks                          | True North Steel - ACT-100 Steel/FRP Triple Wall Tank (UL 58 & 1746) |
| Product Delivery Piping        | AO Smith Red Thread IIA (Double wall fiberglass)                     |
| Vapor Recovery Piping          | NA                                                                   |
| Submersible Pumps              | Isolated in sump                                                     |
| Flex Connector (dispenser end) | Isolated in sump                                                     |
| Flex Connector (pump end)      | Isolated in sump                                                     |
| Riser                          | Dielectric tape wrap                                                 |

7. ☒ Overfill protection equipment to be installed:
- ☐ Overfill prevention restrictor positioned at 90% capacity.
  - ☒ Overfill prevention valve positioned at 95% capacity.
  - ☐ Overfill audible and visual alarm positioned at 90% capacity.
8. ☒ Methods for detecting leaks in the inside wall of a double-walled system must be included in the facility's design and construction. The leak detection system must provide continuous monitoring of the system and must be capable of immediately alerting the system's owner of possible leakages. Release detection equipment to be installed: (Check all that apply)
- ☒ Central on-site monitor
  - ☒ Interstitial tank probes
  - ☒ Automatic tank gauge
  - ☒ Pump/manway sump probes
  - ☐ Observation well probes
  - ☒ Mechanical line leak detectors (for pressurized lines only)
  - ☐ Automatic (electronic) line leak detectors

### ***Excavation and Backfill***

9. ☒ The depth of the tank excavation will be sufficient to accommodate piping fall requirements, tank diameter, bedding, and a minimum cover of three (3) feet [30 TAC §334.46].
- The depth of the tank excavation will be 15-16 feet.
10. ☒ The minimum thickness of the tank bedding will conform to 30 TAC §334.46(a)(5)(C and D).
- The tank bedding thickness will be 12 inches.



11. ☒ The material to be used as backfill will conform to 30 TAC §334.46(a)(5)(A and B) and will consist of:
- ☐ Clean washed non-corrosive sand
  - ☐ Pea gravel
  - ☒ Crushed rock
  - ☐ Other: \_\_\_\_\_
12. ☒ The slope of the product delivery line(s) will conform to 30 TAC §334.46(c)(2) and will be 1/8" (1/8" per foot minimum).

## ***Site Plan Requirements***

**Items 13 - 24 must be included on the Site Plan.**

13. ☒ The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 20'.
14. 100-year floodplain boundaries:
- ☒ The 100-year floodplain boundaries are based on the following specific (including date of material) source(s): FEMA Floodplain Map 48491C0294F eff. date 12/20/2019
  - ☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
  - ☒ No part of the project site is located within the 100-year floodplain.
15. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.
- ☐ The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.
16. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
- ☐ There are \_\_\_\_\_ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC §76.
  - ☒ There are no wells or test holes of any kind known to exist on the project site.
17. Geologic or manmade features which are on the site:
- ☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
  - ☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
  - ☐ **Attachment G - Exception to the Geologic Assessment.** A request and justification for an exception to a portion of the Geologic Assessment is attached.

18. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.
19. ☒ Areas of soil disturbance and areas which will not be disturbed.
20. ☒ Locations of major structural and nonstructural controls. These are the temporary best management practices.
21. ☒ Locations where soil stabilization practices are expected to occur.
22. ☐ Surface waters (including wetlands).  
☒ N/A
23. ☐ Locations where stormwater discharges to surface water or sensitive features.  
☒ There will be no discharges to surface water or sensitive features.
24. ☒ Legal boundaries of the site are shown.

### ***UST System Profiles***

25. ☒ **Attachment H - Profile Drawing(s).** A profile drawing(s) of the proposed UST system with all components shown and labeled is attached.

### ***Best Management Practices***

26. ☒ **Attachment I - Initial and Continuing Training.** A description of the initial and continuing training of on-site personnel for operation of release detection equipment is attached. The description should include how personnel will respond to warning and alarm conditions of the leak detection monitoring system.
27. ☒ **Attachment J - Release Detection Maintenance.** A description of the program and schedule for maintaining release detection and cathodic protection equipment is attached. Any such equipment should be operated and maintained in accordance with the manufacturer's specifications and instructions.

### ***Administrative Information***

28. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.
- ☐ The WPAP application for this project was approved by letter dated \_\_\_\_\_. A copy of the approval letter is attached at the end of this application.
- ☐ The WPAP application for this project was submitted to the TCEQ on \_\_\_\_\_, but has not been approved.
- ☐ A WPAP application is required for an associated project, but it has not been submitted.
- ☐ There will be no building or structure associated with this project. In the event a building or structure is needed in the future, the required WPAP will be submitted to the TCEQ.
- ☒ The proposed UST is located on the **Transition Zone** and a WPAP is not required. Information requested in 30 TAC 213.5 subsection (b)(4)(B) and (C) and (5) is

provided with this application. (Forms TCEQ-0600 Permanent Stormwater Section and TCEQ-0602 Temporary Stormwater Section or Stormwater Pollution Prevention Plan/SW3P).

- 29. ☒ UST systems must be installed by a person possessing a valid certificate of registration in accordance with the requirements of 30 TAC Chapter 334 Subchapter I.
- 30. ☒ This facility is subject to and must meet the requirements of 30 TAC Chapter 334, including but not limited to the 30 day construction notification and reporting and cleanup of surface spills and overfills.
- 31. ☒ Upon completion of the tankhold excavation, a geologist must certify that the excavation was inspected for the presence of sensitive features. The certification must be submitted to the appropriate regional office. If sensitive features are found, then excavation near the feature may not proceed until the methods to protect the Edwards Aquifer are reviewed and approved by the executive director.
- 32. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 33. ☒ Any modification of this UST application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

ATTACHMENT A  
Detailed Narrative of UST Facility

## PROJECT DESCRIPTION

The subject site is located at the 3711 E. University Avenue in Georgetown, Texas (Williamson County). The site is located within the Edwards Aquifer Transition Zone. This subject site consists undeveloped land. A proposed retail fueling facility and convenience store is proposed for the site. The project lies within the Georgetown City Limits and the Granger Lake-San Gabriel watershed. The site is unimproved/undeveloped.

The proposed underground storage tank systems will include one (1) True North Steel ACT-100/FRP underground storage tank. The tank will be a 30,000-gallon compartmentalized tank (UL 58 & UL 1746). The compartments will store 18,000 gallons of gasoline (regular), 6,000 gallons of gasoline (super), and 6,000 gallons of diesel. Associated with these tanks will be five (5) new Gilbarco Encore 700 S dispensers along with double wall FRP piping.

The 18,000 gallon unleaded gasoline compartment will be equipped with 2 hp Franklin submersible pump. The two 6,000 gallon super gasoline and diesel compartments will be equipped with 1.5 hp Franklin submersible pumps. Overfill prevention for each tank compartment will be provided by a valve assembly which will be installed in the tank below the vapor recovery fitting and will be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity.

Product piping will be UL listed AO Smith Red Thread IIA fiberglass-reinforced plastic piping. Vent lines will be 2-inch diameter single-wall pipe. Under each dispenser for each product grade there will be a shear valve mounted to a rigid framework and installed at the dispenser island surface level to assure automatic shut-off of product flow during impact or fire emergencies. In addition, FLEX-ING flexible connectors will be installed at both ends of each product line in isolation sumps to connect to the dispenser unit and submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within single wall sumps, which will provide isolation from the backfill material. The dispenser-end flexible connector will be similarly isolated by enclosure within a PCI single wall fiberglass sumps under the dispenser. The vapor recovery riser and the fill tube riser will be installed within a PCI single wall sump and thoroughly wrapped with a suitable dielectric material and are isolated from the tank by the use of isolation bushings.

The proposed tank and piping will be monitored for leaks by means of inventory control, sump and interstitial leak detection, and mechanical line leak detection. The tank will be equipped with a liquid discrimination sensor which will be installed adjacent to the submersible pumps in the sumps and in all dispenser sumps. The tanks will also be equipped with an electronic automatic tank gauging inventory probe for inventory of the product volume in the tank.

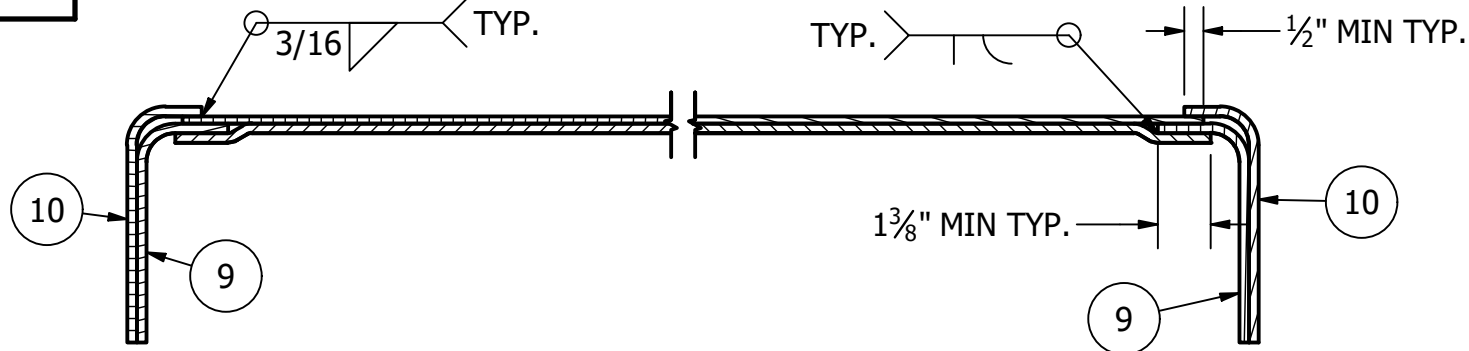
The controller will use interstitial monitoring viewed by the Sensor Status Report to meet TCEQ release detection requirements. The tank interstitial is monitored with an interstitial sensor which will set off an alarm if liquid either enters the tank interstitial or is lost within the interstitial space. This central monitoring unit is designed to provide visual and audible alarms when the changes within the interstitials are detected. Each product piping line will be equipped with electronic line leak detection. The probes and sensors from all tanks will be connected to a Franklin Evo 1 programmable control unit to be located in the store building.



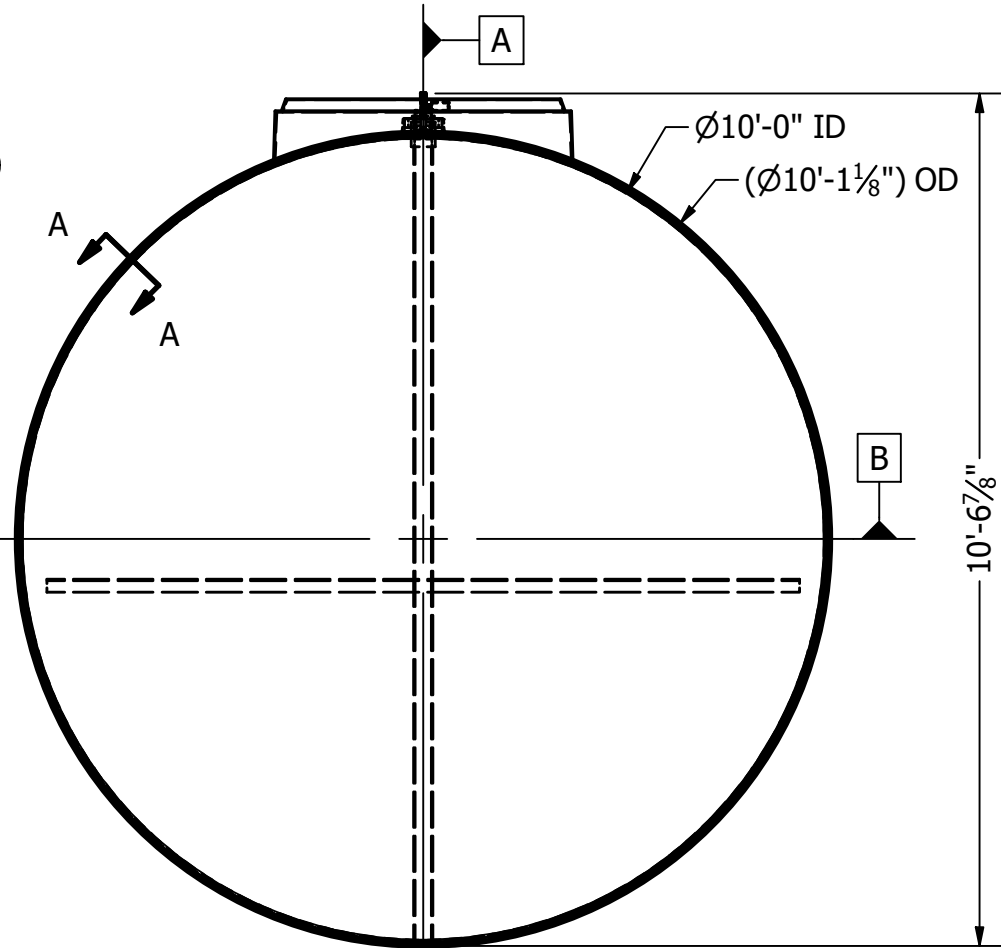
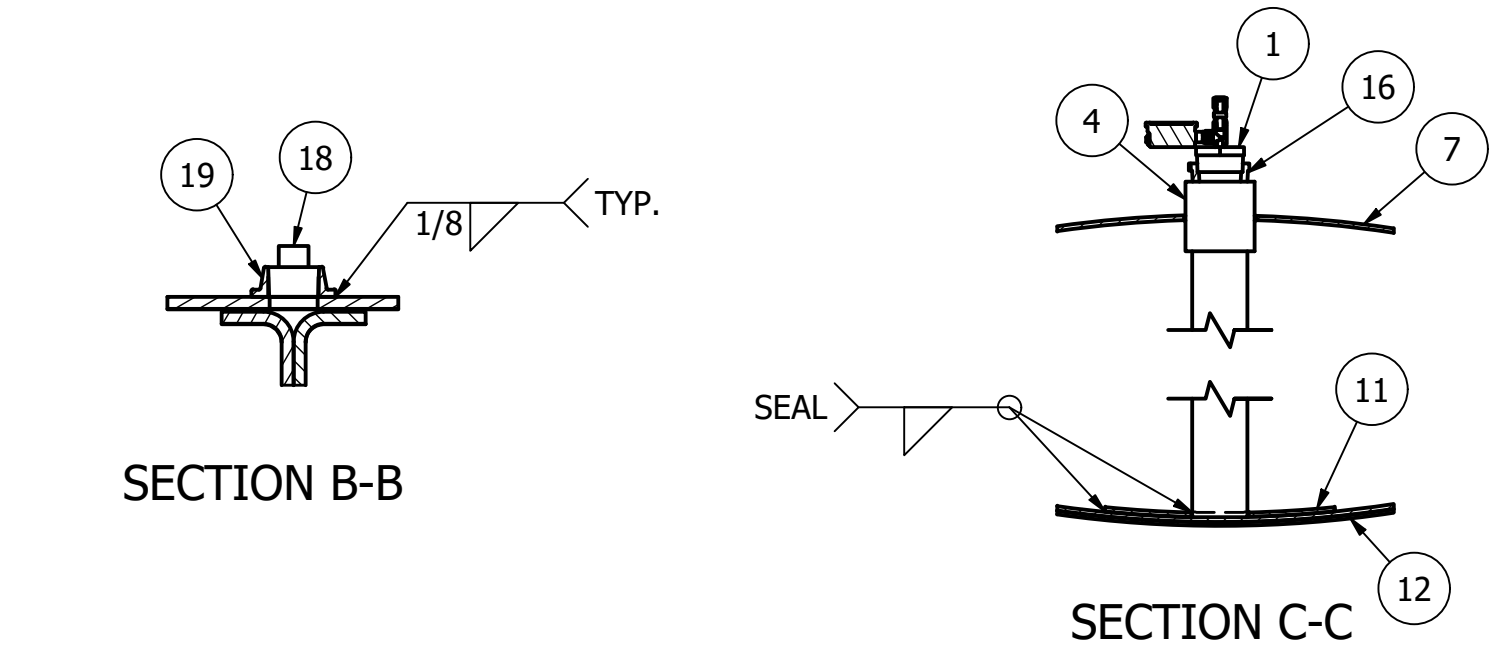
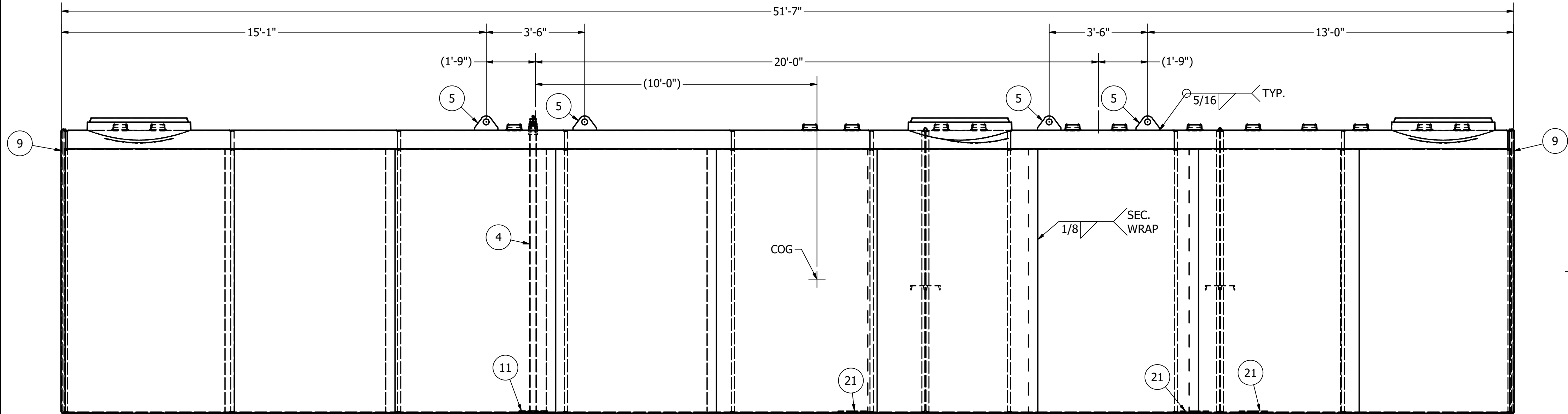
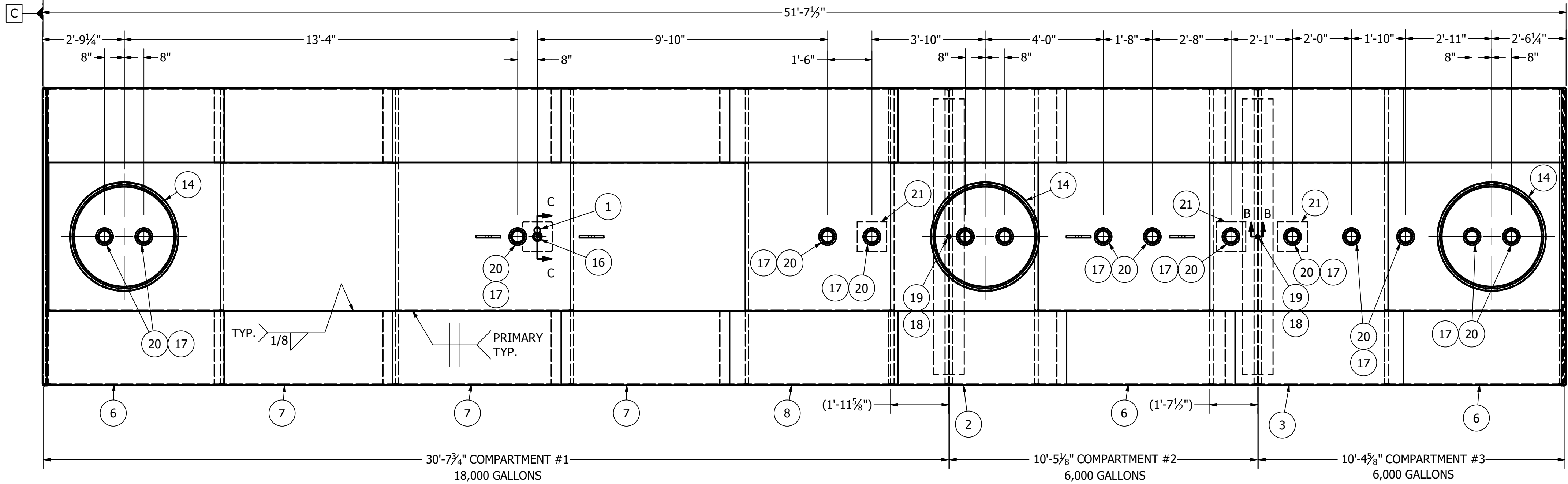
ATTACHMENT B

Manufacturer Information for Tanks

| QC | LAYOUT | DIM. INSP.: | WELDER: | WELD INSP.: | COATING: | COAT. INSP.: | COMP. DATE: | HEAT #: |
|----|--------|-------------|---------|-------------|----------|--------------|-------------|---------|
|----|--------|-------------|---------|-------------|----------|--------------|-------------|---------|



SECTION A-A



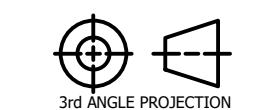
| TANK SPECIFICATIONS                 |             |
|-------------------------------------|-------------|
| ITEM                                | VALUE       |
| Nominal Capacity (gal)              | 30,000      |
| Nominal Diameter (ft-in)            | 10'-0"      |
| Nominal Length (ft-in)              | 52'-0"      |
| Design Diameter (ft-in)             | 10'-0"      |
| Design Length (ft-in)               | 51'-7 3/8"  |
| Design Capacity (gal) Total         | 30,233      |
| Design Capacity (gal) Compartment 1 | 18,005      |
| Design Capacity (gal) Compartment 2 | 6,126       |
| Design Capacity (gal) Compartment 3 | 6,102       |
| Shell Thickness                     | 1/4"        |
| Head Thickness                      | 1/4"        |
| Design Pressure (oz/in2)            | Atmospheric |
| Maximum Burial Depth (ft)           | 5           |
| Maximum Design Temp (F)             | 150         |

|                  |     |                             |          |     |
|------------------|-----|-----------------------------|----------|-----|
| 9/8/2025         | E   | MOVED FITTING               | 00028325 | JLR |
| 9/3/2025         | D   | REVISED PER CUSTOMER MARKUP | 00028325 | JLR |
| 8/12/2025        | C   | ADDED REPAD ON MONITOR PIPE | 00028325 | JPS |
| 8/7/2025         | B   | DRAFTING REVIEW UPDATES     | 00028325 | TS  |
| 8/6/2025         | A   | FOR REVIEW                  | 00028325 | JPS |
| DATE             | REV | DESCRIPTION                 | PROJ#    | BY  |
| REVISION HISTORY |     |                             |          |     |

### NOTES:

1. THIS TANK SHALL BE BUILT AND TESTED IN ACCORDANCE WITH STEEL TANK INSTITUTE ACT-100® SPECIFICATION FOR EXTERNAL CORROSION PROTECTION OF FRP COMPOSITE STEEL UNDERGROUND STORAGE TANKS.
2. PRIMARY STEEL TANK SHALL BE BUILT AND TESTED IN ACCORDANCE WITH UL58 STEEL UNDERGROUND STORAGE TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
3. EXTERIOR OF TANK TO BE BLASTED BEFORE APPLICATION OF LAMINATE COATING. FRP COATING SHALL BE MANUFACTURED AND APPLIED IN ACCORDANCE WITH STI ACT-100® SPECIFICATION AND UL1746 PART II CORROSION PROTECTION SYSTEMS FOR UNDERGROUND STORAGE TANKS.
4. TANK SHALL BE SHIPPED WITH VACUUM ON INTERSTITIAL SPACE AND GAUGE INSTALLED ON MONITOR PIPE.
5. LAMINATE COATING NOT SHOWN FOR CLARITY.
6. INCLUDE FRP TOUCH-UP KIT ON SALES ORDER; 1 PER TANK; 1500-0335 (NO MANWAY) OR 1500-0336 (WITH MANWAY)

| COATING SPECIFICATIONS     |                                                |
|----------------------------|------------------------------------------------|
| ITEM                       | VALUE                                          |
| External Type              | STI ACT100/UL1746 FRP COMPOSITE SPECIFICATIONS |
| Internal Type              | N/A                                            |
| Internal Surface Prep      | N/A                                            |
| Internal DFT               | N/A                                            |
| Internal - Full or Partial | N/A                                            |



UNLESS OTHERWISE SPECIFIED:  
UNITS = INCHES

TOLERANCE:  
LINEAR ±1/8"  
ANGULAR ±1/2"

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4401 West Main  
Fargo, ND 58103  
Phone: 701-282-2345  
Fax: 701-282-5516  
TrueNorthSteel.com

DRAWN: JPS  
DATE: 8/6/2025  
CHECKED: TS  
DATE: 8/7/2025

PART#: 1007-0459  
DESCRIPTION: Tank, H, 30000, 120x624, UL58, ACT-100

WEIGHT: 36900.861 lbmass  
SCALE: DO NOT SCALE DRAWING  
SHEET: 1 OF 1

ATTACHMENT D

Manufacturer Information for Piping

## Applications

- Service Station
- Vent/Vapor Recovery
- Bulk Plant Terminals
- Fueling Terminals
- Central Fuel Oil Systems
- Marinas Terminals
- Ethanol Fuel Blends
- Biodiesel Fuel
- Diesel Exhaust Fluid
- UL/ULC Systems that require MV, HB, CT, A&M Fuels

### Materials and Construction

All pipe is manufactured by filament winding process using amine-cured epoxy thermosetting resin to impregnate strands of continuous glass filaments with a resin-rich interior surface. The operating pressure of the pipe is up to 250 psig (17.2 bar) with continuous operating temperature to 150°F (66°C).

Red Thread IIA is Listed with Underwriters Laboratories Standard 971-2004 for non-metallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels. The pipe and fittings are also Listed with Underwriters Laboratories of Canada with both Listings under File MH9162.

### Fittings

Fittings are manufactured with the same chemical and temperature capabilities as the pipe. Depending on the configurations and size, the fittings construction method will be compression molded, contact molded, fabricated or filament wound and are described in FH1250.

### Testing

Installed pipe systems should be tested prior to use to assure soundness of all joints and connections. Locate pressure gauge in close proximity to the pressurizing equipment, not directly on the piping system. A pressure gauge with the test pressure at mid-scale is recommended.

### Joining System

- **T.A.B.™** - The primary joining method for pipe joints promoting fast, positive make-up and prevents “backout” during curing.
- **Bell & Spigot** - The primary joining method for fitting joints.

These joints assist the installer and assures a fast trouble-free installation. Adhesive for this system is Series 8000. T.A.B. spigots can be bonded into tapered bells and tapered spigots can be Bonded into T.A.B. bells using standard bonding procedures for tapered joints.

**ASTM D2996 Designation Code -**  
RTRP-11AW13110

## Nominal Dimensional Data

| Pipe Size |     | Inside Diameter |     | Outside Diameter |     | Wall Thickness |      | Weight |      | Pressure/<br>Temperature<br>Max. Rating at<br>150°F (66°C) |      | Mill Test<br>Pressure |      | Minimum<br>Bending Radius |      |
|-----------|-----|-----------------|-----|------------------|-----|----------------|------|--------|------|------------------------------------------------------------|------|-----------------------|------|---------------------------|------|
| in        | mm  | in              | mm  | in               | mm  | in             | mm   | lbs.ft | kg/m | psig                                                       | MPa  | psig                  | MPa  | ft                        | m    |
| 2         | 50  | 2.238           | 57  | 2.371            | 60  | 0.067          | 1.70 | 0.42   | 0.63 | 250                                                        | 1.72 | 376                   | 2.59 | 102                       | 31.0 |
| 3         | 80  | 3.363           | 85  | 3.559            | 90  | 0.098          | 2.49 | 0.92   | 1.37 | 175                                                        | 1.21 | 300                   | 2.07 | 153                       | 46.5 |
| 4         | 100 | 4.364           | 111 | 4.553            | 116 | 0.095          | 2.41 | 1.10   | 1.64 | 125                                                        | 0.86 | 265                   | 1.83 | 195                       | 59.5 |
| 6         | 150 | 6.408           | 163 | 6.686            | 170 | 0.139          | 3.53 | 2.47   | 3.68 | 20                                                         | 0.14 | 265                   | 1.83 | 287                       | 87.4 |

View of Joint Illustrations



T.A.B.



Bell & Spigot

## Typical Mechanical Properties

| Pipe Property                                             | 75°F                    | 24°C   | 200°F                   | 93°C            | Method        |                          |
|-----------------------------------------------------------|-------------------------|--------|-------------------------|-----------------|---------------|--------------------------|
|                                                           | psi                     | MPa    | psi                     | MPa             |               |                          |
| Axial Tensile                                             |                         |        |                         |                 |               |                          |
| Ultimate Stress                                           | 9,530                   | 65.7   | 6,585                   | 45.4            | ASTM D2105    |                          |
| Modulus of Elasticity                                     | 1.68 x 10 <sup>6</sup>  | 11,584 | 1.42 x 10 <sup>6</sup>  | 9,791           | ASTM D2105    |                          |
| Poisson's Ratio, $\nu_{ah}$ ( $\nu_{ha}$ ) <sup>(1)</sup> | 0.35 (0.61)             |        |                         |                 |               |                          |
| Axial Compression                                         |                         |        |                         |                 |               |                          |
| Ultimate Stress                                           | 12,510                  | 86.3   | 8,560                   | 59.0            | ASTM D695     |                          |
| Modulus of Elasticity                                     | 0.677 x 10 <sup>6</sup> | 4,668  | 0.379 x 10 <sup>6</sup> | 2,613           | ASTM D695     |                          |
| Beam Bending                                              |                         |        |                         |                 |               |                          |
| Modulus of Elasticity (Long Term)                         | 2.6 x 10 <sup>6</sup>   | 17,927 | 0.718 x 10 <sup>6</sup> | 4,951           | ASTM D2925    |                          |
| Hydrostatic Burst                                         |                         |        |                         |                 |               |                          |
| Ultimate Hoop Tensile Stress                              | 40,150                  | 277    | 36,480                  | 252             | ASTM D1599    |                          |
| Hydrostatic Hoop Design Stress                            |                         |        |                         |                 |               |                          |
| Static 20 Year Life                                       | LTHS - 95% LCL          | -      | -                       | 18,203 - 14,689 | 125.5 - 101.3 | ASTM D2992 - Procedure B |
| Static 50 Year Life                                       | LTHS - 95% LCL          | -      | -                       | 16,788 - 13,142 | 115.7 - 90.6  | ASTM D2992 - Procedure B |
| Parallel Plate                                            |                         |        |                         |                 |               |                          |
| Hoop Modulus of Elasticity                                | 3.02 x 10 <sup>6</sup>  | 20,822 | -                       | -               | ASTM D2412    |                          |
| Shear Modulus                                             | 1.36 x 10 <sup>6</sup>  | 9,343  | 1.15 x 10 <sup>6</sup>  | 7,895           | -             |                          |

## Typical Physical Properties

| Pipe Property        | Value                           | Value                            | Method    |
|----------------------|---------------------------------|----------------------------------|-----------|
| Thermal Conductivity | 0.23 BTU/hr·ft·°F               | 0.4 W/m°C                        | ASTM D177 |
| Thermal Expansion    | 8.5 x 10 <sup>-6</sup> in/in °F | 15.3 x 10 <sup>-6</sup> mm/mm °C | ASTM D696 |
| Absolute Roughness   | 0.00021 in                      | 0.00053 mm                       |           |
| Specific Gravity     | 1.8                             |                                  | ASTM D792 |

<sup>(1)</sup>  $\nu_{ha}$  = The ratio of axial strain to hoop strain resulting from stress in the hoop direction.

$\nu_{ah}$  = The ratio of hoop strain to axial strain resulting from stress in the axial direction.

<sup>(2)</sup> The differential pressure between internal and external pressure which causes collapse.

<sup>(3)</sup> A 0.67 design factor is recommended for short duration vacuum service. A full vacuum is equal to 14.7 psig (0.101 MPa) differential pressure at sea level.

<sup>(4)</sup> A 0.33 design factor is recommended for sustained (long-term) differential collapse pressure design and operation.

## Ultimate Collapse Pressure

| Size |     | Collapse Pressure <sup>(2)(3)(4)</sup> |       |      |      |
|------|-----|----------------------------------------|-------|------|------|
|      |     | psig                                   |       | MPa  |      |
| in   | mm  | 75°F                                   | 150°F | 24°C | 66°C |
| 2    | 50  | 177                                    | 133   | 1.22 | 0.92 |
| 3    | 80  | 171                                    | 129   | 1.18 | 0.89 |
| 4    | 100 | 69                                     | 51    | 0.48 | 0.35 |
| 6    | 150 | 69                                     | 51    | 0.48 | 0.35 |

## Pipe Length

| Size |        | Standard |      | Random |          |
|------|--------|----------|------|--------|----------|
| in   | mm     | ft       | m    | ft     | m        |
| 2-6  | 50-150 | 15       | 4.57 | 22-25  | 6.7-7.62 |

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FH1200ENG May 2016

### Fiber Glass Systems

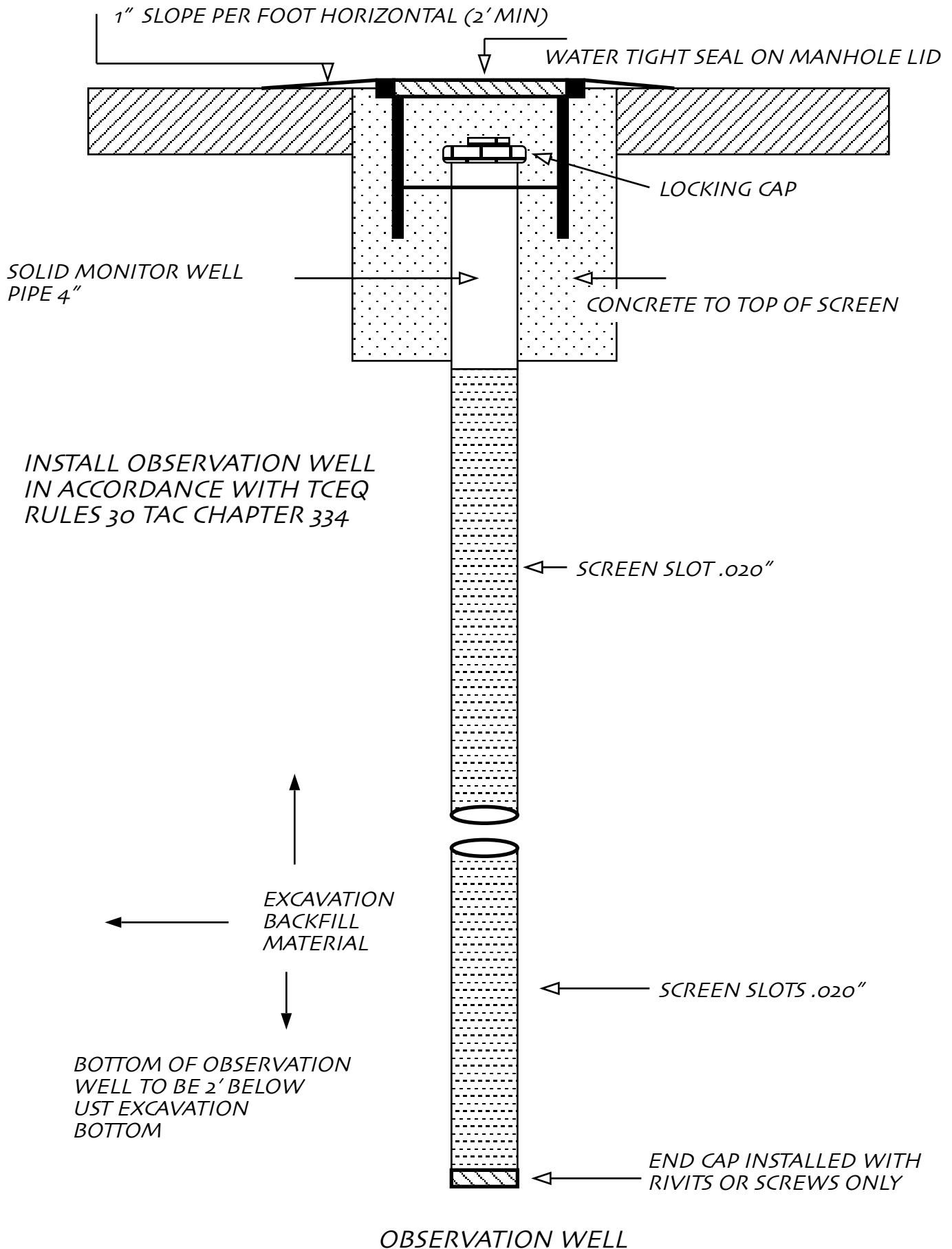
17115 San Pedro Avenue, Ste 200  
San Antonio, Texas 78232 USA  
Phone: 210 477 7500  
Fax: 210 477 7560

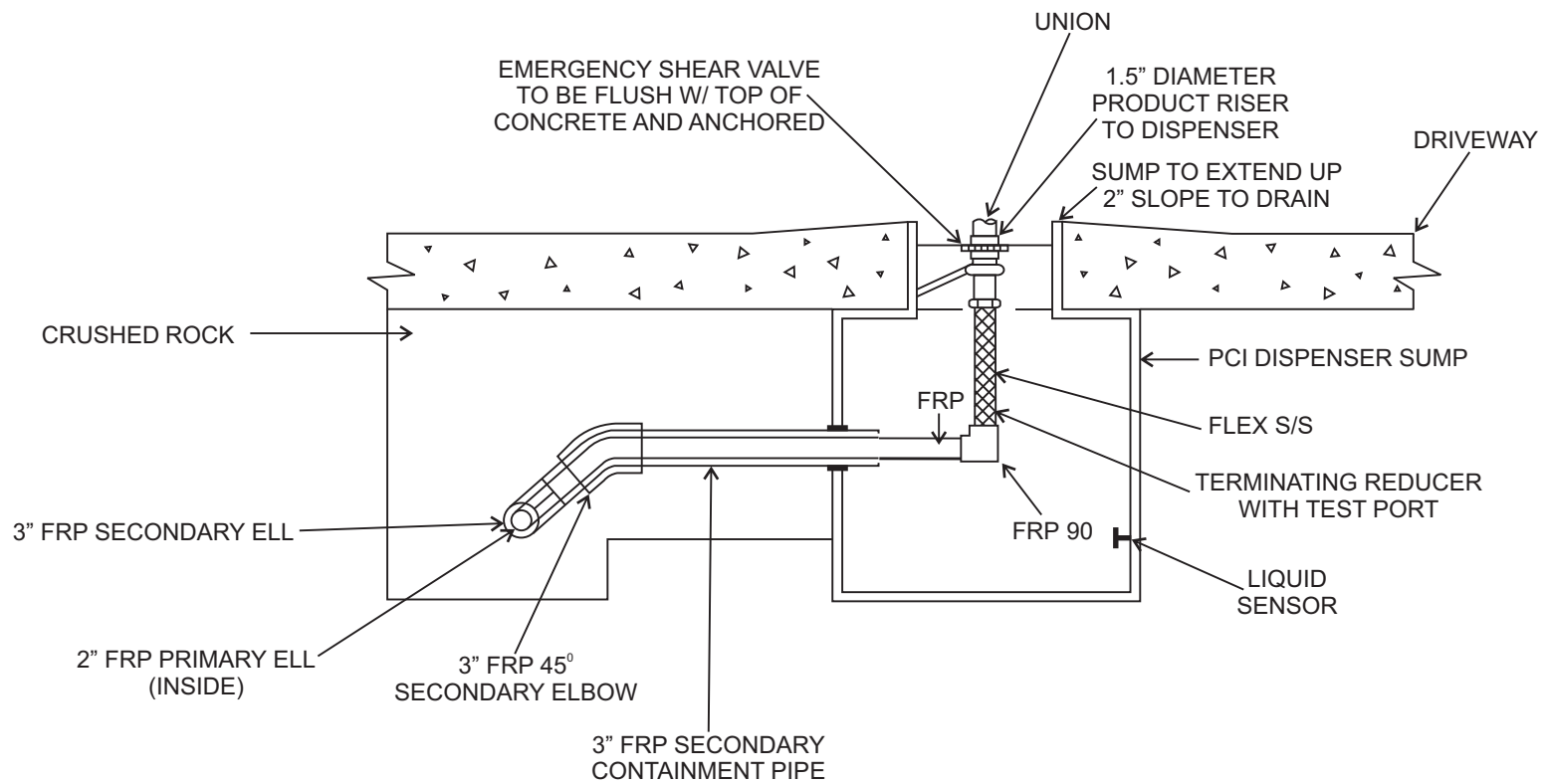




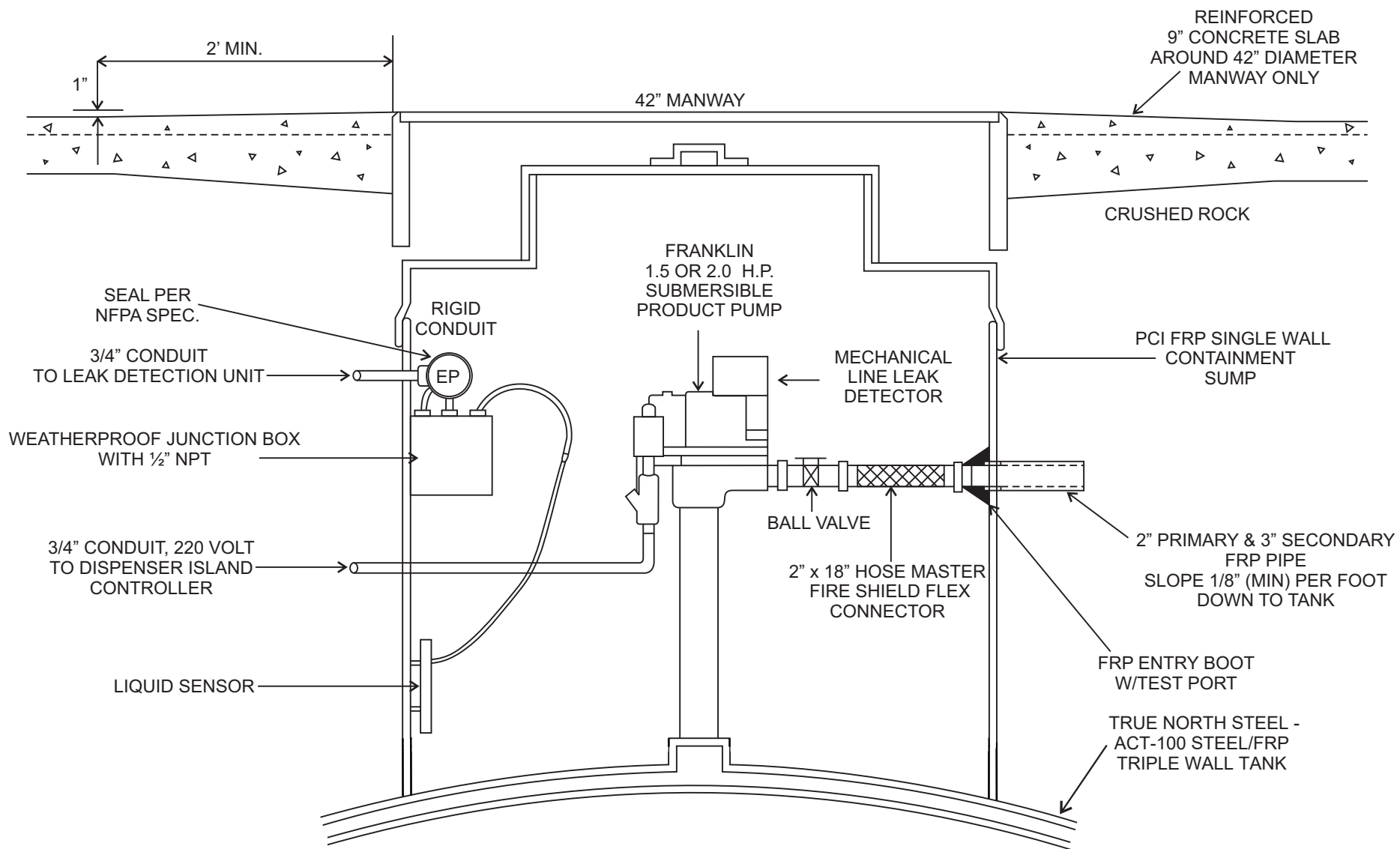
ATTACHMENT H

Profile Drawings

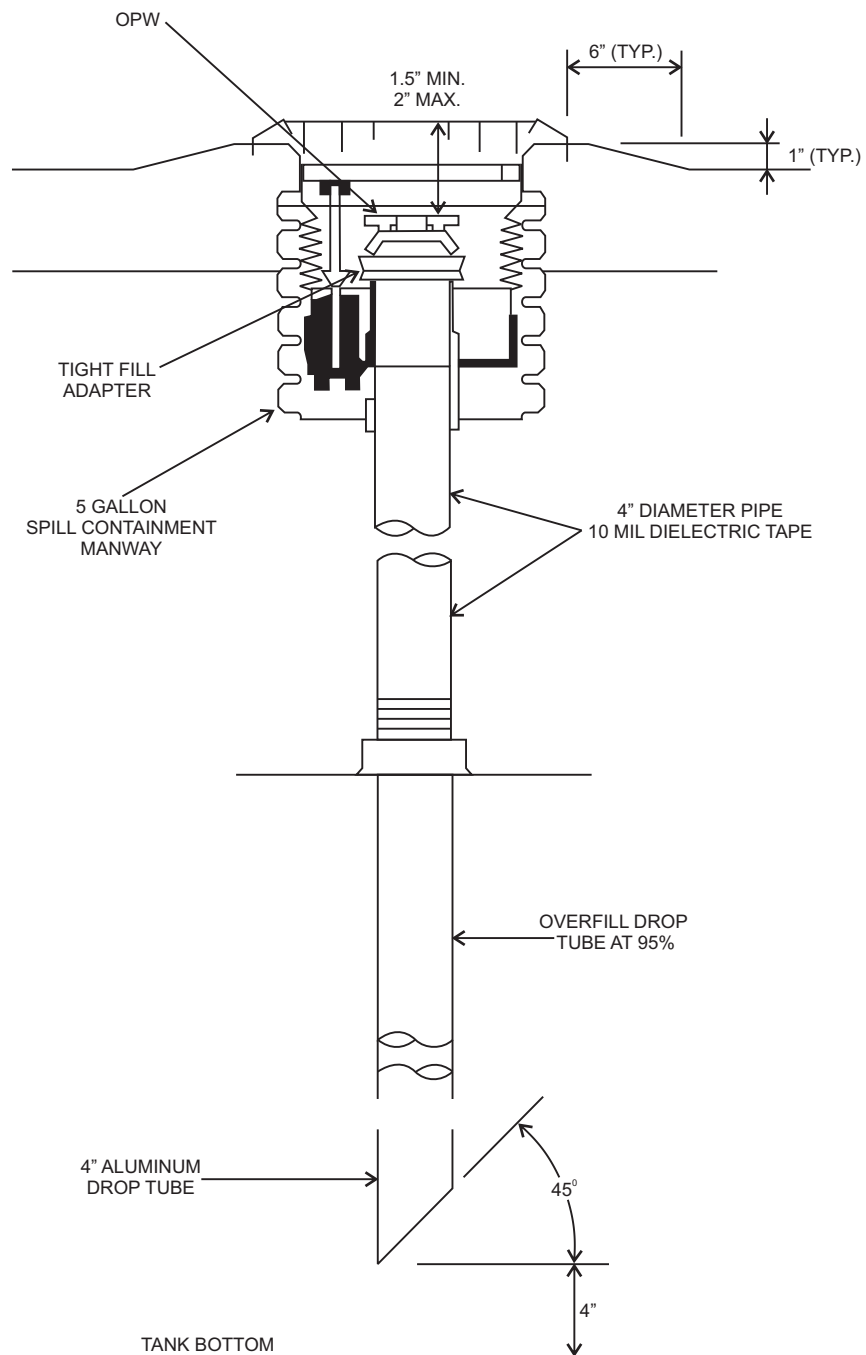




DISPENSER PIPING  
NOT TO SCALE

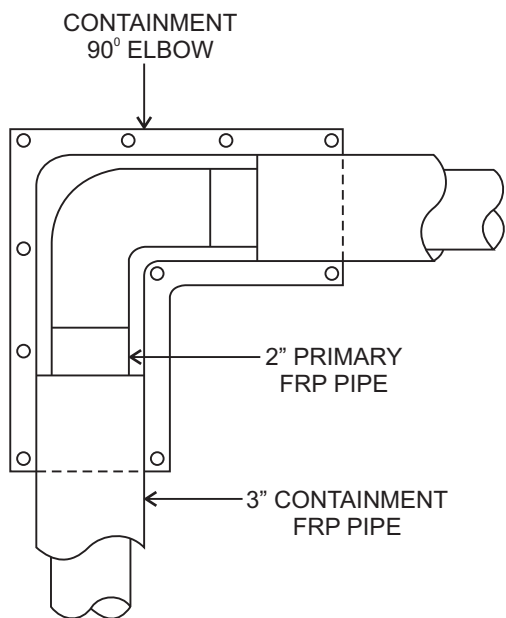


TYPICAL SUBMERSIBLE PUMP ASSEMBLY  
NOT TO SCALE

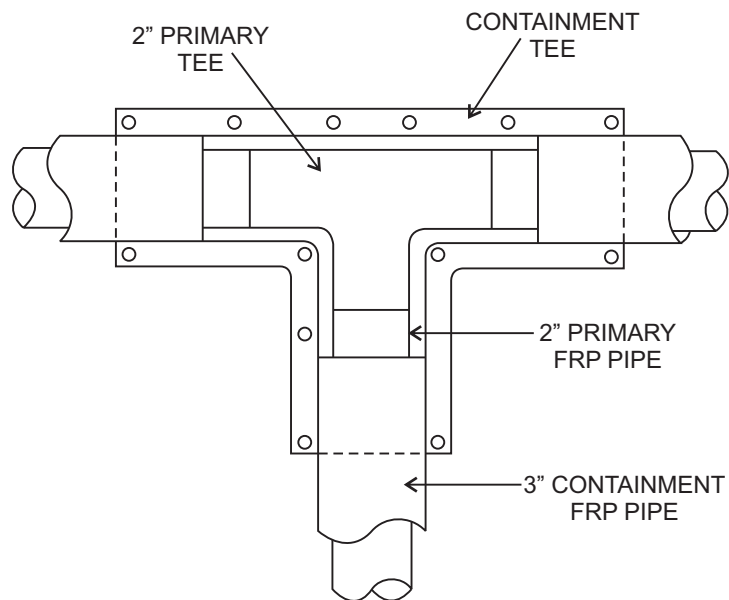


FILL RISER DETAIL  
NOT TO SCALE

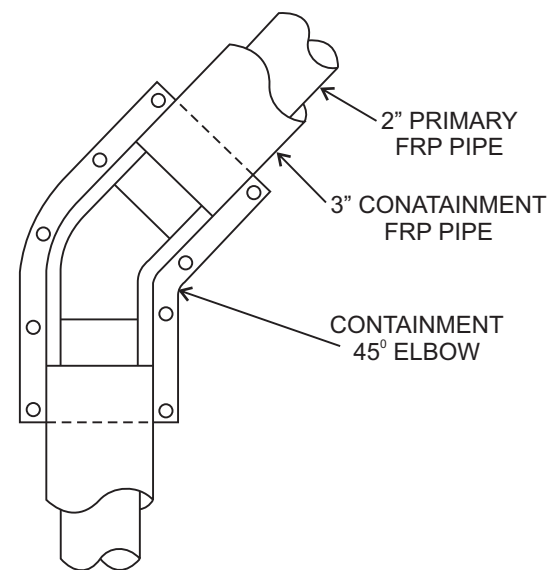




TYPICAL 90° ELBOW



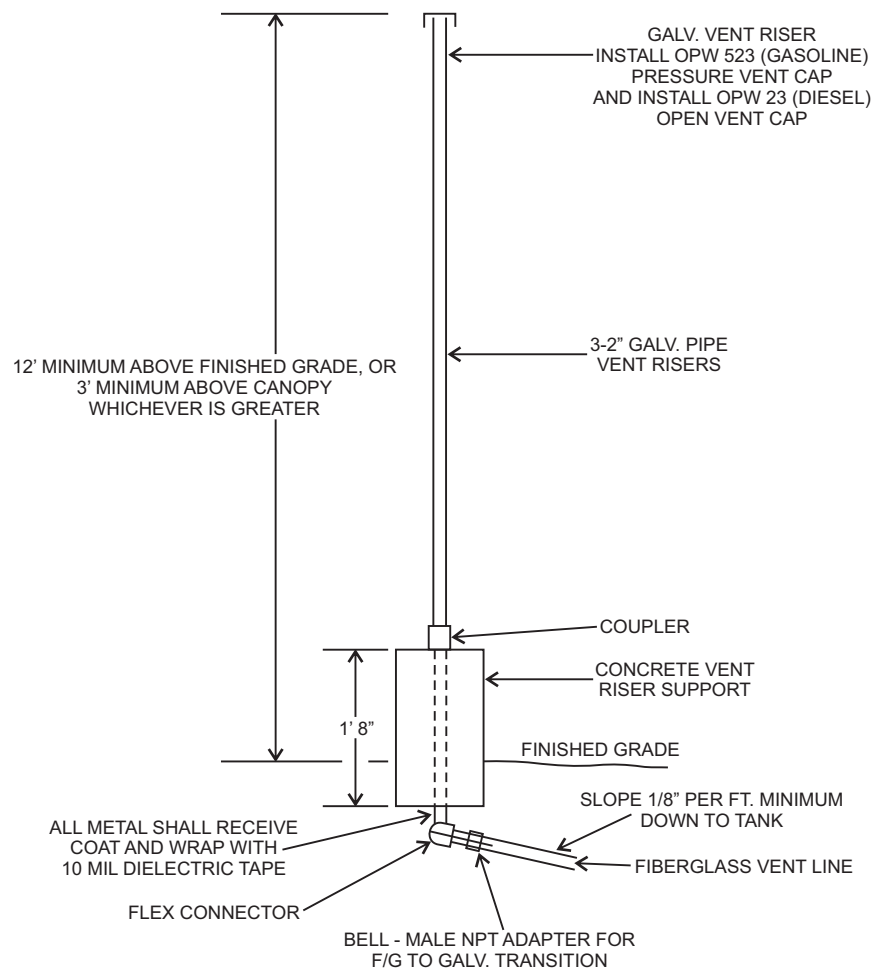
TYPICAL THREE WAY TEE



TYPICAL 45° ELBOW

SMITH RED THREAD DOUBLE WALL FIBERGLASS PIPING

PIPING PLAN NOT TO  
SCALE



TANK VENT RISER  
NOT TO SCALE



# ENCORE<sup>®</sup> 700 S

FUEL DISPENSERS



## TABLE OF CONTENTS

|                                    |    |
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| Flex Fuel Configurations . . . . . | 12 |
| Ultra-Hi Flow . . . . .            | 14 |
| DEF . . . . .                      | 16 |

# ENCORE<sup>®</sup> SERIES

## FUEL DISPENSERS

As the market leader in retail fueling dispensers, Gilbarco Veeder-Root custom builds each and every fuel dispenser to deliver unmatched reliability and a familiar experience for consumers at the pump. In addition to the broad model assortment, Encore dispensers go through extended life cycle testing to ensure all fueling positions are operating as they should, 24/7/365.

On top of the quality performance, Encore also offers first-class blending with its precise blend control software and hydraulics that are designed to hit and hold target blend ratios, regardless of site conditions.

Encore's family of dispensers also provides a variety of options to deliver media while fueling, ultimately driving foot traffic in-store.

Encore is just one part of the full site solution that Gilbarco offers. From the forecourt, to the c-store, to underground or in the cloud, we have the product for you along with a seamless integration across all.

If you're looking to freshen up your forecourt with the latest in fueling technology, Gilbarco has the perfect solution for your c-store.



# ENCORE OFFERING

## Standard Flow



## Flex Fuels



## Ultra-Hi Flow



## Diesel Exhaust Fluid (DEF)



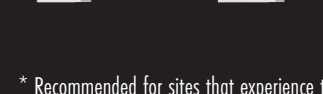
# ENCORE 700 S STANDARD FEATURES



\* when mounted on a 6 in. island  
Unions, hoses, and nozzles not included

# OPTIONAL FEATURES

- Meter Upgrades
- Two Level Price Posting (Dual PPU)
- Security Add-ons
  - Reinforced Lower Panel
  - Door Sensors
  - Encrypted Pulsers (Standard Flow Only)
  - Pulser Security Cover (Ultra-Hi Only)
- Satellite Indicator Light (Ultra-Hi Only)
- Junction Box
- Heaters
  - Full Cabinet Heater\*
- Sheathing Upgrades
  - Painted
  - Stainless Steel

| CANOPY OPTIONS                                                                      |                                                                                                      |                                                               |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Style                                                                               | Kit Number                                                                                           | Description                                                   |
|  | EN55010GAXXX<br> | <b>Brand View™ Canopy</b><br>56" W x 33" D x 9½" H            |
|  | EN55020GAXXX<br> | <b>Brand View™ DEF Canopy</b><br>66" W x 37 ⅞" D x 10" H      |
|  | EN01003GAXXX<br> | <b>Oval Canopy</b><br>62" W x 35" D x 9½" H                   |
|  | EN01001GAXXX<br> | <b>Rectangular Canopy</b><br>46½" W x 39½" D x 9½" H          |
|  | EN01004GAXXX<br> | <b>Rounded Corner DEF Canopy</b><br>64.3" W x 32" D x 9.55" H |
|                                                                                     | EN01002GAXXX<br> | <b>Rounded Corner Canopy</b><br>56" W x 33" D x 9½" H         |

\* Recommended for sites that experience temperatures lower than 14°F (-10°C)

# PAYMENT TERMINALS



FlexPay 6 Modular 15 in.



FlexPay 6 All-in-One 9 in.



# OVERVIEW

---

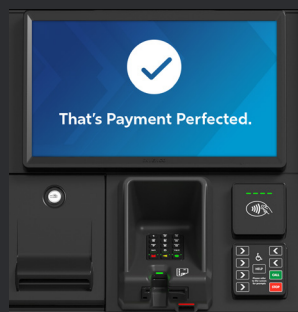
Inenco by GVR offers best in class security, durability and user experience. Its product offering gives you the ability to select the outdoor payment terminal that best fits your business' needs. With a variety of options, compatible with nearly all standard dispensers, Inenco by GVR's all-in-one and modular Payment Terminals, offer endless possibilities.

The all-in-one payment terminals allow a fully customizable user experience with dynamic multi-media in a compact footprint. The incredibly durable, modular payment terminals, provide the ultimate customer experience with high-definition rich media and video, perfect for various media opportunities to drive your business.

# FLEXPAY 6 PAYMENT TERMINALS

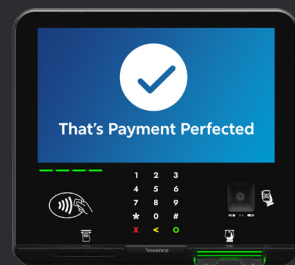
Designed from the bottom up, the new FlexPay 6 payment terminals from Invenco by GVR maximize customer engagement, have higher reliability, lower cost of ownership, best-in-class security, and reduce maintenance through remote terminal management.

FlexPay 6 features two distinct product lines: the All-in-One and Modular payment terminals. All FlexPay 6 outdoor payment terminals will be PCI 6 compliant with the latest EMV contactless standard, have native cloud connectivity, and include 2D bar code and contactless readers as standard features. Terminals are available as retrofit kits or as factory-installed kits in Encore 700S dispensers.



**FlexPay 6  
Modular 15 in.**

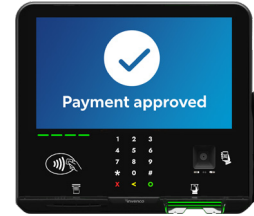
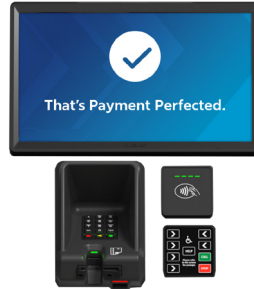
- 15.6 in. HD color full touch screen display with 1200 nits rating
- Modular design offers the following as separate components:
  - Printer
  - Card Reader
  - Display
  - ADA Module
  - Contactless



**FlexPay 6  
All-in-One 9 in.**

- 9 in. HD color full touch screen with HTML5
- All-in-One design offers card reader, contactless, PIN Pad, and printer
- Superior anti-skim design
- Capacitive PIN Pad
- Split card reader
- Backwards compatible to replace older models

# PORTFOLIO AT A GLANCE



|                                          | Modular                          | All-in-One       |
|------------------------------------------|----------------------------------|------------------|
|                                          | FlexPay 6 M1-15                  | FlexPay 6 A2-09  |
| Display Size                             | 15.6 in.                         | 9 in.            |
| OPT Configuration                        | Modular                          | All-In-One       |
| EMV Contactless Certifications           | 3                                | 3.x              |
| PCI PTS x.x / SRED                       | PCI 5.x<br>(PCI 6.x coming soon) | PCI 6.x          |
| Temperature Range                        | -30° C to +70° C                 | -30° C to +70° C |
| Display Brightness                       | 1250 nits                        | 1200 nits        |
| Media Ready                              | Yes                              | Yes              |
|                                          |                                  |                  |
| Available as Factory Installed Dispenser | Yes                              | Yes              |
| Available as Retrofit Kit                | Yes                              | Yes              |

**Same trusted service network as other Gilbarco Veeder-Root Products.  
Contact Your Local Sales Representative for More Information.**

# ENCORE STANDARD FLOW DISPENSER AND PUMPER



## Features:

- Single or two sided units available with up to 6 grades and 4 hoses per side
- 4-piston Positive displacement C+ Meters
- High capacity 10-micron water alert filters (one per grade)

Dispensing: Gasoline, Diesel, Flex Fuels, Biodiesel, and Kerosene

| STANDARD FLOW DISPENSERS |       |                                                  | Products/Inlets | Hoses per side | Active Meters |
|--------------------------|-------|--------------------------------------------------|-----------------|----------------|---------------|
| Dispensed Grades         | Model | Description                                      |                 |                |               |
| One Grade                | NA0*  | MPD Dispenser 1-Grade - No Blending              | 1               | 1              | 1             |
| Two Grades               | NA1*  | MPD Dispenser 2-Grade - No Blending              | 2               | 2              | 2             |
|                          | NG4   | MPD Dispenser 2-Grade, Shared Hose - No Blending | 2               | 1              | 2             |
| Three Grades             | NA2*  | MPD Dispenser 3-Grade - No Blending              | 3               | 3              | 3             |
|                          | NL0   | Blender Dispenser 2+1                            | 3               | 2              | 3             |
|                          | NN1   | Blender Dispenser 3+0                            | 2               | 1              | 2             |
| Four Grades              | NA3*  | MPD Dispenser 4-Grade - No Blending              | 4               | 4              | 4             |
|                          | NG1   | MPD Dispenser 4-Grade, Shared Hose - No Blending | 4               | 2              | 4             |
|                          | NL1   | Blender Dispenser 3+1                            | 3               | 2              | 3             |
|                          | NN2   | Blender Dispenser 4+0                            | 2               | 1              | 2             |
| Five Grades              | NL3   | Blender Dispenser 3+1+1                          | 4               | 3              | 4             |
|                          | NL2   | Blender Dispenser 4+1                            | 3               | 2              | 3             |
| Six Grades               | NL8   | Blender Dispenser 5+1                            | 3               | 2              | 3             |

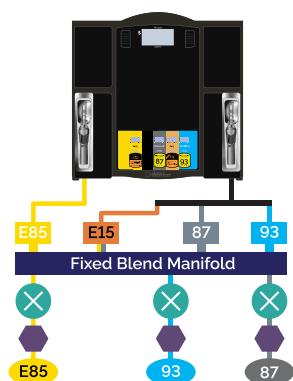
*\*Lever Activation*

| STANDARD FLOW PUMPERS |       |                                | Products/Inlets | Hoses per side | Active Meters |
|-----------------------|-------|--------------------------------|-----------------|----------------|---------------|
| Dispensed Grades      | Model | Description                    |                 |                |               |
| One Grade             | NC0*  | MPP Pump 1-Grade - No Blending | 1               | 1              | 1             |
| Two Grades            | NC1*  | MPP Pump 2-Grade - No Blending | 2               | 2              | 2             |
| Three Grades          | NN5   | Blender Pump 3+0               | 2               | 1              | 2             |
| Four Grades           | NL5   | Blender Pump 3+1               | 3               | 2              | 3             |
| Five Grades           | NL6   | Blender Pump 4+1               | 3               | 2              | 3             |

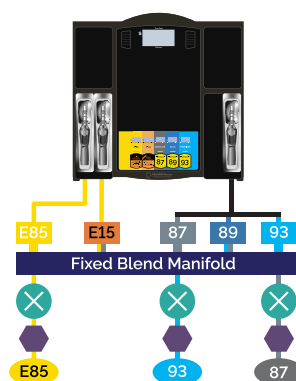
*\*Lever Activation*



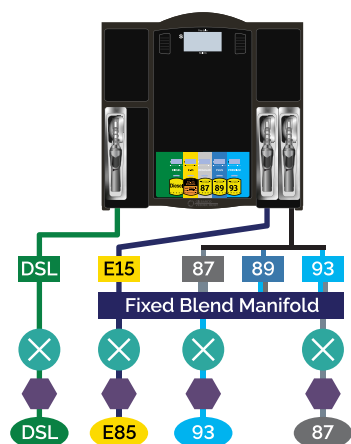
# STANDARD FLOW: FLEXIBLE FUEL DISPENSER CONFIGURATIONS



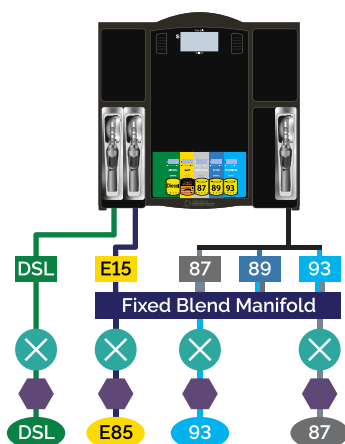
NF0



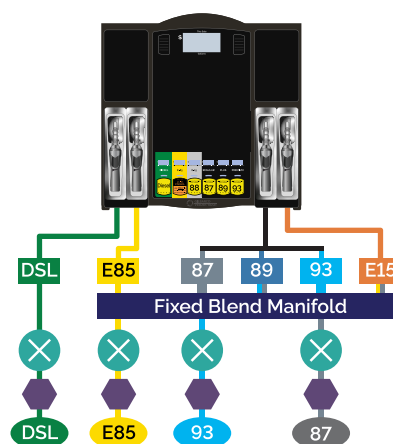
NF1



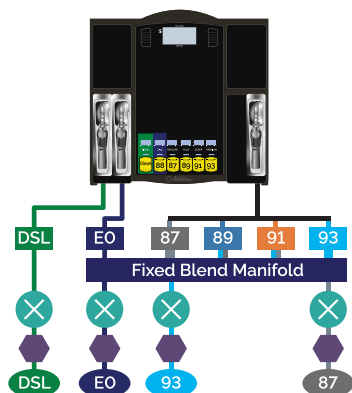
NF2



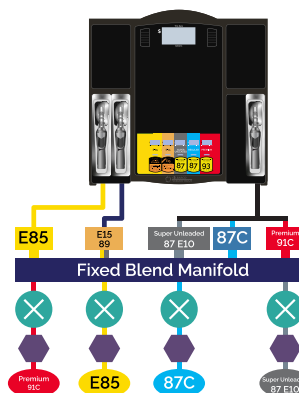
NF4



NF6



NF7



NF8



Valve



Meter



Underground  
Storage Tank



Hoses

| STANDARD FLOW FLEX FUEL DISPENSERS |                  |                                     | Products/Inlets | Hoses per side | Active Meters |
|------------------------------------|------------------|-------------------------------------|-----------------|----------------|---------------|
| Dispensed Grades                   | Model            | Description                         |                 |                |               |
| Five Grades                        | NF0              | Universal Blender Dispenser 3-2+0   | 3               | 2              | 3             |
|                                    | NF1              | Universal Blender Dispenser 3-1-1   | 3               | 3              | 3             |
|                                    | NF2 <sub>a</sub> | Universal Blender Dispenser 3-1+1   | 4               | 3              | 4             |
|                                    | NF4 <sub>a</sub> | Universal Blender Dispenser 3-1+1   | 4               | 3              | 4             |
|                                    | NF8              | Universal Blender Dispenser 3-1-1   | 4               | 3              | 4             |
| Six Grades                         | NF7              | Universal Blender Dispenser 4-1+1   | 4               | 3              | 4             |
|                                    | NF6              | Universal Blender Dispenser 3-1-1+1 | 4               | 4              | 4             |

a. NF2 and NF4 are similar configurations. NF2 allows two hoses on the right (3 and -1) and one on the left (+1). NF4 allows one hose on the right (3) and two on the left (-1 and +1)



# ULTRA-HI FLOW DISPENSER



## Features:

- Pump up to 60 gallons (227 liters) per minute\* with a Master and Satellite simultaneously
- Lever Activation
- High Capacity 30-micron filters (one per inlet)

| ULTRA-HI FLOW DISPENSERS |                  |                                           | Products/Inlets | Hoses per side | Active Meters |
|--------------------------|------------------|-------------------------------------------|-----------------|----------------|---------------|
| Dispensed Grades         | Model            | Description                               |                 |                |               |
| One Grade                | NP3              | Master Dispenser 1-Grade                  | 1/2**           | 1              | 1/2**         |
|                          | NP4              | Combo: Master/Satellite Dispenser 1-Grade | 2               | 1              | 1             |
|                          | NP5              | Satellite Dispenser (No CRIND)            | 1/2**           | 1              | 0             |
| Two Grades               | NP6 <sub>a</sub> | Master Dispenser 2-Grade                  | 2               | 2              | 2             |
|                          | NP8 <sub>a</sub> | Satellite Dispenser 2-Grade (No CRIND)    | 2               | 2              | 0             |

a. Available Only as Single-Sided Dispensers  
 \*\* 2 Products/Inlets and Active Meters only



# ENCORE DEF DISPENSERS



DEF dispensing compatible with Standard Flow or Ultra-Hi Flow models

Magnetic Flapper cover helps keep heat in, preventing DEF nozzles & hoses from freezing

DEF valve access door

Thermostat-controlled cabinet protecting to -4°F (-20° C). Colder weather protection available.

- Single or Dual-sided
- Factory Installed or Retrofit Kits



# DIESEL EXHAUST FLUID

---

With all diesel vehicle engines produced after 2010 requiring diesel exhaust fluid or DEF, providing customers an easier way to fill up their DEF tanks is becoming more and more important.

In addition to offering DEF from both sides of the dispenser, Encore has also brought DEF dispensing to the forecourt. Encore 700S DEF Standard Flow Dispensers provide the ability to add DEF dispensing from the same fueling position as your standard gasoline and diesel fuels, preventing retailers from giving up an entire spot dedicated to DEF.

## **STANDARD FEATURES:**

- Stainless steel DEF-compatible hydraulics
- Highly accurate, magnetic flow meter
- ISO components to ensure DEF compatibility
- Crossover plumbing available to route DEF from one inlet to both cabinets

## **AVAILABLE OPTIONS:**

- DEF cold weather upgrade or specialized upgrade option for protection to -40° F (-40° C)
- DEF temperature warning sensors
- 6 ft. DEF inlet hose
- Stainless steel DEF breakaway and swivel
- DEF nozzle with or without mis-fill magnetic adapter

| FACTORY INSTALLED DEF DISPENSERS |       |                                                                                                                        | Products/Inlets | Hoses per side | DEF Hoses | Active Meters |
|----------------------------------|-------|------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|-----------|---------------|
|                                  | Model | Description                                                                                                            |                 |                |           |               |
| Backcourt DEF                    | NA4   | DEF Dispenser - Diesel Exhaust Fluid Only <sub>a</sub>                                                                 | 1               | 0              | 1         | 1             |
|                                  | NPA   | UH Master Diesel 1-Grade + DEF 1-Side Only                                                                             | 2/3**           | 1              | 1         | 2/3**         |
|                                  | NPB   | UH Master/Satellite Diesel Dispenser + DEF 1-Side Only                                                                 | 2               | 1              | 1         | 2             |
|                                  | NPC   | UH Master Diesel 2-Grade, 1-Sided + DEF 1-Side Only <sub>b</sub>                                                       | 3               | 2              | 1         | 3             |
| Forecourt DEF Adder Options      | -     | NXX + DEF: Factory Installed DEF on Std flow Dispenser <sub>c</sub>                                                    | -               | -              | 1         | -             |
|                                  | -     | NXX + Dual DEF: Factory Installed DEF on Std Flow Dispenser and 2 <sup>nd</sup> Cabinet Field Installed <sub>c,d</sub> | -               | -              | 2         | -             |

a. NA4 includes only 1 DEF cabinet. If DEF is required on both sides, a two sided NA4 should be ordered along with an NPK RF-2 Kit that will need to be field installed.

b. NPC is only available single sided.

c. Available for models: NA0, NA1, NA2, NG0, NN1, NN2, NL0, NL1.

d. Second side cabinet should be ordered with NPK RF-4 Kit

\*\* 3 Products/Inlets and Active Meters only on Two-Sided NPA

# FACTORY INSTALLED DEF DISPENSERS

|                          | Model        | Description                                                        |
|--------------------------|--------------|--------------------------------------------------------------------|
| Ultra-Hi Flow Dispensers | NPK RF Kit   | To add 1 side DEF Cabinet to NP3, NP6, NP4                         |
|                          | NPK RF-2 Kit | To add 2nd side DEF cabinet to 2-sided NP3, NPA                    |
| Standard Flow Dispensers | NPK RF-3 Kit | To add DEF to one side of a standard flow unit (one- or two-sided) |
|                          | NPK RF-4 Kit | To add DEF to 2nd side of a 2-sided standard flow unit             |
|                          |              |                                                                    |

**Note:** DEF outlet hose required for all DEF dispensers/cabinets.



# NOTES

This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal gray lines across the entire width of the page, typical of notebook or legal stationery. The background is white, and there are no margins, text, or other markings present.

Blank lined paper for writing.



[www.gilbarco.com](http://www.gilbarco.com)



# PCS4200 Series



100% fiberglass.  
100% dependable.



## ENGINEERED FOR QUALITY

The closed-molded design provides a consistent wall thickness with a smooth finish on the inside and outside, making it easier to prep and providing a better seal for rubber/gasketed entry fittings.

## ENGINEERED FOR LOGISTICS

Nestable Space Saver design and integrated features reduce shipping costs and warehouse space. Up to 12 risers, 6 bases, or 3 full sumps per pallet.

## ENGINEERED FOR DURABILITY

This 100% fiberglass sump is manufactured with the most corrosion-resistant composites available ensuring secondary containment dependability for the life of the station.

## ENGINEERED FOR VERSATILITY

The universal base works for all applications: tank collar, fitting adapter, and manway installations. With 27" of height adjustability and 10% more working space that the competitor's 42" sump, the PCS does it all.

**SPECIAL  
INTRODUCTORY  
PRICING**

## PART NUMBER LEGEND

**Series**  
PCS42: PCS Series

**Base**  
B: Solid Bottom  
C: Collar Mount

**Bonding Kit**  
0: No Bonding Kit  
1: Epoxy Bonding Kit  
2: Two Epoxy Bonding Kits

**Sump Height**

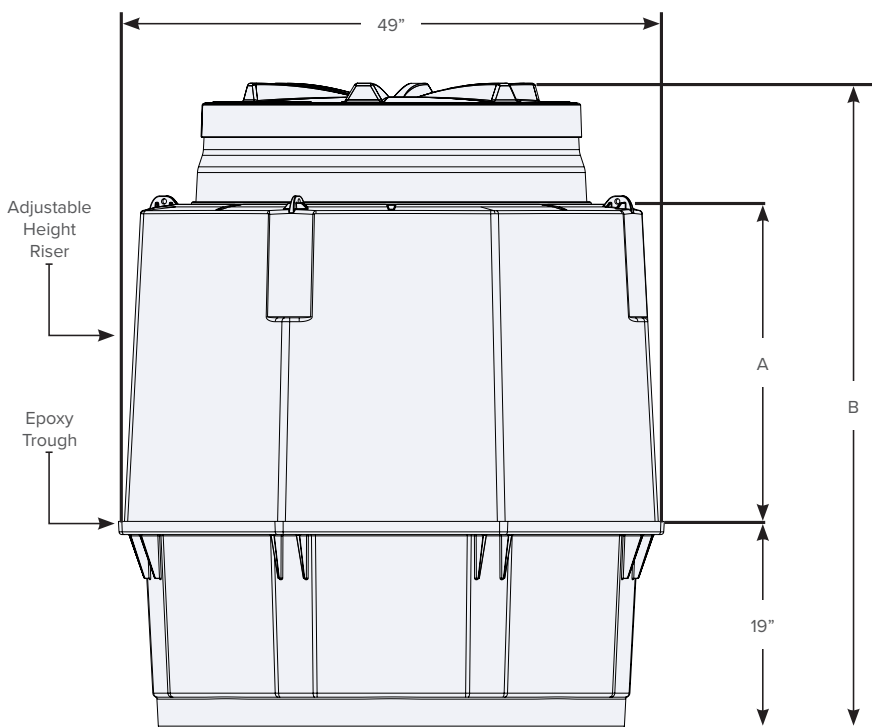
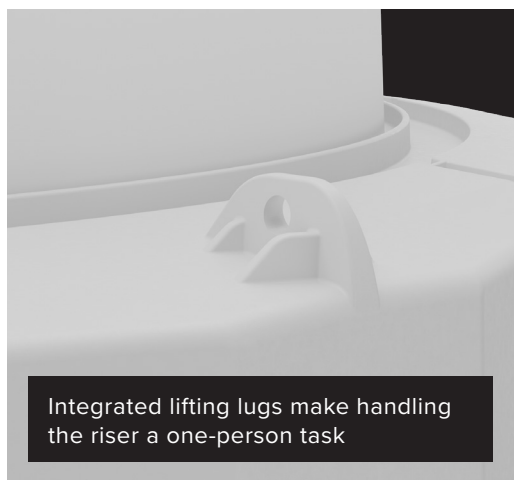
**Lid**  
3: Twist-Lok

PCS42 60 U-3 B 0

## PRODUCT SIZES & PRICES

| Part No.                       | Adjustability (A)                                       | Overall Height (B) |
|--------------------------------|---------------------------------------------------------|--------------------|
| PCS4260U                       | 2.5" - 29.5"                                            | 32" - 59"          |
| Options (Example: PCS4260-XXX) |                                                         | LIST PRICE         |
| -3B0                           | Solid Bottom, Twist-Lok Lid, No Bonding Kit             | \$1920             |
| -3B1                           | Solid Bottom, Twist-Lok Lid, (1) Epoxy Bonding Kit      | \$2125             |
| -3B2                           | Solid Bottom, Twist-Lok Lid, (2) Epoxy Bonding Kits     | \$2280             |
| -3C0                           | 42" Collar Mount, Twist-Lok Lid, No Bonding Kit         | \$1920             |
| -3C2                           | 42" Collar Mount, Twist-Lok Lid, (2) Epoxy Bonding Kits | \$2280             |

\* Dimensions are based on Solid Bottom sumps only  
\*\* Subtract 1" if mounting to a 42" tank collar



**TWISTLOK**  
access cover

**SPACE  
SAVER**

**DRI-SUMP  
COMPATIBLE**

## Applications

- Service Station
- Vent/Vapor Recovery
- Bulk Plant Terminals
- Fueling Terminals
- Central Fuel Oil Systems
- Marinas Terminals
- Ethanol Fuel Blends
- Biodiesel Fuel
- Diesel Exhaust Fluid
- UL/ULC Systems that require MV, HB, CT, A&M Fuels

### Materials and Construction

All pipe is manufactured by filament winding process using amine-cured epoxy thermosetting resin to impregnate strands of continuous glass filaments with a resin-rich interior surface. The operating pressure of the pipe is up to 250 psig (17.2 bar) with continuous operating temperature to 150°F (66°C).

Red Thread IIA is Listed with Underwriters Laboratories Standard 971-2004 for non-metallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels. The pipe and fittings are also Listed with Underwriters Laboratories of Canada with both Listings under File MH9162.

### Fittings

Fittings are manufactured with the same chemical and temperature capabilities as the pipe. Depending on the configurations and size, the fittings construction method will be compression molded, contact molded, fabricated or filament wound and are described in FH1250.

### Testing

Installed pipe systems should be tested prior to use to assure soundness of all joints and connections. Locate pressure gauge in close proximity to the pressurizing equipment, not directly on the piping system. A pressure gauge with the test pressure at mid-scale is recommended.

### Joining System

- **T.A.B.™** - The primary joining method for pipe joints promoting fast, positive make-up and prevents “backout” during curing.
- **Bell & Spigot** - The primary joining method for fitting joints.

These joints assist the installer and assures a fast trouble-free installation. Adhesive for this system is Series 8000. T.A.B. spigots can be bonded into tapered bells and tapered spigots can be Bonded into T.A.B. bells using standard bonding procedures for tapered joints.

**ASTM D2996 Designation Code -**  
RTRP-11AW13110

## Nominal Dimensional Data

| Pipe Size |     | Inside Diameter |     | Outside Diameter |     | Wall Thickness |      | Weight |      | Pressure/<br>Temperature<br>Max. Rating at<br>150°F (66°C) |      | Mill Test<br>Pressure |      | Minimum<br>Bending Radius |      |
|-----------|-----|-----------------|-----|------------------|-----|----------------|------|--------|------|------------------------------------------------------------|------|-----------------------|------|---------------------------|------|
| in        | mm  | in              | mm  | in               | mm  | in             | mm   | lbs.ft | kg/m | psig                                                       | MPa  | psig                  | MPa  | ft                        | m    |
| 2         | 50  | 2.238           | 57  | 2.371            | 60  | 0.067          | 1.70 | 0.42   | 0.63 | 250                                                        | 1.72 | 376                   | 2.59 | 102                       | 31.0 |
| 3         | 80  | 3.363           | 85  | 3.559            | 90  | 0.098          | 2.49 | 0.92   | 1.37 | 175                                                        | 1.21 | 300                   | 2.07 | 153                       | 46.5 |
| 4         | 100 | 4.364           | 111 | 4.553            | 116 | 0.095          | 2.41 | 1.10   | 1.64 | 125                                                        | 0.86 | 265                   | 1.83 | 195                       | 59.5 |
| 6         | 150 | 6.408           | 163 | 6.686            | 170 | 0.139          | 3.53 | 2.47   | 3.68 | 20                                                         | 0.14 | 265                   | 1.83 | 287                       | 87.4 |

View of Joint Illustrations



T.A.B.



Bell & Spigot

## Typical Mechanical Properties

| Pipe Property                               | 75°F                    | 24°C   | 200°F                   | 93°C            | Method        |                          |
|---------------------------------------------|-------------------------|--------|-------------------------|-----------------|---------------|--------------------------|
|                                             | psi                     | MPa    | psi                     | MPa             |               |                          |
| Axial Tensile                               |                         |        |                         |                 |               |                          |
| Ultimate Stress                             | 9,530                   | 65.7   | 6,585                   | 45.4            | ASTM D2105    |                          |
| Modulus of Elasticity                       | 1.68 x 10 <sup>6</sup>  | 11,584 | 1.42 x 10 <sup>6</sup>  | 9,791           | ASTM D2105    |                          |
| Poisson's Ratio, $\nu_{ah}(\nu_{ha})^{(1)}$ | 0.35 (0.61)             |        |                         |                 |               |                          |
| Axial Compression                           |                         |        |                         |                 |               |                          |
| Ultimate Stress                             | 12,510                  | 86.3   | 8,560                   | 59.0            | ASTM D695     |                          |
| Modulus of Elasticity                       | 0.677 x 10 <sup>6</sup> | 4,668  | 0.379 x 10 <sup>6</sup> | 2,613           | ASTM D695     |                          |
| Beam Bending                                |                         |        |                         |                 |               |                          |
| Modulus of Elasticity (Long Term)           | 2.6 x 10 <sup>6</sup>   | 17,927 | 0.718 x 10 <sup>6</sup> | 4,951           | ASTM D2925    |                          |
| Hydrostatic Burst                           |                         |        |                         |                 |               |                          |
| Ultimate Hoop Tensile Stress                | 40,150                  | 277    | 36,480                  | 252             | ASTM D1599    |                          |
| Hydrostatic Hoop Design Stress              |                         |        |                         |                 |               |                          |
| Static 20 Year Life                         | LTHS - 95% LCL          | -      | -                       | 18,203 - 14,689 | 125.5 - 101.3 | ASTM D2992 - Procedure B |
| Static 50 Year Life                         | LTHS - 95% LCL          | -      | -                       | 16,788 - 13,142 | 115.7 - 90.6  | ASTM D2992 - Procedure B |
| Parallel Plate                              |                         |        |                         |                 |               |                          |
| Hoop Modulus of Elasticity                  | 3.02 x 10 <sup>6</sup>  | 20,822 | -                       | -               | ASTM D2412    |                          |
| Shear Modulus                               | 1.36 x 10 <sup>6</sup>  | 9,343  | 1.15 x 10 <sup>6</sup>  | 7,895           | -             |                          |

## Typical Physical Properties

| Pipe Property        | Value                           | Value                            | Method    |
|----------------------|---------------------------------|----------------------------------|-----------|
| Thermal Conductivity | 0.23 BTU/hr•ft•°F               | 0.4 W/m°C                        | ASTM D177 |
| Thermal Expansion    | 8.5 x 10 <sup>-6</sup> in/in °F | 15.3 x 10 <sup>-6</sup> mm/mm °C | ASTM D696 |
| Absolute Roughness   | 0.00021 in                      | 0.00053 mm                       |           |
| Specific Gravity     | 1.8                             |                                  | ASTM D792 |

<sup>(1)</sup>  $\nu_{ha}$  = The ratio of axial strain to hoop strain resulting from stress in the hoop direction.

$\nu_{ah}$  = The ratio of hoop strain to axial strain resulting from stress in the axial direction.

<sup>(2)</sup> The differential pressure between internal and external pressure which causes collapse.

<sup>(3)</sup> A 0.67 design factor is recommended for short duration vacuum service. A full vacuum is equal to 14.7 psig (0.101 MPa) differential pressure at sea level.

<sup>(4)</sup> A 0.33 design factor is recommended for sustained (long-term) differential collapse pressure design and operation.

## Ultimate Collapse Pressure

| Size |     | Collapse Pressure <sup>(2)(3)(4)</sup> |       |      |      |
|------|-----|----------------------------------------|-------|------|------|
|      |     | psig                                   |       | MPa  |      |
| in   | mm  | 75°F                                   | 150°F | 24°C | 66°C |
| 2    | 50  | 177                                    | 133   | 1.22 | 0.92 |
| 3    | 80  | 171                                    | 129   | 1.18 | 0.89 |
| 4    | 100 | 69                                     | 51    | 0.48 | 0.35 |
| 6    | 150 | 69                                     | 51    | 0.48 | 0.35 |

## Pipe Length

| Size |        | Standard |      | Random |          |
|------|--------|----------|------|--------|----------|
| in   | mm     | ft       | m    | ft     | m        |
| 2-6  | 50-150 | 15       | 4.57 | 22-25  | 6.7-7.62 |

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FH1200ENG May 2016

### Fiber Glass Systems

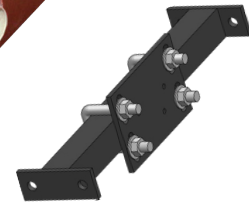
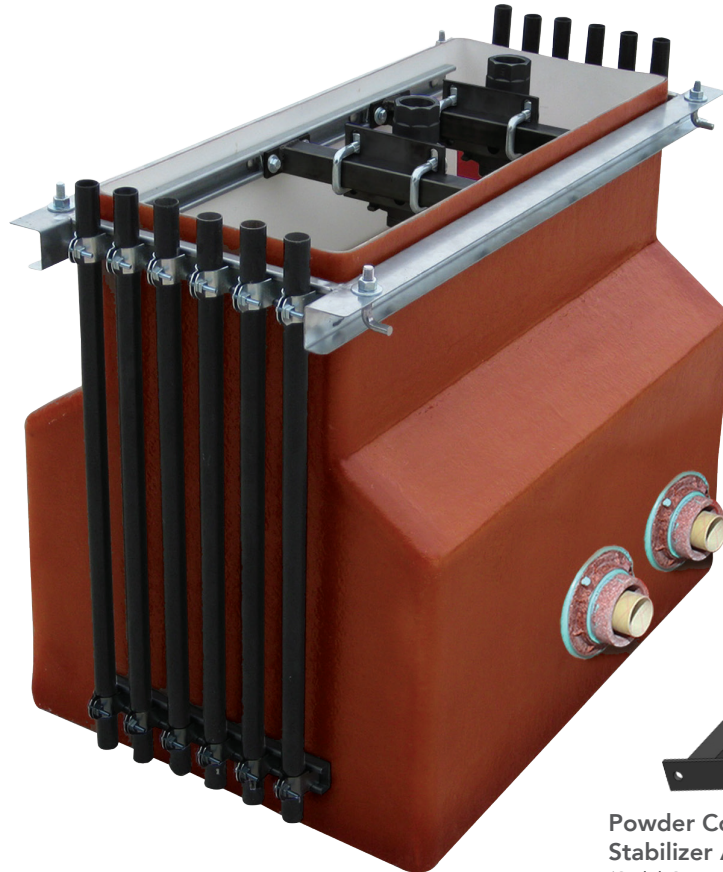
17115 San Pedro Avenue, Ste 200  
San Antonio, Texas 78232 USA  
Phone: 210 477 7500  
Fax: 210 477 7560





## RSC SERIES DISPENSER SUMPS

PCI's RSC (Reduced Steel Conduitless) dispenser sump offers our quality fiberglass in a cost-effective design. Our reduced galvanized steel frame offers excellent corrosion resistance.



Powder Coated Shear Valve  
Stabilizer Assembly Kit  
(Sold Separately)

### ADJUSTABLE HEIGHT

Designed and engineered to allow up to 6" of field adjustment helps ensure proper slope once penetration fittings have been installed off location.

### WIDE-BODY DESIGN

Allows ample space for up to 4 Pass-Thru plumbing configurations in a single sump while our tapered top fits inside the most narrow island forms.

### DUAL CONDUITLESS ENTRY

Conduit mounting channel is engineered directly into both ends of the steel frame to allow electrical entry in the bottom of the dispenser without penetrating the sump wall.

### SINGLE PIECE CONSTRUCTION

Eliminates any seams and provides less places for water penetration.

### 1" COMPOSITE RAINLIP

Prevents surface water from entering the sump and offers better protection against rust and corrosion than metallic rainlips.

### UNIVERSAL STABILIZER BARS

Universal stabilizer bars with 3-axis adjustment accommodate multi-product dispensers without displacing product lines and ensure proper load transfer in case of an impact from any direction.

### 100% FIBERGLASS

100% high quality, non-corrosive fiberglass provides long-term reliable containment from fuel exposure without voiding warranty, warping, cracking or becoming brittle.

### 'BRITE-WHITE' INTERIOR

Our signature 'Brite-White' interior reflects light for better visibility and makes identifying leak points easier.

### DUO-MOLDED TECHNOLOGY

Our fiberglass sumps utilizes Duo-Molded Technology. Using premium raw materials with a high glass content, we create two layers of fiberglass, offering superior strength and fuel resistance.



Translucent Fiberglass Finish  
Brite-White Fiberglass Interior

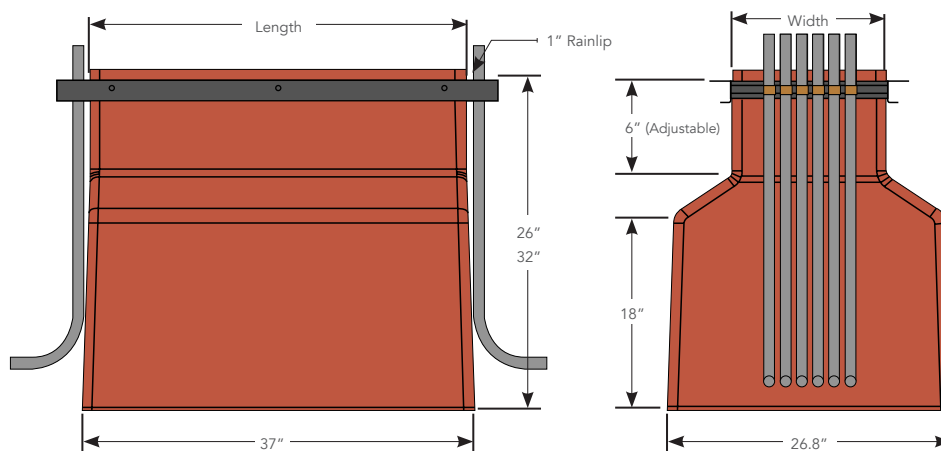
### DOUBLE WALL OPTIONS

Available in double wall for a variety of monitoring options to satisfy local regulations and requirements. From dry fluid or fluid filled interstitial to vacuum interstice monitoring, PCI has all options to best fit your installation and compliance needs.





## RSC SERIES DISPENSER SUMPS



| Dispenser Model            | RSC Series  | Double Wall Models | Width  | Length | Stabilizer Kit |
|----------------------------|-------------|--------------------|--------|--------|----------------|
| Bennett Pacific            | RSC146360B  | RSCDW146360B       | 14.75" | 36"    | SVU-L          |
| Bennett 3000               | RSC120206   | RSCDW120206        | 12"    | 20.75" | SVU-S          |
| Gasboy Atlas               | RSC120206A  | RSCDW120206A       | 12"    | 20.75" | SVU-S          |
| Gilbarco Encore            | RSC174360   | RSCDW174360        | 17.5"  | 36"    | SVU-L          |
| Gilbarco Legacy            | RSC120206X  | RSCDW120206X       | 12"    | 20.75" | SVU-S          |
| Wayne Century              | RSC154260   | RSCDW154260        | 15.5"  | 26"    | SVU-L          |
| Wayne Reliance             | RSC154260   | RSCDW154260        | 15.5"  | 26"    | SVU-L          |
| Wayne Select               | RSC154260   | RSCDW154260        | 15.5"  | 26"    | SVU-L          |
| Wayne Ovation              | RSC146360   | RSCDW146360        | 14.75" | 36"    | SVU-L          |
| Wayne Vista (UHC) HS3, HS4 | RSC154260HV | RSCDW154260HV      | 15.5"  | 26"    | SVU-L          |
| Wayne Vista 48"            | RSC112360   | RSCDW112360        | 11.25" | 36"    | SVU-S          |

**Note: Additional Models Available**

## PART NUMBER LEGEND

The diagram illustrates the components of a part number: **RSC120206X**. Red boxes highlight the **RSC**, **206**, and **X** segments. Red lines connect these segments to their respective descriptions: **RSC** to Series, **206** to Length, and **X** to Suffix. A black line connects the **120** segment to Width.

| Series             | Width       | Length      | Suffix                  |
|--------------------|-------------|-------------|-------------------------|
| RSC: Standard      | 146: 14.75" | 206: 20.75" | PCI Internal Identifier |
| RSCDW: Double Wall | 120: 12"    | 260: 26"    | X: No Rainlip           |
|                    | 174: 17.5"  | 360: 36"    |                         |

| Series             | Width       | Length      | Suffix                  |
|--------------------|-------------|-------------|-------------------------|
| RSC: Standard      | 146: 14.75" | 206: 20.75" | PCI Internal Identifier |
| RSCDW: Double Wall | 120: 12"    | 260: 26"    | X: No Rainlip           |
|                    | 174: 17.5"  | 360: 36"    |                         |





THE ALL-IN-ONE FUEL MONITORING SYSTEM SOLUTION  
***AT THE PRICE OF JUST A CONSOLE***

INVENTORY CONTROL | COMPLIANCE MONITORING | LEAK DETECTION | REMOTE ACCESS



# ONE COMPLETE SYSTEM AT A PRICE YOU CAN'T IGNORE.

EVO™ ONE is an all-in-one fuel management system (including console, sensors, probes, and hardware) that lets you upgrade or equip a site with up to 3 tanks, 3 lines, and 8 dispensers for about the same price as a standalone ATG console replacement.

One kit, one system, one solution

Full featured | User-friendly | Affordable | Easy upgrade | Simplified compliance | Remote access







LIQUID SENSORS



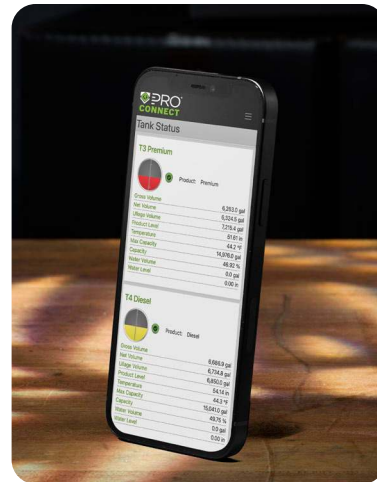
INVENTORY PROBES & FLOATS



EVO™ ONE CONSOLE



LINE LEAK DETECTION



REMOTE ACCESS

# THE EVO™ ONE SYSTEM

EVO™ ONE is an economical, turnkey fuel monitoring solution designed for complete system management. The system includes a console, sensors, probes, and all necessary installation hardware. Designed for easy installation and long-term reliability, EVO™ ONE delivers a fully integrated system at a cost-effective price, with the security that you've come to expect from the EVO™ Series.

## Feature & Benefits

- Full monitoring system at the cost of just a console
- Highly accurate, real-time fuel inventory monitoring
- Automated compliance monitoring, testing, and reporting
- Continuous electronic line leak detection *(Optional)*
- Advanced pump monitoring and control
- Pre-configure software tool for fast, hassle-free setup
- Anywhere, anytime access via PRO® Connect
- Includes hardware for turnkey installation
- Custom security levels, user tracking, & multifactor log-in
- Latest TLS/SSL protocols for secure data encryption

## Capabilities

- Inventory monitoring
- Inventory reconciliation
- Tank autocalibration
- Static tank testing
- Statistical Continuous Automatic Leak Detection (SCALD®)
- Turbine Pump Interface™ (TPI)
- Containment compliance monitoring
- Electronic Line Leak Detection (ELLD)\*
- AUTO-LEARN® ELLD line learning\*
- Statistical Line Leak Detection (SLLD)\*
- Programmable logic conditions (custom applications)

*\*Optional capability*

## System Includes

-  EVO™ ONE Console & Remote Access
-  Line Leak Detection Pressure Transducers *(Optional)*
-  Universal Liquid Sensors
-  Probes
-  Probe Float Kits
-  Probe Install Kits







# EVO™ ONE: A SYSTEM SOLUTION

**1. EVO™ ONE CONSOLE**

**2. PROBES & FLOAT KITS**

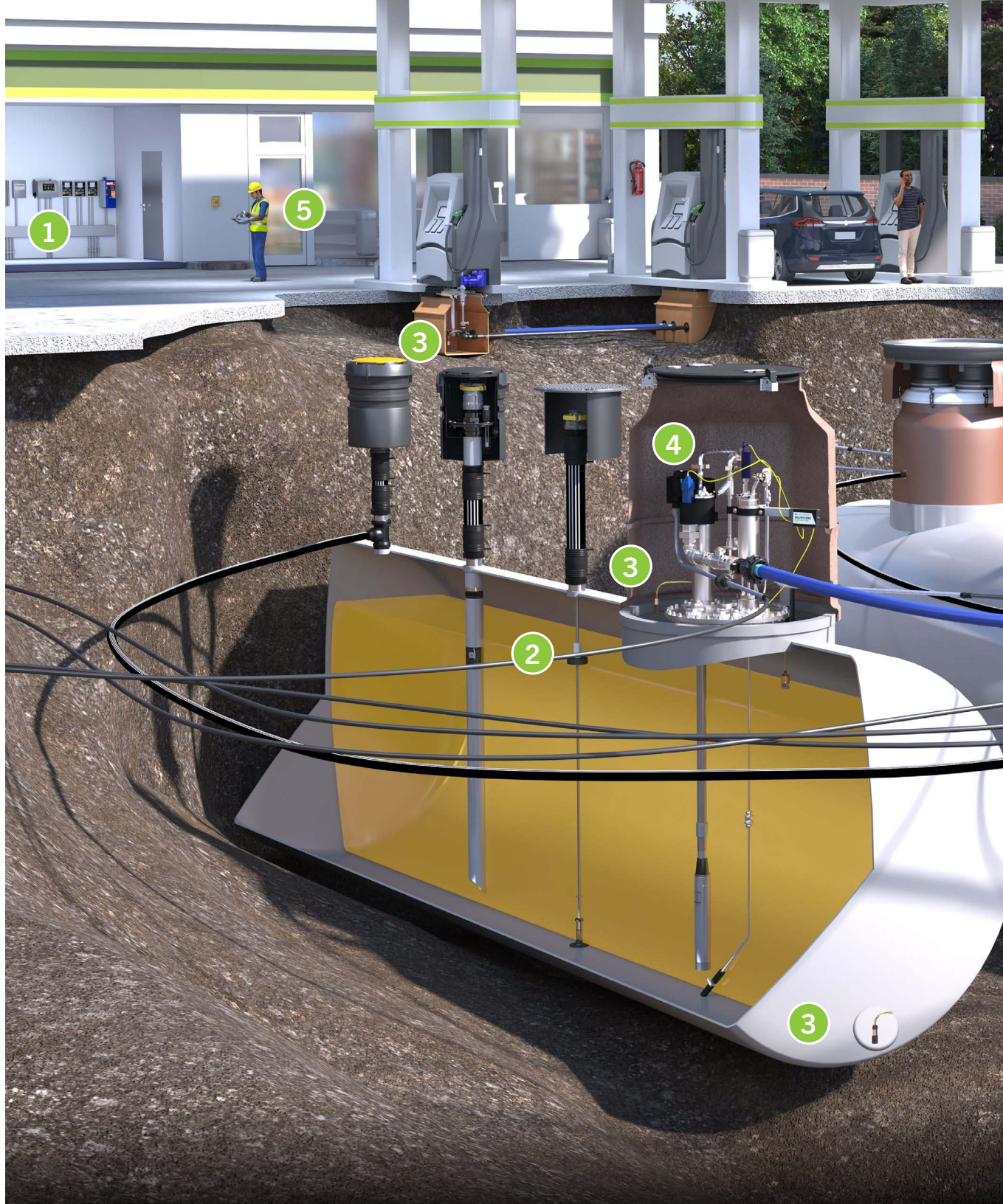
**3. LIQUID SENSORS**

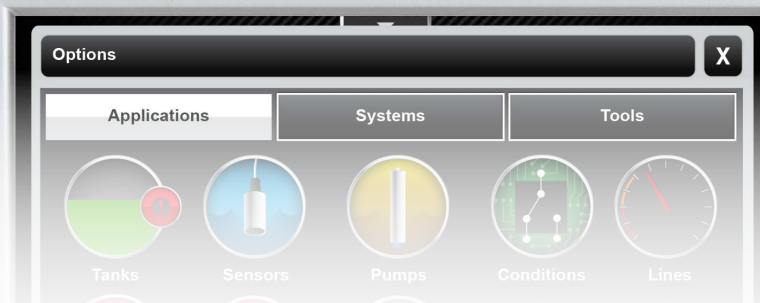
**4. LEAK DETECTION**

**5. REMOTE ACCESS**



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# A HIGHLY CAPABLE CONSOLE

EVO™ ONE features capabilities that empower every user type to make informed, data-driven inventory management decisions while keeping sites in compliance and operating at peak performance.



## COMPLIANCE MONITORING

Full-featured compliance monitoring with monthly and annual tank testing, containment testing, and line testing — even for busy sites with minimal downtime.



## CONTAINMENT MONITORING

EVO™ provides containment monitoring to detect water or fuel leaks in sumps and interstitial spaces, ensuring early detection and compliance with environmental regulations.



## ALARMS & EVENTS

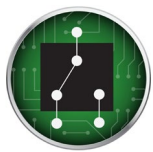
Operators can easily manage system events with instant email or SMS alerts, a detailed event log, and remote access to quickly acknowledge or resolve issues.



## LEAK DETECTION

Electronic Line Leak Detection (ELLD) continuously monitors pipework to detect leaks and provide hourly, monthly, and annual precision line leak detection compliance testing requirements.

*(Optional)*



## CUSTOM APPS

Logic Conditions lets users create custom applications to do things like automate compliance testing and reporting and more.



## ONE TOUCH BUTTONS

Automate and carry out anything from complex, multi-function processes to simple daily delivery report generation — all with the touch of a single button.



## TANK MONITORING

Make informed, data-driven inventory management decisions with highly accurate tank level monitoring, tank autocalibration, and inventory reconciliation.



## TURBINE PUMP INTERFACE™

Enhanced remote pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, tank priority, and more.



# EVO™ ONE MAKES IT EASY

EVO™ helps operators maintain compliance, protect their sites from leaks, and stay connected to vital inventory data anytime, anywhere.



## COMPLIANCE MONITORING

Monitor and automate compliance-related activities, simplify regulatory reporting requirements, and ensure optimal fuel system performance.

## INVENTORY MANAGEMENT

Track and manage fuel inventory levels, optimize fuel supply, and prevent runouts with inventory automation and customizable delivery notifications.

## LEAK DETECTION

Proactively identify and address any potential issues, ensuring the safety and integrity of fuel storage, pipework, and the distribution processes.



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# USER-FRIENDLY INTERFACE

The EVO™ ONE full-color, 7" LCD touchscreen features intuitive controls and clear visual cues, allowing users to easily access all functionalities without extensive training. EVO™ ONE simplifies complex tasks for an easy user experience.



## ONE TOUCH BUTTONS

The home screen can be customized with up to six One Touch Buttons. These buttons simplify routine tasks for on-site staff and help automate fuel system corrective actions in the event of an alarm.

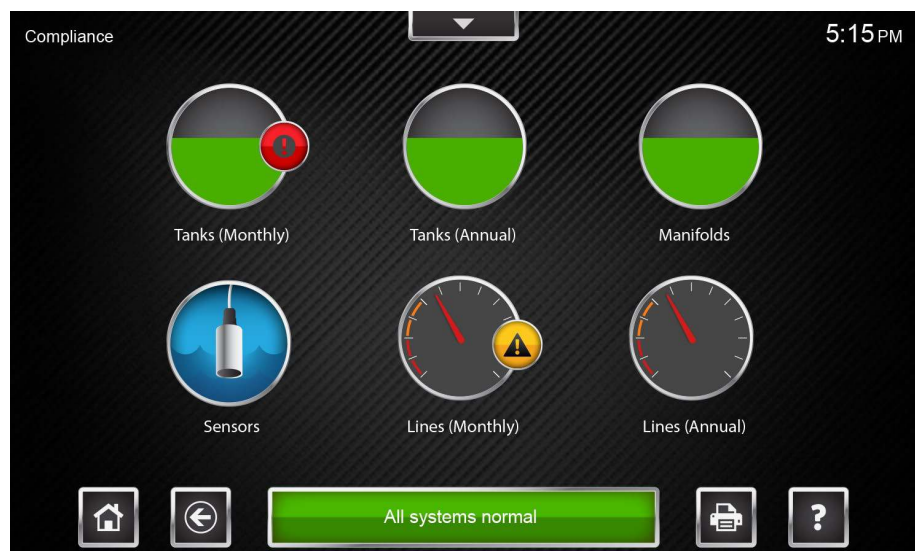


## QUICK JUMP MENU

Navigate quickly through applications with ease. This time-saving menu makes the interface's structure extremely shallow, simple to navigate, and reduces the amount of steps it takes to accomplish tasks.

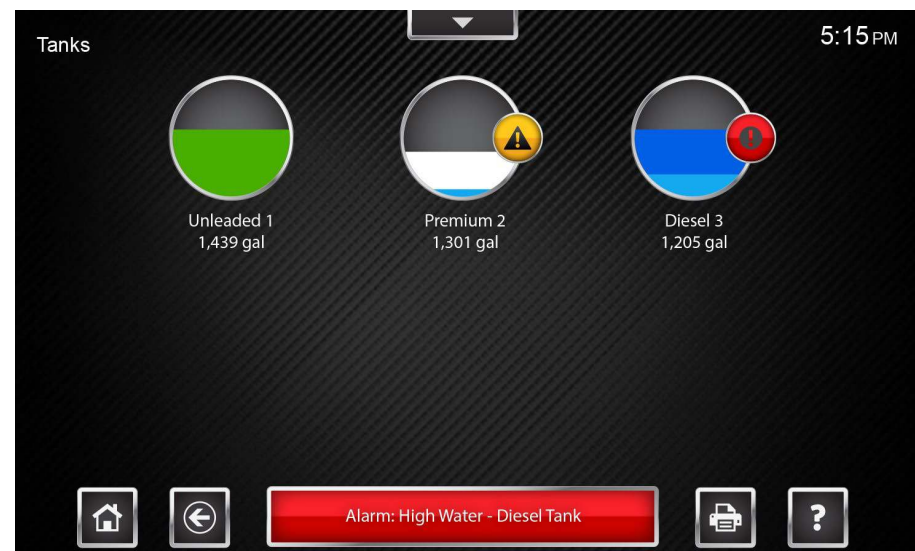


# ***INTELLIGENT DESIGN***



## ***ICON-BASED DESIGN***

Designed with a smartphone-like interface, EVO™ ONE features colorful apps, status indicators, and intuitive navigation, making it easy for new users to operate with minimal training.



## ***CUSTOM COLORS***

Customizable fuel grade colors make it easy for users to identify fuel grade types, check tank water levels, and identify any potential issues at a glance.



# STAY CONNECTED

The PRO® Connect Web Browser Interface allows operators to securely and remotely connect to EVO™ ONE from any web enabled device. Automatic scaling provides access to site information whether using a PC, tablet, or smart phone.

## REMOTE MONITORING

Get remote access to vital site data including tank status, sensor status, pump status, delivery information, active events, alarm history, event history, and more.

## INVENTORY FORECASTING

Remotely monitor tank levels, view delivery information, and check the predicted days of remaining inventory to precisely schedule deliveries and avoid costly run-outs.

## SIMPLIFIED REPORTING

A wide variety of reports including inventory, alarm history, delivery history, sensor status, and regulatory compliance can be custom-scheduled, displayed, printed, or emailed at specific times.

Displays data in a user-defined schedule, or in real-time

Centralized control of all compliance information

Monitor inventory to precisely forecast delivery needs

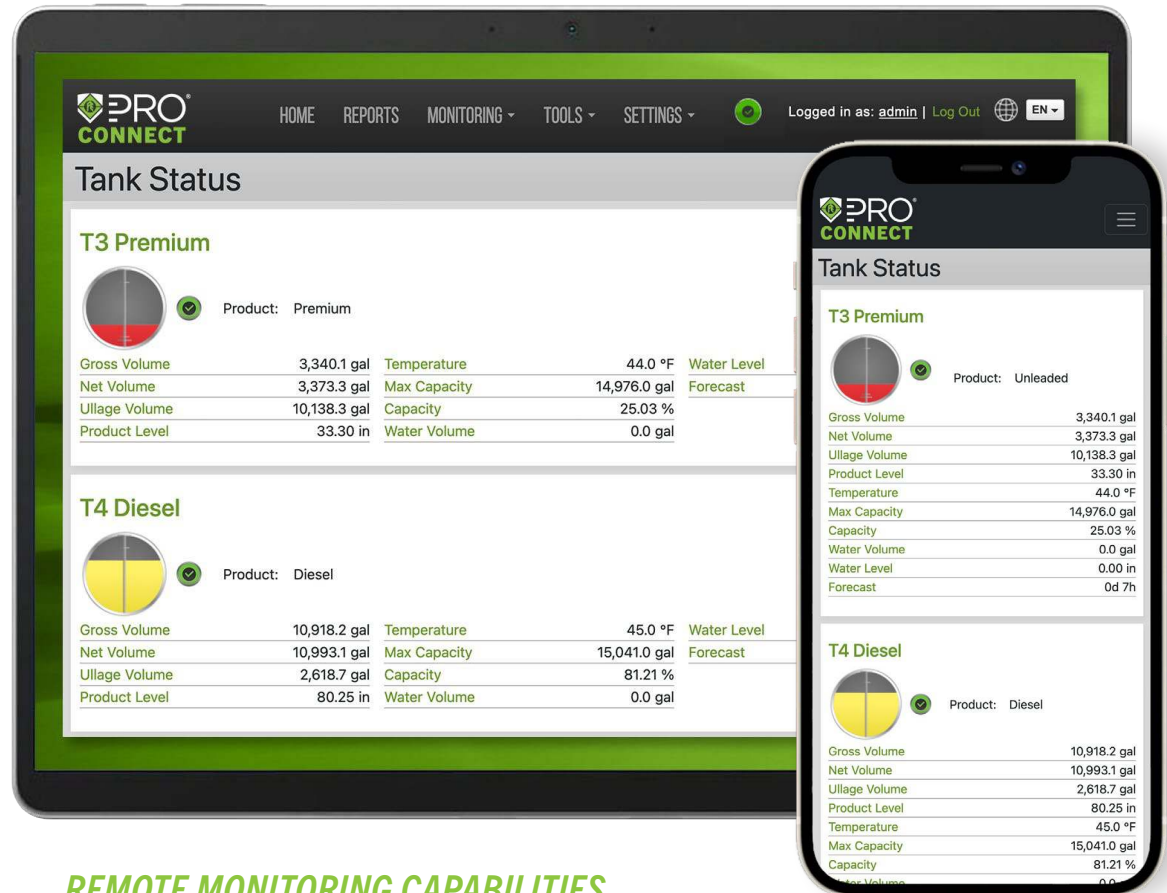
Create and schedule customized reports

Generate, view, print, or email reports

Analyze and respond to system events and alarms

Configure custom applications and system automation

Control and troubleshoot pumps remotely



## REMOTE MONITORING CAPABILITIES

- Tank Status
- Sensor Status
- Line Status
- Pump Status
- Compliance Status
- Meter Status
- Shift Status
- Events
- Discrete Input Status





# FASTER SETUP

The Pre-Configure tool uses a few simple questions to auto-fill configurations settings, cutting setup time and reducing complexity.

**PRO CONNECT** Reports Monitoring Tools Settings User Help

**Pre-Configure**

How many tanks?

What are the products of the tanks?

Tank 1

Tank 2

Tank 3

Is the interstitial to be monitored?

Tank 1

Tank 2

Tank 3

Is there line leak detection?

How many dispensers?

Unleaded Product:  Super Product:  Diesel Product:

| Channel #  | Device Type         | Device Location                                              | Device Name              |
|------------|---------------------|--------------------------------------------------------------|--------------------------|
| Channel 1  | FMP-LL3             | Tank 1 Unleaded:                                             | T1 Unleaded              |
| Channel 2  | FMP-LL3             | Tank 2 Super:                                                | T2 Super                 |
| Channel 3  | FMP-LL3             | Tank 3 Diesel:                                               | T3 Diesel                |
| Channel 4  | FMP-LSU500-U        | Line 1 Unleaded:                                             | L1 Unleaded              |
| Channel 5  | FMP-LSU500-U        | Line 2 Super:                                                | L2 Super                 |
| Channel 6  | FMP-LSU500-U        | Line 3 Diesel:                                               | L3 Diesel                |
| Channel 7  | Dual ULS/UHS Sensor | Dispenser 1/2 Sump & Dispenser 3/4 Sump:                     | D1/2 & D3/4 Sumps        |
| Channel 8  | Dual ULS/UHS Sensor | Dispenser 5/6 Sump & Dispenser 7/8 Sump:                     | D5/6 & D7/8 Sumps        |
| Channel 9  | Dual ULS/UHS Sensor | Dispenser 9/10 Sump & Dispenser 11/12 Sump:                  | D9/10 & D11/12 Sumps     |
| Channel 10 | Dual ULS/UHS Sensor | Dispenser 13/14 Sump & Dispenser 15/16 Sump:                 | D13/14 & D15/16 Sumps    |
| Channel 11 | Dual ULS/UHS Sensor | Tank 1 Unleaded Turbine Sump & Tank 1 Unleaded Interstitial: | T1 UNL Sump/Interstitial |
| Channel 12 | Dual ULS/UHS Sensor | Tank 2 Super Turbine Sump & Tank 2 Super Interstitial:       | T2 PUL Sump/Interstitial |
| Channel 13 | ULS/UHS Sensor      | Tank 3 Diesel Turbine Sump:                                  | T3 DSL Sump              |
| Channel 14 | ULS/UHS Sensor      | Tank 3 Diesel Interstitial Sump:                             | T3 DSL Interstitial      |



# ACCESSORIES INCLUDED WITH EVO™ ONE

## PROBES

Digital inventory and leak detection probes provide accurate tank level monitoring and reporting with optional leak detection capabilities. These probes employ digital communications and magnetostrictive position measurement technology for highly accurate tank readings.



## PROBE FLOATS

Float kits come complete with a product and water float. The 4" float kit is paired with each probe to measure fuel and water level information inside the tank.



## PROBE INSTALLATION KITS

Probe install kits provide a tight seal to the tank to prevent water intrusion and meet regulatory requirements. A quick release cap enable easy access to the probe for inspection or maintenance.



## LIQUID SENSORS

Based on float-switch technology and made of chemically-resistant materials, the liquid sensor can be installed in containments, basins, double wall tanks or other locations where the presence of liquid indicates a leak has occurred.



## LINE LEAK DETECTION SENSOR

EVO™ ONE utilizes line leak detection pressure transducers mounted in the submersible pump manifold to monitor fuel lines for pressure drops, enabling rapid detection of leaks and ensuring compliance with leak detection requirements.

(Optional)





# WHY UPGRADE THE WHOLE SYSTEM?

Unlike competitive solutions that only replace the console, EVO™ ONE lets station owners replace everything – console, sensors, probes – at the same cost of a new console. This means a complete, modern fuel monitoring system without the hidden costs associated with outdated components.

## 1 UPGRADE TO THE LATEST TECHNOLOGY

Get the most advanced fuel monitoring system available, with features like electronic line leak detection (optional), 24-hour tank testing, remote access, and more.

## 2 GUARANTEED COMPATIBILITY

Mixing new consoles with legacy probes and sensors can create integration headaches. EVO™ ONE ensures all components work seamlessly from day one.

## 3 FUTURE-PROOF YOUR INVESTMENT

With the ability to create logic-based custom applications, EVO™ ONE ensures your fuel system stays adaptable and ahead of the curve to meet future needs.

## 4 ELIMINATE HIDDEN WIRING ISSUES

Aging probe and sensor wiring can fail during or after installation, leading to costly delays and follow-up maintenance. Replacing everything upfront ensures a smooth install and lasting reliability.



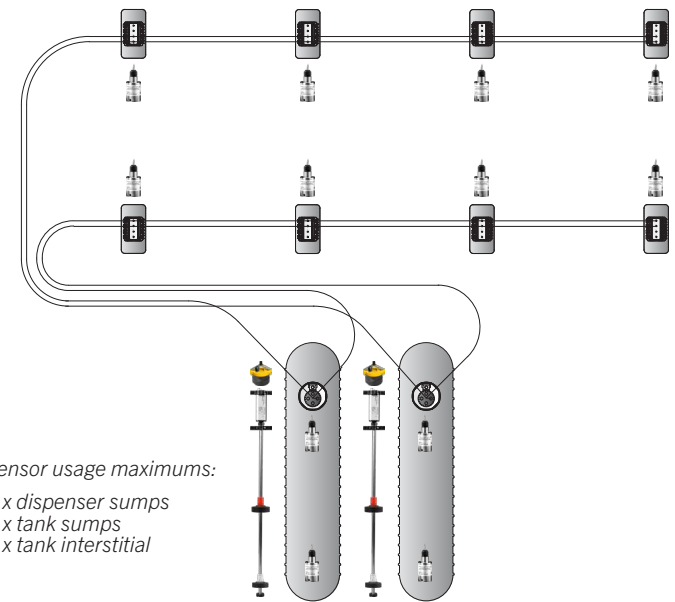
## UP TO 2 TANKS, 8 DISPENSERS

EVO™ ONE KIT: EVO1-X0-S12-C2-G2D0

|  |                      |                          |                    |            |         |
|------------------------------------------------------------------------------------|----------------------|--------------------------|--------------------|------------|---------|
| Kit Component                                                                      | Pressure Transducers | Universal Liquid Sensors | Probe Install Kits | Float Kits | Probes* |
| Quantity                                                                           | -                    | 12                       | 2                  | 2 Gas      | 2       |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                |
|-------------------|---|-----------------|---|----------------|
| EVO™ ONE Kit List | + | Probes (2) List | = | Total List     |
| \$4,230           |   | \$4,406         |   | <b>\$8,636</b> |



Sensor usage maximums:  
8 x dispenser sumps  
2 x tank sumps  
2 x tank interstitial

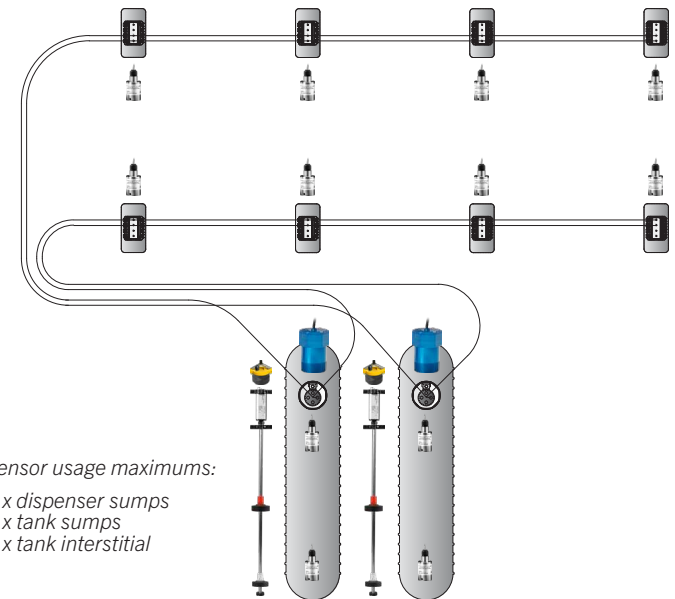
## UP TO 2 TANKS, 8 DISPENSERS WITH ELECTRONIC LEAK DETECTION

EVO™ ONE KIT: EVO1-X2-S12-C2-G2D0

|  |                      |                          |                    |            |         |
|--------------------------------------------------------------------------------------|----------------------|--------------------------|--------------------|------------|---------|
| Kit Component                                                                        | Pressure Transducers | Universal Liquid Sensors | Probe Install Kits | Float Kits | Probes* |
| Quantity                                                                             | 2                    | 12                       | 2                  | 2 Gas      | 2       |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                |
|-------------------|---|-----------------|---|----------------|
| EVO™ ONE Kit List | + | Probes (2) List | = | Total List     |
| \$4,950           |   | \$4,406         |   | <b>\$9,356</b> |



Sensor usage maximums:  
8 x dispenser sumps  
2 x tank sumps  
2 x tank interstitial

Note: list prices as of May 1, 2025 / inventory only probe used for example.



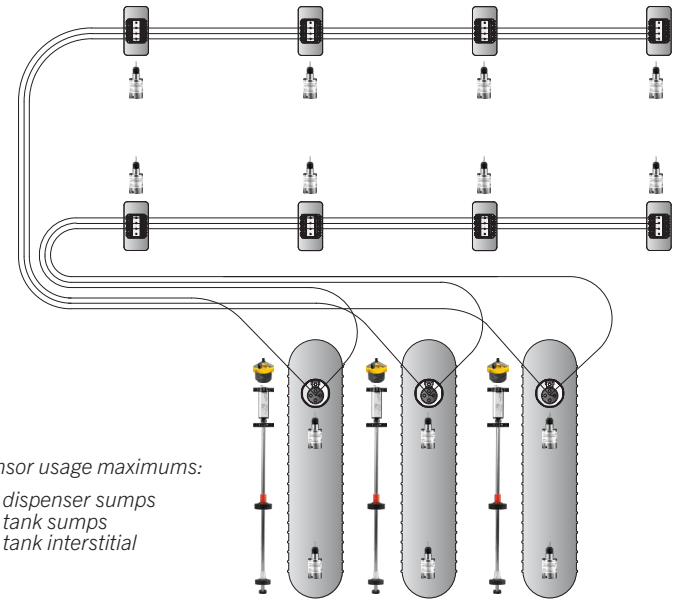
## UP TO 3 TANKS, 8 DISPENSERS

EVO™ ONE KIT: EV01-X0-S14-C3-G2D1

|  |  |  |  |  |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Kit Component                                                                     | Pressure Transducers                                                              | Universal Liquid Sensors                                                          | Probe Install Kits                                                                | Float Kits                                                                        | Probes*                                                                            |
| Quantity                                                                          | -                                                                                 | 14                                                                                | 3                                                                                 | 2 Gas, 1 Diesel                                                                   | 3                                                                                  |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                 |
|-------------------|---|-----------------|---|-----------------|
| EVO™ ONE Kit List | + | Probes (3) List | = | Total List      |
| \$4,630           |   | \$6,609         |   | <b>\$11,239</b> |



Sensor usage maximums:  
8 x dispenser sumps  
3 x tank sumps  
3 x tank interstitial

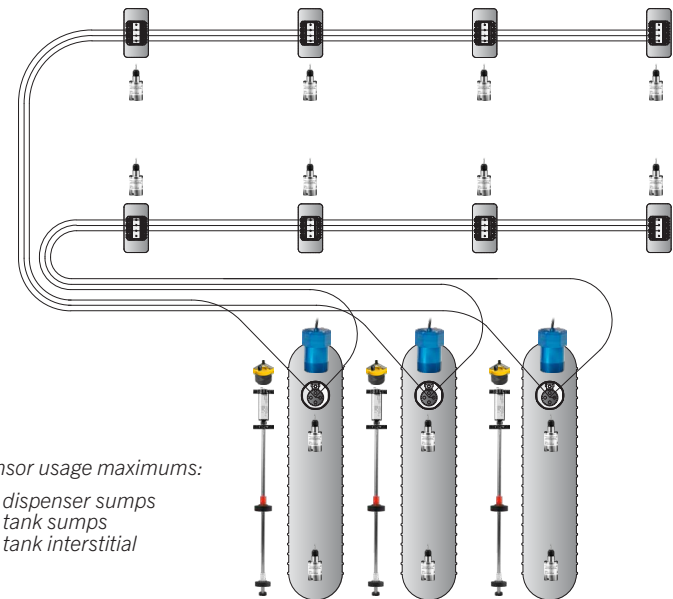
## UP TO 3 TANKS, 8 DISPENSERS WITH ELECTRONIC LEAK DETECTION

EVO™ ONE KIT: EV01-X3-S14-C3-G2D1

|  |  |  |  |  |  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Kit Component                                                                       | Pressure Transducers                                                                | Universal Liquid Sensors                                                            | Probe Install Kits                                                                  | Float Kits                                                                          | Probes*                                                                              |
| Quantity                                                                            | 3                                                                                   | 14                                                                                  | 3                                                                                   | 2 Gas, 1 Diesel                                                                     | 3                                                                                    |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                 |
|-------------------|---|-----------------|---|-----------------|
| EVO™ ONE Kit List | + | Probes (3) List | = | Total List      |
| \$5,650           |   | \$6,609         |   | <b>\$12,259</b> |



Sensor usage maximums:  
8 x dispenser sumps  
3 x tank sumps  
3 x tank interstitial

Note: list prices as of May 1, 2025 / inventory only probe used for example.

# EVO™ ONE CAPABILITIES

## Inventory Monitoring

Provides real-time tracking of fuel levels within storage tanks. This enables station owners to manage inventory effectively, reducing the risk of runouts or overfilling.

## Inventory Reconciliation

Compares dispensed fuel amounts with actual inventory levels to identify discrepancies. This helps detect potential leaks or theft, ensuring product accountability and environmental compliance.

## Tank Autocalibration

Automatically adjusts tank capacity measurements to reflect actual conditions. This enhances measurement accuracy, leading to more precise inventory management and compliance reporting.

## Static Tank Testing

Conducts scheduled, non-intrusive tests to verify tank integrity. Station owners benefit by ensuring regulatory compliance and preventing environmental contamination.

## Statistical Continuous Automatic Leak Detection (SCALD®)

SCALD® continuously analyzes data to detect tank leaks without requiring shutdowns or interrupting fueling. Ideal for 24/7 sites with minimal quiet periods, it ensures compliance without disrupting operations.

## Containment Compliance Monitoring

Monitors containment sumps and tank interstitial for leaks or breaches. This ensures early detection of containment failures, protecting the environment and aiding in regulatory compliance.

## Programmable Logic Conditions (Custom Applications)

Enables customization of system responses based on specific site conditions. This flexibility allows station owners to automate processes, enhancing operational efficiency.

## Electronic Line Leak Detection (ELLD) *(Optional)*

Utilizes electronic sensors mounted in the submersible pump manifold to detect leaks in fuel lines. Early detection prevents product loss and environmental hazards, ensuring system integrity.

## AUTO-LEARN® ELLD Line Learning *(Optional)*

Automatically learns the characteristics of fuel lines to enhance leak detection accuracy. This ensures precise, customized leak detection, reducing the risk of false alarms and enhancing overall system accuracy.

## Statistical Line Leak Detection (SLLD) *(Optional)*

Analyzes pressure and flow data over time to identify leaks. This allows sites with constant fuel flow to perform 0.2 gph leak testing, even during peak operation, which ensures continuous compliance without disrupting operations.

## Dual-Sensor Connectivity in Parallel per Input

Allows two sensors to connect to a single input channel in parallel. This expands monitoring capabilities without additional hardware, optimizing system resources.

## Remote Access via PRO® Connect

Provides off-site access to system data and controls through a secure web interface. Station owners can monitor and manage their sites remotely, improving response times and operational oversight.

## Turbine Pump Interface™ (TPI)

Creates a network between intelligent pump controllers and EVO™ ONE allowing real-time data sharing and intelligent system responses. This enables remote troubleshooting and reduced downtime features like:

- **Pump in Water Automation**  
Detect water in tanks and automatically shut off the affected pump, preventing water from being pumped into a customer's vehicle.
- **Clogged Pump Escalation**  
Detect, verify, and automate the resetting of a pump to clear clogs and bring them back online faster without a service call.
- **Tank Leveling & Priority**  
Balance the levels of multiple tanks with the same fuel type or prioritize one tank for faster, more efficient fuel deliveries.



# EVO™ ONE CONSOLE

## Inputs & Connectivity

|                                  |                                                    |
|----------------------------------|----------------------------------------------------|
| Universal Device Protocol inputs | 14                                                 |
| Maximum tanks monitored          | 14                                                 |
| Maximum sensor input capacity    | 14, 28*                                            |
| Lines capacity                   | 4                                                  |
| Maximum total device inputs      | 14, 28*                                            |
| Maximum AC input channels        | 4                                                  |
| Dry contact input channels       | 2                                                  |
| Relay output channels            | 4                                                  |
| Connectivity                     | Ethernet, RS-232, RS-485, standard USB, Mini-B USB |
| Communication protocol support   | MQTT, MODBUS™, XML, Veeder-Root®                   |

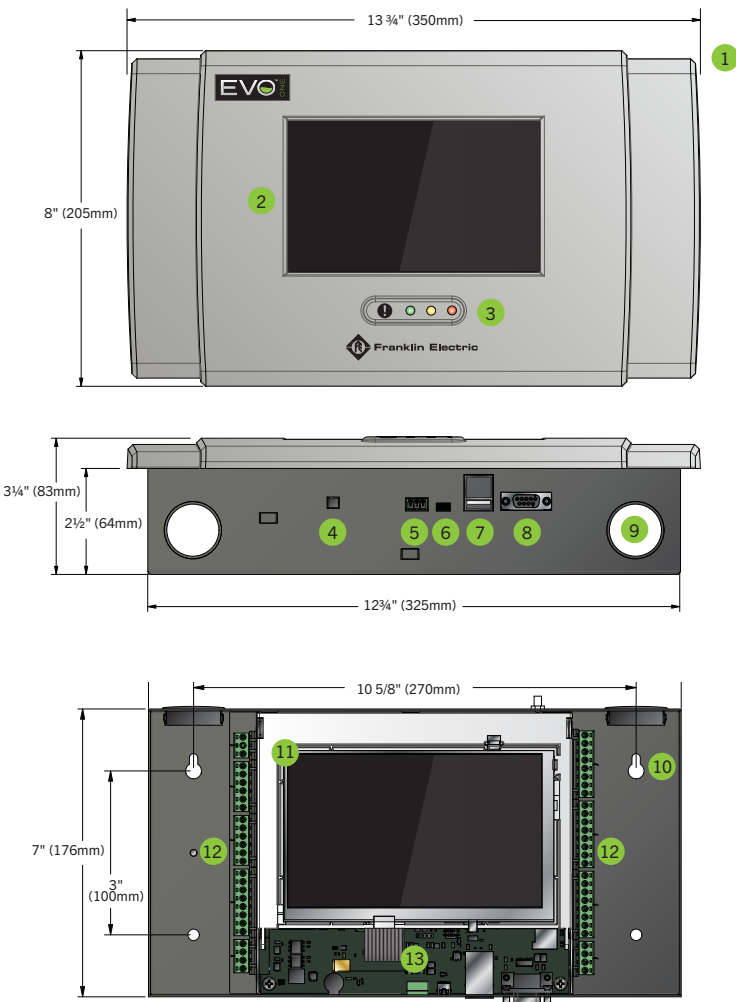
\*Requires connecting two FMP-ULS sensors per channel.

## Hardware

|                       |                                                          |
|-----------------------|----------------------------------------------------------|
| Dimensions            | H: 8" (205 mm), W: 13 ¾" (350 mm), D: 3 ¼" (83 mm)       |
| Display type          | 7" (17.78 cm) color LCD touch screen                     |
| Printer type          | External (network or USB)                                |
| Alarm                 | Internal audible alarm                                   |
| LEDs                  | Alarm, warning, and power                                |
| Applicable liquids    | Petroleum, chemicals, and waste                          |
| Power requirements    | 110 to 240 VAC, 50/60 Hz, 2.6 Amps                       |
| Operating temperature | 32° to 104° F (0° to 40° C)                              |
| Humidity              | 0-95% non-condensing                                     |
| Approvals             | UL, cUL, ATEX, IECEx, GSA IT Security                    |
| Certifications        | Third party certification of leak detection capabilities |

## Security

- Customizable user roles / user activity tracking
- Multifactor authenticated log-in
- Third party verified security
- GSA IT security approval
- Latest SSL/TLS protocols



- |                                |                                  |
|--------------------------------|----------------------------------|
| 1. Cover                       | 8. RS-232                        |
| 2. LCD Touch Screen            | 9. Top and Bottom Knockouts      |
| 3. LED Indicators              | 10. Mounting Holes               |
| 4. Annunciator (audible alarm) | 11. Flip Up Panel (Touch Screen) |
| 5. RS-485 / TPI                | 12. Termination Blocks           |
| 6. Mini-B USB Port             | 13. Main Board                   |
| 7. Ethernet / USB Port         |                                  |



# TOTAL SYSTEM SOLUTIONS™



**Franklin Electric**  
FUELING SYSTEMS

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FFS-1023 08-25

ATTACHMENT I  
Initial and Continuing Training

## **Initial and Continuing Training**

The release detection system at the facility will be Franklin Evo 1. The system will have sump sensors installed in the submersible sump containment area to monitor sub pump, sump sensors installed in the dispenser sumps and tank interstitial sensors. The system will be equipped with mechanical line leak detection for the product delivery lines. The system will be installed by a Franklin certified technician. The system will be installed in accordance with Franklin specifications and instructions. The system is UL listed and is third party certified for release detection under USEPA guidelines. The system has self- diagnostic programs to test and warn of failures of the external devices as well as internal electronics. The system has been tested by a Third Party and found to be compliant with USEPA requirements for release detection.

Annual maintenance of the system will be conducted to certify the function of all modules in the system.

On-site employees will monitor the system condition locally and remotely on a daily basis, with particular emphasis on any sensor alarms or release detection alarms as indicated on the panel of the system. In the case of any sensor or inventory alarm, employees will notify the Owner or General Manager who will make the determination of a proper course of action. Site employees are not authorized to reset or disable any alarm conditions on the system.

New facility employees will be trained in the proper operation and functional modes of the system. Ongoing reviews of the system operation will be presented to all employees to ensure operation and function status is understood.

Ongoing maintenance will be conducted by JF Petroleum personnel.



# Operating And Maintaining Underground Storage Tank Systems

## Practical Help And Checklists



## Contents

|                                                                         |           |
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| <b>Section 1 — Identifying The Equipment At Your UST Facility .....</b> | <b>3</b>  |
| <b>Section 2 — Release Detection .....</b>                              | <b>5</b>  |
| <b>Section 3 — Suspected Or Confirmed Releases .....</b>                | <b>21</b> |
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### DISCLAIMER

This document provides information on operating and maintaining underground storage tank (UST) systems. The document is not a substitute for U.S. Environmental Protection Agency regulations nor is it a regulation itself — it does not impose legally binding requirements.

For regulatory requirements regarding UST systems, refer to the federal regulations governing UST systems (40 CFR Part 280).



# How To Use This Booklet

## Who Should Read This Booklet?

This booklet is for owners and operators of underground storage tank systems (USTs).

You are responsible for making sure your USTs do not leak. This booklet can help you meet your UST responsibilities.

## What Can This Booklet Help You Do?

- Identify and understand the operation and maintenance (O&M) procedures you need to follow routinely to make sure your USTs don't have leaks that damage the environment or endanger human health.
- Identify good O&M procedures you can use to avoid cleanup costs and liability concerns.
- Maintain useful records of your O&M.

### Key Terms Used In This Booklet

An **UST** is an **underground storage tank and underground piping connected to the tank** that has at least 10 percent of its combined volume underground. The federal regulations apply only to USTs storing petroleum or certain hazardous substances.

**O&M** stands for **operation and maintenance procedures** that must be followed to keep USTs from causing leaks and creating costly cleanups.

## Your UST System Is New Or Upgraded — Is That Enough?

Being new or upgraded is not enough. New and upgraded USTs are made of a complex collection of mechanical and electronic devices that can fail under certain conditions. These failures can be prevented or quickly detected by following routine O&M procedures. Having a new or upgraded UST system is a good start, but the system must be properly operated and continuously maintained to ensure that leaks are avoided or quickly detected.

## What Should You Do With Each Section Of This Booklet?

Read through each section carefully and use the checklists to help you establish clear O&M procedures.

By identifying and understanding the O&M tasks you need to perform routinely, you will ensure timely repair or replacement of components when problems are identified.



## **How Can You Use The Following Checklists Effectively?**

This booklet's pages are 3-hole punched and unbound so you can put all the materials in a handy 3-ring binder. You can easily remove any of the following checklists from the binder, reproduce them, and then fill them out.

You can select the specific mix of checklists that matches your UST facility. Once you have your select group of checklists together, make several copies that you can fill out periodically over time.

In this way you can keep track of your O&M activities and know that you've done what was necessary to keep your UST site safe and clean, avoiding any threats to the environment or nearby people as a result of costly and dangerous UST releases.

## **Use This Booklet Often — Effective O&M Requires Constant Vigilance.**

**Note:** This booklet describes quality O&M practices put together by a work group of state and federal environmental regulators. This booklet is not a federal regulation nor legally binding, but it does provide useful information on effective O&M procedures. You should check with your state UST program for information on any additional or different O&M practices that may be required in your state. See Section 7 for contact information.

# Section 1 — Identifying The Equipment At Your UST Facility

Determine what UST equipment you have at your facility by completing the checklist below. Note that each part of the checklist below refers you to the appropriate section of this O&M booklet for relevant information. After you have identified your equipment, proceed to the following sections to identify the O&M actions necessary for your specific UST system.

| <b>General Facility Information (optional)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |         |         |         |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------|---------|---------|---------|
| Facility Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |         |         |         |         |
| Facility ID #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |         |         |         |         |
| <b>Release Detection (See Section 2 for information on release detection)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |         |         |         |         |
| <b>A. Release Detection for Tanks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |         |         |         |         |
| Check at least one for each tank:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Tank #1 | Tank #2 | Tank #3 | Tank #4 |
| Automatic Tank Gauging System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |         |         |         |         |
| Interstitial Monitoring (with secondary containment)                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |         |         |         |         |
| Groundwater Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |         |         |         |         |
| Vapor Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |         |         |         |         |
| Inventory Control and Tank Tightness Testing (TTT)*                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |         |         |         |         |
| Manual Tank Gauging Only **                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            |         |         |         |         |
| Manual Tank Gauging and Tank Tightness Testing (TTT)***                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |         |         |         |         |
| Other Release Detection Method, such as SIR (please specify)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |         |         |         |         |
| <p>* Allowed only for 10 years after upgrading or installing tank with corrosion protection. TTT required every 5 years.</p> <p>** Allowed only for tanks of 1,000 gallon capacity or less.</p> <p>*** Allowed only for tanks of 2,000 gallon capacity or less and only for 10 years after upgrading or installing tank with corrosion protection. TTT required every 5 years.</p>                                                                                                                                 |                            |         |         |         |         |
| <b>B. Release Detection for Pressurized Piping</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |         |         |         |         |
| Check at least one from A & B for each tank's piping:                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Tank #1 | Tank #2 | Tank #3 | Tank #4 |
| <b>A</b><br>(Automatic Line Leak Detectors)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Automatic Flow Restrictor  |         |         |         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Automatic Shutoff Device   |         |         |         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Continuous Alarm           |         |         |         |         |
| <b>B</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Annual Line Tightness Test |         |         |         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Monthly Monitoring*        |         |         |         |         |
| <p>* Monthly Monitoring for piping includes Interstitial Monitoring, Vapor Monitoring, Groundwater Monitoring, and other accepted methods (such as SIR and Electronic Line Leak Detectors)</p>                                                                                                                                                                                                                                                                                                                     |                            |         |         |         |         |
| <b>C. Release Detection for Suction Piping</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |         |         |         |         |
| Check at least one for each tank's piping:                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Tank #1 | Tank #2 | Tank #3 | Tank #4 |
| Line Tightness Testing Every Three Years                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |         |         |         |         |
| Monthly Monitoring*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |         |         |         |         |
| No Release Detection Required For Safe Suction **                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |         |         |         |         |
| <p>* Monthly Monitoring for piping includes Interstitial Monitoring, Vapor Monitoring, Groundwater Monitoring, and SIR</p> <p>** No release detection required only if it can be verified that you have a safe suction piping system with the following characteristics:</p> <ol style="list-style-type: none"> <li>1) Only one check valve per line located directly below the dispenser;</li> <li>2) Piping sloping back to the tank; and</li> <li>3) System must operate under atmospheric pressure.</li> </ol> |                            |         |         |         |         |

| <b>Spill and Overfill Protection (See Section 4 for more information)</b>          |                |                |                |                |
|------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|
| <b>Check for each tank:</b>                                                        | <b>Tank #1</b> | <b>Tank #2</b> | <b>Tank #3</b> | <b>Tank #4</b> |
| Spill Catchment Basin/ Spill Bucket                                                |                |                |                |                |
| <b>Check at least one overfill device for each tank:</b>                           |                |                |                |                |
| Automatic Shutoff Device                                                           |                |                |                |                |
| Overfill Alarm                                                                     |                |                |                |                |
| Ball Float Valve                                                                   |                |                |                |                |
| <b>Corrosion Protection (See Section 5 for more information)</b>                   |                |                |                |                |
| <b>A. Corrosion Protection for Tanks</b>                                           |                |                |                |                |
| <b>Check at least one for each tank:</b>                                           | <b>Tank #1</b> | <b>Tank #2</b> | <b>Tank #3</b> | <b>Tank #4</b> |
| Coated and Cathodically Protected Steel                                            |                |                |                |                |
| Noncorrodible Material (such as Fiberglass Reinforced Plastic)                     |                |                |                |                |
| Steel Jacketed or Clad with Noncorrodible Material                                 |                |                |                |                |
| Cathodically Protected Noncoated Steel*                                            |                |                |                |                |
| Internally Lined Tank*                                                             |                |                |                |                |
| Cathodically Protected Noncoated Steel and Internally Lined Tank*                  |                |                |                |                |
| Other Method Used to Achieve Corrosion Protection (please specify):                |                |                |                |                |
| * These options may be used only for tanks installed before December 22, 1988.     |                |                |                |                |
| <b>B. Corrosion Protection for Piping</b>                                          |                |                |                |                |
| <b>Check at least one for each:</b>                                                | <b>Tank #1</b> | <b>Tank #2</b> | <b>Tank #3</b> | <b>Tank #4</b> |
| Coated and Cathodically Protected Steel                                            |                |                |                |                |
| Noncorrodible Material (such as Fiberglass Reinforced Plastic or Flexible Plastic) |                |                |                |                |
| Cathodically Protected Noncoated Metal*                                            |                |                |                |                |
| Other Method Used to Achieve Corrosion Protection (please specify):                |                |                |                |                |
| * This option may be used only for piping installed before December 22, 1988.      |                |                |                |                |

## Any Problems Filling Out This Checklist?

If you have trouble filling out this checklist or any following checklist, remember these sources of assistance you can contact:

- Your UST contractor, the vendor of your equipment, and the manufacturer of your UST equipment should be ready to help you. Look through your records for contact information. You may also want to use some of the industry contacts and other contact information provided in Section 7.
- Your state regulatory agency may be able to help you identify equipment or sources of information about your UST equipment. You should, in any event, make yourself aware of any ways in which your state may have additional or different O&M procedures than those presented in this booklet. See Section 7 for state agency contact information.

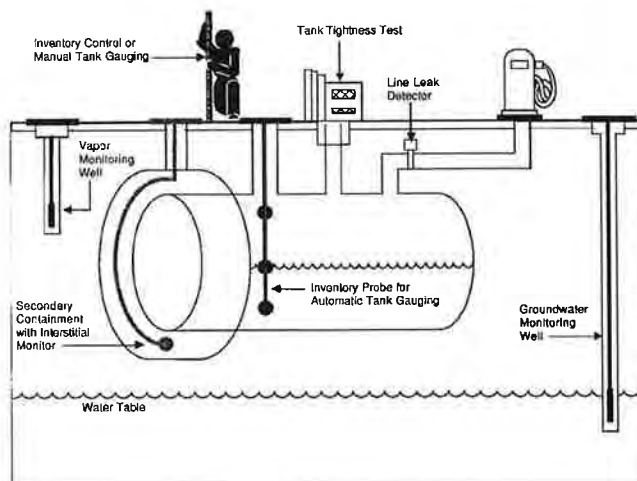
## Section 2 — Release Detection

### What Is Release Detection?

You must be able to determine at least every 30 days whether or not your tank and piping are leaking by using proper release detection methods.

Your release detection method must be able to detect a release from any portion of the tank and connected underground piping that routinely contains product.

Release detection must be installed, calibrated, operated, and maintained according to the manufacturer's instructions.



### Do You Know If Your Release Detection Is Certified To Work At Your UST Site?

Release detection must meet specific performance requirements. You should have documentation from the manufacturer, vendor, or installer of your release detection equipment showing certification that it can meet performance requirements.

Some vendors or manufacturers supply their own certification, but more often an impartial "third party" is paid to test the release detection equipment and certify that performance requirements are met. An independent workgroup of release detection experts periodically evaluates all third-party certifications, thus providing a free and reliable list of evaluations of third-party certifications for various release detection equipment. Frequently updated, this list is available on the Internet at <http://www.nwqlde.org/> (the publication's title is **List Of Leak Detection Evaluations For Underground Storage Tank Systems**). If you can't find the certification anywhere, contact your state regulatory agency (see Section 7 for contact information).

By checking the certification, you may discover the method you use has not been approved for use with the type of tank or piping you have or the type of product being stored. For example, you may learn from the certification that your method won't work with manifolded tanks, certain products, high throughput, or with certain tank sizes.

That's why you need to make sure your release detection method has clear certification that it will work effectively at your site with its specific characteristics.



## How Can You Make Sure Your Leak Detection Method Is Working At Your UST Site?

If you don't understand your O&M responsibilities and don't know what O&M tasks you must routinely perform, you may allow your UST site to become contaminated — then you will face cleanup costs and associated problems.

To avoid these problems use the checklists on the following pages that describe each type of leak detection method, discuss actions necessary for proper O&M, and note the records you should keep.

Locate the methods of release detection you are using at your facility, review these pages, and periodically complete the checklist. You might want to copy a page first and periodically fill out copies later.

If you have questions about your release detection system, review your owner's manual or call the vendor of your system. Your state or local regulatory agency may be able to provide assistance as well.

You will find leak detection recordkeeping forms in the following pages of this Section. Keeping these records increases the likelihood that you are conducting good O&M and providing effective release detection at your UST site. For example, see page 20 for a 30-Day Release Detection Monitoring Record.

If you ever suspect or confirm a leak, refer to Section 3. **Never ignore leak detection alarms or failed leak detection tests. Treat them as potential leaks!**

| <b>Automatic Tank Gauging (ATG) Systems (for tanks only)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                      | An automatic tank gauging (ATG) system consists of a probe permanently installed in a tank and wired to a monitor to provide information on product level and temperature. ATG systems automatically calculate the changes in product volume that can indicate a leaking tank.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Have Certification For Your Release Detection Method</b>  | <ul style="list-style-type: none"> <li>❑ <b>Make sure your ATG system is certified for the types of tanks and stored contents on which the ATG system is used.</b> Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Perform These O&amp;M Actions</b>                         | <ul style="list-style-type: none"> <li>❑ <b>Use your ATG system to test for leaks at least every 30 days.</b> Most systems are already programmed by the installer to run a leak test periodically. If your system is not programmed to automatically conduct the leak test, refer to your ATG system manual to identify which buttons to push to conduct the leak test. Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems.</li> <li>❑ <b>Make sure that the amount of product in your tank is sufficient to run the ATG leak test.</b> The tank must contain a minimum amount of product to perform a valid leak detection test. One source for determining that minimum amount is the certification for your leak detection equipment (as discussed above).</li> <li>❑ <b>Frequently test your ATG system according to the manufacturer's instructions to make sure it is working properly.</b> Don't assume that your release detection system is working and never needs checking. Read your owner's manual, run the appropriate tests, and see if your ATG system is set up and working properly. Most ATG systems have a test or self-diagnosis mode that can easily and routinely run these checks.</li> <li>❑ <b>If your ATG ever fails a test or indicates a release, see Section 3 of this booklet for information on what to do next.</b></li> <li>❑ <b>Periodically have a qualified UST contractor, such as the vendor who installed your ATG, service all the ATG system components according to the manufacturer's service instructions.</b> Tank probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually.</li> <li>❑ <b>Check your ATG system owner's manual often to answer questions and to make sure you know the ATG's operation and maintenance procedures.</b> Call the ATG manufacturer or vendor for a copy of the owner's manual if you don't have one.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                            | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your ATG system tests for at least 1 year.</b> Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.</b></li> <li>❑ <b>Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.</b> These records include the certification of your leak detection equipment described above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| <b>Secondary Containment With Interstitial Monitoring</b><br>(for tanks & piping) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                                           | <p>Secondary containment is a barrier between the portion of an UST system that contains product and the outside environment. Examples of secondary containment include an outer tank or piping wall, an excavation liner, and a bladder inside an UST. The area between the inner and outer barriers — called the interstitial space — is monitored manually or automatically for evidence of a leak.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Have Certification For Your Release Detection Method</b>                       | <ul style="list-style-type: none"> <li>❑ <b>Make sure your interstitial monitoring equipment and any probes are certified for the types of tanks, piping, and stored contents on which the release detection system is used.</b> Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Perform These O&amp;M Actions</b>                                              | <ul style="list-style-type: none"> <li>❑ <b>Use your release detection system to test for leaks at least every 30 days.</b> Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems.</li> <li>❑ <b>Frequently test your release detection system according to the manufacturer's instructions to make sure it is working properly.</b> Don't assume that your release detection system is working and never needs checking. Read your owner's manual, run the appropriate tests, and see if your system is set up and working properly. Some interstitial monitoring systems have a test or self-diagnosis mode that can easily and routinely run these checks.</li> <li>❑ <b>If your interstitial monitoring ever fails a test or indicates a release, see Section 3 of this booklet for information on what to do next.</b></li> <li>❑ <b>Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturer's service instructions.</b> Tank probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually.</li> <li>❑ <b>Keep interstitial monitoring access ports clearly marked and secured.</b></li> <li>❑ <b>Check your interstitial monitoring system owner's manual often to answer questions and to make sure you know the system's O&amp;M procedures.</b> Call the system's vendor or manufacturer for a copy of the owner's manual if you don't have one.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                                                 | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your release detection system tests for at least 1 year.</b> Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.</b></li> <li>❑ <b>Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.</b> These records include the certification of your leak detection equipment described above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| <b>Statistical Inventory Reconciliation (SIR) (for tanks &amp; piping)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                                    | SIR is typically a method in which a trained professional uses sophisticated computer software to conduct a statistical analysis of inventory, delivery, and dispensing data. You must supply the professional with data every month. There are also computer programs that enable an owner/operator to perform SIR. In either case, the result of the analysis may be pass, inconclusive, or fail.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Have Certification For Your Release Detection Method</b>                | <ul style="list-style-type: none"> <li>❑ <b>Make sure your SIR vendor's methodology is certified for the types of tanks, piping, and product on which you use SIR.</b> Most vendors have their leak detection methodology tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the vendor provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Perform These O&amp;M Actions</b>                                       | <ul style="list-style-type: none"> <li>❑ <b>Supply daily inventory data to your SIR vendor (as required) at least every 30 days.</b> The vendor will provide you with your leak detection results after the statistical analysis is completed. Otherwise, use your computer software at least every 30 days to test your tank for leaks.</li> <li>❑ <b>See Section 3 of this manual if your UST system fails a leak test.</b></li> <li>❑ <b>If you receive an inconclusive result, you must work with your SIR vendor to correct the problem and document the results of the investigation.</b> An inconclusive result means that you have not performed leak detection for that month. If you cannot resolve the problem, treat the inconclusive result as a suspected release and refer to Section 3.</li> <li>❑ <b>If you use an ATG system to gather data for the SIR vendor or your software, periodically have a qualified UST contractor, such as the vendor who installed your ATG, service all the ATG system components according to the manufacturer's service instructions.</b> Tank probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. Do this according to manufacturer's instructions. See the checklist for ATG systems on page 7.</li> <li>❑ <b>If you stick your tank to gather data for the SIR vendor or your software, make sure your stick can measure to one-eighth of an inch and can measure the level of product over the full range of the tank's height.</b> You should check your measuring stick periodically to make sure you can read the markings and numbers and that the bottom of the stick is not worn.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                                          | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your SIR tests for at least 1 year.</b> Unless you are keeping records of the 30-day release detection results and maintaining those records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep all vendor performance claims for at least 5 years.</b> This includes the certification of the SIR method discussed above.</li> <li>❑ <b>If you use an ATG system, keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.</b></li> <li>❑ <b>Keep the records of investigations conducted as a result of any monthly monitoring conclusion of inconclusive or fail for at least 1 year.</b> This may include the results of a tightness test performed during the investigation or a re-evaluation based on corrected delivery or dispenser data.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| <b>Vapor Monitoring (for tanks &amp; piping)</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                     | Vapor monitoring measures product vapors in the soil at the UST site to check for a leak. A site assessment must determine the number and placement of monitoring wells that make sure a release is detected. <b>NOTE: vapor monitors will not work well with substances that do not easily vaporize (such as diesel fuel).</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Have Certification For Your Release Detection Method</b> | <ul style="list-style-type: none"> <li>❑ <b>Make sure your vapor monitoring equipment is certified for the types of stored contents on which the release detection system is used.</b> Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Perform These O&amp;M Actions</b>                        | <ul style="list-style-type: none"> <li>❑ <b>Use your release detection system to test for leaks at least every 30 days.</b> Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems. <b>Be sure you check all of your vapor monitoring wells.</b></li> <li>❑ <b>See Section 3 of this manual if your UST system fails a leak test.</b></li> <li>❑ <b>Frequently test your release detection system according to the manufacturer's instructions to make sure it is working properly.</b> Don't assume that your release detection system is working and never needs checking. Some electronic vapor monitoring systems have a test or self-diagnosis mode. If you have components (such as monitoring equipment, probes or sensors) for your vapor monitoring system, read your manual and test your equipment to see if it is working properly.</li> <li>❑ <b>Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturer's service instructions.</b> Probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually.</li> <li>❑ <b>Keep your vapor monitoring wells clearly marked and secured.</b></li> <li>❑ <b>Check your vapor monitoring system owner's manual often to answer questions and to make sure you know the system's operation and maintenance procedures.</b> Call the system's vendor or manufacturer for a copy of the owner's manual if you don't have one.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                           | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your release detection system tests for at least 1 year.</b> Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.</b></li> <li>❑ <b>Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.</b> These records include the certification of your leak detection equipment described above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



| <b>Groundwater Monitoring</b> (for tanks & piping)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>Description Of Release Detection</b>                     | Groundwater monitoring looks for the presence of liquid product floating on the groundwater at the UST site. A site assessment must determine the number and placement of monitoring wells that make sure a release is detected. <b>NOTE:</b> this method cannot be used at sites where groundwater is more than 20 feet below the surface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Have Certification For Your Release Detection Method</b> | <ul style="list-style-type: none"> <li>❑ <b>Make sure any automated groundwater monitoring equipment is certified for the types of stored contents on which the release detection system is used.</b> Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you. (Manual devices such as bailers are not generally certified.)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Perform These O&amp;M Actions</b>                        | <ul style="list-style-type: none"> <li>❑ <b>Use your release detection system to test for leaks at least every 30 days.</b> Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems. <b>Be sure you check all of your groundwater monitoring wells.</b></li> <li>❑ <b>See Section 3 of this manual if your UST system fails a leak test.</b></li> <li>❑ <b>Frequently test your automated release detection system according to the manufacturer's instructions to make sure it is working properly.</b> Don't assume that your release detection system is working and never needs checking. Some electronic groundwater monitoring systems have a test or self-diagnosis mode. If you have components (such as monitoring equipment, probes or sensors) for your groundwater monitoring system, read your manual and test your equipment to see if it is working properly. Manual devices should be periodically checked to make sure they are working properly.</li> <li>❑ <b>Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturer's service instructions.</b> Probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually.</li> <li>❑ <b>Keep your groundwater monitoring wells clearly marked and secured.</b></li> <li>❑ <b>Check your groundwater monitoring system owner's manual often to answer questions and to make sure you know the system's operation and maintenance procedures.</b> Call the system's vendor or manufacturer for a copy of the owner's manual if you don't have one.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                           | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your release detection system tests for at least 1 year.</b> Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.</b></li> <li>❑ <b>Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.</b> These records include the certification of your leak detection equipment described above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Inventory Control And Tank Tightness Testing (for tanks only)

|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                     | <p>This temporary method combines monthly inventory control with periodic tank tightness testing. Inventory control involves taking measurements of tank contents and recording the amount of product pumped each operating day, measuring and recording tank deliveries, and reconciling all this data at least once a month. This combined method also includes tightness testing, a sophisticated test performed by trained professionals.</p> <p><b>NOTE:</b> <i>This combination method can only be used temporarily for up to 10 years after installing a new UST or for up to 10 years after your tank meets the corrosion protection requirements.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Have Certification For Your Release Detection Method</b> | <ul style="list-style-type: none"> <li>❑ <b>Make sure your tank tightness testing method is certified for the types of tanks and stored contents on which the tightness test is used.</b> Most tightness test methods are certified by a third party to verify that they meet specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the tightness tester provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Perform These O&amp;M Actions</b>                        | <ul style="list-style-type: none"> <li>❑ <b>Take inventory readings and record the numbers at least each day that product is added to or taken out of the tank.</b> You may want to use the Daily Inventory Worksheet provided for you on the next page.</li> <li>❑ <b>Reconcile the fuel deliveries with delivery receipts by taking inventory readings before and after each delivery.</b> Record these readings on a Daily Inventory Worksheet (see next page).</li> <li>❑ <b>Reconcile all your data at least every 30 days.</b> Use a Monthly Inventory Record (see page 14 for an example).</li> <li>❑ <b>Have a tank tightness test conducted at least every 5 years.</b> This testing needs to be conducted by a professional trained in performing tank tightness testing.</li> <li>❑ <b>See Section 3 of this manual if your tank fails a tightness test or if fails two consecutive months of inventory control.</b></li> <li>❑ <b>Ensure that your measuring stick can measure to the nearest one-eighth inch and can measure the level of product over the full range of the tank's height.</b> You should check your measuring stick periodically to make sure that you can read the markings and numbers and that the bottom of the stick is not worn.</li> <li>❑ <b>Ensure that your product dispenser is calibrated according to local standards or to an accuracy of 6 cubic inches for every 5 gallons of product withdrawn.</b></li> <li>❑ <b>Measure the water in your tank to the nearest one-eighth inch at least once a month and record the results on the reconciliation sheet.</b> You can use a paste that changes color when it comes into contact with water.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                           | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your release detection system tests for at least 1 year.</b> Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep the results of your most recent tightness test.</b></li> <li>❑ <b>Keep all certification and performance claims for tank tightness test performed at your UST site for at least 5 years.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

# Daily Inventory Worksheet

Facility Name: \_\_\_\_\_

Your Name: \_\_\_\_\_

Date: \_\_\_\_\_

|                                                                      |   |   |   |   |   |
|----------------------------------------------------------------------|---|---|---|---|---|
| Tank Identification                                                  |   |   |   |   |   |
| Type Of Fuel                                                         |   |   |   |   |   |
| Tank Size In Gallons                                                 |   |   |   |   |   |
| End Stick Inches                                                     |   |   |   |   |   |
| Amount Pumped                                                        | ↓ | ↓ | ↓ | ↓ | ↓ |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| Totalizer Reading                                                    |   |   |   |   |   |
| <b>Today's Sum Of Totalizers</b>                                     |   |   |   |   |   |
| Previous Day's Sum Of Totalizers                                     |   |   |   |   |   |
| <b>Amount Pumped Today</b>                                           |   |   |   |   |   |
| Delivery Record                                                      | ↓ | ↓ | ↓ | ↓ | ↓ |
| Inches of Fuel Before Delivery                                       |   |   |   |   |   |
| Gallons of Fuel Before Delivery<br>(from tank chart)                 |   |   |   |   |   |
| Inches of Fuel After Delivery                                        |   |   |   |   |   |
| Gallons of Fuel After Delivery<br>(from tank chart)                  |   |   |   |   |   |
| <b>Gallons Delivered (Stick)</b><br>[Gallons After - Gallons Before] |   |   |   |   |   |
| <b>Gross Gallons Delivered (Receipt)</b>                             |   |   |   |   |   |

# Monthly Inventory Record

Month/Year : \_\_\_\_/\_\_\_\_

Tank Identification & Type Of Fuel: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Date Of Water Check: \_\_\_\_\_ Level Of Water (Inches): \_\_\_\_\_

| Date | Start Stick Inventory<br>(Gallons) | Gallons<br>Delivered | Gallons<br>Pumped | Book<br>Inventory<br>(Gallons) | End Stick Inventory |           | Daily Over (+) Or<br>Short (-)<br>[End - Book] | Initials |
|------|------------------------------------|----------------------|-------------------|--------------------------------|---------------------|-----------|------------------------------------------------|----------|
|      |                                    |                      |                   |                                | (Inches)            | (Gallons) |                                                |          |
| 1    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 2    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 3    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 4    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 5    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 6    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 7    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 8    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 9    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 7    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 8    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 9    | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 10   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 11   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 12   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 13   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 14   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 15   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 16   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 17   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 18   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 19   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 20   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 21   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 22   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 23   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 24   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 25   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 26   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 27   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 28   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 29   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 30   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |
| 31   | (+)                                | (-)                  | (=)               |                                |                     |           |                                                |          |

Total Gallons Pumped >

Total Gallons Over Or Short >

Leak Check:  
Drop the last two digits  
from the **Total Gallons**

**Pumped** number and enter here: \_\_\_\_\_

+ 130 =

Compare these numbers

\_\_\_\_\_ gallons

Is the total gallons over or short **larger** than leak check result? **Yes No** (circle one)

If your answer is Yes for 2 months in a row, **notify the regulatory agency** as soon as possible.

**Keep This Piece Of Paper On File For At Least 1 Year**

| <b>Manual Tank Gauging (for tanks 1,000 gallons or less only)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                           | <u>This method may be used only for tanks of 1,000 gallons or less capacity meeting certain requirements. These requirements (tank size, tank dimension, and test time) are found in the manual tank gauging record on the next page. Manual tank gauging involves taking your tank out of service for the testing period (at least 36 hours) each week, during which time the contents of the tank are measured twice at the beginning and twice at the end of the test period. The measurements are then compared to weekly and monthly standards to determine if the tank is tight.</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Have Certification For Your Release Detection Method</b>       | None required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Perform These O&amp;M Actions</b>                              | <ul style="list-style-type: none"> <li><input type="checkbox"/> Once a week, record two inventory readings at the beginning of the test, allow the tank to sit undisturbed for the time specified in the Manual Tank Gauging Record on the next page, and record two inventory readings at the end of the test (use any form comparable to the one on the following page).</li> <li><input type="checkbox"/> Reconcile the numbers weekly and record them on a Manual Tank Gauging Record (see the next page).</li> <li><input type="checkbox"/> See Section 3 of this manual if your tank fails the weekly standard.</li> <li><input type="checkbox"/> At the end of 4 weeks, reconcile your records for the monthly standard and record the result on a Manual Tank Gauging Record (see the next page).</li> <li><input type="checkbox"/> See Section 3 of this manual if your tank fails the monthly standard.</li> <li><input type="checkbox"/> Ensure that your measuring stick can measure to the nearest one-eighth inch and can measure the level of product over the full range of the tank's height. You should check your measuring stick periodically to make sure that you can read the markings and numbers and that the bottom of the stick is not worn.</li> <li><input type="checkbox"/> Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems. Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                                 | <ul style="list-style-type: none"> <li><input type="checkbox"/> Keep your manual tank gauging records for at least 1 year. Unless you are recording actual release detection results weekly and at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



# Manual Tank Gauging Record

Month \_\_\_\_\_ Year \_\_\_\_\_  
 Tank Identification: \_\_\_\_\_  
 Person Completing Form: \_\_\_\_\_  
 Facility Name: \_\_\_\_\_

Circle your tank size, test duration, and weekly/monthly standards in the table below:

| Tank Size                                                           | Minimum Duration Of Test | Weekly Standard (1 test) | Monthly Standard (4-test average) |
|---------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------------|
| up to 550 gallons                                                   | 36 hours                 | 10 gallons               | 5 gallons                         |
| 551-1,000 gallons (when tank diameter is 64")                       | 44 hours                 | 9 gallons                | 4 gallons                         |
| 551-1,000 gallons (when tank diameter is 48")                       | 58 hours                 | 12 gallons               | 6 gallons                         |
| 551-1,000 gallons (also requires periodic tank tightness testing)   | 36 hours                 | 13 gallons               | 7 gallons                         |
| 1,001-2,000 gallons (also requires periodic tank tightness testing) | 36 hours                 | 26 gallons               | 13 gallons                        |

Compare your weekly readings and the monthly average of the 4 weekly readings with the standards shown in the table on the left.

If the calculated change exceeds the weekly standard, the UST may be leaking. Also, the monthly average of the 4 weekly test results must be compared to the monthly standard in the same way.

If either the weekly or monthly standards have been exceeded, the UST may be leaking. As soon as possible, call your implementing agency to report the suspected leak and get further instructions.

| Start Test<br>(month, day, and time)                               | First Initial Stick Reading | Second Initial Stick Reading | Average Initial Reading | Initial Gallons<br>(convert inches to gallons)<br>[a] | End Test<br>(month, day, and time) | First End Stick Reading | Second End Stick Reading | Average End Reading | End Gallons<br>(convert inches to gallons)<br>[b] | Change In Tank Volume In Gallons<br>+ or (-)<br>[a-b] | Tank Passes Test<br><br>(circle Yes or No) |
|--------------------------------------------------------------------|-----------------------------|------------------------------|-------------------------|-------------------------------------------------------|------------------------------------|-------------------------|--------------------------|---------------------|---------------------------------------------------|-------------------------------------------------------|--------------------------------------------|
| Date: _____<br>Time: _____ AM/PM                                   |                             |                              |                         |                                                       | Date: _____<br>Time: _____ AM/PM   |                         |                          |                     |                                                   |                                                       | Y N                                        |
| Date: _____<br>Time: _____ AM/PM                                   |                             |                              |                         |                                                       | Date: _____<br>Time: _____ AM/PM   |                         |                          |                     |                                                   |                                                       | Y N                                        |
| Date: _____<br>Time: _____ AM/PM                                   |                             |                              |                         |                                                       | Date: _____<br>Time: _____ AM/PM   |                         |                          |                     |                                                   |                                                       | Y N                                        |
| Date: _____<br>Time: _____ AM/PM                                   |                             |                              |                         |                                                       | Date: _____<br>Time: _____ AM/PM   |                         |                          |                     |                                                   |                                                       | Y N                                        |
| <p><b>Keep This Piece Of Paper On File For At Least 1 Year</b></p> |                             |                              |                         |                                                       |                                    |                         |                          |                     |                                                   |                                                       | Y N                                        |

To see how close you are to the monthly standard, divide the sum of the 4 weekly readings by 4 and enter result here >

## Manual Tank Gauging And Tank Tightness Testing

(for tanks 2,000 gallons or less only)

|                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description Of Release Detection                     | <p>This temporary method combines manual tank gauging with periodic tank tightness testing. <u>It may be used only for tanks of 2,000 gallons or less capacity.</u> Manual tank gauging involves taking your tank out of service for the testing period (at least 36 hours) each week, during which the contents of the tank are measured twice at the beginning and twice at the end of the test period. The measurements are then compared to weekly and monthly standards to determine if the tank is tight. This combined method also includes tightness testing, a sophisticated test performed by trained professionals.</p> <p><b>NOTE: This combination method can only be used temporarily for up to ten years after installing a new UST or for up to 10 years after your tank meets the corrosion protection requirements.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Have Certification For Your Release Detection Method | <p><input type="checkbox"/> <b>Make sure your tank tightness testing is certified for the types of tanks and stored contents on which the tightness test is used.</b> Most tightness test methods are certified by a third party to verify that they meet specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the tightness tester provide them to you.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Perform These O&M Actions                            | <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Once a week, record two inventory readings at the beginning of the test, allow the tank to sit undisturbed for the time specified in the Manual Tank Gauging Record on page 16, and record two inventory readings at the end of the test (use any form comparable to the one on page 16).</b></li> <li><input type="checkbox"/> <b>Reconcile the numbers weekly and record them on a Manual Tank Gauging Record (see page 16).</b></li> <li><input type="checkbox"/> <b>See Section 3 of this manual if your tank fails the weekly standard.</b></li> <li><input type="checkbox"/> <b>At the end of 4 weeks, reconcile your records for the monthly standard and record the result on a Manual Tank Gauging Record (see page 16).</b></li> <li><input type="checkbox"/> <b>See Section 3 of this manual if your tank fails the monthly standard.</b></li> <li><input type="checkbox"/> <b>Conduct a tank tightness test at least every 5 years.</b> This testing needs to be conducted by a professional trained in performing tank tightness testing.</li> <li><input type="checkbox"/> <b>See Section 3 of this manual if your tank fails the tightness test.</b></li> <li><input type="checkbox"/> <b>Ensure that your measuring stick can measure to the nearest one-eighth inch and can measure the level of product over the full range of the tank's height.</b> You should check your measuring stick periodically to make sure that you can read the markings and numbers and that the bottom of the stick is not worn.</li> <li><input type="checkbox"/> <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| Keep These O&M Records                               | <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Keep your manual tank gauging records for at least 1 year.</b> Unless you are recording actual release detection results at least weekly and every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li><input type="checkbox"/> <b>Keep the results of your most recent tightness test.</b></li> <li><input type="checkbox"/> <b>Keep all certification and performance claims for tank tightness test performed at your UST site for at least 5 years.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| <b>Automatic Line Leak Detection (for pressurized piping only)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                            | Automatic line leak detectors (LLDs) are designed to detect a catastrophic release from pressurized piping. Automatic LLDs must be designed to detect a leak at least as small as 3 gallons per hour at a line pressure of 10 psi within 1 hour. When a leak is detected, automatic LLDs must shut off the product flow, restrict the product flow, or trigger an audible or visual alarm. <b>NOTE: Mechanical automatic LLDs need to be installed and operated as close as possible to the tank (LLDs are designed to detect a leak, restrict flow, etc. only between the detector and the dispenser).</b>                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Have Certification For Your Release Detection Method</b>        | <ul style="list-style-type: none"> <li>❑ <b>Make sure your release detection equipment is certified for the types of piping and stored contents on which the release detection system is used.</b> Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Perform These O&amp;M Actions</b>                               | <ul style="list-style-type: none"> <li>❑ <b>Frequently test your automatic LLDs according to the manufacturer's instructions to make sure it is working properly.</b> Don't assume that your release detection system is working and never needs checking. Some monitoring systems have a test or self-diagnosis mode.</li> <li>❑ <b>Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturers' service instructions.</b> Components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually.</li> <li>❑ <b>See Section 3 of this manual if your LLD detects a leak.</b></li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                                  | <ul style="list-style-type: none"> <li>❑ <b>For at least a year, keep the annual test that demonstrates that the LLD is functioning properly.</b></li> <li>❑ <b>If used for monthly monitoring, keep results of your release detection system tests for at least 1 year.</b> Your monitoring equipment system may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.</b></li> <li>❑ <b>Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.</b> These records include the certification of your leak detection equipment described above.</li> </ul>                                                                                                             |

| <b>Line Tightness Testing (for piping only)</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Of Release Detection</b>                     | <b>This method uses a periodic line tightness test to determine if your piping is leaking. Tightness testing can be performed by either a trained professional or by using a permanently installed electronic system (sometimes connected to an automatic tank gauging system).</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Have Certification For Your Release Detection Method</b> | <ul style="list-style-type: none"> <li>❑ <b>Make sure your line tightness testing or permanently installed electronic system is certified for the types of piping and stored contents on which the release detection system is used.</b> Most tightness test methods and release detection equipment have been tested and certified by a third party to verify that the equipment or services meet specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the tightness tester or equipment manufacturer provide them to you.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Perform These O&amp;M Actions</b>                        | <ul style="list-style-type: none"> <li>❑ <b>If line tightness testing is used for pressurized piping, the test must be conducted at least annually.</b></li> <li>❑ <b>If line tightness testing is used for suction piping, the test must be conducted at least every three years.</b> Safe suction piping as described at the bottom of page 3 may not need release detection testing.</li> <li>❑ <b>This tightness testing must be conducted by a professional trained in performing line tightness testing or by using a permanently installed electronic system.</b></li> <li>❑ <b>See Section 3 of this manual if your piping fails the tightness test or if the electronic system indicates a leak.</b></li> <li>❑ <b>Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturers' service instructions.</b> Components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually.</li> <li>❑ <b>Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.</b> Develop and maintain regular training programs for all employees.</li> </ul> |
| <b>Keep These O&amp;M Records</b>                           | <ul style="list-style-type: none"> <li>❑ <b>Keep results of your release detection system tests for at least 1 year.</b> Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.</li> <li>❑ <b>If you use a permanently installed electronic system, keep all records of calibration, maintenance, and repair of your equipment for at least 1 year.</b></li> <li>❑ <b>Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.</b> These records include the certification of your leak detection equipment described above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

(May be used for monitoring wells, interstitial monitoring, and automatic tank gauging)

Facility Name: \_\_\_\_\_

**Keep This Piece Of Paper And Any Associated Printouts On File For  
At Least 1 Year From The Date Of The Last Entry**



## Section 3 — Suspected Or Confirmed Releases

You need to be fully prepared to respond to releases **before** they may occur. You need to know what to do when release detection methods indicate a suspected or confirmed release. Be ready to take the following steps, as appropriate.

### Stop The Release

- Take immediate action to prevent the release of more product.
- Turn off the power to the dispenser and bag the nozzle.
- Make sure you know where your emergency shutoff switch is located.
- Empty the tank, if necessary, without further contaminating the site. You may need the assistance of your supplier or distributor.

### Contain The Release

Contain, absorb, and clean up any surface spills or overfills. You should keep enough absorbent material at your facility to contain a spill or overfill of petroleum products until emergency response personnel can respond to the incident. The suggested supplies include, but are not limited to, the following:

- Containment devices, such as containment booms, dikes, and pillows.
- Absorbent material, such as kitty litter, chopped corn cob, sand, and sawdust. (Be sure you properly dispose of used absorbent materials.)
- Mats or other material capable of keeping spill or overfill out of nearby storm drains.
- Spark-free flash light.
- Spark-free shovel.
- Buckets.
- Reels of caution tape, traffic cones, and warning signs.
- Personal protective gear.

Also, identify any fire, explosion, or vapor hazards and take action to neutralize these hazards.

## Call For Help

Contact your local fire or emergency response authority. Make sure you have these crucial telephone numbers prominently posted where you and your employees can easily see them. See the next page for a form you can copy and post.

## Report To Authorities

If you observe any of the following, contact your state's underground storage tank regulatory authority to report a suspected or confirmed release as soon as possible (within 24 hours):

- Any spill or overfill of petroleum that exceeds 25 gallons or that causes a sheen on nearby surface water. (Spills and overfills under 25 gallons that are contained and immediately cleaned up do not have to be reported. If they can't be quickly cleaned up they must be reported to your regulatory agency.)
- Any released regulated substances at the UST site or in the surrounding area — such as the presence of liquid petroleum; soil contamination; surface water or groundwater contamination; or petroleum vapors in sewer, basement, or utility lines.
- Any unusual operating conditions you observe — such as erratic behavior of the dispenser, a sudden loss of product, or an unexplained presence of water in the tank. However, you are not required to report if:
  - The system equipment is found to be defective, but not leaking, and is immediately repaired or replaced.
- Results from your release detection system indicate a suspected release. However, you are not required to report if:
  - The monitoring device is found to be defective and is immediately repaired, recalibrated, or replaced and further monitoring does not confirm the initial suspected release, or
  - In the case of inventory control, a second month of data does not confirm the initial result.

The next page contains a blank list for names and phone numbers of important contacts. Fill out this information for your facility so that you will know who to call in case of an emergency. Remove this page from the manual, copy it, fill it out, and post it in a prominent place at your facility.

**Copy the next page and update it often. Make sure everyone at your UST facility is familiar with this list of contacts.**

## Release Response Important Contact Information

|                                          | Contact Name                             | Phone #                                  |
|------------------------------------------|------------------------------------------|------------------------------------------|
| State UST Agency:                        | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| Local UST Agency:                        | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| Fire Department:                         | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| Ambulance:                               | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| Police Department:                       | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| Repair Contractor:                       | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| Other Contacts:                          | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |
| <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> | <input style="width: 90%;" type="text"/> |

### ✓ Release Response Checklist

- ☐ **Stop the release:** Take immediate action to prevent the release of more product. Turn off the power to the dispenser and bag the nozzle. Make sure you know where your emergency shutoff switch is located. Empty the tank, if necessary, without further contaminating the site.
  
- ☐ **Contain the release:** Contain, absorb, and clean up any surface releases. Identify any fire, explosion, or vapor hazards and take action to neutralize these hazards.
  
- ☐ **Call for help and to report suspected or confirmed releases:** Contact your local fire or emergency response authority. Contact your state's underground storage tank regulatory authority within 24 hours.

## Section 4 — Spill And Overfill Protection

The purpose of spill and overfill protection equipment is to eliminate the potential for a release during fuel deliveries. The equipment must be in working order and used properly to provide adequate protection from spills and overfills.

Even the best spill and overfill protection equipment can become faulty over time if not properly operated and maintained.

Only one gallon of fuel leaking each week from a poorly maintained spill bucket can result in up to 195 tons of contaminated soil in a year.

Improper maintenance of the spill bucket at the UST site pictured below contributed to significant contamination of soil and groundwater.

### What's The Difference?

#### Spill Protection:

A spill bucket is installed at the fill pipe to contain the drips and spills of fuel that can occur when the delivery hose is uncoupled from the fill pipe after delivery.

#### Overfill Protection:

Equipment is installed on the UST that is designed to stop product flow, reduce product flow, or alert the delivery person during delivery **before** the tank becomes full and begins releasing petroleum into the environment.

The following pages in this section focus on how you can routinely make sure your spill and overfill equipment is operating effectively.

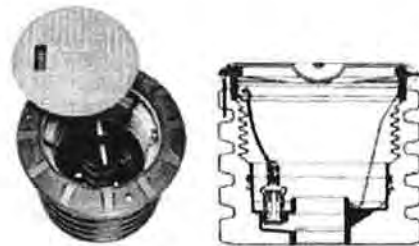


## What Are The Basics Of Spill Protection?

Your USTs must have catchment basins — also called spill buckets — installed at the fill pipe to contain spills that may occur as a result of fuel deliveries.

- The spill bucket is designed to temporarily contain product spills that might occur during fuel delivery. To contain a spill, the spill bucket must be liquid tight.
- **The spill bucket is not designed to contain fuel for long periods of time.** After each delivery, empty and dispose of contents properly.
- Spill buckets need to be large enough to contain any fuel that may spill when the delivery hose is uncoupled from the fill pipe. Spill buckets typically range in size from 5 gallons to 25 gallons.
- If you use a checklist for correct delivery practices (see page 33), spills should be eliminated or reduced to very small volumes that your spill bucket can easily handle.

If your UST **never** receives deliveries of more than 25 gallons at a time, the UST does not need to meet the spill protection requirements. Many used oil tanks fall into this category. Even though these USTs are not required to have spill protection, you should consider using spill protection as part of good UST system management.



Examples Of Spill Buckets

## How Do You Maintain Your Spill Bucket?

The checklist below provides information on properly maintaining your spill bucket.

### ✓ Spill Bucket O&M Checklist

- ☐ **Keep your spill bucket empty of liquids.**  
Some spill buckets are equipped with a valve that allows you to drain accumulated fuel into your UST. Others may be equipped with a manual pump so fuel can be put into your UST by pumping it through the fill pipe. However, keep in mind that when you pump out or drain your spill bucket into your UST, any water and debris may also enter the UST. If a basin is not equipped with drain valve or pump, then any accumulated fuel or water must be removed manually and disposed of properly.
- ☐ **Periodically check your spill bucket to remove any debris.**  
Debris could include soil, stones, or trash.
- ☐ **Periodically check to see if your spill bucket is still liquid tight.**  
Have a qualified UST contractor inspect your spill bucket for signs of wear, cracks, or holes. Based on this inspection, the contractor may suggest a test to determine if the spill bucket is tight or needs repair or replacement.



## What Are The Basics Of Overfill Protection?

Your USTs must have overfill protection installed to help prevent the overfilling of tanks.

Three types of overfill protection devices are commonly used:

- Automatic shutoff devices
- Overfill alarms
- Ball float valves

Each of these forms of overfill protection is discussed in detail on the following pages.

If your UST ***never*** receives deliveries of more than 25 gallons at a time, the UST does not need to meet the overfill protection requirements. Many used oil tanks fall into this category. Even though these USTs are not required to have overfill protection, you should consider using overfill protection as part of good UST system management.

## How Can You Help The Delivery Person Avoid Overfills?

To protect your business, you must make every effort to help the delivery person avoid overfilling your UST.

### Use A Checklist On Correct Filling Practices

If correct filling practices are used, you will not exceed the UST's capacity — see page 33 for a checklist on correct filling procedures. Overfills are caused when the delivery person makes a mistake, such as ignoring an overfill alarm.

### Use Signs, Alert Your Delivery Person

The delivery person should know what type of overfill device is present on each tank at your facility and what action will occur if the overfill device is triggered — such as a visual and/or audible alarm or that the product flow into the tank will stop or slow significantly.

***Educate and alert your delivery person by placing a clear sign near your fill pipes, in plain view of the delivery person.*** An example of such a sign follows on the next page.

### **Delivery Person — Avoid Overfills**

- An **overfill alarm** is used for overfill protection at this facility.
- Do not tamper with this alarm in any attempt to defeat its purpose.
- When the tank is 90% full, the overfill alarm whistles and a red light flashes.
- **If you hear the alarm whistle or see the red light flashing,**

**Stop The Delivery Immediately!**

### **Make Sure You Order The Right Amount Of Product**

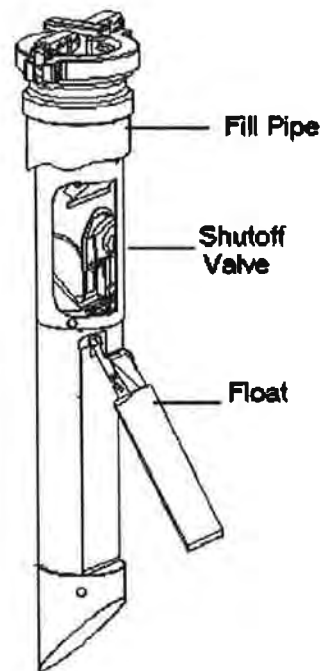
Also, you need to **make sure you've ordered the right amount of product for delivery**. Order only the quantity of fuel that will fit into 90% of the tank. For example, if you have a 10,000 gallon tank with 2,000 gallons already in the tank, you would order at the most a 7,000 gallon delivery (90% of 10,000 is 9,000 gallons; subtracting the 2,000 gallons already in the tank leaves a maximum delivery of 7,000 gallons). Use the checklist formula on page 33. Do your homework right and you reduce the chance of overfills.

## What Should You Do To Operate And Maintain Your Automatic Shutoff Device?

The automatic shutoff device is a mechanical device installed in line with the drop tube within the fill pipe riser. It slows down and then stops the delivery when the product has reached a certain level in the tank. It should be positioned so that the float arm is not obstructed and can move through its full range of motion.

When installed and maintained properly, the shutoff valve will shut off the flow of fuel to the UST at 95% of the tank's capacity or before the fittings at the top of the tank are exposed to fuel.

**You should not use an automatic shutoff device for overfill protection if your UST receives pressurized deliveries.**



### ✓ Basic O&M Checklist For Automatic Shutoff Devices

- ☐ A qualified UST contractor periodically checks to make sure that the automatic shutoff device is functioning properly and that the device will shut off fuel flowing into the tank at 95% of the tank capacity or before the fittings at the top of the tank are exposed to fuel:
  - Make sure the float operates properly.
  - Make sure there are no obstructions in the fill pipe that would keep the floating mechanism from working.
- ☐ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.

## What Should You Do To Operate And Maintain Your Electronic Overfill Alarm?

This type of overfill device activates an audible and/or visual warning to delivery personnel when the tank is either 90% full or is within one minute of being overfilled. **The alarm *must* be located so it can be seen and/or heard from the UST delivery location.** Once the electronic overfill alarm sounds, the delivery person has approximately one minute to stop the flow of fuel to the tank.

Electronic overfill alarm devices have no mechanism to shut off or restrict flow. Therefore, the fuel remaining in the delivery hose after the delivery has been stopped will flow into the tank as long as the tank is not yet full.



### ✓ Basic O&M Checklist For Overfill Alarms

- ☐ A qualified UST contractor periodically checks your electronic overfill alarm to make sure that it is functioning properly and that the alarm activates when the fuel reaches 90% of the tank capacity or is within one minute of being overfilled:
  - Ensure that the alarm can be heard and/or seen from where the tank is fueled.
  - Make sure that the electronic device and probe are operating properly.
- ☐ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.

## What Should You Do To Operate And Maintain Your Ball Float Valve?

The ball float valve — also called a float vent valve — is installed at the vent pipe in the tank and restricts vapor flow in an UST as the tank gets close to being full. The ball float valve should be set at a depth which will restrict vapor flow out of the vent line during delivery at 90% of the UST's capacity or 30 minutes prior to overfilling.

As the tank fills, the ball in the valve rises, restricting the flow of vapors out of the UST during delivery. The flow rate of the delivery will decrease noticeably and should alert the delivery person to stop the delivery.

For ball float valves to work properly, the top of the tank must be air tight so that vapors cannot escape from the tank. Everything from fittings to drain mechanisms on spill buckets must be tight and be able to hold the pressure created when the ball float valve engages.



**You should not use a ball float valve for overfill protection if any of the following apply:**

- Your UST receives pressurized deliveries.
- Your UST system has suction piping.
- Your UST system has single point (coaxial) stage 1 vapor recovery.

### ✓ Basic O&M Checklist For Ball Float Valves

- ☐ A qualified UST contractor periodically checks to make sure that the ball float valve is functioning properly and that it will restrict fuel flowing into the tank at 90% of the tank capacity or 30 minutes prior to overfilling:
  - Ensure that the air hole is not plugged.
  - Make sure the ball cage is still intact.
  - Ensure the ball still moves freely in the cage.
  - Make sure the ball still seals tightly on the pipe.
- ☐ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.



## ✓ Spill And Overfill O&M Checklist

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Spill Bucket</b>              | <ul style="list-style-type: none"> <li>❑ <b>Keep your spill bucket empty of liquids.</b><br/>Some spill buckets are equipped with a drainage valve which allows you to drain accumulated fuel into your UST. Others can be equipped with a manual pump so fuel can be put into your UST by pumping it through the fill pipe. However, keep in mind that when you pump out or drain your spill bucket into your UST, any water and debris may also enter the UST. If a spill bucket is not equipped with a drain valve or pump, then any accumulated fuel or water must be removed manually and disposed of properly.</li> <li>❑ <b>Periodically check your spill bucket to remove any debris.</b><br/>Debris could include soil, stones, or trash.</li> <li>❑ <b>Periodically check to see if your spill bucket is still liquid tight.</b><br/>Have a qualified UST contractor inspect your spill bucket for signs of wear, cracks, or holes. Based on this inspection, the contractor may suggest a test to determine if the spill bucket is tight or needs repair or replacement.</li> </ul> |
| <b>Automatic Shutoff Devices</b> | <ul style="list-style-type: none"> <li>❑ A qualified UST contractor periodically checks to make sure that the automatic shutoff device is functioning properly and that the device will shut off fuel flowing into the tank at 95% of the tank capacity or before the fittings at the top of the tank are exposed to fuel: <ul style="list-style-type: none"> <li>• Make sure the float operates properly.</li> <li>• Make sure that there are no obstructions in the fill pipe that would keep the floating mechanism from working.</li> </ul> </li> <li>❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.</li> </ul>                                                                                                                                                                                                                                                                                                                                                    |
| <b>Overfill Alarms</b>           | <ul style="list-style-type: none"> <li>❑ A qualified UST contractor periodically checks your electronic overfill alarm to make sure that it is functioning properly and that the alarm activates when the fuel reaches 90% of the tank capacity or is within one minute of being overfilled: <ul style="list-style-type: none"> <li>• Ensure that the alarm can be heard and/or seen from where the tank is fueled.</li> <li>• Make sure that the electronic device and probe are operating properly.</li> </ul> </li> <li>❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Ball Float Valves</b>         | <ul style="list-style-type: none"> <li>❑ A qualified UST contractor periodically checks to make sure that the ball float valve is functioning properly and that it will restrict fuel flowing into the tank at 90% of the tank capacity or 30 minutes prior to overfilling: <ul style="list-style-type: none"> <li>• Ensure that the air hole is not plugged.</li> <li>• Make sure the ball cage is still intact.</li> <li>• Ensure the ball still moves freely in the cage.</li> <li>• Make sure the ball still seals tightly on the pipe.</li> </ul> </li> <li>❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |

## What Are Your Responsibilities For Correct Filling Practices?

As an owner or operator you are responsible for ensuring that releases due to spilling or overfilling do not occur during fuel delivery.

As part of this responsibility, you must:

- Ensure the amount of product to be delivered will fit into the available empty space in the tank; and
- Ensure the transfer operation is monitored constantly to prevent overfilling and spilling.

One way help ensure the above requirements are met is to follow the checklist on the next page. The checklist describes activities to perform before, during, and after a fuel delivery.



## ✓ Correct Filling Checklist

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What To Do Before Your USTs Are Filled</b>      | <ul style="list-style-type: none"> <li><input type="checkbox"/> Post clear signs that alert delivery persons to the overfill devices and alarms in use at your facility.</li> <li><input type="checkbox"/> Make and record accurate readings for product and water in the tank before fuel delivery.</li> <li><input type="checkbox"/> Order only the quantity of fuel that will fit into 90% of the tank.</li> </ul> <p style="margin-left: 40px;"><b>Remember, the formula for determining the maximum amount of gasoline to order is:</b></p> <p style="margin-left: 40px;">(Tank capacity in gallons X 90% ) — Product currently in tank = Maximum amount of fuel to order</p> <p style="margin-left: 40px;"><b>Example:</b> (10,000 gal X 0.9 ) — 2,000 gal = 7,000 gal maximum amount to order</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure fuel delivery personnel know the type of overfill device present at the tank and what actions to perform if it activates. For example, use sample sign on page 27 of this chapter.</li> <li><input type="checkbox"/> Review and understand the spill response procedures.</li> <li><input type="checkbox"/> Verify that your spill bucket is empty, clean, and will contain spills.</li> </ul> |
| <b>What To Do While Your USTs Are Being Filled</b> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Keep fill ports locked until the fuel delivery person requests access.</li> <li><input type="checkbox"/> Have an accurate tank capacity chart available for the fuel delivery person.</li> <li><input type="checkbox"/> The fuel delivery person makes all hook-ups. The person responsible for monitoring the delivery should remain attentive and observe the entire fuel delivery, be prepared to stop the flow of fuel from the truck to the UST at any time, and respond to any unusual condition, leak, or spill which may occur during delivery.</li> <li><input type="checkbox"/> Have response supplies readily available for use in case a spill or overfill occurs (see Section 3).</li> <li><input type="checkbox"/> Provide safety barriers around the fueling zone.</li> <li><input type="checkbox"/> Make sure there is adequate lighting around the fueling zone.</li> </ul>                                                                                                                                                                                                                                                                                                                   |
| <b>What To Do After Your USTs Are Filled</b>       | <ul style="list-style-type: none"> <li><input type="checkbox"/> Following complete delivery, the fuel delivery person is responsible for disconnecting all hook-ups.</li> <li><input type="checkbox"/> Return spill response kit and safety barriers to proper storage locations.</li> <li><input type="checkbox"/> Make and record accurate readings for product and water in the tank after fuel delivery.</li> <li><input type="checkbox"/> Verify the amount of fuel received.</li> <li><input type="checkbox"/> Make sure fill ports are properly secured.</li> <li><input type="checkbox"/> Ensure the spill bucket is free of product and clean up any small spills.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Section 5 — Corrosion Protection

To prevent leaks, all parts of your UST system that are underground and routinely contain product need to be protected from corrosion. The UST system includes the tank, piping, and ancillary equipment, such as flexible connectors, fittings, and pumps. Unprotected metal UST components can deteriorate and leak when underground electrical currents act upon them.

One way to protect UST components from corrosion is to **make them with nonmetallic, noncorrodible materials**, such as USTs made of (or clad or jacketed with) fiberglass reinforced plastic (FRP) or other noncorrodible materials — as illustrated by the FRP tank on the right. Noncorrodible USTs like these do not require O&M for corrosion protection.



UST components made from metal, however, that routinely contain product and are in direct contact with the ground need corrosion protection provided by cathodic protection or (in some cases) lining the interior of the tank, as described below. These options require O&M.

**Note: Metal tanks or piping installed after December 22, 1988 must have a dielectric coating (a coating that does not conduct electricity) in addition to the cathodic protection described below.**

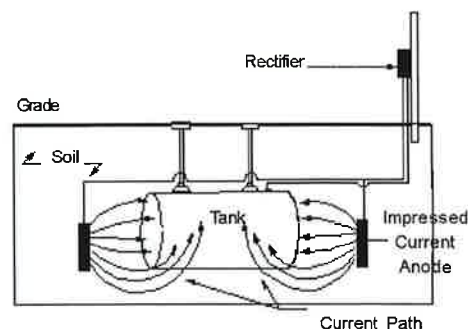
### Cathodic Protection Using Sacrificial Anode Systems

Sacrificial anodes are buried and attached to UST components for corrosion protection — as illustrated on the right by an anode attached to a tank. Anodes are pieces of metal that are more electrically active than steel, and thus they suffer the destructive effects of corrosion rather than the steel they are attached to.



### Cathodic Protection Using Impressed Current Systems

An impressed current system — as shown on the right — uses a rectifier to provide direct current through anodes to the tank or piping to achieve corrosion protection. The steel is protected because the current going to the steel overcomes the corrosion-causing current flowing away from it. **The cathodic protection rectifier must always be on and operating to protect your UST system from corrosion.**



## Corrosion Protection Using Internal Lining Of The Tank

This corrosion protection option applies only to tanks installed before December 22, 1988. These older tanks can be internally lined by trained professionals to meet the corrosion protection requirements — as shown on the right, in which a professional follows industry codes to safely and effectively line a tank's interior.



It may help you to see your corrosion protection options displayed in the following table.

| Corrosion Protection Choices                                                    |                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option                                                                          | Description                                                                                                                                                                                                                                                                                                                |
| <b>Noncorrodible Material</b>                                                   | The tank or piping is constructed of noncorrodible material.                                                                                                                                                                                                                                                               |
| <b>Steel Tank Clad Or Jacketed With A Noncorrodible Material</b>                | Examples of cladding or jacket material include fiberglass and urethane. Does not apply to piping.                                                                                                                                                                                                                         |
| <b>Coated And Cathodically Protected Steel Tanks Or Piping</b>                  | Steel tank and piping is well-coated with a dielectric material and cathodically protected.                                                                                                                                                                                                                                |
| <b>Cathodically Protected Noncoated Steel Tanks Or Piping</b>                   | <i>This option is only for steel tanks and piping installed before December 22, 1988.</i> Cathodic protection is usually provided by an impressed current system.                                                                                                                                                          |
| <b>Internal Lining Of Tanks</b>                                                 | <i>This option is only for steel tanks installed before December 22, 1988.</i> A lining is applied to the inside of the tank. Does not apply to piping.                                                                                                                                                                    |
| <b>Combination Of Cathodically Protected Steel And Internal Lining Of Tanks</b> | <i>This option is only for steel tanks installed before December 22, 1988.</i> Cathodic protection is usually provided by an impressed current system. Does not apply to piping.                                                                                                                                           |
| <b>Other Methods Used To Achieve Corrosion Protection</b>                       | If you have tanks or piping that do not meet any of the descriptions above, check with your state UST agency to see if your UST system meets the requirements for corrosion protection. You also will need to ask about the operation, maintenance, and record keeping requirements applicable to this type of UST system. |

Note: In addition to tanks and piping, all other metal components in direct contact with the ground that routinely hold product — such as flexible connectors, swing joints, fittings, and pumps — must also be cathodically protected.

**Use the O&M checklist on the next page. Following the checklist look for record keeping forms and discussions of special corrosion protection situations.**



## ✓ Basic O&M Checklist For Corrosion Protection

|                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sacrificial Anode Cathodic Protection Systems</b> | <p><b>You need to have a periodic test conducted by a qualified corrosion tester to make sure your cathodic protection system is adequately protecting your UST system. This test needs to be conducted:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Within 6 months of installation.</li> <li><input type="checkbox"/> At least every 3 years after the previous test.</li> <li><input type="checkbox"/> Within 6 months after any repairs to your UST system. <ul style="list-style-type: none"> <li>• Make sure the professional tester is qualified to perform the test and follows a standard code of practice to determine that test criteria are adequate.</li> <li>• If any test indicates your tanks are not adequately protected, you need to have a corrosion expert examine and fix your system.</li> <li>• Testing more frequently can catch problems before they become big problems.</li> </ul> </li> <li><input type="checkbox"/> <b>You need to keep the results of at least the last two tests on file.</b> See the next page for a cathodic protection test record keeping form.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Impressed Current Cathodic Protection Systems</b> | <p><b>You need to have a periodic test conducted by a qualified corrosion tester to make sure your cathodic protection system is adequately protecting your UST system. This test needs to be conducted:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Within 6 months of installation.</li> <li><input type="checkbox"/> At least every 3 years after the previous test.</li> <li><input type="checkbox"/> Within 6 months after any repairs to your UST system. <ul style="list-style-type: none"> <li>• Make sure the professional tester is qualified to perform the test and follows a standard code of practice to determine that test criteria are adequate.</li> <li>• If any test indicates your tanks are not adequately protected, you need to have a corrosion expert examine and fix your system.</li> <li>• Testing more frequently can catch problems before they become big problems.</li> </ul> </li> <li><input type="checkbox"/> <b>You need to keep the results of at least the last two tests on file.</b> See next page for a cathodic protection test record keeping form.</li> <li><input type="checkbox"/> <b>You need to inspect your rectifier at least every 60 days to make sure that it is operating within normal limits.</b> <ul style="list-style-type: none"> <li>• This inspection involves reading and recording the voltage and amperage readouts on the rectifier. You or your employees can perform this periodic inspection.</li> <li>• Make sure your cathodic protection professional provides you with the rectifier's acceptable operating levels so you can compare the readings you take with an acceptable operating level. If your readings are not within acceptable levels, you must contact a cathodic protection professional to address the problem.</li> </ul> </li> <li><input type="checkbox"/> <b>You need to keep records of at least the last 3 rectifier readings.</b> See page 39 for a 60-Day Inspection Results record keeping form.</li> <li><input type="checkbox"/> <b>You should have a trained professional periodically service your impressed current system.</b></li> <li><input type="checkbox"/> <b>Never turn off your rectifier!</b></li> </ul> |
| <b>Internally Lined Tanks</b>                        | <ul style="list-style-type: none"> <li><input type="checkbox"/> Within 10 years after lining and at least every 5 years thereafter, the lined tank must be inspected by a trained professional and found to be structurally sound with the lining still performing according to original design specifications. Make sure the professional performing the inspection follows a standard code of practice.</li> <li><input type="checkbox"/> <b>Keep records of the inspection (as specified in industry standards for lining inspections).</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



# Record For Periodic Testing Of Cathodic Protection Systems

(for use by a qualified cathodic protection tester)

Test Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Facility Name/ID: \_\_\_\_\_

Note: Provide site sketch as directed on the back of this page.

|                                                                                                  |                     |
|--------------------------------------------------------------------------------------------------|---------------------|
| <b>Cathodic Protection (CP) Tester Information:</b>                                              |                     |
| Name: _____                                                                                      | Phone Number: _____ |
| Address: _____                                                                                   |                     |
| Testing must be conducted by a qualified CP tester. Indicate your qualifications as a CP tester: |                     |
|                                                                                                  |                     |

Identify which of the following testing situations applies:

- ☐ Test required within 6 months of installation of CP system (installation date was \_\_\_\_/\_\_\_\_/\_\_\_\_)
- ☐ Test required at least every 3 years after installation test noted above
- ☐ Test required within 6 months of any repair activity – note repair activity and date below:

Indicate which industry standard you used to determine that the cathodic protection test criteria are adequate: \_\_\_\_\_

| <b>Cathodic Protection Test Method Used (check one)</b> |                                                                                                                                                                                                          |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | 100 mV Cathodic Polarization Test                                                                                                                                                                        |
|                                                         | -850 mV Test (Circle 1 or 2 below)<br>1) Polarized Potential (instant off)    2) Potential with CP Applied, IR Drop Considered<br><b>Note: All readings taken must meet the -850 mV criteria to pass</b> |
|                                                         | Other Accepted Method (please describe):                                                                                                                                                                 |

Is the cathodic protection system working properly? Yes      No  
(circle one)

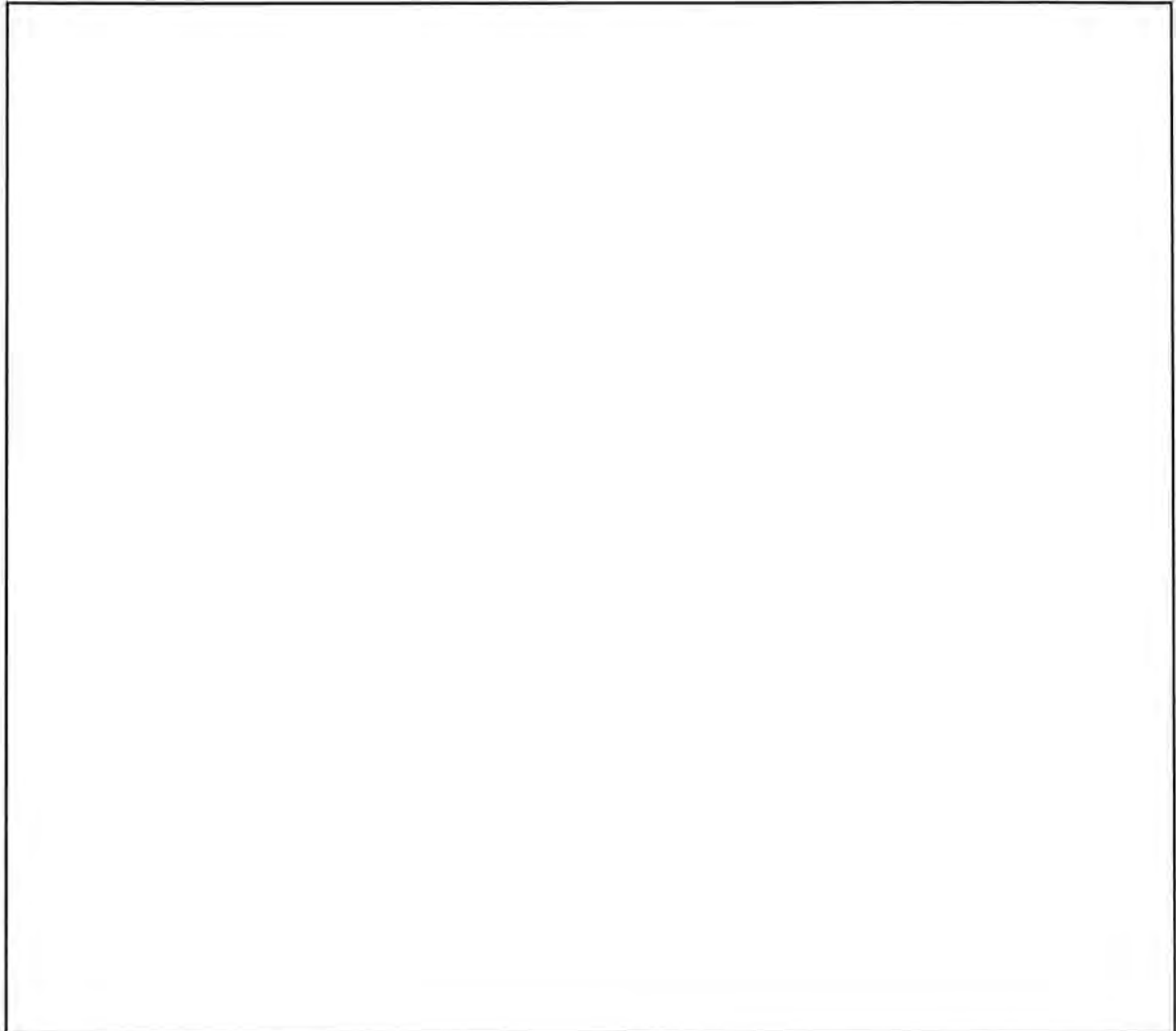
If answer is no, go to the directions at the bottom on the back of this page.

My signature below affirms that I have sufficient education and experience to be a cathodic protection tester; I am competent to perform the tests indicated above; and that the results on this form are a complete and truthful record of all testing at this location on the date shown.

CP Tester Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Keep This Paper On File For At Least Six Years**

**Site Sketch:** Provide a rough sketch of the tanks and piping, the location of each CP test, and each voltage value obtained (use space below or attach separate drawing). Voltage readings through concrete or asphalt do not provide accurate readings and are not acceptable. Perform sufficient testing to evaluate the entire UST system.



**If CP system fails test, you must have a corrosion expert fix the system.**

If the answer was no, indicating that your CP system is not working, you must have a **corrosion expert** investigate and fix the problem. A corrosion expert has additional training, skills, and certification beyond the corrosion tester who filled out the bulk of this form. A corrosion expert must be:

- Accredited/certified by NACE International (The Corrosion Society) as a corrosion specialist or cathodic protection specialist, or
- Be a registered professional engineer with certification or licensing in corrosion control.

As long as you have the UST, be sure you keep a record that clearly documents what the corrosion expert did to fix your CP system.

**Keep This Paper On File For At Least Six Years**

## 60-Day Inspection Results For Impressed Current Cathodic Protection Systems

Facility Name: \_\_\_\_\_

Amp Range Recommended: \_\_\_\_\_

Voltage Range Recommended: \_\_\_\_\_

[illegible]

- If the rectifier voltage and/or amperage output(s) are outside the recommended operating levels, contact a cathodic protection expert to address the problem.
- Never turn off your rectifier.
- Keep this record for at least 6 months after the date of the last reading.

## Some Special Corrosion Protection Situations

### What If You Have An STI-P3 Tank With A PP4 Test Station?

If you have a PP4 test station installed with an STI-P3 tank, you may perform the periodic testing of your cathodic protection system by using the meter provided to you with the PP4 test station.

- Don't forget to record the result of the reading and keep at least the last two results.
- If your test readings do not pass, you must take action to correct the problem. Call your installer and ask that the corrosion expert who designed the system examine it and correct the problem.

### What If You Combine Internal Lining And Cathodic Protection?

If you chose the combination of internal lining and cathodic protection for meeting corrosion protection requirements on your UST, you may not have to meet the periodic inspection requirement for the lined tank. However, you must always meet the requirements for checking and testing your cathodic protection system as described in the basic O&M checklist for corrosion protection on page 36. The 10-year and subsequent 5-year inspections of the lined tank are not required if the integrity of the tank was ensured when cathodic protection was added. You should be able to show an inspector documentation of the passed integrity assessment.

#### Example 1:

If you have cathodic protection and internal lining applied to your tank at the same time, periodic inspections of the lined tank **are not** required because an integrity assessment of the tank is required prior to adding the cathodic protection and internal lining.

#### Example 2:

If you had cathodic protection added to a tank in 1997 that was internally lined in 1994 and the contractor did not perform an integrity assessment of the tank at the time cathodic protection was added (or you cannot show an inspector documentation of the passed integrity assessment), then periodic inspections of the lined tank **are** required because you cannot prove that the tank was structurally sound and free of corrosion holes when the cathodic protection was added. The lined tank needs to be periodically inspected because the lining may be the only barrier between your gasoline and the surrounding environment.

### What If You Have A Double Walled Steel UST With Interstitial Monitoring And Cathodic Protection?

If you have a cathodically protected double walled steel tank and you use interstitial monitoring capable of detecting a breach in both the inner and outer wall or ingress of product and water as your method of leak detection, then you should monitor your cathodic protection system within six months of installation and following any activity that could affect the CP system.

If you are using impressed current cathodic protection, you still need to perform the 60-day checks of your rectifier to make sure it is operating within normal limits.

- Testing the cathodic protection system more frequently may help catch problems quicker.
- If your test readings do not pass, you must take action to correct the problem. Call your installer and ask that the corrosion expert who designed the system examine it and correct the problem.
- Don't forget to keep at least the last two results of your cathodic protection testing.

### **Do All UST Sites Need Corrosion Protection?**

A corrosion expert may be able to determine the soil at an UST site is not conducive to corrosion and will not cause the tank or piping to have a release during its operating life. If so, you must keep a record of that corrosion expert's analysis for the life of the tank or piping to demonstrate why your UST has no corrosion protection.

## Section 6 — Frequent Walk-Through Inspections

You should conduct basic walk-through inspections of your facility **at least monthly** to make sure your essential equipment is working properly and you have release response supplies on hand.

These inspections would not be as thorough as following the O&M checklists presented earlier in this booklet, but they can provide a quick overview you can do more often than the longer checklists. You might think of this level of inspection as similar to automobile dashboard indicators that provide us with status warnings like low battery.

When you perform your walk-through inspection you should quickly check at least the following:

- **Release Detection System:** Is your release detection equipment working properly? For example, did you run a quick self-test of the ATG to verify it's working properly? Or did you check your manual dip stick to make sure it's not warped or worn?
- **Spill Buckets:** Are spill buckets clean, empty, and in good condition?
- **Overfill Alarm (if you have one):** Is your overfill alarm working and easily seen or heard?
- **Impressed Current Cathodic Protection System (if you have one):** Is your cathodic protection system turned on? Are you checking your rectifier at least every 60 days?
- **Fill And Monitoring Ports:** Are covers and caps tightly sealed and locked?
- **Spill And Overfill Response Supplies:** Do you have the appropriate supplies for cleaning up a spill or overfill?

In addition, good UST site management should also include the following quick visual checks:

- **Dispenser Hoses, Nozzles, And Breakaways:** Are they in good condition and working properly?
- **Dispenser And Dispenser Sumps:** Any signs of leaking? Are the sumps clean and empty?
- **Piping Sumps:** Any signs of leaking? Are the sumps clean and empty?

If you find any problems during the inspection, you or your UST contractor need to take action quickly to resolve these problems and avoid serious releases.

**A frequent walk-through checklist is provided for your use on the next page.**



## ✓ Frequent Walk-Through Inspection Checklist

|                                                                                                                                                                                                                                                        |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
| <b>Date Of Inspection</b>                                                                                                                                                                                                                              |  |  |  |  |  |  |
| <b>Release Detection System:</b> Inspect for proper operation.                                                                                                                                                                                         |  |  |  |  |  |  |
| <b>Spill Buckets:</b> Ensure spill buckets are clean and empty.                                                                                                                                                                                        |  |  |  |  |  |  |
| <b>Overfill Alarm:</b> Inspect for proper operation. Can a delivery person hear or see the alarm when it alarms?                                                                                                                                       |  |  |  |  |  |  |
| <b>Impressed Current System:</b> Inspect for proper operation.                                                                                                                                                                                         |  |  |  |  |  |  |
| <b>Fill And Monitoring Ports:</b> Inspect all fill/monitoring ports and other access points to make sure that the covers and caps are tightly sealed and locked.                                                                                       |  |  |  |  |  |  |
| <b>Spill And Overfill Response Supplies:</b> Inventory and inspect the emergency spill response supplies. If the supplies are low, restock the supplies. Inspect supplies for deterioration and improper functioning.                                  |  |  |  |  |  |  |
| <b>Dispenser Hoses, Nozzles, And Breakaways:</b> Inspect for loose fittings, deterioration, obvious signs of leakage, and improper functioning.                                                                                                        |  |  |  |  |  |  |
| <b>Dispenser And Dispenser Sumps:</b> Open each dispenser and inspect all visible piping, fittings, and couplings for any signs of leakage. If any water or product is present, remove it and dispose of it properly. Remove any debris from the sump. |  |  |  |  |  |  |
| <b>Piping Sumps:</b> Inspect all visible piping, fittings, and couplings for any signs of leakage. If any water or product is present, remove it and dispose of it properly. Remove any debris from the sump.                                          |  |  |  |  |  |  |

Your initials in each box below the date of the inspection indicate the device/system was inspected and OK on that date.

## Section 7 — For More Information

This section identifies UST program contacts and other resources to help answer your questions and provide you with information about good UST management.

### Internet Resources

#### Government Links

- # Directory of State UST Program Contacts: <http://www.epa.gov/oust/states/statcon1.htm>
- # Directory of State UST Program Internet Sites: <http://www.epa.gov/oust/states/stateurl.htm>
- # U.S. Environmental Protection Agency's Office of Underground Storage Tanks Home Page: <http://www.epa.gov/oust>. To go directly to the compliance assistance section of the Home page go to: <http://www.epa.gov/swrust1/cmplastc/index.htm>
- # Tanks Subcommittee of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO): [http://www.astswmo.org/programs\\_tanks.htm](http://www.astswmo.org/programs_tanks.htm)
- # New England Interstate Water Pollution Control Commission (NEIWPCC): <http://www.neiwpcc.org>

#### Professional And Trade Association Links

- # American Petroleum Institute (API): <http://www.api.org>
- # American Society of Testing and Materials (ASTM): <http://www.astm.org>
- # Fiberglass Tank and Pipe Institute (FTPI): <http://www.fiberglasstankandpipe.com>
- # NACE International - The Corrosion Society: <http://www.nace.org>
- # National Fire Protection Association (NFPA) : <http://www.nfpa.org>
- # Petroleum Equipment Institute (PEI): <http://www.pei.org>
- # Steel Tank Institute (STI): <http://www.steeltank.com>
- # Underwriters Laboratories (UL): <http://www.ul.com>

### Free Informative Publications Available

The publications listed below are free and available from the U.S. Environmental Protection Agency (EPA). You can access these publications in the following ways.

- # Go to EPA's web site at <http://www.epa.gov/oust/pubs/index.htm> to order, read, or download documents online.
- # Write and ask for **free** publications by addressing your request to EPA's publication distributor: National Service Center for Environmental Publications (NSCEP), Box 42419, Cincinnati, OH 45242.
- # For **free** copies, call EPA's publication distributor's **toll-free** number at (800) 490-9198. Or go to <http://www.epa.gov/nscep/ordering.htm> for additional ordering methods.

#### Catalog Of EPA Materials On USTs

An annotated list of UST materials, including ordering information. Most of the leaflets, booklets, videos, and software items listed provide UST owners and operators with information to help them comply with federal UST requirements (32 pages).

**Musts For USTs: A Summary Of Federal Regulations For Underground Storage Tank Systems**  
Plain language summary of federal UST requirements for installation, release detection, spill, overfill, and corrosion protection, corrective action, closure, reporting and recordkeeping. Updated & revised 1995 (36 pages).

**Model Underground Storage Tank Environmental Results Program Workbook**

Workbook, which states can modify to reflect their laws, helps improve owner and operator compliance with UST regulations. Contains general information about ERP; instructions on how to use the workbook; regulatory requirements, best management practices, and compliance checklists for USTs; and draft forms and worksheets in the appendices (164 pages). (Available on web only)

**UST Systems: Inspecting And Maintaining Sumps And Spill Buckets – Practical Help And Checklist**

Manual presents recommended inspection guidelines and best management practices for UST system sumps and spill buckets. Includes safety considerations; a general introduction to the kinds of sumps; basic maintenance procedures for sumps and spill buckets; and a sump and spill bucket inspection checklist (16 pages).

**Straight Talk On Tanks: Leak Detection Methods For Petroleum Underground Storage Tanks**

Explains federal regulatory requirements for leak detection and briefly describes allowable leak detection methods. Updated & revised 2005 (28 pages).

**Getting The Most Out Of Your Automatic Tank Gauging System**

Trifold leaflet provides UST owners and operators with a basic checklist they can use to make sure their automatic tank gauging systems work effectively and provide compliance with federal leak detection requirements.

**Doing Inventory Control Right: For Underground Storage Tanks**

Booklet describes how owners and operators of USTs can use inventory control and periodic tightness testing to temporarily meet federal leak detection requirements. Contains recordkeeping forms (16 pages).

**Manual Tank Gauging: For Small Underground Storage Tanks**

Booklet provides simple, step-by-step directions for conducting manual tank gauging for tanks 2,000 gallons or smaller. Contains recordkeeping forms (12 pages).

**List Of Leak Detection Evaluations For UST Systems**

A summary of specifications, based on third-party certifications, for over 275 systems that detect leaks from USTs and their piping. Each summary provides information on such items as certified detectable leak rate/threshold, test period duration, product applicability, calibration requirements, restrictions on the use of the device, and so on. (Available on web only)

**List Of Integrity Assessment Evaluations For USTs**

A list of integrity assessment procedures that have been successfully evaluated and certified by a qualified independent third party to meet specified performance criteria. (Available on web only)

**Introduction To Statistical Inventory Reconciliation: For Underground Storage Tanks**

Booklet describes how Statistical Inventory Reconciliation (SIR) can meet federal leak detection requirements (12 pages).

**Closing Underground Storage Tanks: Brief Facts**

Trifold leaflet presents "brief facts" on properly closing USTs in order to comply with federal closure requirements.

**Underground Storage Tanks: Requirements And Options**

Trifold leaflet alerts UST owners and operators who are "nonmarketers" (who do not sell stored petroleum) that they need either to find alternatives to managing their USTs or to make decisions about UST compliance.

**Dollars And Sense: Financial Responsibility Requirements For Underground Storage Tanks**

Booklet summarizes the "financial responsibility" required of UST owners and operators (16 pages).

**List Of Known Insurance Providers For Underground Storage Tanks**

Provides UST owners and operators with a list of insurance providers who may be able to help them comply with financial responsibility requirements by providing suitable insurance mechanisms (12 pages). (Available on web only)

**Financing Underground Storage Tank Work: Federal And State Assistance Programs**

Booklet identifies potential sources of financial assistance to cover the costs of upgrading, replacing, or closing an UST, or of cleaning up an UST release. Updated and revised March 1999 (23 pages).

**State Regulatory Agency Contacts**

See EPA's web site at <http://www.epa.gov/oust/states/statcon1.htm> for state underground storage tank program contact information.







## Getting The Most Out Of Your Automatic Tank Gauging System

As an owner or operator of an underground storage tank, you have invested a lot of money in your automatic tank gauging system to detect leaks—but are you getting your money's worth?

If you don't operate your automatic tank gauging system (ATGS) effectively, you may be letting stored product leak into the environment. If so, you may face costly cleanups and liability actions. Also, you can be cited and fined for not meeting the federal requirements for properly operating and maintaining an ATGS to detect leaks from underground storage tanks (USTs).

***Note that a simple ATGS will detect leaks only from tanks. To detect leaks from piping, you will need an ATGS that supports connection to line leak detectors.***

The checklist that follows can help you avoid some common problems and make sure your ATGS is working as required:

- # **Know your ATGS.** Insist that your ATGS installer trains you and provides clear instructions in the proper operation and maintenance of the ATGS.
- # **Make sure your ATGS is constantly “on”** and plugged into a power source. This may sound obvious, but inspectors have written many citations when they discovered that the ATGS was “off” and not monitoring for leaks.

- # **Respond to alarms.** Ignoring an alarm defeats the purpose for having the ATGS. Don't ignore the “FAIL” alarm. Large leaks have gone undetected when operators ignored an alarm or turned their ATGS off.
- # **Run your ATGS in its “test mode”** at least once a month. You must test when tank is relatively full. Since an ATGS does not detect leaks above the product level, test when the tank is as full as it typically gets (try testing soon after delivery, but after product settles). Also, you should test frequently. The more frequently you test, the greater the likelihood you will detect leaks as quickly as possible. The earlier you detect a leak, the easier and less costly the cleanup.
- # **Have your ATGS maintained and calibrated according to manufacturers' instructions.** Make sure you read the directions in the manual that came with your ATGS. Use the manufacturer or installer representative's phone number to get answers to any questions you have about using the ATGS correctly. Don't hesitate to contact the manufacturer or installer for help.
- # **Report problems.** You must report test results indicating a leak to your implementing agency (usually your state environmental agency), generally within 24 hours. You do not need to report if the ATGS is found to be defective, is repaired immediately, recalibrated or replaced, and subsequent monitoring shows tank is tight. You must immediately investigate and confirm all suspected leaks. When in doubt, report.

- # **Keep records.** Federal regulations require you to keep the following records:

### Keep for at least one year:

- Monthly test results.
- Documentation of all calibration, maintenance, and repair.

### Keep for at least five years:

- Any written performance claim for your ATGS. This will usually be an evaluation document signed by a third-party evaluator showing how a sample ATGS performed under test conditions.
- Manufacturer-supplied schedules for calibration and maintenance.

Keep records either at the UST site or at a readily available alternative site, and provide them for inspection upon request.

- # **Put ATGS monitoring in the most responsible hands.** Do not rely on the vigilance of part-time or under-trained employees. If necessary, have ATGS alarms go to a central, 24-hour contact or use other mechanisms that put ATGS monitoring in the most responsible hands.

***Check state and local regulations.*** State or local regulations may differ from the federal requirements, so find out which requirements apply to your UST. Check with your implementing agency.

**Please note: You may need to continue doing monthly inventory control as you use your ATGS.** If your ATGS was installed after December 22, 1990 and does not meet performance standards for minimum leak detection rates, you must continue to perform proper inventory control. Check the third-party evaluation of your ATGS to see if it meets the performance standard requiring ATGS to detect a leak of 0.2 gallons per hour with 95% probability of detection and 5% probability of false alarm. **If you are not sure, check with your implementing agency.**

### Need More Information?

EPA can provide free, plain-English publications that concisely describe all aspects of federal UST requirements.

To order free publications, determine if your tanks need to meet federal UST requirements, get more information about UST requirements, or identify state regulatory authorities, please call **EPA's toll-free Hotline at 800-424-9346**. Remember, requirements and deadlines may be different in some states, so check with your state UST program office.

You can also find UST publications, links to state regulatory authorities, and other UST information at EPA's Office of Underground Storage Tanks Web site at <http://www.epa.gov/OUST/>

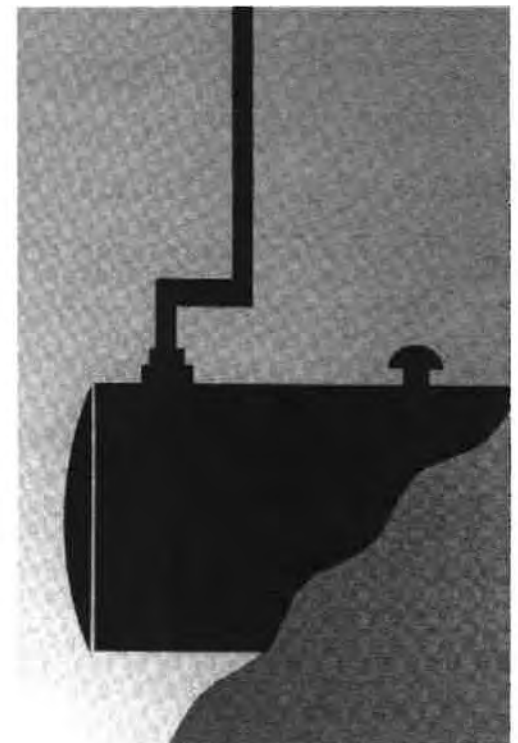
***Remember, it's in your best interest that your ATGS works and detects leaks as soon as possible—***

***before leaks become big cleanup and liability problems.***

***Protect your ATGS investment by making sure your ATGS installer:***

- Trains you in proper operation of the ATGS.
- Demonstrates that the ATGS has been correctly installed and programmed for the tank it monitors.
- Gives you an operation manual, schedules and documentation for calibration/maintenance, third-party evaluation, and phone numbers for technical support.
- Schedules maintenance with you as required by manufacturers' instructions.

## **Getting The Most Out Of Your Automatic Tank Gauging System**





# UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

## Practical Help And Checklist



## Contents

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### Appendix A: Sample Underground Storage Tank Sump And Spill Bucket Inspection Checklist

This document provides information on inspecting and maintaining sumps and spill buckets. The information provided in this manual is not intended to replace or contradict your specific manufacturer's instructions for maintaining your sumps. Nothing in this manual is intended to endorse or criticize any specific type of equipment or any manufacturer. Photographs of common sump problems are provided for instructional purposes only. This document does not replace existing federal or state regulations, nor is it a regulation itself - it does not impose legally binding requirements. For regulatory requirements regarding UST systems, refer to the federal regulations governing underground storage tank systems (40 CFR Part 280) or corresponding state regulations.

Additional copies of this manual are available at no cost by calling EPA's toll-free distribution center at 800-490-9198. Or you can download a color copy by going to OUST's World Wide Web Home Page at <http://www.epa.gov/oust/pubs>

## **Introduction**

### **Who Should Read This Manual?**

This manual is intended for owners and operators of underground storage tank (UST) systems; specifically, anyone who oversees the operation and maintenance of UST systems that contain and dispense petroleum products. UST owners/operators should ensure that only qualified personnel conduct inspection and maintenance activities.

### **How Will This Manual Help You?**

This manual covers recommended inspection guidelines and best management practices for sumps associated with your UST system. This manual will:

- ❖ Help you identify and inspect the sumps associated with your UST system, including the equipment in your sumps.
- ❖ Explain some simple steps you can take to maintain your sumps and the equipment in your sumps, as well as identify potential problems.
- ❖ Provide you with tips for fixing common problems before they cause a release to the environment.

For more complete guidance on how to operate and maintain your UST system, refer to the U.S. Environmental Protection Agency (EPA) document, *Operating And Maintaining Underground Storage Tank Systems, Practical Help And Checklists* (EPA 510-B-05-002, May 2005).

### **Why Should You Care About Sump Maintenance?**

Despite advances that have greatly reduced the threat of petroleum releases from UST systems into the environment, some UST systems continue to experience releases. Inadequate operation and maintenance is one reason these systems continue to experience releases.

**After reading this manual, you should be able to identify the different types of sumps associated with your UST system and be familiar with how to identify some common sump-related problems.**

**The average cleanup cost for a leaking UST is about \$100,000. The cost can be more than \$1,000,000 if groundwater is affected.**

## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

Sumps, including the sumps beneath dispensers, sumps around the submersible pump (turbine) head<sup>1</sup>, transition/intermediate sumps, and spill buckets are common sources of releases. Releases of even small volumes of product can seep into the ground and contaminate soil and groundwater. Inspecting and maintaining your sumps is generally simple and can prevent or minimize such releases.

While this manual addresses a number of issues related to sump maintenance, it may not cover some details specific to your particular sumps. Keep in mind the information provided in this manual is not intended to replace or contradict your specific manufacturer's instructions for maintaining your sumps and the equipment in your sumps.

**This manual presents practical help and a checklist for inspecting and maintaining sumps. State and local agencies may require these or other activities. Please check with your state or local agency to determine their specific requirements.**

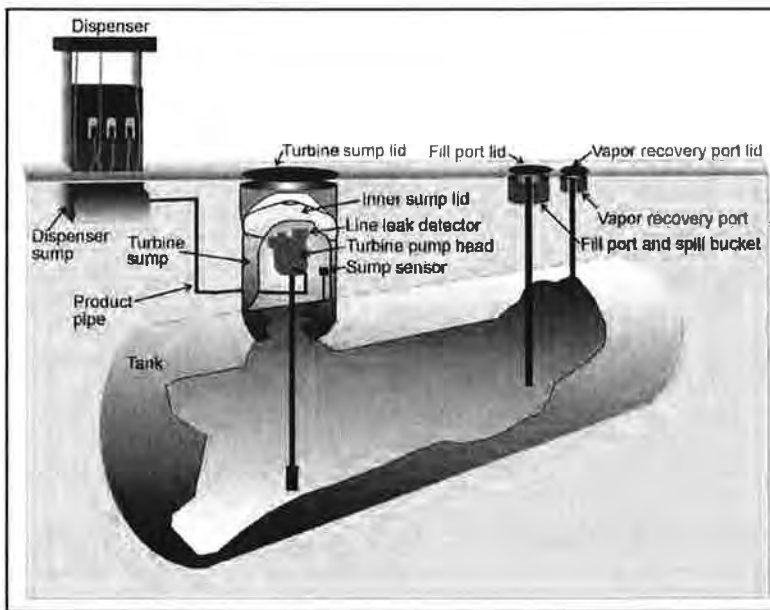


Diagram of an UST system

<sup>1</sup> Submersible turbine pumps are often known by their acronym STP.



## **Safety Considerations**

If you perform sump inspection and maintenance activities, you should be experienced and aware of hazards and safety issues. Chances are you will be working in a high-traffic area, such as a gas station. You should properly mark off your work area and take appropriate steps to protect yourself. You should have the following items:

- ❖ Safety barriers, such as traffic cones or yellow plastic tape to mark off your work area
- ❖ Orange safety vest
- ❖ Hard hat (for construction sites)
- ❖ Steel-toed boots
- ❖ First-aid kit
- ❖ Chemical resistant gloves

You should consider these additional safety precautions:

- ❖ Sump lids may be large and very heavy and may require more than one person to lift. Use caution when lifting large steel lids.
- ❖ Be aware of the possibility of explosive or harmful vapors when inspecting and maintaining sumps. Avoid breathing in petroleum vapors.
- ❖ Please note that OSHA designates some sumps as confined spaces. See OSHA's standard on confined spaces in Title 29 of the *Code of Federal Regulations*, Part 1910.146.

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9797](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9797)



Person wearing safety gear while inspecting a sump



Person removing a sump lid within a marked inspection area

## Getting To Know Your Sumps

### What Is A Sump?

A sump is a subsurface area (pit) designed to provide access to equipment located below ground and, when contained, to prevent liquids from releasing into the environment.

Sumps may or may not be contained. Contained sumps have sides and a bottom, are designed to be liquid tight, and may have a special cover designed to keep out water. Uncontained sumps generally do not have a bottom and are not designed to prevent liquid from entering or exiting the sump. These sumps may use wooden or metal sheeting to restrict the slumping of soil or crushed rock onto the equipment and to prevent the surface pavement from buckling or caving.



Uncontained turbine sump

### What Kinds Of Sumps Are Associated With My UST System And Where Are They Located?

The types of sumps likely to be associated with your UST system are:

**Turbine Sumps** – Turbine sumps are designed to provide access to the turbine area above the tank. The turbine area may house the submersible turbine pump head, piping, line leak detectors, interstitial monitoring devices, wiring, and other equipment. You generally will find turbine sumps directly above your USTs. Turbine sump lids generally range from 3 to 4 feet in diameter and can be round, oval, square, or rectangular in shape.



Contained turbine sump

**Dispenser Sumps** – Dispenser sumps are designed to provide access to piping, flex connectors, shear valves, and other equipment located beneath the dispenser. Dispenser sumps are found directly under your dispensers.



Contained dispenser sump

## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

**Transition/Intermediate Sumps** – Transition/intermediate sumps are less common than other sumps, but can be found along the piping runs that connect the tanks to the dispensers, and are designed to provide access to the piping. Transition sumps are used to transition from above-ground piping to below-ground piping or, in some cases, to transition between different types of piping. Intermediate sumps are located at key points in the piping system (e.g., low spots, branches, tees). Transition/intermediate sump lids generally range from 3 to 4 feet in diameter and can be round, oval, square, or rectangular in shape.



Transition/intermediate sump



Spill bucket

**Spill Buckets** – Spill buckets are contained sumps installed at the fill and/or vapor recovery connection points to contain drips and spills of fuel that can occur during delivery. Spill buckets are located where the delivery driver connects the product and/or vapor recovery hoses to your tank. Spill buckets can be found directly above your UST, at a location that is away from your UST (remote), or both. They typically range in size from 5 to 25 gallons, and lids range from 1 to 2 feet in diameter. Spill buckets may also be installed within a larger sump, similar in construction to a turbine sump, for secondary containment. In this case, you will only need to open your smaller lids to access your spill buckets.



Fill and vapor recovery lids installed within a larger sump lid

Spill Bucket Lid

Turbine Sump Lid



View of sump lids

### ***Did You Know?***

**Most UST systems must have spill buckets at each fill pipe where fuel is delivered into the UST. Some facilities also may have a second spill bucket around the Stage I vapor recovery line.**

### How Do You Access Your Sumps And Spill Buckets?

You may need tools such as a large screwdriver, pry bar, wrench, or hammer to open your sump lids. Composite lids may require a specialized tool that you probably have on site. Have someone help you in lifting large lids, as they may be very heavy. Use caution when opening the lids and be aware of the following:

- ❖ Square, rectangular, or oval sump lids can fall through the opening and damage the piping, submersible pump, or tank.
- ❖ Round lids, while not typically capable of falling into the sump, may swing down and damage the turbine head or line leak detector.
- ❖ If applicable, follow your equipment manufacturer's recommendations if special instructions are necessary to open the sump lids.
- ❖ You may need a key to remove the dispenser cover in order to access the dispenser sumps.

Generally, sumps will have a traffic load rated lid, beneath which may be either direct access to the equipment or, if contained, an inner lid covering the contained area.



Circular steel sump lid pulled back to show the inner lid covering the turbine sump



Square steel sump lid pulled up to show the inside of an uncontained turbine sump



Circular spill bucket lid pulled back to show the fill port with a spill bucket



Dispenser cover pulled off to show the dispenser piping and equipment



## Basic Maintenance Procedures For Sumps And Spill Buckets

### What Can You Do To Ensure Your Sumps and Spill Buckets Are In Good Condition?

Maintaining your sumps and spill buckets will involve gaining access to them, inspecting them on a regular basis, assessing whether any problems exist, and ensuring any problems are addressed. For serious problems (e.g., obvious leaks occurring on the piping and equipment, cracked spill buckets or sidewalls, cracked or missing seal around the lid), it's best to contact your UST contractor or the manufacturer of your UST equipment to have the problem fixed. Appendix A contains a sample checklist you may want to use to guide your sump inspections.

### What Should You Look For When You Inspect Your Turbine, Dispenser, And Transition/Intermediate Sumps?

**Are The Lids Tight And Sealed Correctly?** Check to ensure the lids to the turbine, transition, and intermediate sumps create a tight seal when closed and are securely fastened. The seals of the sump lids often dry out, crack, and require replacement; so you need to ensure they are in good condition. Water in your sumps may be an indication of a bad seal.

**Are The Sump Walls Intact?** Check to ensure the walls of your sump are intact and are not slumping or warping. If your sump is not contained, check the sidewalls to ensure there is no caving.

**Note:** To avoid accumulation of surface water, you should check the seals of your sumps' lids more frequently if they are located at a low point on the property or in the path of surface water runoff.

If you identify or suspect a release of fuel to the environment, report this to your implementing agency. For a list of state UST websites, go to: <http://www.epa.gov/oust/states/statcon1.htm>



Contained turbine sump full of liquid

## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

**Is The Sump Free Of Debris, Liquid, Or Ice?** Debris, liquid, and ice can damage equipment, reduce capacity (if contained), and interfere with your equipment's ability to operate correctly. For example, water in your sump will reduce capacity and may cause metal equipment in your sump to corrode. Fuel in your sump will also reduce capacity and may damage some plastic sumps and other components not designed for long term contact with petroleum. Similarly, used dispenser filters may contain small amounts of petroleum, so they should not be left inside your sump. You should carefully remove and properly dispose of any debris, liquid, or ice in your sumps.

**Did You Know?**  
Some sensors may alarm only when in contact with petroleum. If covered completely with water, they will not alarm, even in the event of a petroleum leak.



Dry, debris-free contained turbine sump



Contained sump with liquid and debris

**Is The Sump Free Of Cracks Or Holes?** Examine your contained sumps for signs of damage (e.g., cracks or holes). Check to ensure no cracks are present around the areas where components, such as wiring conduit and piping, enter your sumps. Cracks and holes mean your sump will no longer contain product or prevent releases to the environment.

**Are Sump Components Leak-Free?** Check to ensure the piping, fittings, and connections in your sump are not leaking or dripping fuel.

**Is The Sump Free Of Staining/New Staining?** Check to ensure no new stains are present since your last inspection. New staining indicates a drip or spill has occurred.



Staining



## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

**Are The Sensors Positioned Correctly?**<sup>2</sup> If you have sensors, check to ensure they are positioned properly in the lowest part of your sump and below the piping entry. Sensors should not be raised as the result of false alarms or for any other reason. Raised or disabled sensors will take longer or fail to detect a leak and could violate regulatory requirements.

Sump sensor



Sump sensor in contained turbine sump



Float sump sensor



Liquid sump sensor

### Are All Penetrations Into The Sump In Good Condition?<sup>2</sup>

Check to ensure all areas where electrical wires, conduits, and piping enter the sump are sealed. Cracked or loose seals around the penetrations can allow liquids to enter the sump and can allow fuel to be released into the surrounding soils if a release occurs inside the sump.



Sump penetration seals in poor condition



Sump penetration seals in good condition

### Did You Know?

A crack or hole in your sump below the sump sensor will not allow liquid to accumulate in the sump to a level necessary to activate the sensor. As a result, liquid may be released undetected. Such cracks or holes need to be repaired immediately.

### Did You Know?

Some plastic flexible piping is installed within a larger pipe (or chase). There may be a seal between the primary pipe and the chase. Check with the piping maker to determine the proper position of the seal.

<sup>2</sup> Only for contained sumps

## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

**Are The Test Boots Positioned Correctly And In Good Condition?**<sup>3</sup> A test boot is found on secondarily-contained piping and is a flexible sleeve usually made of rubber with a valve located either at the entry to the sump or on the piping in the sump. It is used to test the space between the inner and outer piping walls for tightness. Check to ensure the test boots are in good condition, not cracked or torn, and positioned correctly in the sump.

To ensure a leak can be detected by your leak detection equipment, test boots should be positioned so they allow product to enter your sump if a leak from the primary piping occurs. There are a variety of different configurations for test boots. If you are unsure of the appropriate configuration, check with your contractor.



Test boot located in a sump



Test boots positioned at sump wall, right test boot is torn

### Is The Piping And Other Equipment In Good Condition?

Sumps may contain various types of piping and equipment such as leak detection equipment, turbine motors, line leak detectors, sensors, conduits, and flex connectors.



Contained turbine sumps and equipment in good condition

#### ***Did You Know?***

**If your metal piping, including metal flex connectors, is in contact with the ground, it must be protected from corrosion.**

<sup>3</sup> Typically only for contained sumps

## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

When inspecting the piping and equipment in your sumps, you should watch for the following conditions:

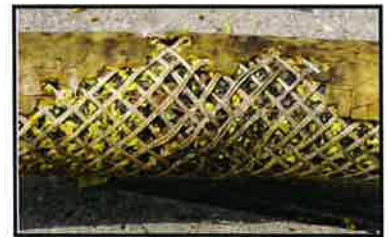
- ❖ For metal piping, check to ensure the piping is not severely corroded, in contact with the ground if it does not have corrosion protection, or otherwise degraded.
- ❖ For fiberglass piping, check to ensure the piping is not cracked, delaminated, or otherwise degraded.
- ❖ For flexible piping, check to ensure the piping does not have abnormal bends, breaks, cracks, or kinks; is not bulging, swelling, or growing; has not become soft, spongy, or discolored; and is not otherwise distorted or degraded.
- ❖ Check to ensure the fittings and flexible connectors are not twisted or misaligned and the flexible connectors are not cracked, kinked, etc.
- ❖ Check to ensure other pieces of equipment, including pump head, line leak detector, and sensors, are not visibly damaged, severely corroded, etc.



Equipment and metal piping covered with dirt in uncontained sump



Fiberglass piping is cracked



Flexible piping is degraded due to microbial growth



Flexible piping is cracked



Flexible piping is kinked



Metal flexible connector is twisted due to growth of flexible plastic piping



Flexible piping is bulging

## **What Should You Look For When You Inspect Your Spill Buckets?**

**Are The Lids To Your Spill Buckets In Good Condition?** Check to ensure the lids to your spill buckets are in good condition so they will keep water out when the lid is closed. Ensure that when the lids to your spill buckets are in the closed position, they create a good seal and are secured tightly. Some spill buckets contain a rubber gasket inside the cover; check to ensure the rubber gasket is in good condition and creates a proper seal when the lid is closed.



Cracked spill bucket lid



Spill bucket lid gasket

Check to ensure the lid is not touching the fill cap. This situation should be repaired because it could potentially damage the fill pipe and the tank if it is in an area where vehicles drive over the lid.

**Is The Spill Bucket Free Of Debris, Liquid, Or Ice?** Examine your spill buckets to determine whether they contain debris, liquid, or ice. For example, water in your spill bucket will reduce capacity and may cause metal equipment in your sump to corrode. Fuel in your spill bucket will also reduce capacity and may damage some plastic spill buckets not designed for long term contact with petroleum. You should carefully remove and properly dispose of any debris, liquid, or ice found in your spill buckets during your inspections. You should also check for and remove any liquid and debris present in your spill buckets before and after every delivery.

**A missing or damaged spill bucket lid may be a safety hazard. Replace it as soon as possible. Until the lid is replaced, cover and barricade the area to prevent potential accidents.**



Spill bucket that contains liquid

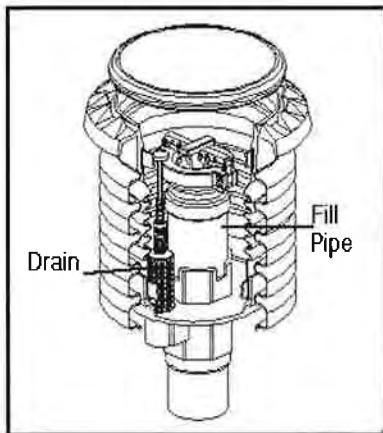


## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

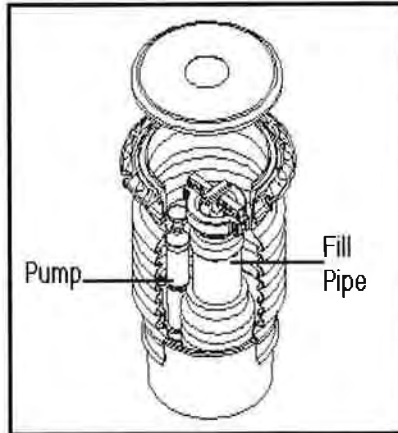
Some spill buckets are equipped with a valve that allows you to drain accumulated liquid into your UST. Others may be equipped with a manual pump so fuel can be transferred to your UST system by pumping it through the fill pipe or removing the fuel and disposing of it properly. However, keep in mind that when you pump out or drain your spill bucket into your UST, any water and debris present also will enter the UST. This could lead to internal corrosion, dispensing problems, and the need to remove contaminated water from the tank. If your spill bucket is not equipped with a drain valve or pump, you can still remove the liquid and debris and dispose of them appropriately. Liquid can be removed with a portable pump, such as the one on the right.



Portable pump



Spill bucket with a drain valve



Spill bucket with a manual pump

**If your spill bucket is always dry, this may be an indication that it is not able to contain product. You may need to test to ensure it is liquid tight.**

**Is The Spill Bucket Free Of Cracks Or Holes?** Examine the spill buckets for evidence of cracks or holes. If you have a metal bucket, check for corrosion and rust. Also check for deformations in the spill buckets or separation of the spill bucket from the fill pipe.



Spill bucket in poor condition – note the gap between the spill bucket and the fill pipe

## UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

**Are The Drain Valves Operational?** Some spill buckets have drain valves. Check to ensure the drain valve is free of debris and operational (e.g., it can close tightly and be opened to drain fuel in the spill bucket). If the drain valve is left open:

- ❖ It will act as a vent
  - Possibly affecting the ability of your overfill device to function properly;
  - Allowing potentially dangerous vapors to build up in the spill bucket or to be released to the soil or groundwater;
  - Possibly affecting the operation of the Stage II vapor recovery system.
- ❖ It can allow water and debris to enter your tank.



Spill bucket drain valve

**Never pump fuel from your spill buckets into storm or sewer drains as a method of disposal. Improper disposal can contaminate surface and groundwater, result in vapor/explosion hazards, damage sewage treatment plants, and may be in violation of state or federal law.**



## **Where Can You Get More Information On This Topic?**

### **Federal Agencies**

U.S. EPA  
Office of Underground Storage Tanks  
<http://www.epa.gov/oust>

U.S. Department of Labor  
Occupational Safety and Health Administration  
<http://www.osha.gov>  
1-800-321-OSHA (6742)

### **Organizations**

API - American Petroleum Institute  
[www.api.org](http://www.api.org)  
(202) 682-8000

FTPI - Fiberglass Tank and Pipe Institute  
[www.fiberglassstankandpipe.com](http://www.fiberglassstankandpipe.com)  
(281) 568-4100

NACE International - Formerly National Association of  
Corrosion Engineers  
[www.nace.org](http://www.nace.org)  
(281) 228-6200

NFPA - National Fire Protection Association  
[www.nfpa.org](http://www.nfpa.org)  
(617) 770-3000

PEI - Petroleum Equipment Institute  
[www.pei.org](http://www.pei.org)  
(918) 494-9696

STI - Steel Tank Institute  
[www.steeltank.com](http://www.steeltank.com)  
(847) 438-8265

### **Publications**

The publications listed below are free and available from the U.S. EPA. You can access these publications via EPA's website or you can call, write to, or fax EPA.

- ❖ You can download, read, or order documents from  
<http://www.epa.gov/oust/pubs/index.htm>
- ❖ To order free copies or ask questions, call EPA's publication distribution toll-free number at 800-490-9198 or fax 301-604-3408. You can also write and ask for free publications by addressing your request to EPA's publication distributor: National Service Center for Environmental Publications (NSCEP), Box 42419, Cincinnati, OH 45242.

*Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists*, U.S. EPA, Office of Underground Storage Tanks, Washington DC, EPA 510-B-05-002, May 2005.

*Musts for USTs: A Summary of the New Regulations for Underground Storage Tank Systems*, U.S. EPA, Solid Waste and Emergency Response, Washington DC, EPA-510-K-95-002, July 1995.

*Model Underground Storage Tank Environmental Results Program Workbook*, U.S. EPA, Solid Waste and Emergency Response, Washington DC, EPA R-04-003, June 2004.

### **Other Sources**

For additional information on UST system operation and maintenance, go to U.S. EPA Office of Underground Storage Tanks, List of Operation and Maintenance Tools  
<http://www.epa.gov/oust/ustsystem/tanko&m.htm>

For links to state UST websites go to  
<http://www.epa.gov/oust/states/statcon1.htm>

## Appendix A

Note: Federal UST regulations do not require you to report your maintenance activities, use this form, or keep any specific records of your sump inspection and maintenance practices.

### Sample Underground Storage Tank Sump And Spill Bucket Inspection Checklist

Name: \_\_\_\_\_ Date/Time Of Inspection: \_\_\_\_\_

Comments/Follow-Up Needed: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Choose yes or no for each question that applies.  
 Choosing no on any item indicates a problem that should be corrected.  
 When you have corrected the problem, check the fixed box.

| Turbine/Transition/Intermediate Sumps                           | Sump No.: _____ |    |                          | Sump No.: _____ |    |                          | Sump No.: _____ |    |                          | Sump No.: _____ |    |                          |
|-----------------------------------------------------------------|-----------------|----|--------------------------|-----------------|----|--------------------------|-----------------|----|--------------------------|-----------------|----|--------------------------|
|                                                                 | Yes             | No | Fixed?                   | Yes             | No | Fixed?                   | Yes             | No | Fixed?                   | Yes             | No | Fixed?                   |
| Are The Lids Tight And Sealed Correctly?                        |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Are The Sump Walls Intact?                                      |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Is The Sump Free Of Debris, Liquid, Or Ice?                     |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Is The Sump Free Of Cracks Or Holes?*                           |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Are Sump Components Leak-Free (No Leak Or Drips)?               |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Is The Sump Free Of Staining/New Staining?                      |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Are The Sensors Positioned Correctly?*                          |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Are All Penetrations Into The Sump In Good Condition?*          |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Are The Test Boots Positioned Correctly And In Good Condition?* |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |
| Is The Piping And Other Equipment In Good Condition?            |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |                 |    | <input type="checkbox"/> |

| Dispenser Sumps                                                | Dispenser No.: _____ |    |                          | Dispenser No.: _____ |    |                          | Dispense No.: _____ |    |                          | Dispenser No.: _____ |    |                          |
|----------------------------------------------------------------|----------------------|----|--------------------------|----------------------|----|--------------------------|---------------------|----|--------------------------|----------------------|----|--------------------------|
|                                                                | Yes                  | No | Fixed?                   | Yes                  | No | Fixed?                   | Yes                 | No | Fixed?                   | Yes                  | No | Fixed?                   |
| Is The Sump Free Of Debris, Liquid, Or Ice In The Sump?        |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Is The Sump Free Of Cracks Or Holes?                           |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Are Sump Components Leak-Free (No Leak Or Drips)?              |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Is The Sump Free Of Staining/New Staining?                     |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Are The Sensors Positioned Correctly?                          |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Are All Penetrations Into The Sump In Good Condition?          |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Are The Test Boots Positioned Correctly And In Good Condition? |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |
| Is The Piping And Other Equipment In Good Condition?           |                      |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |                     |    | <input type="checkbox"/> |                      |    | <input type="checkbox"/> |

| Spill Buckets                                         | Bucket No.: _____ |    |                          | Bucket No.: _____ |    |                          | Bucket No.: _____ |    |                          | Bucket No.: _____ |    |                          |
|-------------------------------------------------------|-------------------|----|--------------------------|-------------------|----|--------------------------|-------------------|----|--------------------------|-------------------|----|--------------------------|
|                                                       | Yes               | No | Fixed?                   | Yes               | No | Fixed?                   | Yes               | No | Fixed?                   | Yes               | No | Fixed?                   |
| Are The Lids To Your Spill Buckets In Good Condition? |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |
| Is The Spill Bucket Free Of Debris, Liquid, Or Ice?   |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |
| Is The Spill Bucket Free Of Cracks Or Holes?          |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |
| Are The Drain Valves Operational?                     |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |                   |    | <input type="checkbox"/> |

\*Only for contained sumps

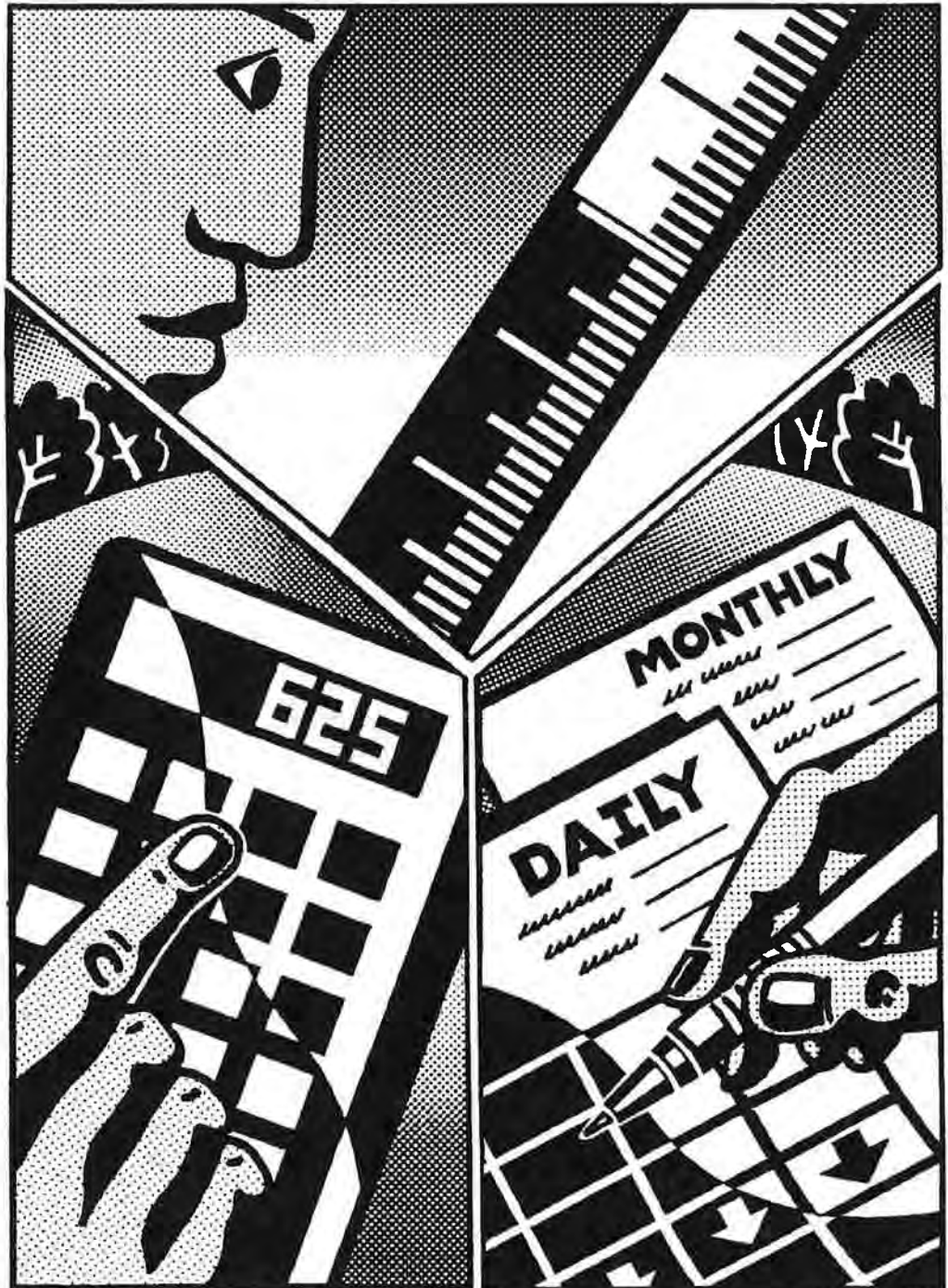






# Doing Inventory Control Right

## For Underground Storage Tanks



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# **Why You Should Read This Booklet If You Use Inventory Control**

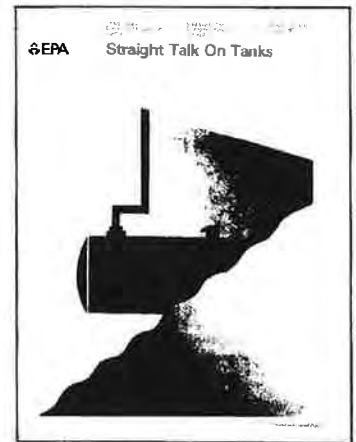
Federal and state laws require underground storage tanks (USTs) to have leak detection.

If your USTs do not have leak detection, you can be cited for violations and fined. Leak detection violations can also keep you from getting legally required insurance coverage and reimbursement for cleanup costs. Without leak detection, you constantly risk discovering a leak only after it becomes a major financial burden for yourself and an environmental problem for everyone.

**If inventory control is part of your leak detection, then this booklet can help you make sure you do inventory control correctly.**

Inspections conducted nationwide indicate that most people who think they are doing inventory control are not doing it in a way that is likely to find leaks and meet the law's requirements for leak detection. So even if you are SURE you are doing inventory control right, read this booklet carefully—it could save you a lot of grief and money.

If you need information on federal leak detection requirements and the various methods of leak detection available to you, see "Straight Talk On Tanks." Call EPA's toll-free Hotline at 800 424-9346 and order this free publication by number: EPA 530/UST-90/012.



## How Does Inventory Control Work?



This booklet helps you use inventory control to meet federal regulatory leak detection requirements by showing you how to do three important tasks:

- ! Good sticking
- ! Good math
- ! Good recordkeeping



Without these three, you may fail to meet the leak detection requirements. To do inventory control right, you have to spend time to make sure that you consistently measure the tank's contents correctly, that you don't let math errors creep into your daily and monthly calculations, and that you keep complete, easy-to-read records on file for at least a year.

Basically, inventory control requires daily measurements of tank contents and math calculations that let you compare your "**stick**" inventory (what you've measured) to your "**book**" inventory (what your recordkeeping indicates you should have). Some people call this process "inventory reconciliation." If the difference between your "**stick**" and "**book**" inventory is too large, your tank may be leaking.



Be sure you read about several important restrictions on the use of inventory control that are described on the next page.

***To use INVENTORY CONTROL correctly,  
follow Steps 1—5 starting on page 6.***

**Please note these important restrictions on the use of inventory control as leak detection:**

**!** **Inventory control can never be used alone.** Inventory control must always be used in combination with tank tightness testing. Tanks must be tightness tested every 12 months if they do not have corrosion protection and spill/overflow devices. Tanks with corrosion protection and spill/overflow devices must be tested every 5 years.

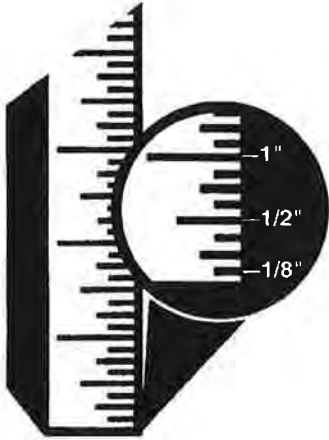
**!** **Inventory control is a TEMPORARY leak detection method.** You can use inventory control only for 10 years after installing a new tank that has corrosion protection and spill/overflow devices or for 10 years after upgrading an old tank with corrosion protection and spill/overflow devices. After the 10-year period, you must use a monthly monitoring method, such as groundwater monitoring or interstitial monitoring.

Tanks without corrosion protection and spill/overflow devices can use inventory control only until December 1998, when these tanks must be upgraded or closed. (See "Straight Talk On Tanks.")

**!** **The combined use of inventory control and tank tightness testing does not meet your tank system's leak detection requirements for piping.** Pressurized and some suction piping must use other methods of leak detection, such as interstitial monitoring. (See "Straight Talk On Tanks.")

**If you don't pay careful attention to these restrictions, you will fail to meet the leak detection requirements.**

## Do You Have The Right Equipment?



### Gauge Stick Or Other Gauges

The gauge stick used to measure the depth of liquid in an underground tank must be marked or notched to the  $\frac{1}{8}$  inch, starting with zero at the bottom end. Check your stick to be sure the end has not been worn or cut off and that the stick is not warped. The stick should be made of non-sparking material, such as wood, and varnished to minimize the creeping of fuel above the actual fuel level in the tank. Instead of using a gauge stick, you may use a mechanical or electronic tank level monitor. Whatever measuring device you use must be capable of measuring the level of product over the full range of the tank's height to the nearest  $\frac{1}{8}$  inch.



### Pastes For Finding Water Or Fuel

You must check for water in the bottom of the tank at least once each month by smearing a water-finding paste along the bottom of the gauge stick. The paste changes color when it comes in contact with water. Many operators improve their stick readings by smearing a fuel-finding paste on about 6 inches of the stick where they expect the fuel level to be. Fuel-finding paste changes color when it comes in contact with fuel.

### Forms

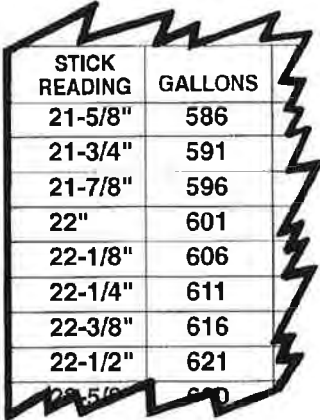
The instructions in this booklet are keyed to two forms: the "DAILY INVENTORY WORKSHEET" and the "MONTHLY INVENTORY RECORD." You will find filled-in sample copies of these forms on the last two pages of this booklet. These samples are on perforated pages, so tear them out and refer to them while you read through the directions that are keyed alphabetically to the sample forms. Also, **near the back of the booklet, you will find "masters" you can copy repeatedly to provide forms for use in your recordkeeping.** If these forms are filled out according to the instructions in this booklet, you will be in compliance with federal regulations for inventory control. You should find out if state or local requirements have limitations on the use of inventory control or have requirements that are different from those presented in this booklet. You can use other standard recordkeeping forms, as long as they are clear, consistent, and contain all the information required by the federal and state leak detection regulations.



### Tank Chart

A tank chart is a table that converts the number of inches of liquid in the tank into the number of gallons. You need a tank chart that exactly matches your storage tank (tank manufacturers usually provide charts for their tanks). If you have more than one tank, you will need a chart for each tank unless the tanks are identical. The tank chart must show conversion to gallons for each  $\frac{1}{8}$  inch stick reading. If your tank chart does not convert each  $\frac{1}{8}$  inch reading into gallons, contact the tank manufacturer, or, if you have a steel tank, the Steel Tank Association (708 438-8265) to get an appropriate chart.

**You always need to convert inches into gallons in order to fill out the forms correctly and to do the necessary math.** To convert inches into gallons, find your stick's reading to the nearest  $\frac{1}{8}$  inch on the tank chart, then simply read across to the gallons column to find the number of gallons. If you cannot get a tank chart showing conversion to gallons for each  $\frac{1}{8}$  inch reading, you must do the additional math explained on page 9.



| STICK<br>READING | GALLONS |
|------------------|---------|
| 21-5/8"          | 586     |
| 21-3/4"          | 591     |
| 21-7/8"          | 596     |
| 22"              | 601     |
| 22-1/8"          | 606     |
| 22-1/4"          | 611     |
| 22-3/8"          | 616     |
| 22-1/2"          | 621     |
| 22-5/8"          | 626     |

### Drop Tube

The fill pipe through which the fuel is delivered into the tank must have a drop tube extending to within 1 foot of the bottom of the tank. Stick measurements should be made through a drop tube in the fill pipe or gauging port. If your fill pipe does not have a drop tube, call your petroleum equipment supplier to have one installed.

### Calibrated Dispensing Meters

Meters must be calibrated according to local standards.

### Manifolded Tanks

If you have manifolded tanks or dispensers that blend fuel, consider these tanks as one tank system if they share a common inventory of stored fuel. As you follow the directions on the following pages, you will need to combine your measurements and calculations for all the tanks manifolded into one system.

## Step 1—Measure The Tank's Contents

**You must measure the tank every day** that fuel is added or removed. You may take measurements using a gauge stick or a mechanical or electronic tank level monitor.

**No fuel can be added or removed from the tank while you are performing Step 1 or Step 2.**

Every day you measure the tank, you should fill out a "DAILY INVENTORY WORKSHEET." As you go through the following directions, refer to the sample DAILY INVENTORY WORKSHEET you will find on the last pages of this booklet. For easy reference, the sample is on a perforated page so you can tear it out and keep it handy as you read through the directions. Also, near the back of the booklet is a "master copy" on a perforated page you can tear out to make copies of the DAILY INVENTORY WORKSHEET for your recordkeeping.

**Use the sample "DAILY INVENTORY WORKSHEET" from the last two pages of the booklet to see where you put the information from letters "A" through "M" in the following directions.**

- A** Fill in the identifying information at the top of the worksheet.
- B** Next to the "TANK IDENTIFICATION" box are empty vertical columns. Each column represents one tank—consistently enter all information on that one tank in the same vertical column. **NOTE:** Once you have filled in the tank identification boxes, make copies of the worksheet so you won't have to repeatedly enter the same information.

**USE GOOD STICKING PRACTICES:** **Slowly** lower the gauge stick to the tank's bottom. Let the stick gently touch the bottom, then quickly bring it back up. Read the depth of fuel indicated by the wet mark to the closest  $\frac{1}{8}$  inch division on the stick. Use of fuel-finding paste will make your stick readings more accurate.



- C** Write your measurement in the box labeled "END STICK INCHES" for the tank you measured.

**NOTE:** If your tank is equipped with an automatic tank gauge (ATG), you may record the inches of product and gallons of product directly from the ATG's printed tape or simply staple the tape with this information to the worksheet.



## Step 2—Record The Amount Pumped

**At the same time** you measure the tank contents (Step 1), you must record on the DAILY INVENTORY WORKSHEET the amount of fuel pumped. **No fuel can be added or removed from the tank while you are sticking the tank and recording the amount pumped.**



- D** Locate the box labeled "AMOUNT PUMPED" on the left side of the worksheet. Copy the numbers from each dispenser's totalizer onto the worksheet. **Be very careful that you write all the meter readings for a tank in the same column.** You may have several dispensers and totalizers for one tank, so the worksheet provides boxes in which you can enter several readings in any order.
- E** Add up the totalizer meter readings in each column and write the result in the box labeled "TODAY'S SUM OF TOTALIZERS."
- F** Find the last DAILY INVENTORY WORKSHEET you completed. Copy "TODAY'S SUM OF TOTALIZERS" from that worksheet into the "Previous Day's Sum of Totalizers" box of the worksheet you are working on today.
- G** On today's worksheet, subtract "Previous Day's Sum of Totalizers" from "TODAY'S SUM OF TOTALIZERS" and write the result in the box labeled "AMOUNT PUMPED TODAY."

You may have an alternative to reading totalizers. If you have a self-service fueling operation where the cashier can authorize fuel sales from inside the facility, you can probably print out a daily report that gives you the total sales for each type of fuel. **NOTE: You can use the sales volumes from this report instead of reading your totalizer meters only if no fuel sales are made between the time you print the report from the cash register and the time you measure your tanks (Step 1).**

***If you pumped fuel through a dispenser and back into a tank, for example during a test, subtract the number of gallons you pumped from "AMOUNT PUMPED TODAY."***

- H** If you are using cash register reports to record the amount pumped, enter the amount of each type of fuel pumped in the box labeled "AMOUNT PUMPED TODAY" or staple the printout to the worksheet.

## Step 3—Record Fuel Deliveries



You must check how much fuel has been delivered every time any amount of fuel is delivered to your tank. **NOTE: You should not pump any fuel during the time it takes to do items "I" and "J" below.**

Before the delivery begins, the liquid level in the tank must be measured. Always use good sticking practices: slowly lower the gauge stick, gently touch the stick to the bottom of the tank, then quickly bring the stick back up. Read the depth of fuel indicated by the wet mark to the nearest  $\frac{1}{2}$  inch division on the stick.

- I** Write your measurement in the box labeled "Inches of Fuel Before Delivery" for each tank you measured.

The delivery person can now deliver fuel into the tank. After the delivery, wait at least 5 minutes for the fuel level in the tank to stabilize, and then measure again as described above.

- J** Record fuel level in the box labeled "Inches of Fuel After Delivery."
- K** Using your tank chart with  $\frac{1}{2}$  inch readings, convert both delivery readings to the correct number of gallons. Record these numbers in the boxes labeled "Gallons of Fuel Before Delivery" and "Gallons of Fuel After Delivery." (If necessary, see page 9 on converting inches into gallons.)
- L** Subtract "Gallons of Fuel Before Delivery" from "Gallons of Fuel After Delivery." Record the result in the box labeled "GALLONS DELIVERED (STICK)."

Now look at the delivery receipt and find the volume of each type of product that was delivered. If two volumes are given, one labeled "net" and the other "gross," use the gross gallons as the volume of product delivered.

- M** For each type of fuel delivered, copy the gross gallons delivered from the delivery receipt onto the worksheet in the box labeled "GROSS GALLONS DELIVERED (RECEIPT)." The gallons in items "L" and "M" should roughly match. If they don't, contact your supplier.

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***An automatic tank gauge (ATG) can usually print a delivery report. If your tank has an ATG that prints such a report, you may simply staple the ATG's delivery report to the DAILY INVENTORY WORKSHEET.***

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# Using Tank Charts Without $\frac{1}{8}$ Inch Conversions

If your tank chart does not list direct conversions from inches to gallons for every  $\frac{1}{8}$  inch, then you must **do the additional math described below every time you stick your tank**.

The easiest way to explain this procedure is with an example. Let's say you have a stick reading of 43 $\frac{1}{4}$  inches and you need to figure how many gallons are in your tank.

1. Look on your tank chart and find the inch measurements that are just above and below your stick reading and write down the number of gallons for these inch readings. Subtract the gallon readings to find the difference between the two readings:

|                             |               |
|-----------------------------|---------------|
| Chart reading at 44 inches: | 3,585 gallons |
| Chart reading at 43 inches: | 3,480 gallons |

---

Difference: 105 gallons

2. Dividing 105 by 8 will give you the number of gallons per  $\frac{1}{8}$  inch, which in this example is 13. (More exactly it is 13.125, but do round off the number to the nearest whole number.) Because your fraction is  $\frac{1}{4}$ , multiply 13 gallons by 3, which gives you 39 gallons as the volume represented by  $\frac{1}{4}$  inch.

**CAUTION:** The gallons represented by each  $\frac{1}{8}$  inch will vary from top to bottom of the tank and must be calculated for each conversion.

3. Take the number of gallons you have just calculated and add it to the inch reading just below your actual stick reading:

|                                |               |
|--------------------------------|---------------|
| Chart reading at 43 inches:    | 3,480 gallons |
| Gallons at $\frac{1}{4}$ inch: | + 39 gallons  |

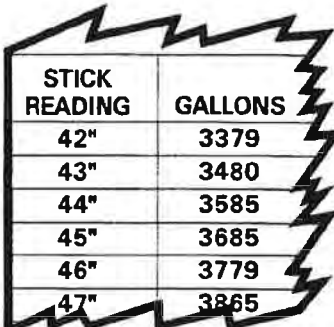
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Sum: 3,519 gallons

Thus, your stick reading of 43 $\frac{1}{4}$  inches converts to 3,519 gallons.

**NOTE:** If your tank chart is in half or quarter inches, you must still use this procedure so that your gallon readings are accurate to  $\frac{1}{8}$  inch.

**After all of this math, you can see why it pays to have the correct tank chart that indicates gallons for each  $\frac{1}{8}$  inch.**



| STICK READING | GALLONS |
|---------------|---------|
| 42"           | 3379    |
| 43"           | 3480    |
| 44"           | 3585    |
| 45"           | 3685    |
| 46"           | 3779    |
| 47"           | 3865    |

## Step 4—Calculate Daily Changes In Inventory

In this step, you will copy information from the DAILY INVENTORY WORKSHEET onto the MONTHLY INVENTORY RECORD. You will then do some math to determine your daily inventory. You need one MONTHLY INVENTORY RECORD for each tank that you have.

As you go through the following directions, refer to the sample MONTHLY INVENTORY RECORD you will find on the reverse side of the DAILY INVENTORY WORKSHEET sample you have already been using. For easy reference, the sample is on a perforated page so you can tear it out and keep it handy as you read through the directions. Also, near the back of the booklet is a "master copy" on a perforated page you can tear out to make copies of the MONTHLY INVENTORY RECORD for your recordkeeping.

**Use the sample "MONTHLY INVENTORY RECORD" from the last two pages of the booklet to see where you put the information from letters "N" through "Z" in the following directions.**

- N** Fill in the identifying information at the top of the MONTHLY INVENTORY RECORD.

If this is the very first day of your inventory recordkeeping, convert the "END STICK INCHES" from the DAILY WORKSHEET into gallons and enter on the MONTHLY RECORD under "END STICK INVENTORY (GALLONS)" for that starting date. (If necessary, see page 9 on converting inches into gallons.) This is all you can do today. Starting tomorrow, follow all of the instructions listed below.

- O** Find the line in the left column on the MONTHLY RECORD with today's date listed. Copy the previous day's "END STICK INVENTORY (GALLONS)" number into the box for today's "START STICK INVENTORY (GALLONS)."
- P** Enter the amount of fuel delivered from the DAILY INVENTORY WORKSHEET. If you were NOT pumping fuel during the time when the delivery was taking place, then use the "GALLONS DELIVERED (STICK)" number. However, if you had to pump fuel while the delivery was taking place, then use the "GROSS GALLONS DELIVERED (RECEIPT)" number as your delivery amount.
- Q** Copy the "AMOUNT PUMPED TODAY" number from the DAILY INVENTORY WORKSHEET into the "GALLONS PUMPED" column of the MONTHLY INVENTORY RECORD.

**R** Add the "START STICK INVENTORY (GALLONS)" and the "GALLONS DELIVERED" columns; then subtract the "GALLONS PUMPED" column. Enter the result in the column labeled "BOOK INVENTORY (GALLONS)."

**S** Copy the "END STICK INCHES" number from the DAILY WORKSHEET into the column labeled "END STICK INVENTORY (INCHES)" on the MONTHLY RECORD. Convert inches into gallons and enter the result in the column on the MONTHLY RECORD labeled "END STICK INVENTORY (GALLONS)." (If necessary, see page 9 on converting inches into gallons.)

**T** Subtract the "BOOK INVENTORY (GALLONS)" from the "END STICK INVENTORY (GALLONS)." Enter the difference into today's "DAILY OVER OR SHORT" box. This number will usually be a positive or negative number (only rarely will it be zero).

**U** Enter your initials to show who entered today's information.

**At least once each month, you must also measure for water in the tank.** Smear water-finding paste on the bottom few inches of the gauge stick. Open the fill pipe and **slowly** lower the stick to the tank's bottom. Hold the stick on the bottom for 10 seconds for gasoline (30 seconds for diesel). Then remove the stick. If there is water in the bottom of the tank, the water-finding paste will change color. Read the depth of water indicated by the line where the water-finding paste has changed color to the closest  $\frac{1}{2}$  inch division on the stick. **Do not use this stick reading to measure the amount of fuel in the tank**, because the fuel will creep up the stick and will give you an inaccurate reading.

**V** If you checked the tank for water today, enter the number of inches of water in the tank on the line under "Facility Name" at the top of the monthly record. If there is no water present, enter a zero to indicate that you in fact checked for water but found none. If you find more than 1 inch of water, you should arrange for its immediate removal, notify the product supplier, and conduct further tests to ensure that the tank is not leaking.

**GOOD ADVICE:** *If you are "over" for 5 days in a row (or "under" for 5 days in a row), you should check for problems with your math and your UST.*





## Step 5—Calculate Monthly Changes In Inventory

At the end of each month, follow the directions below to see if the difference between "stick" and "book" inventory indicates a possible leak.

- W** Add all of the month's "GALLONS PUMPED" numbers and write this total at the bottom of the column in the box labeled "TOTAL GALLONS PUMPED."
- X** Add all the month's "DAILY OVER OR SHORT" numbers: pay careful attention to positive and negative numbers to get an accurate total. For example, adding +4 and +3 and -2 should equal +5. Enter the total at the bottom of the column in the box labeled "TOTAL GALLONS OVER OR SHORT."
- Y** Fill out the "LEAK CHECK" line at the bottom of the MONTHLY INVENTORY RECORD as follows:
  - !** Take the "TOTAL GALLONS PUMPED" number and drop the last two digits to get 1% (for example: 6594 becomes 65).
  - !** Add 130 (for example:  $65 + 130 = 195$ ).

Enter the result of this calculation at the end of the "LEAK CHECK" line. This number is the **maximum change in inventory allowed** by federal regulations (1% of throughput plus 130 gallons).

- Z** At the bottom of the MONTHLY INVENTORY RECORD, circle "YES" or "NO" to show whether your "TOTAL GALLONS OVER OR SHORT" number is **LARGER** than the "LEAK CHECK" number you identified in the previous item. Even if your "TOTAL GALLONS OVER OR SHORT" is a negative number, treat it as a positive number for the purpose of this comparison. For example, -74 would become +74.

If you circle "YES" for 2 months in a row, you must notify your regulatory agency as soon as possible (usually within 24 hours) that your tank may be leaking.

**NOTE:** Keep your inventory control records on file for at least 1 year. Your state, however, may have different rules about when you have to report a leak or how long you must keep the inventory records. Be sure you know the rules that apply to you.



# DAILY INVENTORY WORKSHEET

FACILITY NAME: \_\_\_\_\_

YOUR NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

|                                                                           |   |   |   |   |   |
|---------------------------------------------------------------------------|---|---|---|---|---|
| <b>TANK IDENTIFICATION</b>                                                |   |   |   |   |   |
| Type of Fuel                                                              |   |   |   |   |   |
| Tank Size in Gallons                                                      |   |   |   |   |   |
| <b>END STICK INCHES</b>                                                   |   |   |   |   |   |
| <b>AMOUNT PUMPED</b>                                                      | ↓ | ↓ | ↓ | ↓ | ↓ |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| Totalizer Reading                                                         |   |   |   |   |   |
| <b>TODAY'S SUM OF TOTALIZERS</b>                                          |   |   |   |   |   |
| Previous Day's Sum of Totalizers                                          |   |   |   |   |   |
| <b>AMOUNT PUMPED TODAY</b>                                                |   |   |   |   |   |
| <b>DELIVERY RECORD</b>                                                    | ↓ | ↓ | ↓ | ↓ | ↓ |
| Inches of Fuel Before Delivery                                            |   |   |   |   |   |
| Gallons of Fuel Before Delivery<br>(from tank chart)                      |   |   |   |   |   |
| Inches of Fuel After Delivery                                             |   |   |   |   |   |
| Gallons of Fuel After Delivery<br>(from tank chart)                       |   |   |   |   |   |
| <b>GALLONS DELIVERED (STICK)</b><br>[Gallons "After"    Gallons "Before"] |   |   |   |   |   |
| <b>GROSS GALLONS DELIVERED (RECEIPT)</b>                                  |   |   |   |   |   |

# MONTHLY INVENTORY RECORD

TANK IDENTIFICATION & TYPE OF FUEL: \_\_\_\_\_

MONTH/YEAR: \_\_\_\_/\_\_\_\_

FACILITY NAME: \_\_\_\_\_

DATE OF WATER CHECK: \_\_\_\_\_ LEVEL OF WATER (INCHES): \_\_\_\_\_

| DATE | START STICK<br>INVENTORY<br>(GALLONS) | GALLONS<br>DELIVERED | GALLONS<br>PUMPED | BOOK<br>INVENTOR<br>Y<br>(GALLONS) | END STICK INVENTORY |           | DAILY OVER (+)<br>OR SHORT ( )<br>["End" "Book"] | INITIALS |
|------|---------------------------------------|----------------------|-------------------|------------------------------------|---------------------|-----------|--------------------------------------------------|----------|
|      |                                       |                      |                   |                                    | (INCHES)            | (GALLONS) |                                                  |          |
| 1    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 2    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 3    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 4    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 5    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 6    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 7    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 8    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 9    | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 10   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 11   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 12   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 13   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 14   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 15   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 16   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 17   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 18   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 19   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 20   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 21   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 22   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 23   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 24   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 25   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 26   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 27   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 28   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 29   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 30   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |
| 31   | (+)                                   | ( )                  | (=)               |                                    |                     |           |                                                  |          |

TOTAL GALLONS PUMPED >

TOTAL GALLONS OVER OR SHORT >

DROP THE LAST 2 DIGITS from the  
PUMPED number and enter on the

LEAK CHECK: \_\_\_\_\_

TOTAL GALLONS  
PUMPED

+

130

=

Compare these numbers  
gallons

Is "TOTAL GALLONS OVER OR SHORT" LARGER than "LEAK CHECK" result? YES NO (circle one)

If answer is "YES" for 2 MONTHS IN A ROW, notify regulatory agency as soon as possible.

**KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR**

# SAMPLE

## DAILY INVENTORY WORKSHEET

**A** FACILITY NAME: LAST CHANCE #2  
 YOUR NAME: JUAN DOE  
 DATE: 9/22/93

|            |                                                                          |                  |                  |        |                  |   |
|------------|--------------------------------------------------------------------------|------------------|------------------|--------|------------------|---|
| <b>B</b>   | <b>TANK IDENTIFICATION</b>                                               | 1                | 2                | 3      | 4                |   |
|            | Type of Fuel                                                             | REG UNL          | PREM UNL         | DIESEL | MID UNL          |   |
|            | Tank Size in Gallons                                                     | 6000             | 6000             | 6000   | 10,000           |   |
| <b>C</b>   | <b>END STICK INCHES</b>                                                  | 41 $\frac{1}{4}$ | 58 $\frac{7}{8}$ | 69     | 86 $\frac{1}{2}$ |   |
| <b>D</b>   | <b>AMOUNT PUMPED</b>                                                     | ↓                | ↓                | ↓      | ↓                | ↓ |
|            | Totalizer Reading                                                        | 24 383           | 30798            | 92485  | 44013            |   |
|            | Totalizer Reading                                                        | 55138            | 11017            | 70178  | 38974            |   |
|            | Totalizer Reading                                                        |                  |                  |        |                  |   |
|            | Totalizer Reading                                                        |                  |                  |        |                  |   |
|            | Totalizer Reading                                                        |                  |                  |        |                  |   |
|            | Totalizer Reading                                                        |                  |                  |        |                  |   |
|            | Totalizer Reading                                                        |                  |                  |        |                  |   |
|            | Totalizer Reading                                                        |                  |                  |        |                  |   |
| <b>E</b>   | <b>TODAY'S SUM OF TOTALIZERS</b>                                         | 79 521           | 41815            | 162663 | 82987            |   |
| <b>F</b>   | <b>Previous Day's Sum of Totalizers</b>                                  | 78271            | 40260            | 161663 | 82584            |   |
| <b>G H</b> | <b>AMOUNT PUMPED TODAY</b>                                               | 1250             | 1555             | 1000   | 403              |   |
|            | <b>DELIVERY RECORD</b>                                                   | ↓                | ↓                | ↓      | ↓                | ↓ |
| <b>I</b>   | <b>Inches of Fuel Before Delivery</b>                                    | 13 $\frac{7}{8}$ |                  |        | 49 $\frac{7}{8}$ |   |
| <b>K</b>   | <b>Gallons of Fuel Before Delivery</b><br>(from tank chart)              | 537              |                  |        | 5246             |   |
| <b>J</b>   | <b>Inches of Fuel After Delivery</b>                                     | 41 $\frac{1}{4}$ |                  |        | 86 $\frac{1}{2}$ |   |
| <b>K</b>   | <b>Gallons of Fuel After Delivery</b><br>(from tank chart)               | 2672             |                  |        | 9423             |   |
| <b>L</b>   | <b>GALLONS DELIVERED (STICK)</b><br>(Gallons "After" - Gallons "Before") | 2135             |                  |        | 4177             |   |
| <b>M</b>   | <b>GROSS GALLONS DELIVERED</b><br>(RECEIPT)                              | 2100             |                  |        | 4200             |   |

# SAMPLE

## MONTHLY INVENTORY RECORD

**N** TANK IDENTIFICATION & TYPE OF FUEL: 4 MIDGRADE UNL

MONTH/YEAR: 9, 93

FACILITY NAME: LAST CHANCE #2

DATE OF WATER CHECK: 9/1 LEVEL OF WATER (INCHES): 0 **V**

| DATE | START STICK INVENTORY (GALLONS) | GALLONS DELIVERED | GALLONS PUMPED | BOOK INVENTORY (GALLONS) | END STICK INVENTORY |           | DAILY OVER (+) OR SHORT (-) ("End" - "Book") | INITIALS |
|------|---------------------------------|-------------------|----------------|--------------------------|---------------------|-----------|----------------------------------------------|----------|
|      |                                 |                   |                |                          | (INCHES)            | (GALLONS) |                                              |          |
| 1    | 4047 (+)                        | —                 | (-) 333 (=)    | 3714                     | 38 1/4              | 3690      | -24                                          | JD       |
| 2    | 3690 (+)                        | —                 | (-) 44 (=)     | 3646                     | 38                  | 3658      | +12                                          | JD       |
| 3    | 3658 (+)                        | —                 | (-) 329 (=)    | 3329                     | 35 3/8              | 3323      | -6                                           | JD       |
| 4    | 3323 (+)                        | —                 | (-) 60 (=)     | 3263                     | 35                  | 3275      | +12                                          | JD       |
| 5    | 3275 (+)                        | —                 | (-) 145 (=)    | 3130                     | 33 3/4              | 3117      | -13                                          | JD       |
| 6    | 3117 (+)                        | —                 | (-) 238 (=)    | 2879                     | 31 1/8              | 2790      | -89                                          | JD       |
| 7    | 2790 (+)                        | 6134 (-)          | 117 (=)        | 8807                     | 80                  | 8844      | +37                                          | JD       |
| 8    | 8844 (+)                        | —                 | (-) 127 (=)    | 8717                     | 78 7/8              | 8732      | +15                                          | JD       |
| 9    | 8732 (+)                        | —                 | (-) 182 (=)    | 8550                     | 77 1/2              | 8591      | +41                                          | JD       |
| 10   | 8591 (+)                        | —                 | (-) 205 (=)    | 8386                     | 75 1/2              | 8379      | -7                                           | JD       |
| 11   | 8379 (+)                        | —                 | (-) 204 (=)    | 8175                     | 73 5/8              | 8173      | -2                                           | JD       |
| 12   | 8173 (+)                        | —                 | (-) 166 (=)    | 8007                     | 72                  | 7991      | -16                                          | JD       |
| 13   | 7991 (+)                        | —                 | (-) 320 (=)    | 7671                     | 69 3/4              | 7730      | +59                                          | JD       |
| 14   | 7730 (+)                        | —                 | (-) 307 (=)    | 7423                     | 67                  | 7402      | -21                                          | JD       |
| 15   | 7402 (+)                        | —                 | (-) 76 (=)     | 7326                     | 66 1/2              | 7342      | +16                                          | JD       |
| 16   | 7342 (+)                        | —                 | (-) 224 (=)    | 7118                     | 64 1/8              | 7050      | -68                                          | JD       |
| 17   | 7050 (+)                        | —                 | (-) 390 (=)    | 6660                     | 61                  | 6657      | -3                                           | JD       |
| 18   | 6657 (+)                        | —                 | (-) 296 (=)    | 6361                     | 58 5/8              | 6354      | -7                                           | JD       |
| 19   | 6354 (+)                        | —                 | (-) 78 (=)     | 6276                     | 58 1/8              | 6290      | +14                                          | JD       |
| 20   | 6290 (+)                        | —                 | (-) 424 (=)    | 5866                     | 54 5/8              | 5869      | +3                                           | JD       |
| 21   | 5869 (+)                        | —                 | (-) 205 (=)    | 5664                     | 53 1/8              | 5639      | -25                                          | JD       |
| 22   | 5639 (+)                        | 4177 (-)          | 403 (=)        | 9413                     | 86 1/2              | 9423      | +10                                          | JD       |
| 23   | 9423 (+)                        | —                 | (-) 87 (=)     | 9336                     | 85 1/2              | 9343      | +7                                           | JD       |
| 24   | 9343 (+)                        | —                 | (-) 311 (=)    | 9032                     | 82                  | 9036      | +4                                           | JD       |
| 25   | 9036 (+)                        | —                 | (-) 239 (=)    | 8797                     | 79 1/8              | 8757      | -40                                          | JD       |
| 26   | 8757 (+)                        | —                 | (-) 256 (=)    | 8501                     | 76 7/8              | 8526      | +25                                          | JD       |
| 27   | 8526 (+)                        | —                 | (-) 264 (=)    | 8262                     | 74 1/2              | 8270      | +8                                           | JD       |
| 28   | 8270 (+)                        | —                 | (-) 263 (=)    | 8007                     | 72                  | 7991      | -16                                          | JD       |
| 29   | 7991 (+)                        | —                 | (-) 185 (=)    | 7806                     | 69                  | 7811      | +5                                           | JD       |
| 30   | 7811 (+)                        | —                 | (-) 116 (=)    | 7695                     | 68                  | 7690      | -5                                           | JD       |
| 31   | (+)                             | (-)               | (=)            |                          |                     |           |                                              |          |

**W** TOTAL GALLONS PUMPED > 6594 TOTAL GALLONS OVER OR SHORT > -74 **X**

DROP THE LAST 2 DIGITS from the PUMPED number and enter on the line below

**Y** LEAK CHECK: 65 + 130 = 195 gallons

Is "TOTAL GALLONS OVER OR SHORT" LARGER than "LEAK CHECK" result? YES **NO** (circle one) **Z**

If answer is "YES" for 2 MONTHS IN A ROW, notify regulatory agency as soon as possible.

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR

**>>>Copy and post this reminder where employees  
who measure tanks can see it!<<<**

## **GET GOOD INVENTORY CONTROL MEASUREMENTS!**

- ! Measure each tank every operating day**
- ! Use gauge sticks that are**
  - ✓ marked to the C inch**
  - ✓ not cut off or worn off at the "0" end**
  - ✓ varnished and not warped**
- ! Measure through the same drop tube each time**
- ! Use good sticking practices**
  - ✓ SLOWLY lower stick**
  - ✓ GENTLY touch stick on tank bottom**
  - ✓ QUICKLY pull stick out**
- ! Measure just before each delivery**
- ! Wait at least 5 minutes after delivery,  
then measure again**
- ! Read and record totalizer meters carefully**
- ! Check for water at least once a month  
using water-finding paste**

***Developed in cooperation with...***

***Fiberglass***

***Petroleum Tank & Pipe Institute***



INTERNATIONAL ASSOCIATION OF TANK TESTING PROFESSIONALS



SOCIETY OF INDEPENDENT  
GASOLINE MARKETERS  
OF AMERICA





ATTACHMENT J

Release Detection Maintenance

## **Release Detection**

The release detection system to be used at the facility is a Franklin Evo 1. The system will have inventory probes installed in the tanks, sump sensors installed in the submersible sump containment areas to monitor sub pump, sump sensors installed in the dispenser sumps and tank interstitial sensors. The system will be installed by a Franklin certified technician. The system will be installed in accordance with Franklin specifications and instructions. The system is UL listed and is third party certified for release detection under USEPA guidelines. The system has self-diagnostic programs to test and warn of failures of the external devices as well as internal electronics. The system has been tested by a Third Party and found to be compliant with USEPA requirements for release detection.

Ongoing maintenance will be conducted by JF Petroleum personnel.



THE ALL-IN-ONE FUEL MONITORING SYSTEM SOLUTION  
***AT THE PRICE OF JUST A CONSOLE***

INVENTORY CONTROL | COMPLIANCE MONITORING | LEAK DETECTION | REMOTE ACCESS



# ONE COMPLETE SYSTEM AT A PRICE YOU CAN'T IGNORE.

EVO™ ONE is an all-in-one fuel management system (including console, sensors, probes, and hardware) that lets you upgrade or equip a site with up to 3 tanks, 3 lines, and 8 dispensers for about the same price as a standalone ATG console replacement.

One kit, one system, one solution

Full featured | User-friendly | Affordable | Easy upgrade | Simplified compliance | Remote access







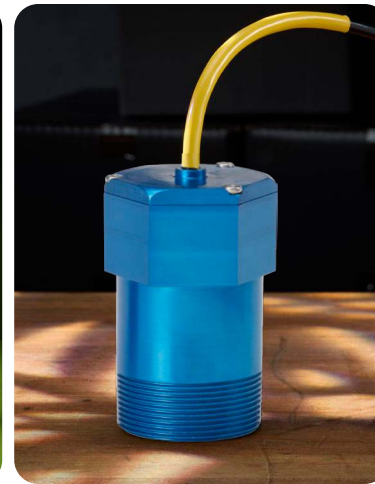
LIQUID SENSORS



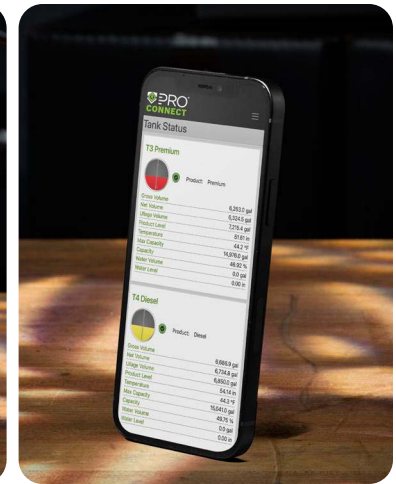
INVENTORY PROBES & FLOATS



EVO™ ONE CONSOLE



LINE LEAK DETECTION



REMOTE ACCESS

# THE EVO™ ONE SYSTEM

EVO™ ONE is an economical, turnkey fuel monitoring solution designed for complete system management. The system includes a console, sensors, probes, and all necessary installation hardware. Designed for easy installation and long-term reliability, EVO™ ONE delivers a fully integrated system at a cost-effective price, with the security that you've come to expect from the EVO™ Series.

## Feature & Benefits

- Full monitoring system at the cost of just a console
- Highly accurate, real-time fuel inventory monitoring
- Automated compliance monitoring, testing, and reporting
- Continuous electronic line leak detection *(Optional)*
- Advanced pump monitoring and control
- Pre-configure software tool for fast, hassle-free setup
- Anywhere, anytime access via PRO® Connect
- Includes hardware for turnkey installation
- Custom security levels, user tracking, & multifactor log-in
- Latest TLS/SSL protocols for secure data encryption

## Capabilities

- Inventory monitoring
- Inventory reconciliation
- Tank autocalibration
- Static tank testing
- Statistical Continuous Automatic Leak Detection (SCALD®)
- Turbine Pump Interface™ (TPI)
- Containment compliance monitoring
- Electronic Line Leak Detection (ELLD)\*
- AUTO-LEARN® ELLD line learning\*
- Statistical Line Leak Detection (SLLD)\*
- Programmable logic conditions (custom applications)

*\*Optional capability*

## System Includes

-  EVO™ ONE Console & Remote Access
-  Line Leak Detection Pressure Transducers *(Optional)*
-  Universal Liquid Sensors
-  Probes
-  Probe Float Kits
-  Probe Install Kits







# EVO™ ONE: A SYSTEM SOLUTION

**1. EVO™ ONE CONSOLE**

**2. PROBES & FLOAT KITS**

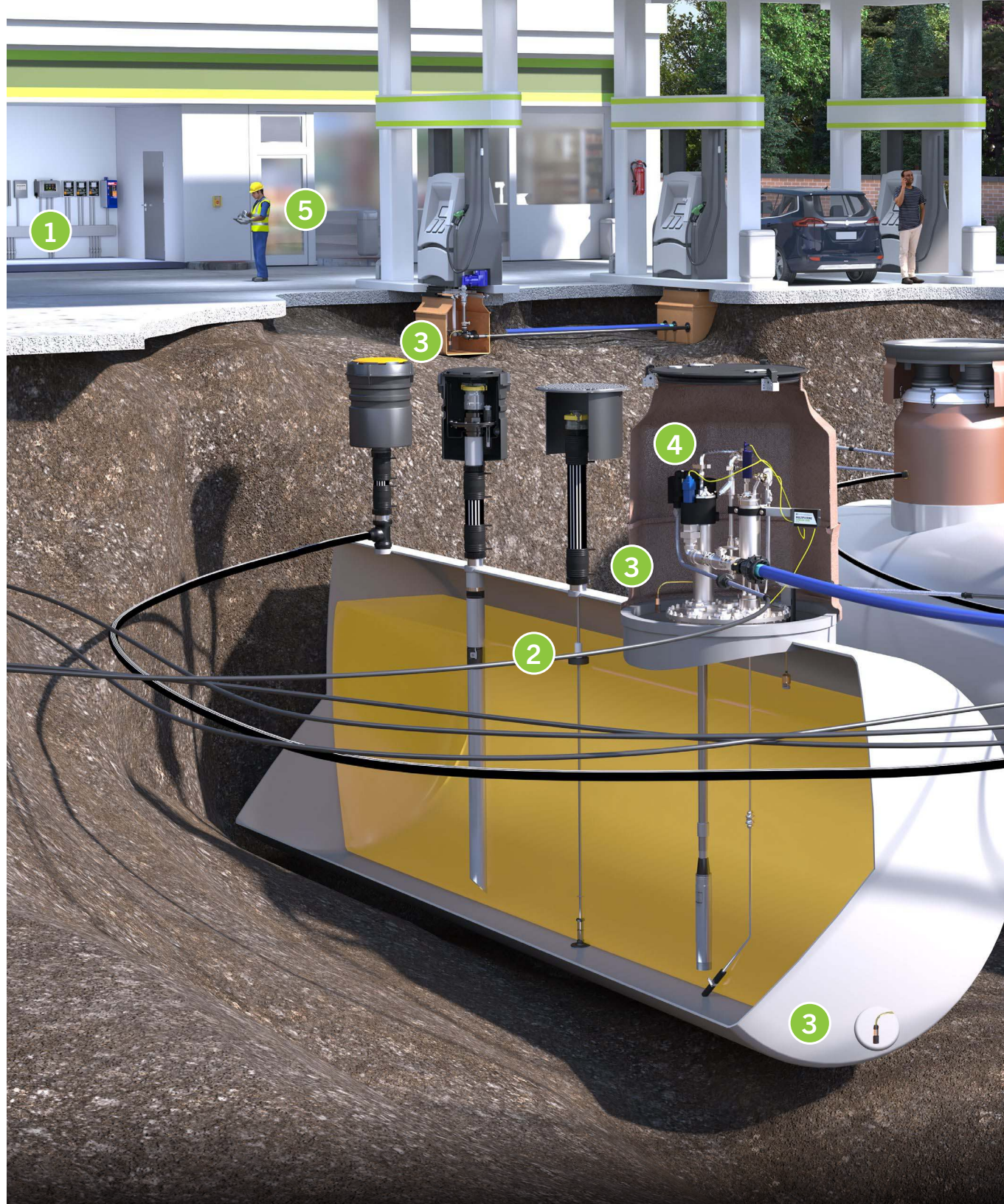
**3. LIQUID SENSORS**

**4. LEAK DETECTION**

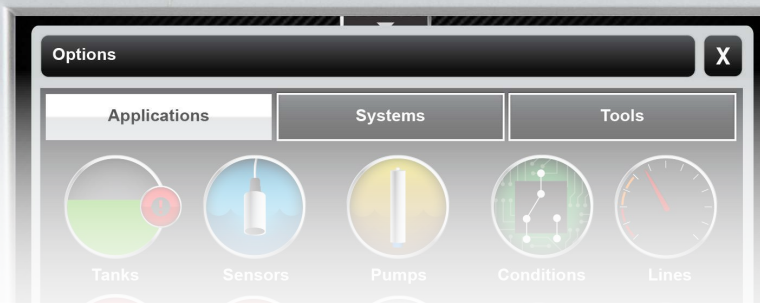
**5. REMOTE ACCESS**



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# A HIGHLY CAPABLE CONSOLE

EVO™ ONE features capabilities that empower every user type to make informed, data-driven inventory management decisions while keeping sites in compliance and operating at peak performance.



## COMPLIANCE MONITORING

Full-featured compliance monitoring with monthly and annual tank testing, containment testing, and line testing — even for busy sites with minimal downtime.



## CONTAINMENT MONITORING

EVO™ provides containment monitoring to detect water or fuel leaks in sumps and interstitial spaces, ensuring early detection and compliance with environmental regulations.



## ALARMS & EVENTS

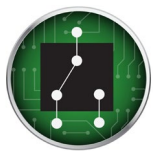
Operators can easily manage system events with instant email or SMS alerts, a detailed event log, and remote access to quickly acknowledge or resolve issues.



## LEAK DETECTION

Electronic Line Leak Detection (ELLD) continuously monitors pipework to detect leaks and provide hourly, monthly, and annual precision line leak detection compliance testing requirements.

*(Optional)*



## CUSTOM APPS

Logic Conditions lets users create custom applications to do things like automate compliance testing and reporting and more.



## ONE TOUCH BUTTONS

Automate and carry out anything from complex, multi-function processes to simple daily delivery report generation — all with the touch of a single button.



## TANK MONITORING

Make informed, data-driven inventory management decisions with highly accurate tank level monitoring, tank autocalibration, and inventory reconciliation.



## TURBINE PUMP INTERFACE™

Enhanced remote pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, tank priority, and more.

# EVO™ ONE MAKES IT EASY

EVO™ helps operators maintain compliance, protect their sites from leaks, and stay connected to vital inventory data anytime, anywhere.



## COMPLIANCE MONITORING

Monitor and automate compliance-related activities, simplify regulatory reporting requirements, and ensure optimal fuel system performance.

## INVENTORY MANAGEMENT

Track and manage fuel inventory levels, optimize fuel supply, and prevent runouts with inventory automation and customizable delivery notifications.

## LEAK DETECTION

Proactively identify and address any potential issues, ensuring the safety and integrity of fuel storage, pipework, and the distribution processes.



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# USER-FRIENDLY INTERFACE

The EVO™ ONE full-color, 7" LCD touchscreen features intuitive controls and clear visual cues, allowing users to easily access all functionalities without extensive training. EVO™ ONE simplifies complex tasks for an easy user experience.



## ONE TOUCH BUTTONS

The home screen can be customized with up to six One Touch Buttons. These buttons simplify routine tasks for on-site staff and help automate fuel system corrective actions in the event of an alarm.



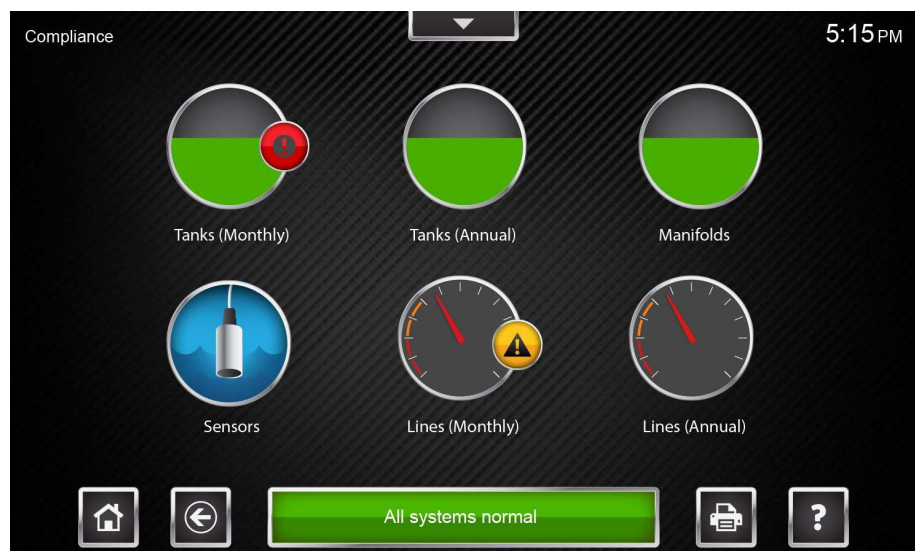
## QUICK JUMP MENU

Navigate quickly through applications with ease. This time-saving menu makes the interface's structure extremely shallow, simple to navigate, and reduces the amount of steps it takes to accomplish tasks.



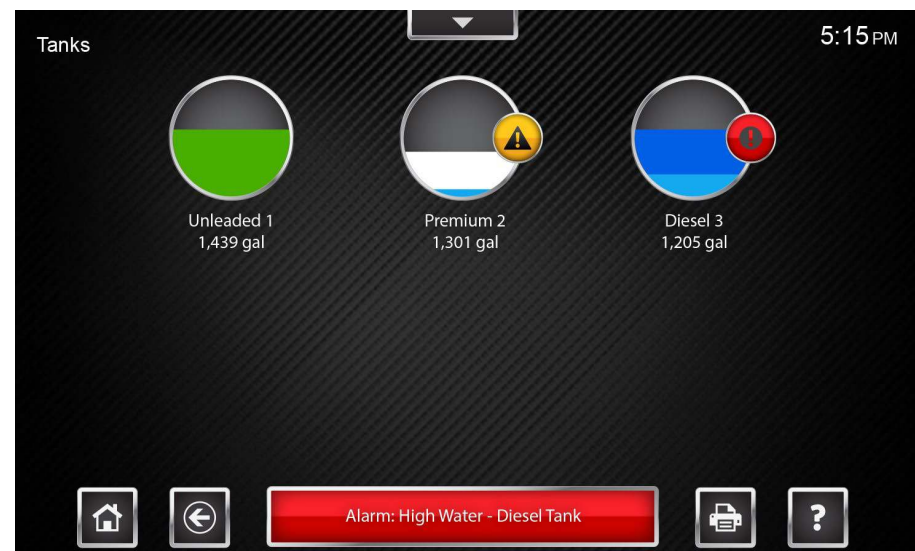


# ***INTELLIGENT DESIGN***



## ***ICON-BASED DESIGN***

Designed with a smartphone-like interface, EVO™ ONE features colorful apps, status indicators, and intuitive navigation, making it easy for new users to operate with minimal training.



## ***CUSTOM COLORS***

Customizable fuel grade colors make it easy for users to identify fuel grade types, check tank water levels, and identify any potential issues at a glance.



# STAY CONNECTED

The PRO® Connect Web Browser Interface allows operators to securely and remotely connect to EVO™ ONE from any web enabled device. Automatic scaling provides access to site information whether using a PC, tablet, or smart phone.

## REMOTE MONITORING

Get remote access to vital site data including tank status, sensor status, pump status, delivery information, active events, alarm history, event history, and more.

## INVENTORY FORECASTING

Remotely monitor tank levels, view delivery information, and check the predicted days of remaining inventory to precisely schedule deliveries and avoid costly run-outs.

## SIMPLIFIED REPORTING

A wide variety of reports including inventory, alarm history, delivery history, sensor status, and regulatory compliance can be custom-scheduled, displayed, printed, or emailed at specific times.

Displays data in a user-defined schedule, or in real-time

Centralized control of all compliance information

Monitor inventory to precisely forecast delivery needs

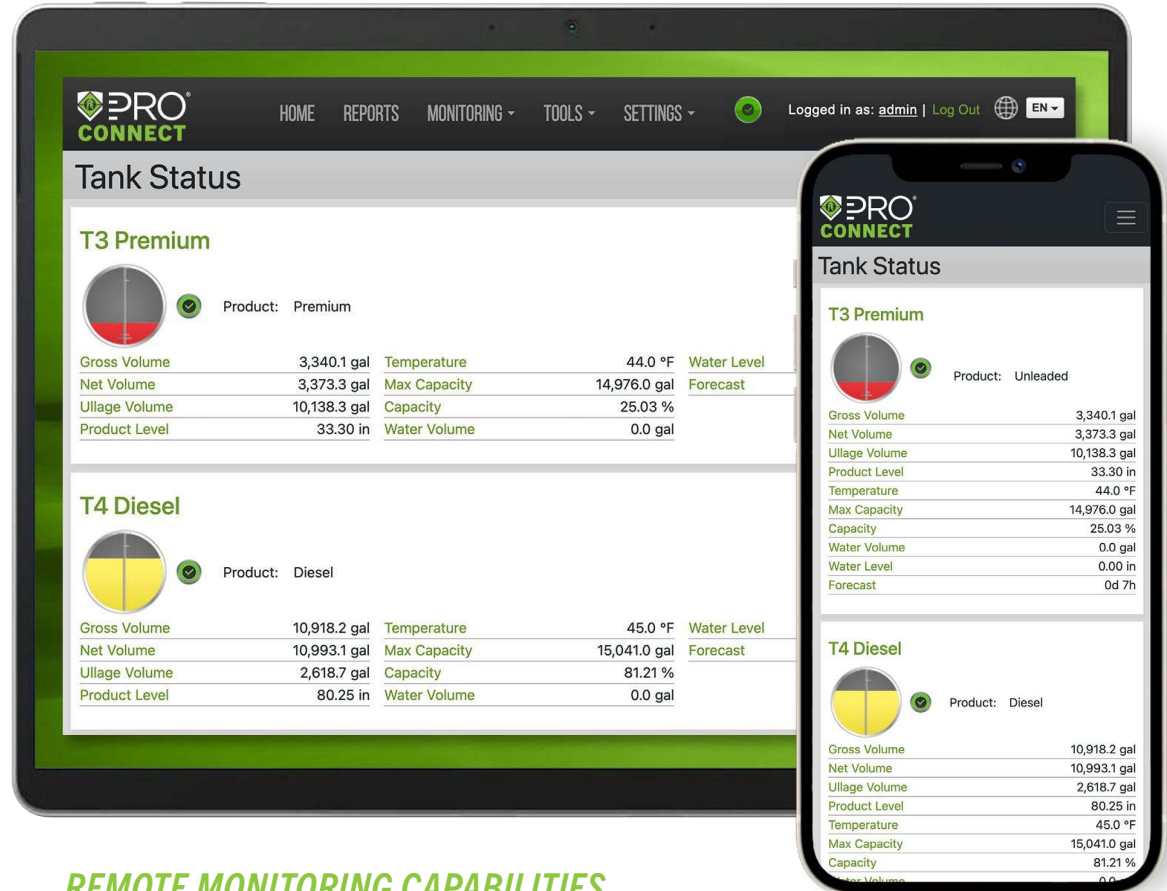
Create and schedule customized reports

Generate, view, print, or email reports

Analyze and respond to system events and alarms

Configure custom applications and system automation

Control and troubleshoot pumps remotely



## REMOTE MONITORING CAPABILITIES

- Tank Status
- Sensor Status
- Line Status
- Pump Status
- Compliance Status
- Meter Status
- Shift Status
- Events
- Discrete Input Status



# FASTER SETUP

The Pre-Configure tool uses a few simple questions to auto-fill configurations settings, cutting setup time and reducing complexity.

**PRO CONNECT** Reports Monitoring Tools Settings User Help

**Pre-Configure**

How many tanks?

What are the products of the tanks?

Tank 1

Tank 2

Tank 3

Is the interstitial to be monitored?

Tank 1

Tank 2

Tank 3

Is there line leak detection?

How many dispensers?

Unleaded Product:  Super Product:  Diesel Product:

| Channel #  | Device Type         | Device Location                                              | Device Name              |
|------------|---------------------|--------------------------------------------------------------|--------------------------|
| Channel 1  | FMP-LL3             | Tank 1 Unleaded:                                             | T1 Unleaded              |
| Channel 2  | FMP-LL3             | Tank 2 Super:                                                | T2 Super                 |
| Channel 3  | FMP-LL3             | Tank 3 Diesel:                                               | T3 Diesel                |
| Channel 4  | FMP-LSU500-U        | Line 1 Unleaded:                                             | L1 Unleaded              |
| Channel 5  | FMP-LSU500-U        | Line 2 Super:                                                | L2 Super                 |
| Channel 6  | FMP-LSU500-U        | Line 3 Diesel:                                               | L3 Diesel                |
| Channel 7  | Dual ULS/UHS Sensor | Dispenser 1/2 Sump & Dispenser 3/4 Sump:                     | D1/2 & D3/4 Sumps        |
| Channel 8  | Dual ULS/UHS Sensor | Dispenser 5/6 Sump & Dispenser 7/8 Sump:                     | D5/6 & D7/8 Sumps        |
| Channel 9  | Dual ULS/UHS Sensor | Dispenser 9/10 Sump & Dispenser 11/12 Sump:                  | D9/10 & D11/12 Sumps     |
| Channel 10 | Dual ULS/UHS Sensor | Dispenser 13/14 Sump & Dispenser 15/16 Sump:                 | D13/14 & D15/16 Sumps    |
| Channel 11 | Dual ULS/UHS Sensor | Tank 1 Unleaded Turbine Sump & Tank 1 Unleaded Interstitial: | T1 UNL Sump/Interstitial |
| Channel 12 | Dual ULS/UHS Sensor | Tank 2 Super Turbine Sump & Tank 2 Super Interstitial:       | T2 PUL Sump/Interstitial |
| Channel 13 | ULS/UHS Sensor      | Tank 3 Diesel Turbine Sump:                                  | T3 DSL Sump              |
| Channel 14 | ULS/UHS Sensor      | Tank 3 Diesel Interstitial Sump:                             | T3 DSL Interstitial      |





# ACCESSORIES INCLUDED WITH EVO™ ONE

## PROBES

Digital inventory and leak detection probes provide accurate tank level monitoring and reporting with optional leak detection capabilities. These probes employ digital communications and magnetostrictive position measurement technology for highly accurate tank readings.



## PROBE FLOATS

Float kits come complete with a product and water float. The 4" float kit is paired with each probe to measure fuel and water level information inside the tank.



## PROBE INSTALLATION KITS

Probe install kits provide a tight seal to the tank to prevent water intrusion and meet regulatory requirements. A quick release cap enable easy access to the probe for inspection or maintenance.



## LIQUID SENSORS

Based on float-switch technology and made of chemically-resistant materials, the liquid sensor can be installed in containments, basins, double wall tanks or other locations where the presence of liquid indicates a leak has occurred.



## LINE LEAK DETECTION SENSOR

EVO™ ONE utilizes line leak detection pressure transducers mounted in the submersible pump manifold to monitor fuel lines for pressure drops, enabling rapid detection of leaks and ensuring compliance with leak detection requirements.

(Optional)



# WHY UPGRADE THE WHOLE SYSTEM?

Unlike competitive solutions that only replace the console, EVO™ ONE lets station owners replace everything – console, sensors, probes – at the same cost of a new console. This means a complete, modern fuel monitoring system without the hidden costs associated with outdated components.

## 1 UPGRADE TO THE LATEST TECHNOLOGY

Get the most advanced fuel monitoring system available, with features like electronic line leak detection (optional), 24-hour tank testing, remote access, and more.

## 2 GUARANTEED COMPATIBILITY

Mixing new consoles with legacy probes and sensors can create integration headaches. EVO™ ONE ensures all components work seamlessly from day one.

## 3 FUTURE-PROOF YOUR INVESTMENT

With the ability to create logic-based custom applications, EVO™ ONE ensures your fuel system stays adaptable and ahead of the curve to meet future needs.

## 4 ELIMINATE HIDDEN WIRING ISSUES

Aging probe and sensor wiring can fail during or after installation, leading to costly delays and follow-up maintenance. Replacing everything upfront ensures a smooth install and lasting reliability.



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## UP TO 2 TANKS, 8 DISPENSERS

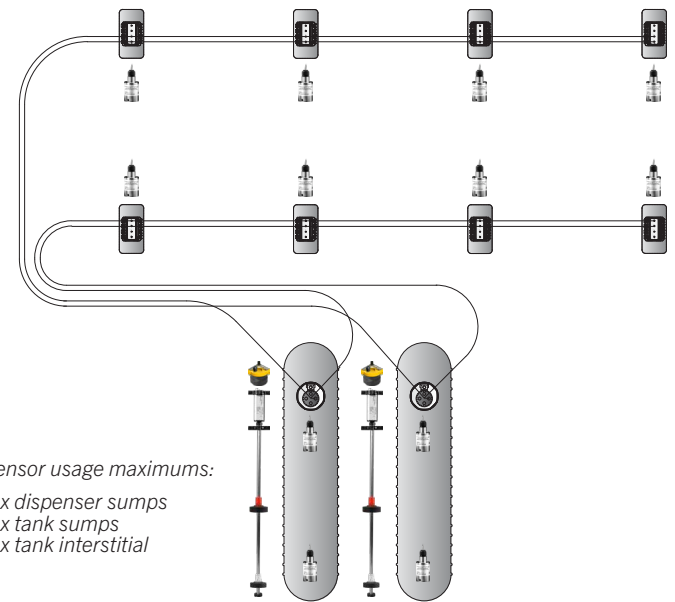
EVO™ ONE KIT: EVO1-X0-S12-C2-G2D0

| Kit Component | Pressure Transducers | Universal Liquid Sensors | Probe Install Kits | Float Kits | Probes* |
|---------------|----------------------|--------------------------|--------------------|------------|---------|
| Quantity      | -                    | 12                       | 2                  | 2 Gas      | 2       |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                |
|-------------------|---|-----------------|---|----------------|
| EVO™ ONE Kit List | + | Probes (2) List | = | Total List     |
| \$4,230           |   | \$4,406         |   | <b>\$8,636</b> |

Sensor usage maximums:  
8 x dispenser sumps  
2 x tank sumps  
2 x tank interstitial



## UP TO 2 TANKS, 8 DISPENSERS WITH ELECTRONIC LEAK DETECTION

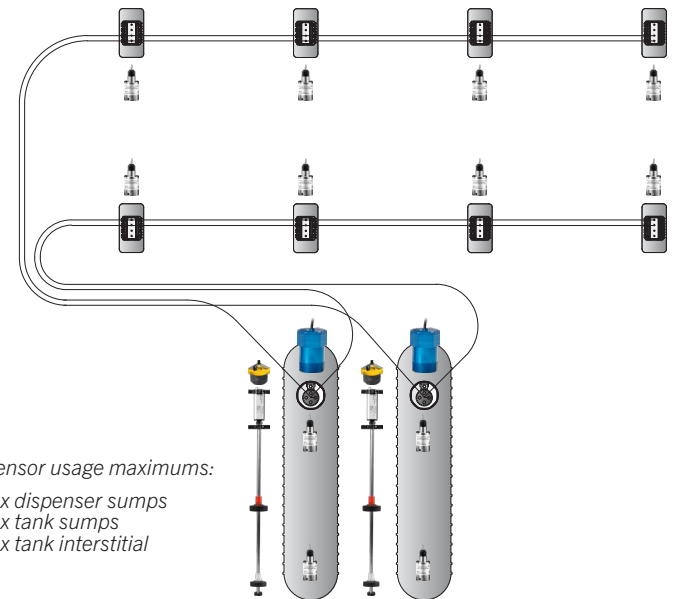
EVO™ ONE KIT: EVO1-X2-S12-C2-G2D0

| Kit Component | Pressure Transducers | Universal Liquid Sensors | Probe Install Kits | Float Kits | Probes* |
|---------------|----------------------|--------------------------|--------------------|------------|---------|
| Quantity      | 2                    | 12                       | 2                  | 2 Gas      | 2       |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                |
|-------------------|---|-----------------|---|----------------|
| EVO™ ONE Kit List | + | Probes (2) List | = | Total List     |
| \$4,950           |   | \$4,406         |   | <b>\$9,356</b> |

Sensor usage maximums:  
8 x dispenser sumps  
2 x tank sumps  
2 x tank interstitial



Note: list prices as of May 1, 2025 / inventory only probe used for example.



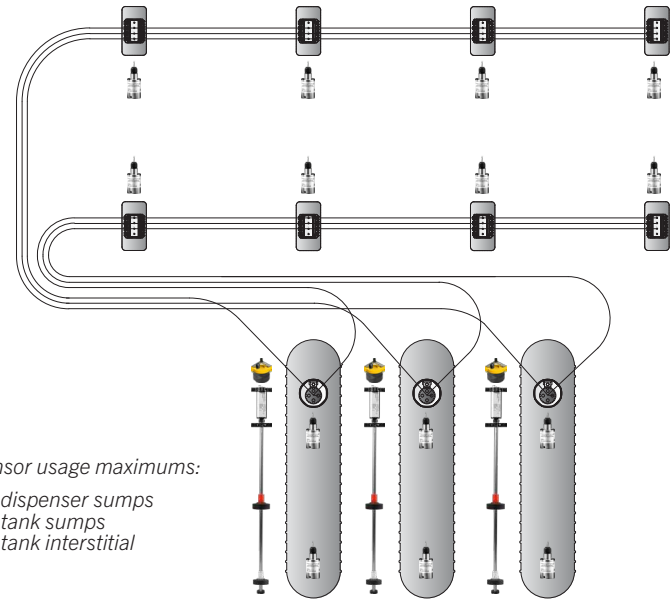
## UP TO 3 TANKS, 8 DISPENSERS

EVO™ ONE KIT: EV01-X0-S14-C3-G2D1

|  |  |  |  |  |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Kit Component                                                                     | Pressure Transducers                                                              | Universal Liquid Sensors                                                          | Probe Install Kits                                                                | Float Kits                                                                        | Probes*                                                                            |
| Quantity                                                                          | -                                                                                 | 14                                                                                | 3                                                                                 | 2 Gas, 1 Diesel                                                                   | 3                                                                                  |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                 |
|-------------------|---|-----------------|---|-----------------|
| EVO™ ONE Kit List | + | Probes (3) List | = | Total List      |
| \$4,630           |   | \$6,609         |   | <b>\$11,239</b> |



Sensor usage maximums:  
8 x dispenser sumps  
3 x tank sumps  
3 x tank interstitial

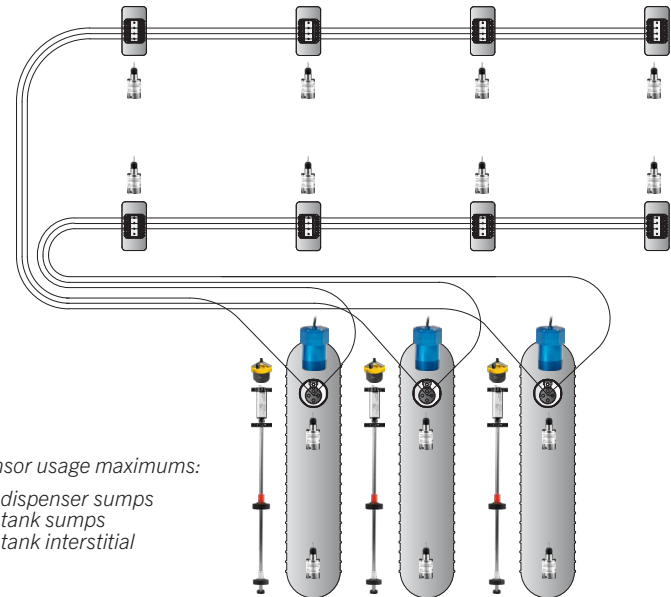
## UP TO 3 TANKS, 8 DISPENSERS WITH ELECTRONIC LEAK DETECTION

EVO™ ONE KIT: EV01-X3-S14-C3-G2D1

|  |  |  |  |  |  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Kit Component                                                                       | Pressure Transducers                                                                | Universal Liquid Sensors                                                            | Probe Install Kits                                                                  | Float Kits                                                                          | Probes*                                                                              |
| Quantity                                                                            | 3                                                                                   | 14                                                                                  | 3                                                                                   | 2 Gas, 1 Diesel                                                                     | 3                                                                                    |

\*EVO™ ONE Kits must be bundled with probes as a separate line item. Probes are ordered separately from the kit to allow for varying tank diameters / probe lengths (10' probe used for total list price).

|                   |   |                 |   |                 |
|-------------------|---|-----------------|---|-----------------|
| EVO™ ONE Kit List | + | Probes (3) List | = | Total List      |
| \$5,650           |   | \$6,609         |   | <b>\$12,259</b> |



Sensor usage maximums:  
8 x dispenser sumps  
3 x tank sumps  
3 x tank interstitial

Note: list prices as of May 1, 2025 / inventory only probe used for example.

# EVO™ ONE CAPABILITIES

## Inventory Monitoring

Provides real-time tracking of fuel levels within storage tanks. This enables station owners to manage inventory effectively, reducing the risk of runouts or overfilling.

## Inventory Reconciliation

Compares dispensed fuel amounts with actual inventory levels to identify discrepancies. This helps detect potential leaks or theft, ensuring product accountability and environmental compliance.

## Tank Autocalibration

Automatically adjusts tank capacity measurements to reflect actual conditions. This enhances measurement accuracy, leading to more precise inventory management and compliance reporting.

## Static Tank Testing

Conducts scheduled, non-intrusive tests to verify tank integrity. Station owners benefit by ensuring regulatory compliance and preventing environmental contamination.

## Statistical Continuous Automatic Leak Detection (SCALD®)

SCALD® continuously analyzes data to detect tank leaks without requiring shutdowns or interrupting fueling. Ideal for 24/7 sites with minimal quiet periods, it ensures compliance without disrupting operations.

## Containment Compliance Monitoring

Monitors containment sumps and tank interstitial for leaks or breaches. This ensures early detection of containment failures, protecting the environment and aiding in regulatory compliance.

## Programmable Logic Conditions (Custom Applications)

Enables customization of system responses based on specific site conditions. This flexibility allows station owners to automate processes, enhancing operational efficiency.

## Electronic Line Leak Detection (ELLD) *(Optional)*

Utilizes electronic sensors mounted in the submersible pump manifold to detect leaks in fuel lines. Early detection prevents product loss and environmental hazards, ensuring system integrity.

## AUTO-LEARN® ELLD Line Learning *(Optional)*

Automatically learns the characteristics of fuel lines to enhance leak detection accuracy. This ensures precise, customized leak detection, reducing the risk of false alarms and enhancing overall system accuracy.

## Statistical Line Leak Detection (SLLD) *(Optional)*

Analyzes pressure and flow data over time to identify leaks. This allows sites with constant fuel flow to perform 0.2 gph leak testing, even during peak operation, which ensures continuous compliance without disrupting operations.

## Dual-Sensor Connectivity in Parallel per Input

Allows two sensors to connect to a single input channel in parallel. This expands monitoring capabilities without additional hardware, optimizing system resources.

## Remote Access via PRO® Connect

Provides off-site access to system data and controls through a secure web interface. Station owners can monitor and manage their sites remotely, improving response times and operational oversight.

## Turbine Pump Interface™ (TPI)

Creates a network between intelligent pump controllers and EVO™ ONE allowing real-time data sharing and intelligent system responses. This enables remote troubleshooting and reduced downtime features like:

- **Pump in Water Automation**  
Detect water in tanks and automatically shut off the affected pump, preventing water from being pumped into a customer's vehicle.
- **Clogged Pump Escalation**  
Detect, verify, and automate the resetting of a pump to clear clogs and bring them back online faster without a service call.
- **Tank Leveling & Priority**  
Balance the levels of multiple tanks with the same fuel type or prioritize one tank for faster, more efficient fuel deliveries.



# EVO™ ONE CONSOLE

## Inputs & Connectivity

|                                  |                                                    |
|----------------------------------|----------------------------------------------------|
| Universal Device Protocol inputs | 14                                                 |
| Maximum tanks monitored          | 14                                                 |
| Maximum sensor input capacity    | 14, 28*                                            |
| Lines capacity                   | 4                                                  |
| Maximum total device inputs      | 14, 28*                                            |
| Maximum AC input channels        | 4                                                  |
| Dry contact input channels       | 2                                                  |
| Relay output channels            | 4                                                  |
| Connectivity                     | Ethernet, RS-232, RS-485, standard USB, Mini-B USB |
| Communication protocol support   | MQTT, MODBUS™, XML, Veeder-Root®                   |

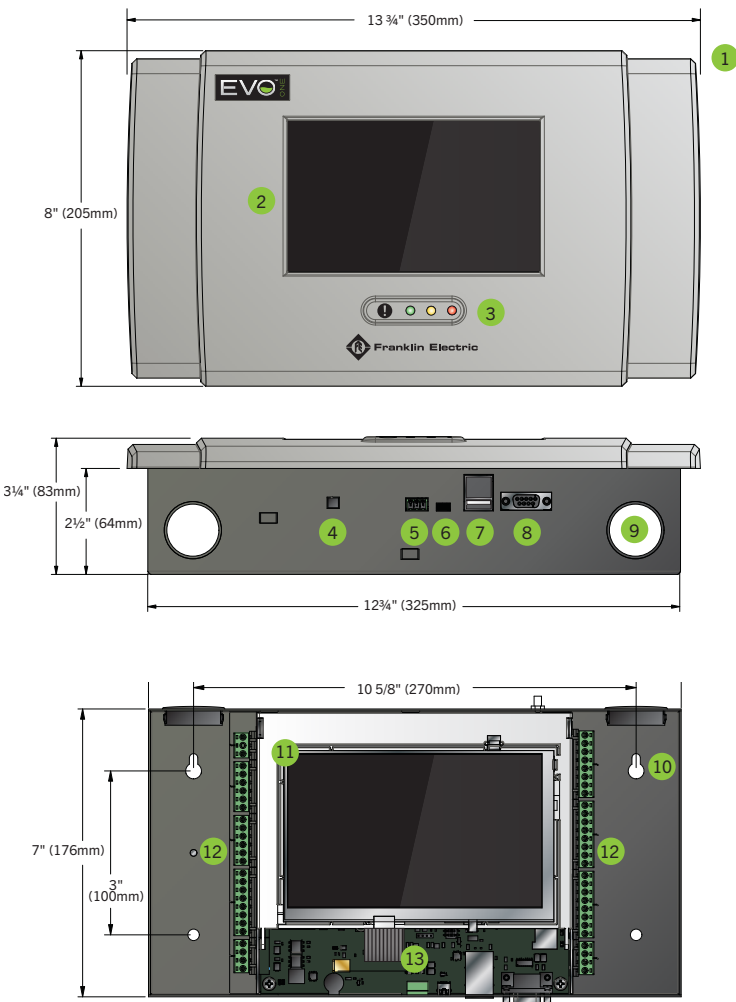
\*Requires connecting two FMP-ULS sensors per channel.

## Hardware

|                       |                                                          |
|-----------------------|----------------------------------------------------------|
| Dimensions            | H: 8" (205 mm), W: 13 ¾" (350 mm), D: 3 ¼" (83 mm)       |
| Display type          | 7" (17.78 cm) color LCD touch screen                     |
| Printer type          | External (network or USB)                                |
| Alarm                 | Internal audible alarm                                   |
| LEDs                  | Alarm, warning, and power                                |
| Applicable liquids    | Petroleum, chemicals, and waste                          |
| Power requirements    | 110 to 240 VAC, 50/60 Hz, 2.6 Amps                       |
| Operating temperature | 32° to 104° F (0° to 40° C)                              |
| Humidity              | 0-95% non-condensing                                     |
| Approvals             | UL, cUL, ATEX, IECEx, GSA IT Security                    |
| Certifications        | Third party certification of leak detection capabilities |

## Security

- Customizable user roles / user activity tracking
- Multifactor authenticated log-in
- Third party verified security
- GSA IT security approval
- Latest SSL/TLS protocols



- |                                |                                  |
|--------------------------------|----------------------------------|
| 1. Cover                       | 8. RS-232                        |
| 2. LCD Touch Screen            | 9. Top and Bottom Knockouts      |
| 3. LED Indicators              | 10. Mounting Holes               |
| 4. Annunciator (audible alarm) | 11. Flip Up Panel (Touch Screen) |
| 5. RS-485 / TPI                | 12. Termination Blocks           |
| 6. Mini-B USB Port             | 13. Main Board                   |
| 7. Ethernet / USB Port         |                                  |



# TOTAL SYSTEM SOLUTIONS™



**Franklin Electric**  
FUELING SYSTEMS

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FFS-1023 08-25

**Temporary Stormwater Section**  
**TCEQ-0602**



*BERRY LANE C-STORE  
UNDERGROUND STORAGE TANK APPLICATION*

## **Temporary Stormwater Section (TCEQ-0602)**

# Temporary Stormwater Section

## Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

***To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.***

***Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.***

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

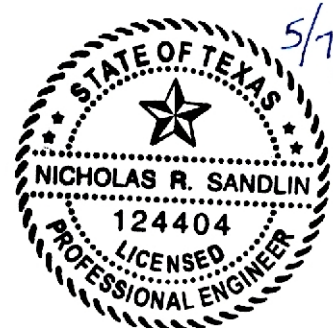
Print Name of Customer/Agent: Nick Sandlin, P.E.

Date: 5/7/2025

Signature of Customer/Agent:



Regulated Entity Name: Berry Lane C-Store



## Project Information

### Potential Sources of Contamination

*Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.*

1. Fuels for construction equipment and hazardous substances which will be used during construction:

☐ The following fuels and/or hazardous substances will be stored on the site: \_\_\_\_\_

These fuels and/or hazardous substances will be stored in:

- ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

- ☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
- ☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
- ☒ Fuels and hazardous substances will not be stored on the site.
- 2. ☒ **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
- 3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- 4. ☒ **Attachment B - Potential Sources of Contamination.** A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

### ***Sequence of Construction***

- 5. ☒ **Attachment C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
  - ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
  - ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
- 6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: San Gabriel River

### ***Temporary Best Management Practices (TBMPs)***

*Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.*

- 7. ☒ **Attachment D – Temporary Best Management Practices and Measures.** TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- ☐ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
  - ☐ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
  - ☐ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
  - ☐ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8. ☐ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- ☐ **Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
- ☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.
9. ☒ **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10. ☒ **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
  - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
  - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
  - ☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.



- ☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- ☒ N/A
12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

## ***Soil Stabilization Practices***

*Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.*

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

### ***Administrative Information***

20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.



## **Temporary Stormwater Section (TCEQ-0602)**

### **Attachment A: Spill Response Actions**

#### *Spill Response Actions*

In the event of an accidental spill, immediate action shall be undertaken by the General Contractor to contain and remove the spilled material. All hazardous materials, including contaminated soil and liquid concrete waste (if applicable), shall be disposed of by the Contractor in the manner specified by Federal, State and Local regulations and by the manufacturer of such products. As soon as possible, the spill shall be reported to the appropriate agencies. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States shall be properly reported. The General Contractor shall prepare a written record of any spill and associated clean-up activities of petroleum products or hazardous materials in excess of 1 gallon or reportable quantities, whichever is less. The General Contractor shall provide notice to the Owner immediately upon identification of a reportable spill.

All spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the State or Local agency regulations, shall be immediately reported within 24 hours to the EPA National Response Center (1-800-424-8802), TCEQ (1-800-832-8224), and local Fire Department (911).

The reportable quantity for hazardous materials can be found in 40 CFR 302:

| <b>Reportable Quantities</b>              |                          |                              |
|-------------------------------------------|--------------------------|------------------------------|
| <b>Material</b>                           | <b>Media Released to</b> | <b>Reportable Quantities</b> |
| Engine Oil, Fuel, Hydraulic & Brake Fluid | Land                     | 25 gallons                   |
| Engine Oil, Fuel, Hydraulic & Brake Fluid | Water                    | Visible sheen                |
| Antifreeze                                | Land                     | 100 lbs (13 gal.)            |
| Battery Acid                              | Land, Water              | 100 lbs                      |
| Refrigerant                               | Air                      | 1 lb                         |
| Gasoline                                  | Air, Land, Water         | 100 lbs                      |
| Engine Degreasers                         | Air, Land, Water         | 100 lbs                      |

Please visit [https://www.tceq.texas.gov/response/spills/spill\\_rq.html](https://www.tceq.texas.gov/response/spills/spill_rq.html) for more information

In order to minimize the potential for a spill of petroleum product or hazardous materials to come in contact with stormwater, the following steps shall be implemented.

- a) All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids paints, paint solvents, additives for soil stabilization,



concrete curing compounds and additives, etc.) shall be stored in a secure location, under cover and in appropriate, tightly sealed containers when not in use.

- b) The minimum practical quantity of all such materials shall be kept on the job site and scheduled for delivery as close to time of use as practical. Post Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- c) A spill control and containment kit (containing for example: absorbent material such as kitty litter or sawdust, acid neutralizing agent, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) shall be provided on the construction site and construction employees shall be trained in when and how to use spill containment materials.
- d) The contractor personnel will immediately clean up any oil, fuel or hydraulic fluid if observed being released from equipment or vehicles. Vehicles or equipment will cease operation until required repairs are made to the equipment.
- e) All of the product in a container shall be used before the container is disposed of. All such containers shall be triple rinsed with water prior to disposal. The rinse water used in these containers shall be disposed of in a manner in compliance with State and Federal regulations and shall not be allowed to mix with stormwater discharges.
- f) All products shall be stored in and used from the original container with the original product label.
- g) All products shall be used in strict compliance with instructions on the product label.
- h) The disposal of the excess or used products shall be in strict compliance with instructions on the products label.

### *Spill Prevention and Control*

#### Education

- 1.) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.
- 2.) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- 3.) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- 4.) Establish a continuing education program to indoctrinate new employees.



- 5.) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

#### General Measures

- 1.) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- 2.) Store hazardous materials and wastes in covered containers and protect from vandalism.
- 3.) Place a stockpile of spill cleanup materials where it will be readily accessible.
- 4.) Train employees in spill prevention and cleanup.
- 5.) Designate responsible individuals to oversee and enforce control measures.
- 6.) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise cleanup activities.
- 7.) Do not bury or wash spills with water.
- 8.) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- 9.) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
- 10.) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- 11.) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- 12.) Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

#### Cleanup

- 1.) Clean up leaks and spills immediately.
- 2.) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.



- 3.) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

#### Minor Spills

- 1.) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- 2.) Use absorbent materials on small spills rather than hosing down or burying the spill.
- 3.) Absorbent materials should be promptly removed and disposed of properly.
- 4.) Follow the practice below for a minor spill:
- 5.) Contain the spread of the spill.
- 6.) Recover spilled materials.
- 7.) Clean the contaminated area and properly dispose of contaminated materials.

#### Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately:

- 1.) Contain spread of the spill.
- 2.) Notify the project foreman immediately.
- 3.) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- 4.) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- 5.) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

#### Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

- 1.) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512- 339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental





***BERRY LANE C-STORE  
UNDERGROUND STORAGE TANK APPLICATION***

Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

- 2.) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
- 3.) Notification should first be made by telephone and followed up with a written report.
- 4.) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- 5.) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: [http://www.tnrcc.state.tx.us/enforcement/emergency\\_response.html](http://www.tnrcc.state.tx.us/enforcement/emergency_response.html).

**Vehicle and Equipment Maintenance**

- 1.) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- 2.) Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
- 3.) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- 4.) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- 5.) Place drip pans or absorbent materials under paving equipment when not in use.
- 6.) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- 7.) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- 8.) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- 9.) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.



Vehicle and Equipment Fueling

- 1.) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- 2.) Discourage “topping off” of fuel tanks.

Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

**SPILL REPORT FORM**

Notes to General Contractor:

- Control and contain the spill.
- Contact the appropriate regulatory agencies if the spill exceeds the applicable reportable quantity.
- Clean up the spill and dispose of waste according to federal, state and local regulations.
- Complete the Spill Report Form in full for each spill that exceeds the applicable reportable quantity and submit to the Owner.
- Call the Owner.
- Resolve as appropriate and as required by regulatory authorities.



## SPILL REPORT FORM

DATE:  
PROJECT:  
PROJECT ADDRESS:

Spill Reported By: \_\_\_\_\_

Date / Time of Spill: \_\_\_\_\_

Describe spill location and events leading to spill: \_\_\_\_\_

\_\_\_\_\_

Material Spilled: \_\_\_\_\_

Source of Spill: \_\_\_\_\_

Amount Spilled: \_\_\_\_\_

Amount Spilled to Waterway (Name Waterway): \_\_\_\_\_

Containment or Clean up Action: \_\_\_\_\_

\_\_\_\_\_

Approximate depth (yards) of soil excavation: \_\_\_\_\_

List injuries or Personal Contamination: \_\_\_\_\_

Action to be taken to prevent future spills:  
\_\_\_\_\_

Agencies notified of spill:  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Contractor Signature and Printed Name

\_\_\_\_\_  
Date

**AFTER NOTIFYING GOVERNING AUTHORITIES, IMMEDIATELY COMPLETE THIS FORM  
AND CONTACT THE OWNER IF THE SPILL EXCEEDS THE REPORTABLE QUANTITY FOR  
THE GOVERNING AGENCY**



## **Temporary Stormwater Section (TCEQ-0602)**

### **Attachment B: Potential Sources of Contamination**

#### *Potential Sources of Contamination and Preventive Measures:*

**Potential Source:** Concrete and concrete products used on-site during construction.

**Preventive Measures:** Concrete washout structure will be used if necessary.

**Potential Source:** Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dripping.

**Preventative Measures:** Vehicle maintenance will be performed at a local maintenance shop.

**Potential Source:** Miscellaneous trash and litter from construction workers and material wrappings.

**Preventative Measures:** Trash containers will be placed throughout the site to encourage proper disposal of trash.

**Potential Source:** Silt leaving the site.

**Preventative Measures:** Contractor will install all temporary best management practices prior to start of construction including the stabilized construction entrance to prevent tracking onto adjoining streets.

**Potential Source:** Construction debris

**Preventative Measures:** Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case-by-case basis.

**Potential Source:** Soil and mud from construction vehicle tires as they leave the site.

**Preventative Measures:** a stabilized construction exit shall be utilized as vehicles leave the site. And soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.

**Potential Source:** Sediment from soil, sand, gravel, and excavated materials stockpiled on site.

**Preventative Measures:** Silt fence shall be installed on the down gradient side of the stockpiled materials. Reinforced rock berms shall be installed at all downstream discharge locations.

**Potential Source:** Portable toilet spill

**Preventative Measures:** Toilets on the site will be emptied on a regular basis by the contracted toilet company.



## **Temporary Stormwater Section (TCEQ-0602)**

### **Attachment C: Sequence of Major Activities**

The installation of erosion and sedimentation controls shall occur prior to any excavation of materials or major disturbances on the site. The sequence of major construction activities will be as follows. Approximate acreage (AC) expected to be disturbed is listed in parentheses next to each activity.

#### *Intended Schedule or Sequence of Major Activities:*

1. Submit written notice of construction to TCEQ regional office at least 48 hours prior to the start of any regulated activities.
2. A pre-construction conference prior to commencement of construction. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Underground Storage Tank Plan (UST) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. Contractors must follow requirements as outlined in TCEQ guidelines and General Notes sheets of the approved Site Construction Plans.
4. Prior to beginning any construction activity, all temporary erosion and sedimentation BMPs and control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications (2.45 AC).
5. Evaluate temporary erosion control installation. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
6. Review construction schedule and the Underground Storage Tank Plan (UST) requirements.
7. Complete UST construction and install landscaping (2.45 AC).
8. Topsoil, Irrigation and Landscaping: Revegetate all disturbed areas according to plan.
9. Site cleanup and removal of temporary erosion/sedimentation BMP controls. (2.45 AC)

Maximum total construction time is not expected to exceed 6 months.



## **Temporary Stormwater Section (TCEQ-0602)**

### **Attachment D: Temporary Best Management Practices and Measures**

1. There are approximately 0.0 AC of storm water that originate up gradient from the site and flow across the site through an onsite BMP. No upstream stormwater exists.
2. Temporary BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property and limits of construction to prevent silt from escaping the construction area during permanent BMP construction.
3. A gravel construction entrance exists on site to reduce vehicle “tracking” onto adjoining streets. A concrete washout pit may be used to collect all excess concrete during construction, if needed.
4. Temporary BMPs for this project will protect surface water or groundwater from turbid water, phosphorus, sediment, oil and other contaminants, which may mobilize in stormwater flows by slowing the flow of runoff to allow sediment and suspended solids to settle out of the runoff.
5. Practices may also be implemented on site for interim and permanent stabilization. Stabilization practices may include but are not limited to establishment of temporary vegetation; establishment of permanent vegetation; mulching; geotextiles; sod stabilization; vegetative buffer strips; protection of existing trees and vegetation; and other similar measures.
6. There are no sensitive features or surface streams within the boundaries of the project that would require temporary BMPs. The temporary onsite BMPs will be used to treat stormwater runoff before it leaves the project and prevent pollutants from entering surface streams or any sensitive features down gradient of the site.





**Temporary Stormwater Section  
(TCEQ-0602)**

**Attachment E:  
Request to Temporarily Seal a Feature  
(NOT APPLICABLE)**



## **Temporary Stormwater Section (TCEQ-0602)**

### **Attachment F: Structural Practices**

Structural BMPs will be used to limit runoff discharge of pollutants from exposed areas of the site. BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. A temporary construction entrance will be placed at the site entry/exit point to reduce tracking onto adjoining streets. A construction staging area will be used onsite to perform all vehicle maintenance and for equipment and material storage. A concrete truck washout pit will be placed on site to provide containment and easier cleanup of waste from concrete operations. The location of all structural temporary BMPs are shown within the Site Plans.

#### *Description of Temporary BMPs*

##### Construction Entrance/Exit:

The purpose of a gravel construction entrance is to provide a stable entrance/exit condition from the construction site and keep mud and sediment off public roads. A stabilized construction entrance is a stabilized pad of crushed stone located at any point traffic will be entering or leaving the construction site from a public right-of-way. This practice should be used at all point of construction ingress and egress. Excessive amounts of mud can also present a safety hazard to roadway users. To minimize the amount of sediment loss to nearby roads, access to the construction site should be limited to as few points as possible and vegetation around the perimeter should be protected where access is not necessary. A rock stabilized construction entrance exists and will be used at all designated access points.

##### Silt Fence:

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.

##### Triangular Sediment Filter Dikes

Triangular sediment filter dikes (18"x18"x18" filter material with 6" square folded wire mesh frame) will be installed downgradient of the AST construction area with filter cloth placed over any existing stormwater



collection drains. The dike and filter cloth will be held in place with cloth sandbags. The facility existing topography will not change as the AST will be placed on existing crushed rock.

**Inlet Protection:**

The purpose of inlet protection is to avoid the clogging of constructed storm sewer networks with sediment loading. Without this protection, the sewer capacity can be greatly reduced following construction and lead to flooding. Temporary protection shall be installed on- and off-site to impacted inlets during construction to avoid these potential issues. Types of protection include filter barrier protection, block and gravel protection, wire mesh and gravel protection, and excavated impoundment protection and will be implemented based on location as well as expected runoff volume.

**Concrete Washout Area (if applicable)**

The purpose of concrete washout areas is to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.

The following steps will help reduce stormwater pollution from concrete wastes:

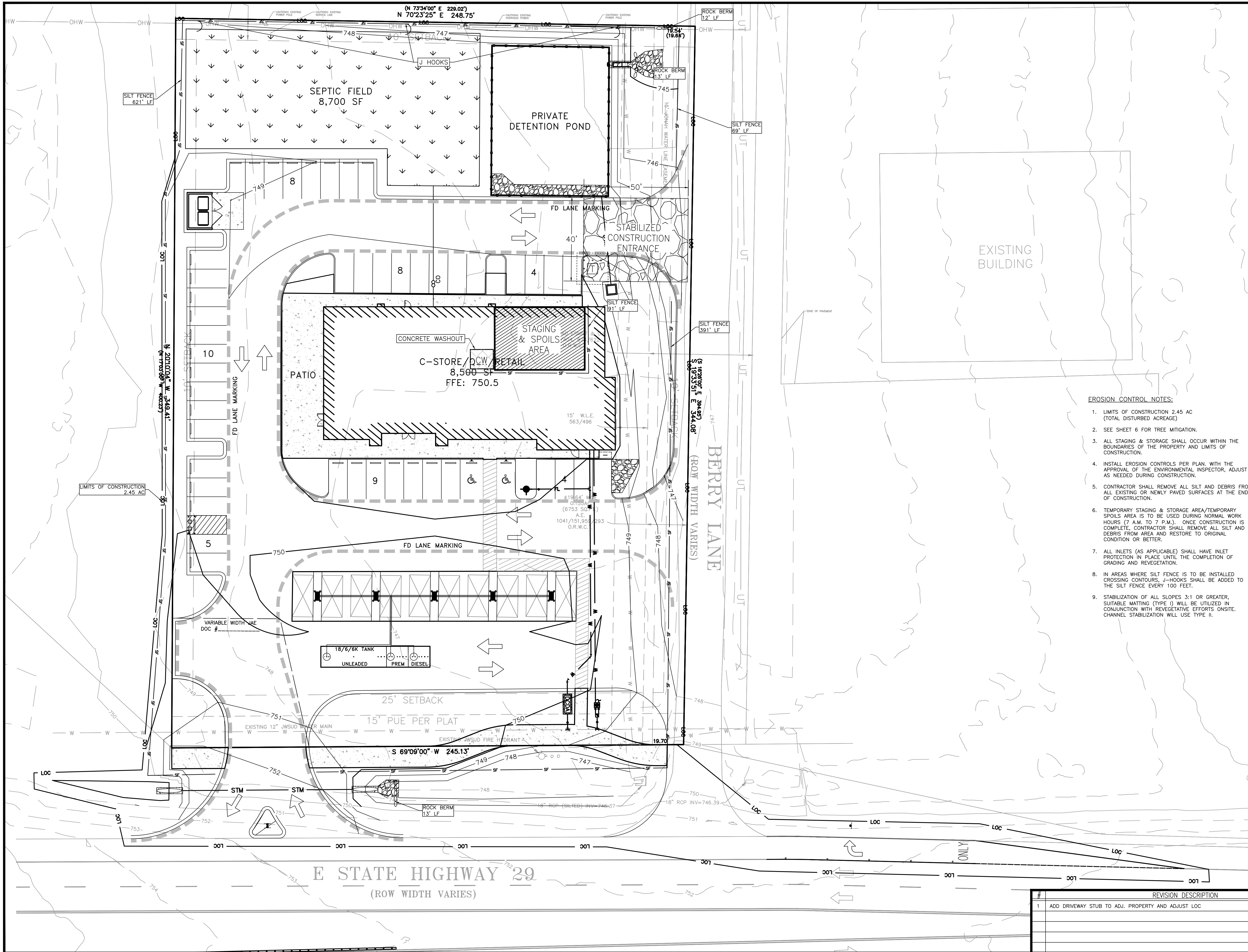
- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.
- For onsite washout:
- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.



**Temporary Stormwater Section  
(TCEQ-0602)**

**Attachment G:  
Drainage Area Map**





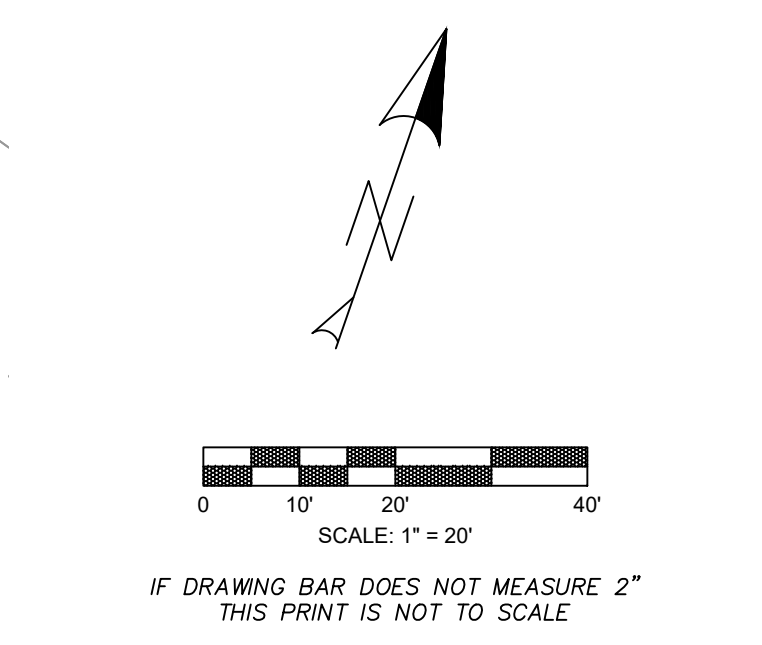
10/31/2024  
NICHOLAS R. SANDLIN  
124404  
LICENSED PROFESSIONAL ENGINEER  
*Nick Sandlin*

**EROSION CONTROL LEGEND**

- PROPOSED PROPERTY / PROJECT BOUNDARY LINE
- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- PROPOSED CURB & GUTTER
- LIMITS OF CONSTRUCTION
- SILT FENCE
- TREE PROTECTION FENCE
- STAGING & TEMPORARY SPOILS AREA
- STABILIZED CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT
- TEMPORARY ROCK BERM
- AREA INLET PROTECTION
- CURB INLET PROTECTION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREE (TO REMAIN)
- EXISTING TREE (TO BE REMOVED)

NOTE: ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY INSPECTOR AT TIME OF CONSTRUCTION.

- EROSION CONTROL NOTES:**
- LIMITS OF CONSTRUCTION 2.45 AC (TOTAL DISTURBED ACREAGE)
  - SEE SHEET 6 FOR TREE MITIGATION.
  - ALL STAGING & STORAGE SHALL OCCUR WITHIN THE BOUNDARIES OF THE PROPERTY AND LIMITS OF CONSTRUCTION.
  - INSTALL EROSION CONTROLS PER PLAN, WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, ADJUST AS NEEDED DURING CONSTRUCTION.
  - CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM ALL EXISTING OR NEWLY PAVED SURFACES AT THE END OF CONSTRUCTION.
  - TEMPORARY STAGING & STORAGE AREA/TEMPORARY SPOILS AREA IS TO BE USED DURING NORMAL WORK HOURS (7 A.M. TO 7 P.M.). ONCE CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM AREA AND RESTORE TO ORIGINAL CONDITION OR BETTER.
  - ALL INLETS (AS APPLICABLE) SHALL HAVE INLET PROTECTION IN PLACE UNTIL THE COMPLETION OF GRADING AND REVEGETATION.
  - IN AREAS WHERE SILT FENCE IS TO BE INSTALLED CROSSING CONTOURS, J-HOOKS SHALL BE ADDED TO THE SILT FENCE EVERY 100 FEET.
  - STABILIZATION OF ALL SLOPES 3:1 OR GREATER, SUITABLE MATTING (TYPE I) WILL BE UTILIZED IN CONJUNCTION WITH REVEGETATIVE EFFORTS ONSITE. CHANNEL STABILIZATION WILL USE TYPE II.



WARNING !!! CONTRACTOR TO FIELD VERIFY ALL EXIST. UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO CONTACT ENGINEER IF ANY EXISTING UTILITY INFORMATION DIFFERS FROM DATA SHOWN IN THE PLANS. CALL 811 BEFORE YOU DIG.

THESE PLANS COPYRIGHTED BY SANDLIN SERVICES, LLC

ENGINEERING | CONSULTING  
**SANDLIN**  
SERVICES, LLC

TBPELS FIRM #21356  
9111 JOLLYVILLE RD. STE 212 AUSTIN, TX 78759

**EROSION CONTROL PLAN**

PROJECT CASE: 2024-25-SDP  
**BERRY LANE C-STORE**

| # | REVISION DESCRIPTION                              | SIGNATURE | DATE    | SHEET |
|---|---------------------------------------------------|-----------|---------|-------|
| 1 | ADD DRIVEWAY STUB TO ADJ. PROPERTY AND ADJUST LOC | NS        | 4/28/25 | 8     |
|   |                                                   |           |         | OF    |
|   |                                                   |           |         | 29    |



C:\shared drives\sandlin\services\ic\sandlin\services\projects\Varia\development\division\01-0077-001\berry\line c-store\CAD\construction sheets\BLC DT.dwg-EROSION CONTROL DETAILS Plotted May 02, 2025 at 9:49am by Engineer | Last Saved by Engineer

GUIDELINES FOR DESIGN AND INSTALLATION OF  
TEMPORARY EROSION AND SEDIMENTATION CONTROLS

| TYPE OF STRUCTURE    | REACH LENGTH | MAXIMUM DRAINAGE AREA | SLOPE       |
|----------------------|--------------|-----------------------|-------------|
| SILT FENCE           | N/A          | 2 ACRES               | 0 – 10%     |
|                      | 200 FEET     | 2 ACRES               | 10 – 20%    |
|                      | 100 FEET     | 1 ACRE                | 20 – 30%    |
|                      | 50 FEET      | 1/2 ACRE              | > 30%       |
| TRIANGLE FILTER DIKE | 100 FEET     | 1/2 ACRE              | < 30% SLOPE |
|                      | 50 FEET      | 1/4 ACRE              | > 30% SLOPE |
| ROCK BERM *, **      | 500 FEET     | < 5 ACRES             | 0 – 10%     |

\* FOR ROCK BERM DESIGN WHERE PARAMETERS ARE OTHER THAN STATED, DRAINAGE AREA CALCULATIONS AND ROCK BERM DESIGN MUST BE SUBMITTED FOR REVIEW.

\*\* HIGH SERVICE ROCK BERMS MAY BE REQUIRED IN AREAS OF ENVIRONMENTAL SIGNIFICANCE AS DETERMINED BY THE CITY OF GEORGETOWN.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

|                                                                                   |                                                          |                                  |                                                        |                                  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------|--------------------------------------------------------|----------------------------------|
|  | CITY OF GEORGETOWN<br>CONSTRUCTION STANDARDS AND DETAILS |                                  | TEMPORARY EROSION AND SEDIMENTATION CONTROL GUIDELINES |                                  |
|                                                                                   | SCALE: NTS<br>DRAWN BY: MRS                              | DATE: 1/2003<br>APPROVED BY: TRB | DESIGN NAME: EC01                                      | REVISION NOTE: ADOPTED 6/21/2006 |

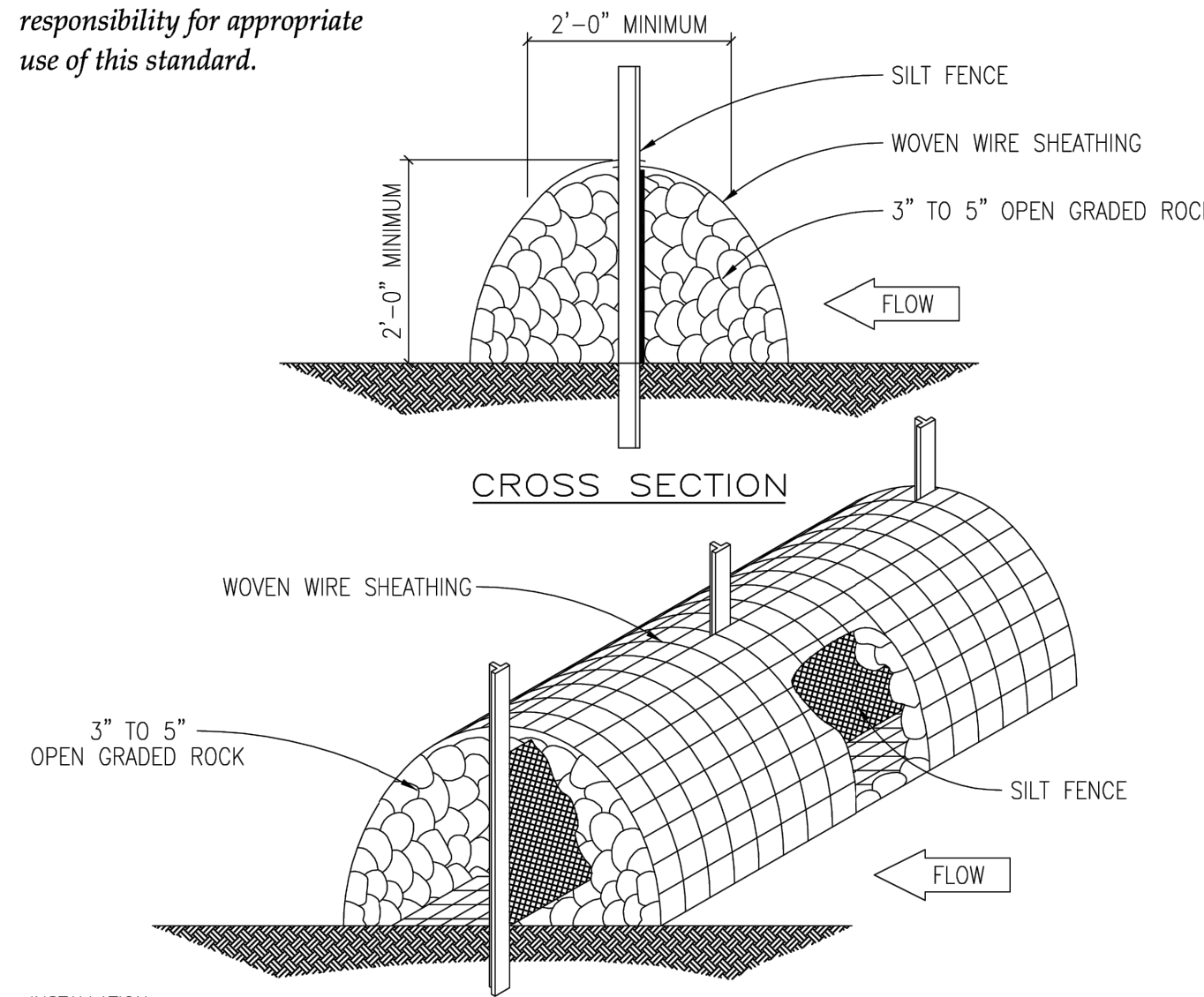
NOTE: THIS SECTION IS INTENDED TO ASSIST THOSE PERSONS PREPARING WATER POLLUTION ABATEMENT PLANS (WPAP) OR STORM WATER POLLUTION PREVENTION PLANS (SWPP) THAT COMPLY WITH FEDERAL, STATE AND/OR LOCAL STORM WATER REGULATIONS.

1. THE CONTRACTOR TO INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, GRADING, OR EXCAVATION). CONTRACTOR TO REMOVE EROSION/SEDIMENTATION CONTROLS AT THE COMPLETION OF PROJECT AND GRASS RESTORATION.
2. ALL PROJECTS WITHIN THE RECHARGE ZONE OF THE EDWARD'S AQUIFER SHALL SUBMIT A BEST MANAGEMENT PRACTICES AND WATER POLLUTION AND ABATEMENT PLAN TO THE TWC FOR APPROVAL PRIOR TO ANY CONSTRUCTION.
3. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS TO BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND WATER POLLUTION ABATEMENT PLAN. DEVIATIONS FROM THE APPROVED PLAN MUST BE SUBMITTED TO AND APPROVED BY THE OWNER'S REPRESENTATIVE.
4. ALL PLANTING SHALL BE DONE BETWEEN MAY 1 AND SEPTEMBER 15 EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING. IF PLANTING IS AUTHORIZED TO BE DONE OUTSIDE THE DATES SPECIFIED, THE SEED SHALL BE PLANTED WITH THE ADDITION OF WINTER FESCUE (KENTUCKY 31) AT A RATE OF 100lb/ACRE. GRASS SHALL BE COMMON BERMUDA GRASS, HULLED, MINIMUM 82% PURE LIVE SEED. ALL GRASS SEED SHALL BE FREE FROM NOXIOUS WEED, GRADE 1+ RECENT CROP, RECLEANED AND TREATED WITH APPROPRIATE FUNGICIDE AT TIME OF MIXING. SEED SHALL BE FURNISHED IN SEALED, STANDARD CONTAINERS WITH DEALER'S GUARANTEED ANALYSIS.
5. ALL DISTURBED AREAS TO BE RESTORED AS NOTED IN THE WATER POLLUTION ABATEMENT PLAN.
6. THE PLANTED AREA TO BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF FOUR (4) INCHES. THE IRRIGATION TO OCCUR AT 10-DAY INTERVALS DURING THE FIRST TWO MONTHS TO INSURE GERMINATION AND ESTABLISHMENT OF THE GRASS. RAINFALL OCCURRENCES OF 1/2 INCH OR GREATER TO POSTPONE THE WATERING SCHEDULE ONE WEEK.
7. RESTORATION TO BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 25 SQUARE FEET EXIST.
8. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL TO BE PLACED IN ALL AREAS DISTURBED BY CONSTRUCTION.
9. THE CONTRACTOR TO HYDROMULCH OR SOD (AS SHOWN ON PLANS) ALL EXPOSED CUTS AND FILLS UPON COMPLETION OF CONSTRUCTION.
10. EROSION AND SEDIMENTATION CONTROLS TO BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILDUP WITHIN TREE DRUPLINE.
11. TO AVOID SOIL COMPACTION, CONTRACTOR SHALL NOT ALLOW VEHICULAR TRAFFIC, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS IN THE TREE DRUPLINE AREAS.
12. WHERE A FENCE IS CLOSER THAN FOUR (4) FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF EIGHT (8) FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE FENCING.
13. TREES TO BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
14. ANY ROOT EXPOSED BY CONSTRUCTION ACTIVITY TO BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOPSOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
15. CONTRACTOR TO PRUNE VEGETATION TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND EQUIPMENT BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.). ALL FINISHED PRUNING TO BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE "NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES").
16. THE CONTRACTOR IS TO INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY RAINFALL EXCEEDING 1/4 INCH TO VERIFY THAT THEY HAVE NOT BEEN SIGNIFICANTLY DISTURBED. ANY ACCUMULATED SEDIMENT AFTER A SIGNIFICANT RAINFALL TO BE REMOVED AND PLACED IN THE OWNER DESIGNATED SPOIL DISPOSAL SITE. THE CONTRACTOR TO CONDUCT PERIODIC INSPECTIONS OF ALL EROSION/SEDIMENTATION CONTROLS AND TO MAKE ANY REPAIRS OR MODIFICATIONS NECESSARY TO ASSURE CONTINUED EFFECTIVE OPERATION OF EACH DEVICE.
17. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT IMMEDIATELY ADJACENT TO A PROTECTED TREE, ERECT THE FENCE APPROXIMATELY TWO TO FOUR FEET (2'-4') BEHIND THE AREA IN QUESTION.
18. NO ABOVE AND/OR BELOW GROUND TEMPORARY FUEL STORAGE FACILITIES TO BE STORED ON THE PROJECT SITE.
19. IF EROSION AND SEDIMENTATION CONTROL SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER'S REPRESENTATIVE AND THE CONTRACTOR TO EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEMS FOR DAMAGE PRIOR TO CONSTRUCTION. ANY DAMAGE TO PREEXISTING EROSION AND SEDIMENTATION CONTROLS NOTED TO BE REPAIRED AT OWNERS EXPENSE.
20. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CONTAMINATED SOIL RESULTING FROM ACCIDENTAL SPILL TO BE REMOVED AND DISPOSED OF PROPERLY.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

|                                                                                   |                                                          |                                  |                                                     |                                  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------|-----------------------------------------------------|----------------------------------|
|  | CITY OF GEORGETOWN<br>CONSTRUCTION STANDARDS AND DETAILS |                                  | EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES |                                  |
|                                                                                   | SCALE: NTS<br>DRAWN BY: MRS                              | DATE: 1/2003<br>APPROVED BY: TRB | DESIGN NAME: EC01A                                  | REVISION NOTE: ADOPTED 6/21/2006 |

The Architect/Engineer assumes responsibility for appropriate use of this standard.



- INSTALLATION:
- LAYOUT THE ROCK BERM FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
  - CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
  - PLACE WOVEN WIRE FABRIC ON THE GROUND ALONG THE PROPOSED INSTALLATION WITH ENOUGH OVERLAP TO COMPLETELY ENCLOSE THE FINISHED SIZE OF THE BERM.
  - INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT. INSTALLATION SHOULD BE AS DESCRIBED IN DRAWING NO. EC-02 "SILT FENCE DETAIL".
  - PLACE THE ROCK ALONG THE CENTER OF THE WIRE AND ON BOTH SIDES OF THE SILT FENCE TO THE DESIGNATED HEIGHT.
  - WRAP THE STRUCTURE WITH THE PREVIOUSLY PLACED WIRE MESH SECURE ENOUGH SO THAT WHEN WALKED ACROSS THE STRUCTURE REMAINS ITS SHAPE.
  - SECURE WITH THE WIRE.
  - THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

- INSPECTION AND MAINTENANCE GUIDELINES:
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL EVENT BY THE CONTRACTOR. FOR THE INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM.
  - REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER.
  - REPAIR ANY LOOSE WIRE SHEATHING.
  - THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
  - THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

|                                                                                     |                                                          |                                  |                               |                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------------------|----------------------------------|
|  | CITY OF GEORGETOWN<br>CONSTRUCTION STANDARDS AND DETAILS |                                  | HIGH SERVICE ROCK BERM DETAIL |                                  |
|                                                                                     | SCALE: NTS<br>DRAWN BY: MRS                              | DATE: 1/2003<br>APPROVED BY: TRB | DESIGN NAME: EC04             | REVISION NOTE: ADOPTED 6/21/2006 |

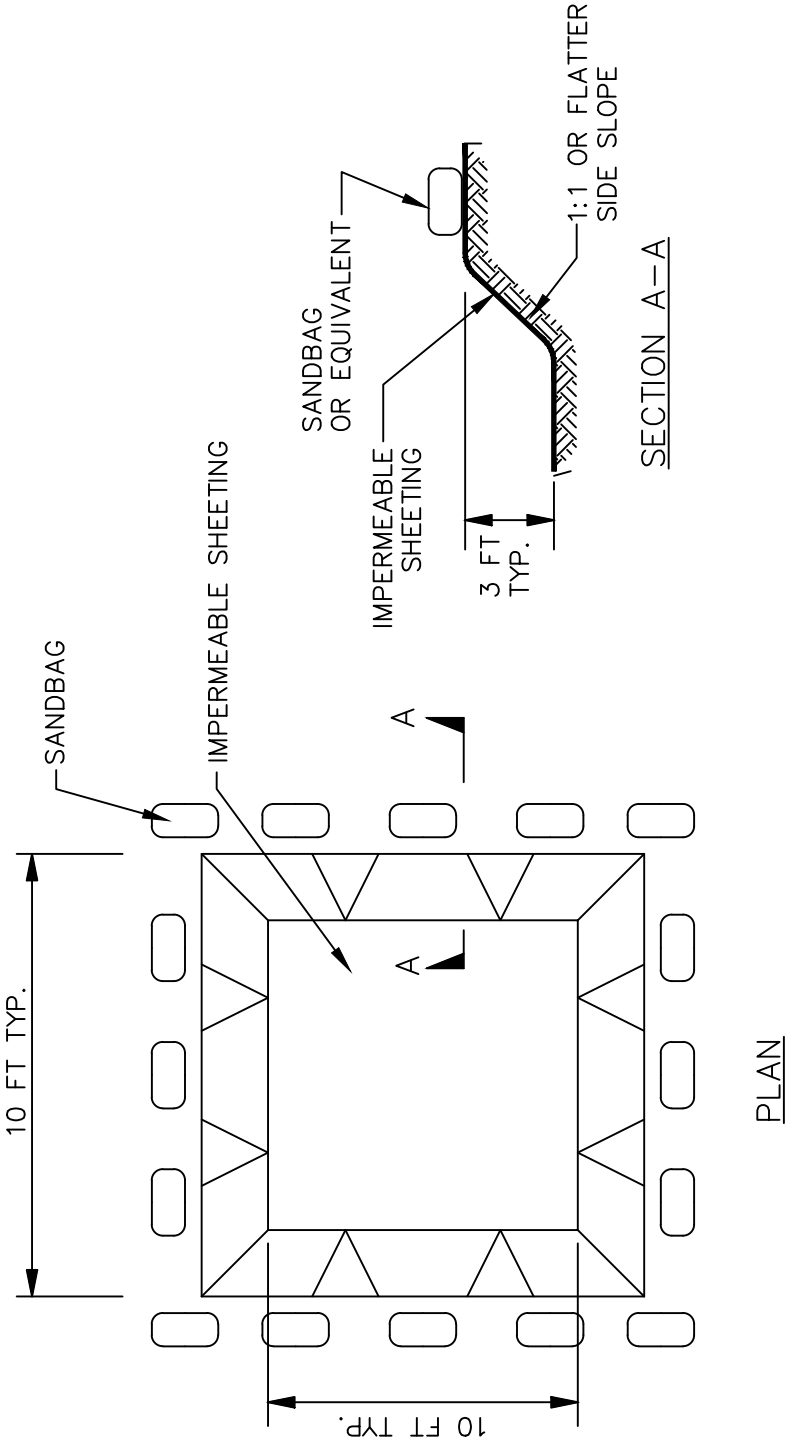
- INSTALLATION:
- CLEAR THE AREA OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
  - GRADE THE AREA FOR THE ENTRANCE TO FLOW BACK ON TO THE CONSTRUCTION SITE. RUNOFF FROM THE STABILIZED CONSTRUCTION
  - PLACE GEOTEXTILE FABRIC AS APPROVED BY THE CITY.
  - PLACE ROCK AS APPROVED BY THE CITY.

- INSPECTIONS AND MAINTENANCE GUIDELINES:
- THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  - ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
  - WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY.
  - WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
  - ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

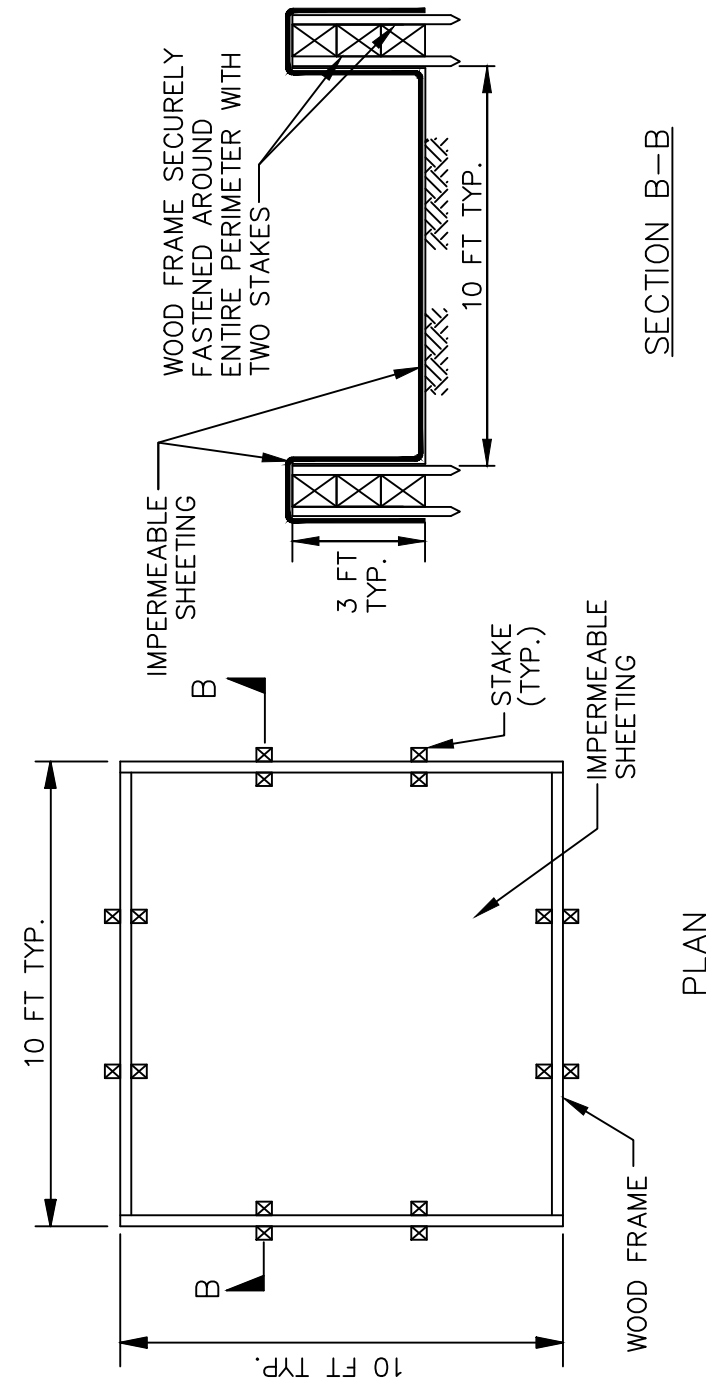
The Architect/Engineer assumes responsibility for appropriate use of this standard.

|                                                                                     |                                                          |                                  |                                  |                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|
|  | CITY OF GEORGETOWN<br>CONSTRUCTION STANDARDS AND DETAILS |                                  | STABILIZED CONSTRUCTION ENTRANCE |                                  |
|                                                                                     | SCALE: NTS<br>DRAWN BY: MRS                              | DATE: 1/2003<br>APPROVED BY: TRB | DESIGN NAME: EC06                | REVISION NOTE: ADOPTED 6/21/2006 |

ONSITE CONCRETE WASHOUT STRUCTURE



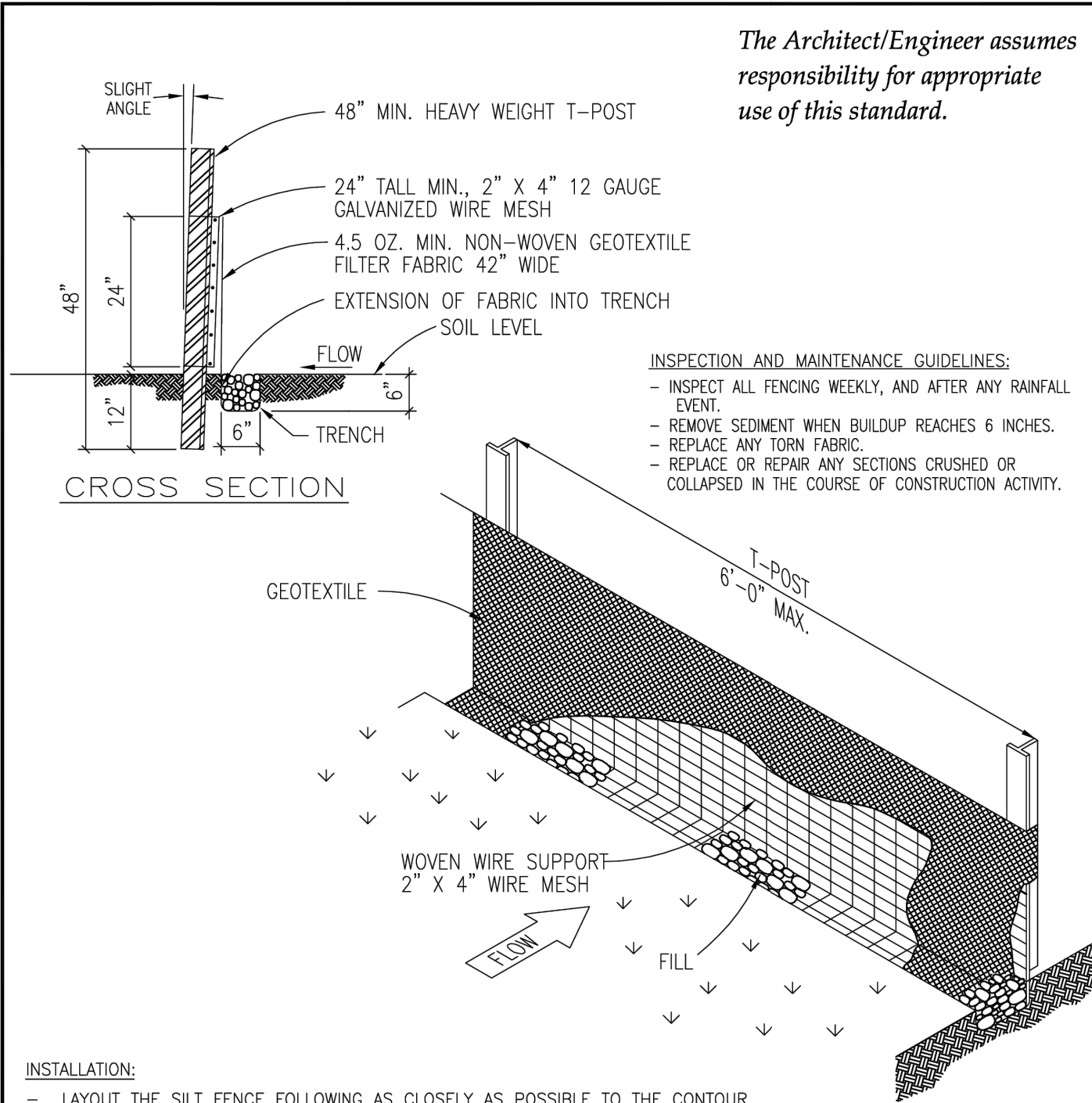
EXCAVATED WASHOUT STRUCTURE



WASHOUT STRUCTURE WITH WOOD PLANKS

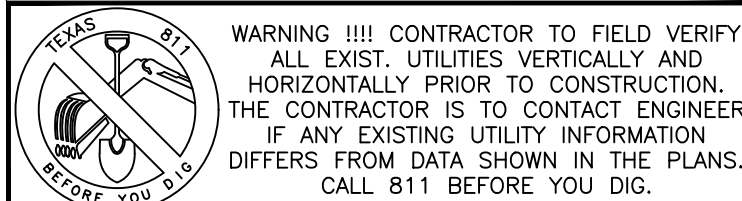
CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT IMPERMEABLE SHEETING FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER, WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO REUSE, THE LINER SHOULD BE INSPECTED FOR DAMAGE, REPAIRS, OR BREAKS. REMOVE AND REPAIR ANY DAMAGE TO THE LINER. REMOVE AND REPAIR ANY DAMAGE TO THE LINER. REMOVE AND REPAIR ANY DAMAGE TO THE LINER. REMOVE AND REPAIR ANY DAMAGE TO THE LINER.



- INSTALLATION:
- LAYOUT THE SILT FENCE FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
  - CLEAR THE GROUND OF DEBRIS, ROCKS, PLANTS (INCLUDING GRASSES TALLER THAN 2') TO PROVIDE A SMOOTH FLOW APPROACH SURFACE. EXCAVATE 6" DEEP X 6" WIDE TRENCH ON UPSTREAM SIDE OF FACE PER PLANS.
  - DRIVE THE HEAVY DUTY T-POST AT LEAST 12 INCHES INTO THE GROUND AND AT A SLIGHT ANGLE TOWARDS THE FLOW.
  - ATTACH THE 2" X 4" 12 GAUGE WELDED WIRE MESH TO THE T-POST WITH 11 1/2 GAUGE GALVANIZED T-POST CLIPS. THE TOP OF THE WIRE TO BE 24" ABOVE GROUND LEVEL. THE WELDED WIRE MESH TO BE OVERLAPPED 6" AND TIED AT LEAST 6 TIMES WITH HOG RINGS.
  - THE SILT FENCE TO BE INSTALLED WITH A SKIRT A MINIMUM OF 6" WIDE PLACED ON THE UPHILL SIDE OF THE FENCE INSIDE EXCAVATED TRENCH. THE FABRIC TO OVERLAP THE TOP OF THE WIRE BY 1".
  - ANCHOR THE SILT FENCE BY BACKFILLING WITH EXCAVATED DIRT AND ROCKS (NOT LARGER THAN 2").
  - GEOTEXTILE SPLICES SHOULD BE A MINIMUM OF 18" WIDE ATTACHED IN AT LEAST 6 PLACES. SPLICES IN CONCENTRATED FLOW AREAS WILL NOT BE ACCEPTED.
  - SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

|                                                                                       |                                                          |                                  |                   |                                  |
|---------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------|-------------------|----------------------------------|
|  | CITY OF GEORGETOWN<br>CONSTRUCTION STANDARDS AND DETAILS |                                  | SILT FENCE DETAIL |                                  |
|                                                                                       | SCALE: NTS<br>DRAWN BY: MRS                              | DATE: 1/2003<br>APPROVED BY: TRB | DESIGN NAME: EC02 | REVISION NOTE: ADOPTED 6/21/2006 |



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ENGINEERING | CONSULTING  
**SANDLIN**  
SERVICES, LLC

TBPELS FIRM #21356  
9111 JOLLYVILLE RD., STE 212 AUSTIN, TX 78759

EROSION CONTROL  
DETAILS

PROJECT CASE: 2024-25-SDP

BERRY LANE C-STORE

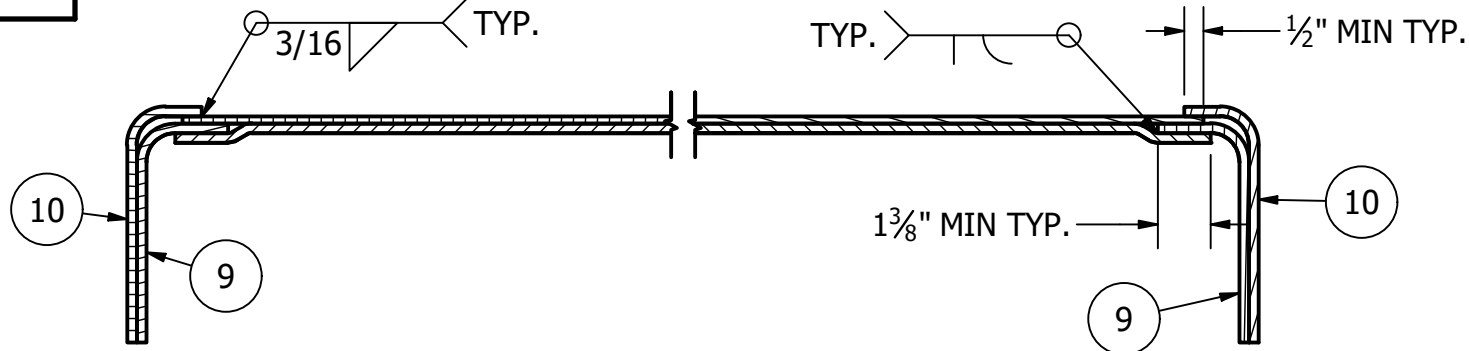
| # | REVISION DESCRIPTION | SIGNATURE | DATE | SHEET |
|---|----------------------|-----------|------|-------|
|   |                      |           |      | 18    |
|   |                      |           |      | OF    |
|   |                      |           |      | 29    |



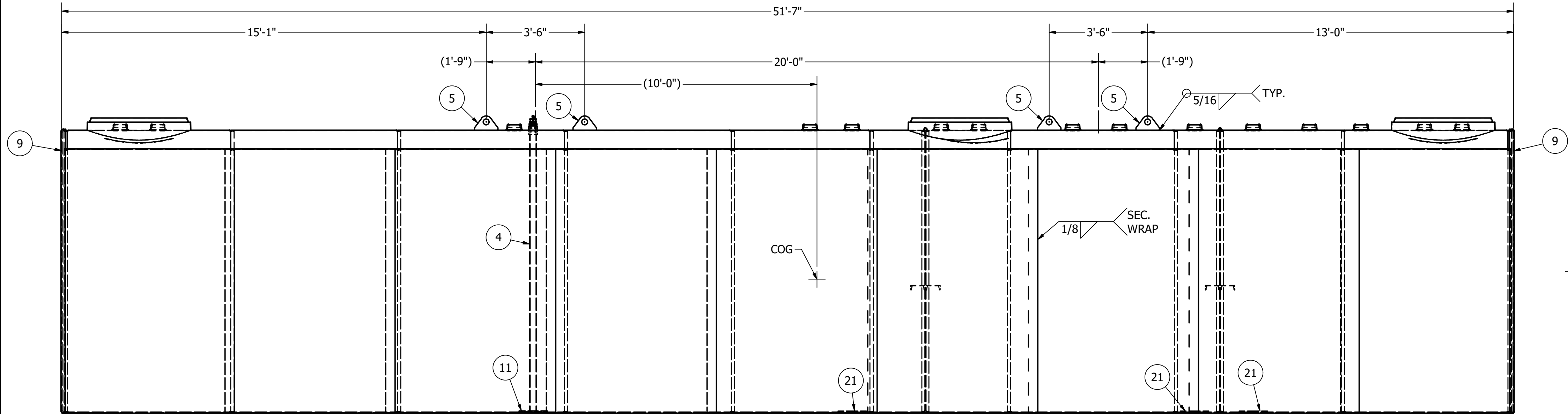
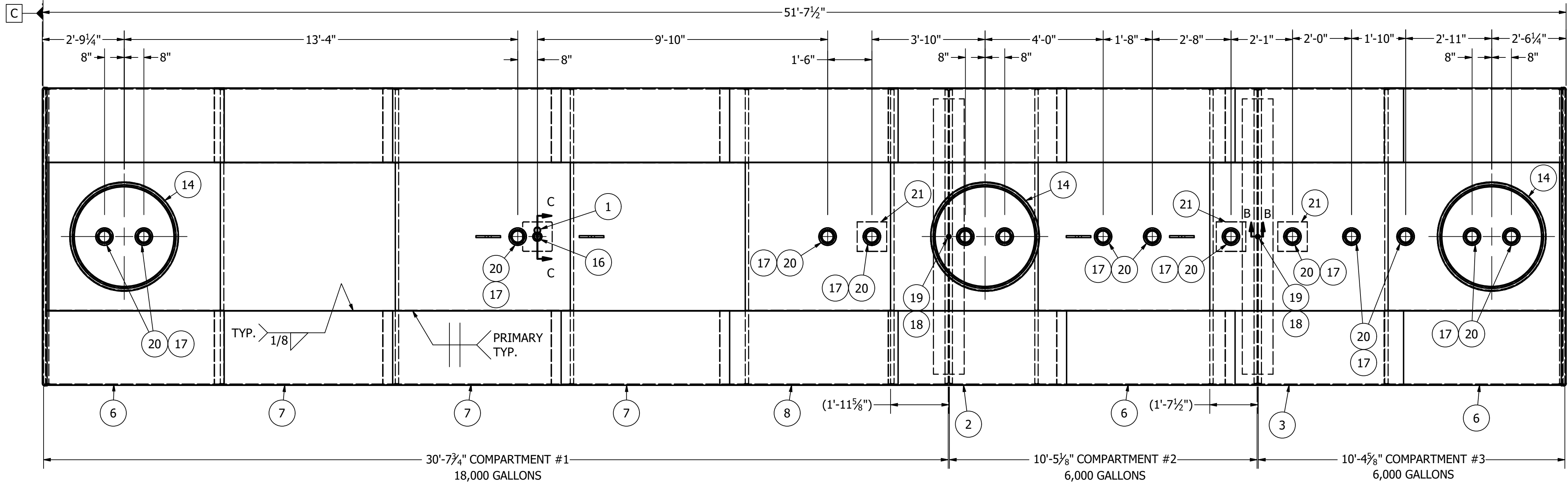




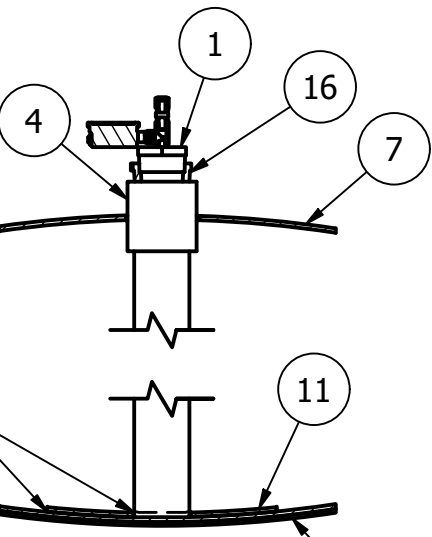
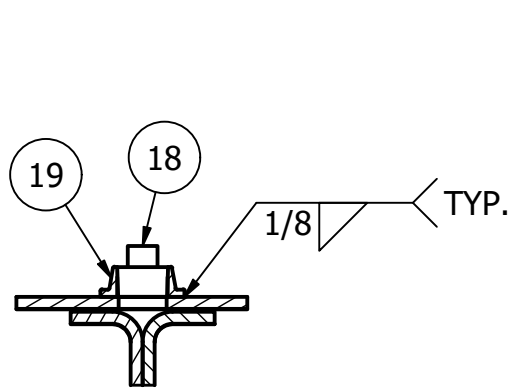
| QC | LAYOUT | DIM. INSP.: | WELDER: | WELD INSP.: | COATING: | COAT. INSP.: | COMP. DATE: | HEAT #: |
|----|--------|-------------|---------|-------------|----------|--------------|-------------|---------|
|----|--------|-------------|---------|-------------|----------|--------------|-------------|---------|



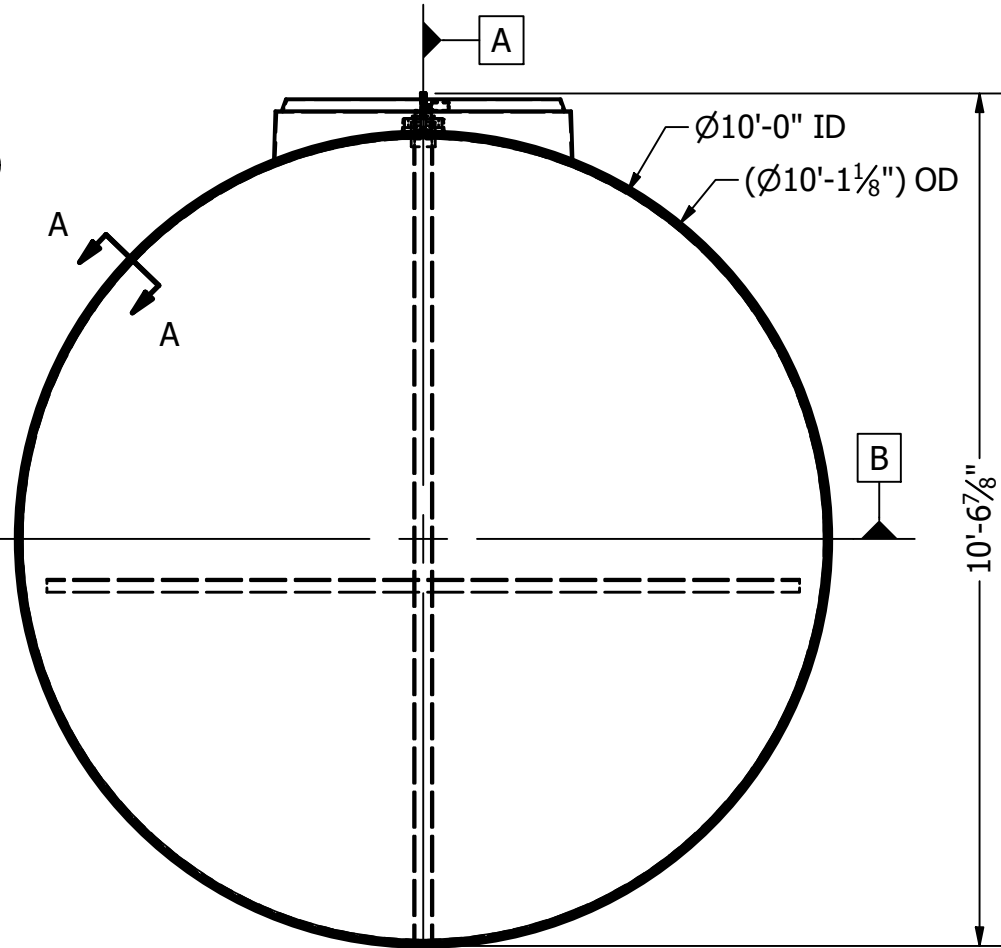
SECTION A-A



SECTION B-B



SECTION C-C



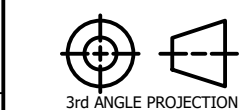
## NOTES:

1. THIS TANK SHALL BE BUILT AND TESTED IN ACCORDANCE WITH STEEL TANK INSTITUTE ACT-100® SPECIFICATION FOR EXTERNAL CORROSION PROTECTION OF FRP COMPOSITE STEEL UNDERGROUND STORAGE TANKS.
2. PRIMARY STEEL TANK SHALL BE BUILT AND TESTED IN ACCORDANCE WITH UL58 STEEL UNDERGROUND STORAGE TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
3. EXTERIOR OF TANK TO BE BLASTED BEFORE APPLICATION OF LAMINATE COATING. FRP COATING SHALL BE MANUFACTURED AND APPLIED IN ACCORDANCE WITH STI ACT-100® SPECIFICATION AND UL1746 PART II CORROSION PROTECTION SYSTEMS FOR UNDERGROUND STORAGE TANKS.
4. TANK SHALL BE SHIPPED WITH VACUUM ON INTERSTITIAL SPACE AND GAUGE INSTALLED ON MONITOR PIPE.
5. LAMINATE COATING NOT SHOWN FOR CLARITY.
6. INCLUDE FRP TOUCH-UP KIT ON SALES ORDER; 1 PER TANK; 1500-0335 (NO MANWAY) OR 1500-0336 (WITH MANWAY)

|                  |     |                             |          |     |
|------------------|-----|-----------------------------|----------|-----|
| 9/8/2025         | E   | MOVED FITTING               | 00028325 | JLR |
| 9/3/2025         | D   | REVISED PER CUSTOMER MARKUP | 00028325 | JLR |
| 8/12/2025        | C   | ADDED REPAD ON MONITOR PIPE | 00028325 | JPS |
| 8/7/2025         | B   | DRAFTING REVIEW UPDATES     | 00028325 | TS  |
| 8/6/2025         | A   | FOR REVIEW                  | 00028325 | JPS |
| DATE             | REV | DESCRIPTION                 | PROJ#    | BY  |
| REVISION HISTORY |     |                             |          |     |

| PARTS LIST |                   |     |                                          |                 |
|------------|-------------------|-----|------------------------------------------|-----------------|
| ITEM       | S/L ITEM#         | QTY | DESCRIPTION                              | MASS            |
| 1          | 2000-2959         | 1   | Vac Test Assembly                        | 2.021 lbmass    |
| 2          | 2000-3550         | 1   | Asm,BulkHd,.25,120x60,ME,1007-0459,A     | 3430.057 lbmass |
| 3          | 2000-3551         | 1   | Asm,BulkHd,.25,120x72,ME,1007-0459,B     | 3764.864 lbmass |
| 4          | 2000-3552         | 1   | Monitor PipeAsm,2.50,120 USTJacketed     | 62.411 lbmass   |
| 5          | 3000-2659         | 4   | PL,.75,6x10,Lug                          | 7.633 lbmass    |
| 6          | 3000-3205         | 3   | PL,.25,120id,72,Shell,1.375,Ofst2,ME     | 1944.568 lbmass |
| 7          | 3000-3206         | 3   | PL,.25,120id,72,Shell,1.375,Ofst1,ME     | 1943.212 lbmass |
| 8          | 3000-3207         | 1   | PL,.25,120id,60,Shell,1.375,Ofst1,ME     | 1621.801 lbmass |
| 9          | 3000-6716-120     | 2   | Head,Flanged,.25,124.25dia,120id         | 855.386 lbmass  |
| 10         | 3000-6716-120_876 | 2   | Head,Flanged,.25,124.75dia,120.876id     | 855.709 lbmass  |
| 11         | 3000-9486         | 1   | PL,.25,12x12,Radius,120od                | 9.671 lbmass    |
| 12         | 3000-9510         | 9   | PL,.188,72x315.875,Rolled120.5id,Wrap,ME | 1221.332 lbmass |
| 13         | 3900-1416         | 6   | Adhesive,AcralockSA-315NAT,400mlCart     | 0.000 lbmass    |
| 14         | 3900-1485         | 3   | SumpCollar,FRP,42,120/126dia Tank        | 11.221 lbmass   |
| 15         | 3900-1549         | 1   | Kit,Composite Coating,120x624            | 1792.868 lbmass |
| 16         | TB001168          | 1   | Bushing,2.50x2.00,BLK,Thrd               | 1.234 lbmass    |
| 17         | TB001183          | 15  | Bushing,5.00x4.00,Nylon,Isolation,Thrd   | 0.488 lbmass    |
| 18         | TB001389          | 2   | Plug,.75,SqHd,#150,MI,BLK,Thrd           | 0.199 lbmass    |
| 19         | TB002012          | 2   | Weld Flange,Thrd,.75,BLK                 | 0.130 lbmass    |
| 20         | TB002030          | 15  | Flange,,Hi-Five,5.00,A105,Blk,Thrd       | 4.398 lbmass    |
| 21         | TC000662-120      | 3   | PL,.25,12x12,Radius,120id,108-143        | 10.210 lbmass   |

| COATING SPECIFICATIONS     |                                                |
|----------------------------|------------------------------------------------|
| ITEM                       | VALUE                                          |
| External Type              | STI ACT100/UL1746 FRP COMPOSITE SPECIFICATIONS |
| Internal Type              | N/A                                            |
| Internal Surface Prep      | N/A                                            |
| Internal DFT               | N/A                                            |
| Internal - Full or Partial | N/A                                            |



UNLESS OTHERWISE SPECIFIED:

UNITS = INCHES

TOLERANCE:

LINEAR ±1/8"

ANGULAR ±1/2°

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4401 West Main  
Fargo, ND 58103  
Phone: 701-282-2345  
Fax: 701-282-5516  
TrueNorthSteel.com

DRAWN JPS DATE 8/6/2025

CHECKED TS DATE 8/7/2025

| TANK SPECIFICATIONS                 |             |
|-------------------------------------|-------------|
| ITEM                                | VALUE       |
| Nominal Capacity (gal)              | 30,000      |
| Nominal Diameter (ft-in)            | 10'-0"      |
| Nominal Length (ft-in)              | 52'-0"      |
| Design Diameter (ft-in)             | 10'-0"      |
| Design Length (ft-in)               | 51'-7 3/8"  |
| Design Capacity (gal) Total         | 30,233      |
| Design Capacity (gal) Compartment 1 | 18,005      |
| Design Capacity (gal) Compartment 2 | 6,126       |
| Design Capacity (gal) Compartment 3 | 6,102       |
| Shell Thickness                     | 1/4"        |
| Head Thickness                      | 1/4"        |
| Design Pressure (oz/in2)            | Atmospheric |
| Maximum Burial Depth (ft)           | 5           |
| Maximum Design Temp (F)             | 150         |



PART#: 1007-0459

DESCRIPTION: Tank,H,30000,120x624,UL58,ACT-100

WEIGHT: 36900.861 lbmass

SCALE DO NOT SCALE DRAWING SHEET 1 OF 1



C:\shared drives\sandlin services\ic\sandlin services\projects\land development\division\01-0077-001\berry lane c-store\CAD\construction sheets\5 BLC EDAM.dwg-EXISTING DRAINAGE AREA MAP Plotted May 02, 2025 at 9:48am by Engineer | Last Saved by: Engineer

| Time of Concentration Calculations |                           |      |         | Sheet Flow |       |         |                | Shallow Conc. Flow |      |         |                | Channel Flow |               |         |                  |                      |                  |        |                | Total          |
|------------------------------------|---------------------------|------|---------|------------|-------|---------|----------------|--------------------|------|---------|----------------|--------------|---------------|---------|------------------|----------------------|------------------|--------|----------------|----------------|
| Existing Flows                     |                           | Area | Area    | L          | n     | S       | T <sub>t</sub> | L                  | L    | S       | T <sub>t</sub> | L            | Manning's 'n' | S       | Wetted Perimeter | Cross-Sectional Area | Hydraulic Radius | Vavg   | T <sub>t</sub> | T <sub>c</sub> |
| From                               | To                        | (Ac) | (sf)    | (ft)       | -     | (ft/ft) | (min)          | (ft)               | (ft) | (ft/ft) | (min)          | (ft)         | -             | (ft/ft) | (ft)             | (ft^2)               | (sf)             | (ft/s) | (min)          | (min)          |
| OS DA-1                            | Existing Culvert          | 1.05 | 45,738  | 100        | 0.011 | 0.010   | 1.54           | 40                 | 28   | 0.084   | 0.22           | 341          | 0.040         | 0.015   | 22               | 11                   | 0.50             | 2.84   | 2.00           | 6.00           |
| EX DA-1                            | Northeast Property Corner | 2.83 | 123,275 | 100        | 0.150 | 0.022   | 9.10           | 262                | 0    | 0.011   | 2.53           | 204          | 0.040         | 0.007   | 22               | 11                   | 0.50             | 2.01   | 1.69           | 13.32          |

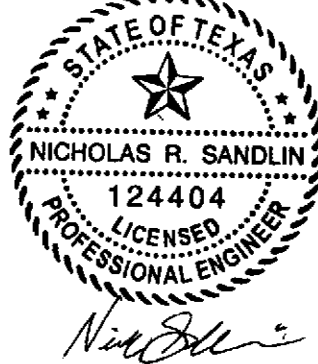
| EXISTING      |            |            | IMPERVIOUS      |                 |                 | GRASS      |            |            |
|---------------|------------|------------|-----------------|-----------------|-----------------|------------|------------|------------|
| Drainage Area | Total Area | Total Area | Area Impervious | Area Impervious | Area Impervious | Area Grass | Area Grass | Area Grass |
| (Ac)          | (sf)       | (sf)       | (sf)            | (Ac)            | (%)             | (sf)       | (Ac)       | (%)        |
| OS DA-1       | 1.05       | 45,738     | 27,660          | 0.63            | 60.5%           | 18,078     | 0.42       | 39.5%      |
| EX DA-1       | 2.83       | 123,275    | 6,736           | 0.15            | 5.5%            | 116,539    | 2.68       | 94.5%      |

| Drainage Basin Characteristics - Existing Conditions |              |          |            |          |          |           |           |
|------------------------------------------------------|--------------|----------|------------|----------|----------|-----------|-----------|
| Drainage Area                                        | Area (Acres) | I.C. (%) | Curve No.* | Tc (min) | Q2 (cfs) | Q10 (cfs) | Q25 (cfs) |
| OS DA-1                                              | 1.05         | 60.47%   | 84.0       | 6.00     | 4.52     | 7.11      | 8.84      |
| EX DA-1                                              | 2.83         | 5.46%    | 84.0       | 13.32    | 7.87     | 13.79     | 17.74     |

\*Pasture, grassland, or range - fair condition for type D Soil assumed for curve number

ATLAS 14 RAINFALL DATA UTILIZED FOR DESIGN STORMS PER COG DCM

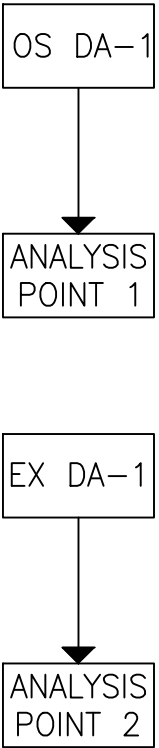
| EXHIBIT 2 - TABLE 2, DEPTH-DURATION-FREQUENCY VALUES |      |       |       |       |       |        |        |         |
|------------------------------------------------------|------|-------|-------|-------|-------|--------|--------|---------|
| SAN GABRIEL RIVER ZONE                               |      |       |       |       |       |        |        |         |
| DURATION                                             | 2-YR | 5-YR  | 10-YR | 25-YR | 50-YR | 100-YR | 500-YR | 1000-YR |
| 5 MIN                                                | 0.51 | 0.643 | 0.757 | 0.921 | 1.05  | 1.19   | 1.53   | 1.69    |
| 15 MIN                                               | 1.02 | 1.29  | 1.51  | 1.84  | 2.1   | 2.37   | 3.03   | 3.33    |
| 1 HR                                                 | 1.88 | 2.37  | 2.79  | 3.4   | 3.88  | 4.39   | 5.79   | 6.47    |
| 2 HR                                                 | 2.3  | 2.95  | 3.55  | 4.43  | 5.16  | 5.98   | 8.28   | 9.43    |
| 3 HR                                                 | 2.55 | 3.3   | 4.02  | 5.09  | 6.01  | 7.06   | 10.1   | 11.6    |
| 6 HR                                                 | 2.98 | 3.91  | 4.81  | 6.18  | 7.38  | 8.75   | 12.7   | 14.7    |
| 12 HR                                                | 3.44 | 4.51  | 5.54  | 7.12  | 8.48  | 10.1   | 14.6   | 16.9    |
| 24 HR                                                | 3.94 | 5.15  | 6.3   | 8.04  | 9.53  | 11.2   | 16.1   | 18.6    |



EXISTING DRAINAGE LEGEND

- PROPOSED PROPERTY / PROJECT BOUNDARY LINE
- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- PROPOSED CURB & GUTTER
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA DESIGNATION AND AREA DRAINED
- FLOW ARROW
- TIME OF CONCENTRATION LINE (SHEET FLOW)
- TIME OF CONCENTRATION LINE (SHALLOW CONCENTRATED FLOW)
- EXISTING CONTOURS
- PROPOSED CONTOURS

EXISTING DRAINAGE CONDITIONS



EQUATIONS 3-11, 3-12, AND 3-13 UTILIZED FOR TC CALCULATIONS PER COG DCM GUIDELINES

EQUATION 3-11 SCS METHOD SHEET FLOW TRAVEL TIME<sup>6</sup>

$$T_t = \frac{[0.42 * (nL)^{0.58}]}{(P_2)^{0.5} * (S)^{0.4}}$$

T<sub>t</sub> - Travel time (min)

n - Manning's roughness coefficient

L - Length of flow path (ft)

P<sub>2</sub> - 2-year, 24-hour rainfall = 4.2 in

S - Ground slope along flow path (ft/ft)

EQUATION 3-12 SCS SHALLOW CONCENTRATED VELOCITY<sup>6</sup>

Unpaved V = 16.1345(S)<sup>0.5</sup>

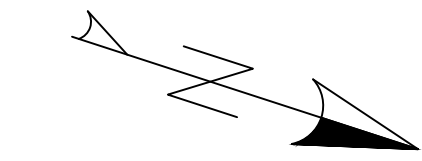
Paved V = 20.3282(S)<sup>0.5</sup>

V - Average velocity (ft/s)

S - Ground slope along flow path (ft/ft)

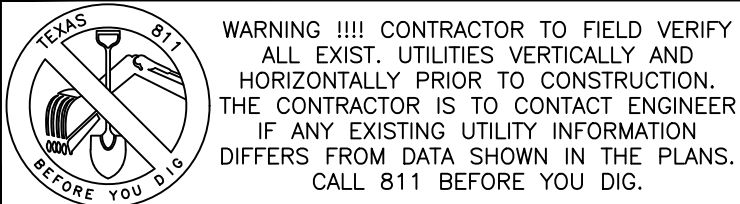
EQUATION 3-13 OPEN CHANNEL FLOW TRAVEL TIME<sup>6</sup>

$$T_t = \frac{L}{60V}$$



0 20' 40' 80'  
SCALE: 1" = 40'

IF DRAWING BAR DOES NOT MEASURE 2" THIS PRINT IS NOT TO SCALE



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TBPELS FIRM #21356  
9111 JOLLYVILLE RD. STE 212 AUSTIN, TX 78759

EXISTING DRAINAGE AREA MAP

PROJECT CASE: 2024-25-SDP

BERRY LANE C-STORE

| # | REVISION DESCRIPTION | SIGNATURE | DATE | SHEET |
|---|----------------------|-----------|------|-------|
|   |                      |           |      | 13    |
|   |                      |           |      | OF    |
|   |                      |           |      | 29    |



| Time of Concentration Calculations |                           |      |        | Sheet Flow |       |         |                | Shallow Conc. Flow |              |         |                | Channel Flow |                  |         |                     |                             |                     |        |                | Total          |
|------------------------------------|---------------------------|------|--------|------------|-------|---------|----------------|--------------------|--------------|---------|----------------|--------------|------------------|---------|---------------------|-----------------------------|---------------------|--------|----------------|----------------|
| Proposed Flows                     |                           | Area | Area   | L          | n     | S       | T <sub>i</sub> | L<br>(Unpaved)     | L<br>(Paved) | S       | T <sub>i</sub> | L            | Manning's<br>'n' | S       | Wetted<br>Perimeter | Cross-<br>Sectional<br>Area | Hydraulic<br>Radius | Vavg   | T <sub>i</sub> | T <sub>c</sub> |
| From                               | To                        | (Ac) | (sf)   | (ft)       | -     | (ft/ft) | (min)          | (ft)               | (ft)         | (ft/ft) | (min)          | (ft)         | -                | (ft/ft) | (ft)                | (ft²)                       | (sf)                | (ft/s) | (min)          | (min)          |
| OS DA-1                            | Existing Culvert          | 1.05 | 45,738 | 100        | 0.011 | 0.010   | 1.54           | 40                 | 28           | 0.084   | 0.22           | 341          | 0.040            | 0.015   | 22                  | 11                          | 0.50                | 2.84   | 2.00           | 6.00           |
| OS DA-2                            | Bypass                    | 0.81 | 35,284 | 100        | 0.150 | 0.022   | 9.10           | 10                 | 0            | 0.023   | 0.07           | -            | -                | -       | -                   | -                           | -                   | -      | 0.00           | 9.16           |
| OS DA-3                            | Northeast Property Corner | 0.26 | 11,326 | 41         | 0.011 | 0.010   | 0.76           | -                  | -            | -       | 0.00           | 321          | 0.040            | 0.011   | 22                  | 11                          | 0.50                | 2.45   | 2.18           | 6.00           |
| PR DA-1                            | Pond                      | 1.76 | 76,666 | 100        | 0.011 | 0.010   | 1.54           | 0                  | 216          | 0.005   | 2.50           | -            | -                | -       | -                   | -                           | -                   | -      | 0.00           | 6.00           |

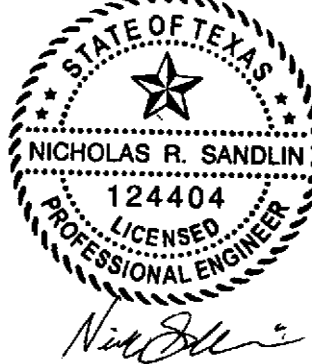
| PROPOSED      |            |            | IMPERVIOUS      |                 |                 | GRASS      |            |            |
|---------------|------------|------------|-----------------|-----------------|-----------------|------------|------------|------------|
| Drainage Area | Total Area | Total Area | Area Impervious | Area Impervious | Area Impervious | Area Grass | Area Grass | Area Grass |
|               | (Ac)       | (sf)       | (sf)            | (Ac)            | (%)             | (sf)       | (Ac)       | (%)        |
| OS DA-1       | 1.05       | 45,738     | 31,270          | 0.72            | 68.4%           | 14,468     | 0.33       | 31.6%      |
| OS DA-2       | 0.81       | 35,284     | 0               | 0.00            | 0.0%            | 35,284     | 0.81       | 100.0%     |
| OS DA-3       | 0.26       | 11,326     | 7,485           | 0.17            | 66.1%           | 3,841      | 0.09       | 33.9%      |
| PR DA-1       | 1.76       | 76,666     | 51,466          | 1.18            | 67.1%           | 25,200     | 0.58       | 32.9%      |

| Drainage Basin Characteristics - Proposed Conditions |              |          |            |          |          |           |           |            |
|------------------------------------------------------|--------------|----------|------------|----------|----------|-----------|-----------|------------|
| Drainage Area                                        | Area (Acres) | I.C. (%) | Curve No.* | Tc (min) | Q2 (cfs) | Q10 (cfs) | Q25 (cfs) | Q100 (cfs) |
| OS DA-1                                              | 1.05         | 68.37%   | 84.0       | 6.00     | 4.64     | 7.21      | 8.93      | 11.75      |
| OS DA-2                                              | 0.81         | 0.00%    | 84.0       | 9.16     | 2.40     | 4.19      | 5.39      | 7.32       |
| OS DA-3                                              | 0.26         | 66.09%   | 84.0       | 6.00     | 1.14     | 1.78      | 2.20      | 2.90       |
| PR DA-1                                              | 1.76         | 67.13%   | 84.0       | 6.00     | 7.75     | 12.06     | 14.94     | 19.67      |

\*Pasture, grassland, or range - fair condition for type D Soil assumed for curve number

ATLAS 14 RAINFALL DATA UTILIZED FOR DESIGN STORMS PER COG DCM

| EXHIBIT 2 - TABLE 2, DEPTH-DURATION-FREQUENCY VALUES |      |       |       |       |       |        |        |         |
|------------------------------------------------------|------|-------|-------|-------|-------|--------|--------|---------|
| SAN GABRIEL RIVER ZONE                               |      |       |       |       |       |        |        |         |
| DURATION                                             | 2-YR | 5-YR  | 10-YR | 25-YR | 50-YR | 100-YR | 500-YR | 1000-YR |
| 5 MIN                                                | 0.51 | 0.643 | 0.757 | 0.921 | 1.05  | 1.19   | 1.53   | 1.69    |
| 15 MIN                                               | 1.02 | 1.29  | 1.51  | 1.84  | 2.1   | 2.37   | 3.03   | 3.33    |
| 1 HR                                                 | 1.88 | 2.37  | 2.79  | 3.4   | 3.88  | 4.39   | 5.79   | 6.47    |
| 2 HR                                                 | 2.3  | 2.95  | 3.55  | 4.43  | 5.16  | 5.98   | 8.28   | 9.43    |
| 3 HR                                                 | 2.55 | 3.3   | 4.02  | 5.09  | 6.01  | 7.06   | 10.1   | 11.6    |
| 6 HR                                                 | 2.98 | 3.91  | 4.81  | 6.18  | 7.38  | 8.75   | 12.7   | 14.7    |
| 12 HR                                                | 3.44 | 4.51  | 5.54  | 7.12  | 8.48  | 10.1   | 14.6   | 16.9    |
| 24 HR                                                | 3.94 | 5.15  | 6.3   | 8.04  | 9.53  | 11.2   | 16.1   | 18.6    |



| PROPOSED DRAINAGE LEGEND |                                                        |
|--------------------------|--------------------------------------------------------|
|                          | PROPOSED PROPERTY / PROJECT BOUNDARY LINE              |
|                          | EXISTING R.O.W./PROPERTY LINE                          |
|                          | EXISTING EASEMENT LINE                                 |
|                          | PROPOSED CURB & GUTTER                                 |
|                          | DRAINAGE AREA BOUNDARY                                 |
|                          | DRAINAGE AREA DESIGNATION AND AREA DRAINED             |
|                          | FLOW ARROW                                             |
|                          | TIME OF CONCENTRATION LINE (SHEET FLOW)                |
|                          | TIME OF CONCENTRATION LINE (SHALLOW CONCENTRATED FLOW) |
|                          | EXISTING CONTOURS                                      |
|                          | PROPOSED CONTOURS                                      |

EQUATIONS 3-11, 3-12, AND 3-13 UTILIZED FOR TC CALCULATIONS PER COG DCM GUIDELINES

EQUATION 3-11 SCS METHOD SHEET FLOW TRAVEL TIME<sup>6</sup>

$$T_t = \frac{[0.42 * (nL)^{0.58}]}{(P_2)^{0.5} * (S)^{0.4}}$$

T<sub>t</sub> - Travel time (min)

n - Manning's roughness coefficient

L - Length of flow path (ft)

P<sub>2</sub> - 2-year, 24-hour rainfall = 4.2 in

S - Ground slope along flow path (ft/ft)

EQUATION 3-12 SCS SHALLOW CONCENTRATED VELOCITY<sup>6</sup>

Unpaved V = 16.1345(S)<sup>0.5</sup>

Paved V = 20.3282(S)<sup>0.5</sup>

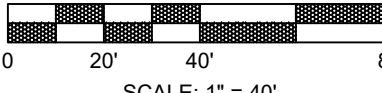
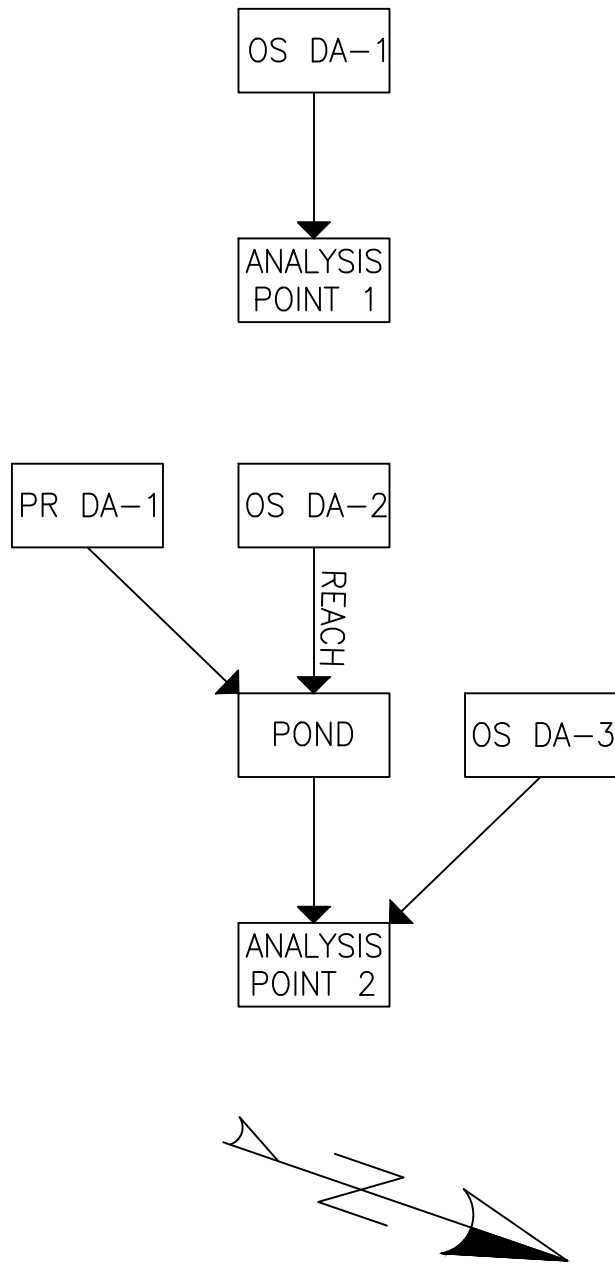
V - Average velocity (ft/s)

S - Ground slope along flow path (ft/ft)

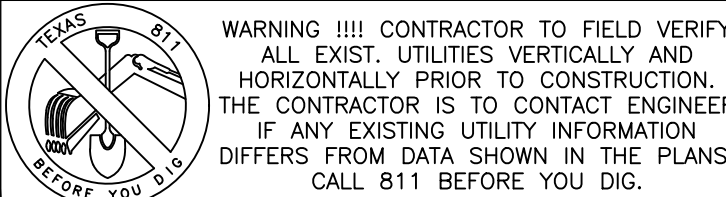
EQUATION 3-13 OPEN CHANNEL FLOW TRAVEL TIME<sup>6</sup>

$$T_t = \frac{L}{60V}$$

PROPOSED DRAINAGE CONDITIONS



IF DRAWING BAR DOES NOT MEASURE 2" THIS PRINT IS NOT TO SCALE



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**SANDLIN**  
SERVICES, LLC

TBPELS FIRM #21356  
9111 JOLLYVILLE RD. STE 212 AUSTIN, TX 78759

PROPOSED DRAINAGE AREA MAP

PROJECT CASE: 2024-25-SDP

BERRY LANE C-STORE

| Gutter Flow Calculations        |      |              |
|---------------------------------|------|--------------|
| OS DA-3                         |      |              |
| Inputs                          |      |              |
| Channel Type                    | -    | Triangle     |
| Channel Slope (%)               | -    | 1.10         |
| Bottom Width (ft)               | -    | N/A          |
| Berm Height (ft)                | -    | 0.5          |
| Side Slopes (H:V)               | -    | 1:1, 50:1    |
| Manning's N                     | -    | 0.011        |
|                                 |      | 25-YR 100-YR |
| Flow Discharge (cfs)            | 2.20 | 2.90         |
| Outputs                         |      |              |
| Q <sub>CAPACITY</sub>           | 30.4 | cfs          |
|                                 |      | 25-YR 100-YR |
| Water Depth (ft)                | 0.18 | 0.2          |
| Flow Velocity (ft/sec)          | 2.77 | 2.96         |
| Provided Channel Freeboard (ft) | 0.32 | 0.30         |

| Analysis Point 2: Northeast Property Corner |                |           |       |     |  |
|---------------------------------------------|----------------|-----------|-------|-----|--|
| Existing Flows                              | Proposed Flows | Delta     |       |     |  |
| 2 YR                                        | 7.87 CFS       | 8.15 CFS  | 0.28  | CFS |  |
| 10 YR                                       | 13.79 CFS      | 13.54 CFS | -0.25 | CFS |  |
| 25 YR                                       | 17.74 CFS      | 17.51 CFS | -0.23 | CFS |  |
| 100 YR                                      | 24.14 CFS      | 24.04 CFS | -0.10 | CFS |  |

NOTE: FLOW INCREASE IN THE 2-YR STORM IS NEGLIGIBLE AND WILL HAVE NO ADVERSE IMPACT DOWNSTREAM

| Analysis Point 1: Existing Culvert |                |           |      |     |  |
|------------------------------------|----------------|-----------|------|-----|--|
| Existing Flows                     | Proposed Flows | Delta     |      |     |  |
| 2 YR                               | 4.52 CFS       | 4.64 CFS  | 0.12 | CFS |  |
| 10 YR                              | 7.11 CFS       | 7.21 CFS  | 0.10 | CFS |  |
| 25 YR                              | 8.84 CFS       | 8.93 CFS  | 0.09 | CFS |  |
| 100 YR                             | 11.68 CFS      | 11.75 CFS | 0.07 | CFS |  |

NOTE: THIS ENGINEER CERTIES THAT < 0.50 CFS INCREASE WILL HAVE NO ADVERSE IMPACT ON DOWNSTREAM DRAINAGE FACILITIES





**Temporary Stormwater Section  
(TCEQ-0602)**

**Attachment H:  
Temporary Sediment Pond(s) Plans and Calculations  
(NOT APPLICABLE)**



## **Temporary Stormwater Section (TCEQ-0602)**

### **Attachment I: Inspection and Maintenance for BMPs**

#### *Inspection and Maintenance Guidelines for Construction BMPs*

##### Silt Fence – Section 1.4.3

- (1) Inspect all fencing weekly, and after any rainfall.
- (2) Remove sediment when buildup reaches 6 inches.
- (3) Replace any torn fabric or install a second line of fencing parallel to the torn section.
- (4) Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
- (5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

##### Rock Berms – Section 1.4.5

- (1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
- (2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
- (3) Repair any loose wire sheathing.
- (4) The berm should be reshaped as needed during inspection.
- (5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
- (6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

##### Temporary Construction Entrance/Exit – Section 1.4.2

- (1) The entrance should be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
- (2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
- (3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
- (4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.





(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

#### Personnel Responsible for Inspections

The agent that performs the inspections should be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWPPP for the site. Documentation of the inspector's qualifications is to be included in the attached Inspector Qualifications Log.

#### Inspection Schedule

The primary operator is required to choose one of the two inspections listed below.

☐ **Option 1:** Once every seven calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

☐ **Option 2:** Once every 14 calendar days and within 24 hours of the end of a storm event of two inches or greater.

The inspections may occur on either schedule provided that documentation reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented (e.g., end of “dry” season and beginning of “wet” season).

If option 2 is the chosen frequency of inspections a rain gauge must be properly maintained on site or the storm event information from a weather station that is representative of the site location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, proper documentation of the total rainfall measured for that day must be recorded.

Personnel provided by the permittee must inspect:

- disturbed areas of the construction site that have not been finally stabilized,
- areas used for storage of materials that are exposed to precipitation,
- structural controls (for evidence of, or the potential for, pollutants entering the drainage system),
- sediment and erosion control measures identified in the SWP3 (to ensure they are operating correctly), and
- locations where vehicles enter or exit the site (for evidence of off-site sediment tracking).

#### Reductions in Inspection Frequency

Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. A record of the total rainfall measured, as well as the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections in the attached Rain Gauge Log.



***BERRY LANE C-STORE  
UNDERGROUND STORAGE TANK APPLICATION***

In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

**Inspection Report Forms**

Use the Inspection Report Forms given as a checklist to ensure that all required areas of the construction site are addressed. There is space to document the inspector's name as well as when the inspections regularly take place. The tables will document that the required area was inspected. (If there were any areas of concern, briefly describe them in this space with a more detailed description in the narrative section. Use the last table to document any discharges found during the inspections).

Describe how effective the installed BMPs are performing. Describe any BMP failures that were noted during the investigation and describe any maintenance required due to the failure. If new BMPs are needed as the construction site changes, the inspector can use the space at the bottom of the section to list BMPs to be implemented before the next inspection.

Describe the inspector's qualifications, how the inspection was conducted, and describe any areas of non-compliance in detail. If an inspection report does not identify any incidents of non-compliance, then it must contain a certifying signature stating that the facility or site is in compliance. The report must be signed by a person and in a manner required by 30 TAC 305.128. There is space at the end of the form to allow for this certifying signature.

Whenever an inspection shows that BMP modifications are needed to better control pollutants in runoff, the changes must be completed within seven calendar days following the inspection. If existing BMPs are modified or if additional BMPs are needed, you must describe your implementation schedule, and wherever possible, make the required BMP changes before the next storm event.

The Inspection Report Form functions as the required report and must be signed in accordance with TCEQ rules at 30 TAC 305.128.



**BERRY LANE C-STORE  
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*Corrective Action*

Personnel Responsible for Corrective Actions

Both Primary and Secondary Operators are responsible for maintaining all necessary Corrective Actions. If an individual is specifically identified as the responsible party for modifying the contact information for that individual should be documented in the attached Inspector Qualifications Log.

Corrective Action Forms

The Temporary BMPs must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the attached forms and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable. Actions taken as a result of inspections must be properly documented by completing the corrective action forms given.



## Inspector Qualifications Log\*

Inspector Name: \_\_\_\_\_

Qualifications (Check as appropriate and provide description):

☐ Training Course \_\_\_\_\_

☐ Supervised Experience \_\_\_\_\_

☐ Other \_\_\_\_\_

Inspector Name: \_\_\_\_\_

Qualifications (Check as appropriate and provide description):

☐ Training Course \_\_\_\_\_

☐ Supervised Experience \_\_\_\_\_

☐ Other \_\_\_\_\_

Inspector Name: \_\_\_\_\_

Qualifications (Check as appropriate and provide description):

☐ Training Course \_\_\_\_\_

☐ Supervised Experience \_\_\_\_\_

☐ Other \_\_\_\_\_

Inspector Name: \_\_\_\_\_

Qualifications (Check as appropriate and provide description):

☐ Training Course \_\_\_\_\_

☐ Supervised Experience \_\_\_\_\_

☐ Other \_\_\_\_\_

Inspector Name: \_\_\_\_\_

Qualifications (Check as appropriate and provide description):

☐ Training Course \_\_\_\_\_

☐ Supervised Experience \_\_\_\_\_

☐ Other \_\_\_\_\_

Inspector Name: \_\_\_\_\_

Qualifications (Check as appropriate and provide description):

☐ Training Course \_\_\_\_\_

☐ Supervised Experience \_\_\_\_\_

☐ Other \_\_\_\_\_

\*The agent that performs the inspections should be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWPPP for the site. The contractor is to provide an inspector with a CPESC, CESSWI, or CISEC certification.





## Construction Activity Sequence Log\*

| Name of Operator | Projected Dates<br>Month/Year | Activity Disturbing Soil clearing, excavation,<br>etc. | Location on-site where<br>activity will be<br>conducted | Acreage<br>being<br>disturbed |
|------------------|-------------------------------|--------------------------------------------------------|---------------------------------------------------------|-------------------------------|
|                  |                               |                                                        |                                                         |                               |
|                  |                               |                                                        |                                                         |                               |
|                  |                               |                                                        |                                                         |                               |
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|                  |                               |                                                        |                                                         |                               |
|                  |                               |                                                        |                                                         |                               |
|                  |                               |                                                        |                                                         |                               |
|                  |                               |                                                        |                                                         |                               |
|                  |                               |                                                        |                                                         |                               |

\*Construction activity sequences for linear projects may be conducted on a rolling basis. As a result, construction activities may be at different stages at different locations in the project area. The Contractor is required to complete and update the schedule and adjust as necessary.

# Stormwater Control Installation and Removal Log

[illegible]

## Stabilization Activities Log\*

| Date Activity Initiated | Description of Activity | Description of Stabilization Measure and Location | Date Activity Ceased (Indicate Temporary or Permanent) | Date When Stabilization Measures Initiated |
|-------------------------|-------------------------|---------------------------------------------------|--------------------------------------------------------|--------------------------------------------|
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
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|                         |                         |                                                   |                                                        |                                            |
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|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |
|                         |                         |                                                   |                                                        |                                            |

\*Stabilization and erosion control practices may include, but are not limited to, establishing temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, and protecting existing trees and vegetation. List practices used where they are located, when they will be implemented, and whether they are temporary (interim) or permanent.

## Inspection Frequency Log

[illegible]





| General Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                 |                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------|-----------------|--|
| Name of Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Tracking Number | Inspection Date |  |
| Inspector Name, Title & Contact Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                 |                 |  |
| Present Phase of Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                 |                 |  |
| Inspection Location (if multiple inspections are required, specify location where this inspection is being conducted)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                 |                 |  |
| <b>Inspection Frequency</b><br><b>Standard Frequency:</b> <input type="checkbox"/> Weekly <input type="checkbox"/> Every 14 days and within 24 hours of a 0.25" rain<br><b>Increased Frequency:</b> <input type="checkbox"/> Every 7 days and within 24 hours of a 0.25" rain<br><b>Reduced Frequency:</b><br><input type="checkbox"/> Once per month (for stabilized areas)<br><input type="checkbox"/> Once per month and within 24 hours of a 0.25" rain (for arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought)<br><input type="checkbox"/> Once per month (for frozen conditions where earth-disturbing activities are being conducted) |  |                 |                 |  |
| <b>Was this inspection triggered by a 0.25" storm event?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No<br><b>If yes, how did you determine whether a 0.25" storm event has occurred?</b><br><input type="checkbox"/> Rain gauge on site <input type="checkbox"/> Weather station representative of site. Specify weather station source.<br><br><b>Total rainfall amount that triggered the inspection (in inches):</b>                                                                                                                                                                                                                                                |  |                 |                 |  |
| <b>Unsafe Conditions for Inspection</b><br><b>Did you determine that any portion of your site was unsafe for inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br><b>If "yes," complete the following:</b> <ul style="list-style-type: none"> <li>○ Describe the conditions that prevented you from conducting the inspection in this location:</li> <br/><br/><br/> <li>○ Location(s) where conditions were found:</li> </ul>                                                                                                                                                                                                                             |  |                 |                 |  |



**BERRY LANE C-STORE**  
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| Condition and Effectiveness of Erosion and Sediment (E&S) Controls |                                                          |                                                          |                                                                  |       |
|--------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------|-------|
| Type / Location of E&S Control                                     | Repairs or Other Maintenance Needed?                     | Corrective Action Required?                              | Date on Which Maintenance of Corrective Action First Identified? | Notes |
| 1.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 2.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 3.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 4.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 5.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 6.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 7.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 8.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |
| 9.                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |       |



**BERRY LANE C-STORE  
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| Condition and Effectiveness of Pollution Prevention (P <sub>2</sub> ) Practices |                                                          |                                                          |                     |       |
|---------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|---------------------|-------|
| Type / Location of P <sub>2</sub> Practices                                     | Repairs or Other Maintenance Needed?                     | Corrective Action Required?                              | Identification Date | Notes |
| 1.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 2.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 3.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 4.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 5.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 6.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 7.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 8.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |
| 9.                                                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                     |       |

| Stabilization of Exposed Soil |                      |                                   |       |
|-------------------------------|----------------------|-----------------------------------|-------|
| Stabilization Area            | Stabilization Method | Have you Initiated Stabilization? | Notes |



**BERRY LANE C-STORE  
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|    |  |                                                                                   |  |
|----|--|-----------------------------------------------------------------------------------|--|
| 1. |  | <input type="checkbox"/> YES <input type="checkbox"/> NO<br>If yes, provide date: |  |
| 2. |  | <input type="checkbox"/> YES <input type="checkbox"/> NO<br>If yes, provide date: |  |
| 3. |  | <input type="checkbox"/> YES <input type="checkbox"/> NO<br>If yes, provide date: |  |
| 4. |  | <input type="checkbox"/> YES <input type="checkbox"/> NO<br>If yes, provide date: |  |

**Description of Discharges**

**Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection?**   ☐ YES   ☐ NO  
**If "YES," provide the following information for each point of discharge:**

| Discharge Locations | Observations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                  | Describe the discharge:<br><br>At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and / or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> YES. <input type="checkbox"/> NO<br>If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue: |
| 2.                  | Describe the discharge:<br><br>At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and / or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> YES. <input type="checkbox"/> NO<br>If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue: |
| 3.                  | Describe the discharge:<br><br>At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and / or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> YES. <input type="checkbox"/> NO<br>If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue: |

**Contractor or Subcontractor Certification and Signature**

|  |
|--|
|  |
|--|



**BERRY LANE C-STORE  
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"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information, submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am, aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**Signature of Contractor or Subcontractor:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name and Affiliation:**

**Certification and Signature by Permittee**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information, submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am, aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**Signature of Permittee or  
"Duly Authorized Representative":** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name and Affiliation:**





**BERRY LANE C-STORE  
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| Section A – Initial Report<br>(Complete this section within 24 hours of discovering the condition that triggered corrective action.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                   |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------|--------------|
| Name of Project:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 | Tracking Number:                                                  | Today's Date |
| Date Problem First Discovered:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 | Time Problem First Discovered:                                    |              |
| Name of Individual Completing this Form:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | Contact Information:                                              |              |
| <p>What site conditions triggered the requirement to conduct corrective action:</p> <p><input type="checkbox"/> A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or Part 3</p> <p><input type="checkbox"/> The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards</p> <p><input type="checkbox"/> A prohibited discharge has occurred or is occurring</p> <p>Provide a description of the problem:</p> <p>Deadline for completing corrective action (Enter date that is either: (1) no more than 7 calendar days after the date you discovered the problem, or (2) if it is infeasible to complete work within the first 7 days, enter the date that is as soon as practicable following the 7<sup>th</sup> day):</p> <p>If your estimated date of completion falls after the 7-day deadline, explain (1) why you believe it is infeasible to complete work within 7 days, and (2) why the date you have established for making the new or modified stormwater control operational is the soonest practicable timeframe:</p> |                 |                                                                   |              |
| Section B – Corrective Action Progress<br>(Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                   |              |
| Section B.1 – Why the Problem Occurred                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                                                                   |              |
| Cause(s) of Problem (Add an additional sheet if necessary)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | How This Was Determined and the Date You Determined the Cause     |              |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | 1.                                                                |              |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | 2.                                                                |              |
| Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                   |              |
| List of Stormwater control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Completion Date | SWPPP Update Necessary?                                           | Notes        |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Date: |              |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Date: |              |



**BERRY LANE C-STORE  
UNDERGROUND STORAGE TANK APPLICATION**

| Section A – Initial Report<br>(Complete this section within 24 hours of discovering the condition that triggered corrective action.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                   |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------|--------------|
| Name of Project:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 | Tracking Number:                                                  | Today's Date |
| Date Problem First Discovered:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 | Time Problem First Discovered:                                    |              |
| Name of Individual Completing this Form:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | Contact Information:                                              |              |
| <p>What site conditions triggered the requirement to conduct corrective action:</p> <p><input type="checkbox"/> A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or Part 3</p> <p><input type="checkbox"/> The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards</p> <p><input type="checkbox"/> A prohibited discharge has occurred or is occurring</p> <p>Provide a description of the problem:</p> <p>Deadline for completing corrective action (Enter date that is either: (1) no more than 7 calendar days after the date you discovered the problem, or (2) if it is infeasible to complete work within the first 7 days, enter the date that is as soon as practicable following the 7<sup>th</sup> day):</p> <p>If your estimated date of completion falls after the 7-day deadline, explain (1) why you believe it is infeasible to complete work within 7 days, and (2) why the date you have established for making the new or modified stormwater control operational is the soonest practicable timeframe:</p> |                 |                                                                   |              |
| Section B – Corrective Action Progress<br>(Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                   |              |
| Section B.1 – Why the Problem Occurred                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                                                                   |              |
| Cause(s) of Problem (Add an additional sheet if necessary)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | How This Was Determined and the Date You Determined the Cause     |              |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | 1.                                                                |              |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | 2.                                                                |              |
| Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                   |              |
| List of Stormwater control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Completion Date | SWPPP Update Necessary?                                           | Notes        |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Date: |              |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Date: |              |

|                                                                |
|----------------------------------------------------------------|
| <b>Contractor or Subcontractor Certification and Signature</b> |
|----------------------------------------------------------------|



**BERRY LANE C-STORE  
UNDERGROUND STORAGE TANK APPLICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information, submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am, aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**Signature of Contractor or Subcontractor:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name and Affiliation:** \_\_\_\_\_

**Certification and Signature by Permittee**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information, submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am, aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**Signature of Permittee or  
"Duly Authorized Representative":** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name and Affiliation:** \_\_\_\_\_



## **Temporary Stormwater Section TCEQ-0602)**

### **Attachment J: Schedule of Interim and Permanent Soil Stabilization Practices**

#### *Interim Vegetative Stabilization*

Interim soil stabilization will not be required.

#### *Permanent Vegetative Stabilization*

Construction practices shall disturb the minimal amount of existing ground cover as required for land clearing, grading, and construction activity for the shortest amount of time possible to minimize the potential of erosion and sedimentation from the site. Existing vegetation shall be maintained and left in place until it is necessary to disturb for construction activity. For this project, the following stabilization practices will be implemented:

1. Hydraulic Mulch and Seeding: Disturbed areas subject to erosion shall be stabilized with hydraulic mulch and/or seeded and watered to provide interim stabilization.
2. Sodding and Wood Mulch: As per the project landscaping plan, sodding and wood mulch will be applied to landscaped areas to provide permanent stabilization prior to project completion.

Records of the following shall be maintained:

1. The dates when major grading activities occur,
2. The dates when construction activities temporarily or permanently cease on a portion of the site, and
3. The dates when stabilization measures are initiated.

Stabilization measures must be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in the following, must be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased:

Where the initiation of stabilization measures by the 14<sup>th</sup> day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practical.



***BERRY LANE C-STORE  
UNDERGROUND STORAGE TANK APPLICATION***

Where construction activity on a portion of the site is temporarily ceased and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of the site.

In arid areas (areas with an average rainfall of 0-10 inches), semiarid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14<sup>th</sup> day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practical.



**Agent Authorization**  
**TCEQ-0599**

**Agent Authorization Form**  
For Required Signature  
Edwards Aquifer Protection Program  
Relating to 30 TAC Chapter 213  
Effective June 1, 1999

I Shival Sheth  
Print Name

Managing Member  
Title Owner/President/Other

of Silvergate Taylor Investments, LLC  
Corporation/Partnership/Entity Name

have authorized Chad M. Copeland, P.G., PWS  
Print Name of Agent/Engineer

of Ranger Environmental Services, LLC  
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

DS

Applicant's Signature

D. Sheth

9/18/25

Date

THE STATE OF TEXAS §

County of TRAVIS §

BEFORE ME, the undersigned authority, on this day personally appeared DHAVAL V. SHETH known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 18<sup>TH</sup> day of SEPTEMBER, 2025.



Jacques Clement  
NOTARY PUBLIC

JACQUES CLEMENT  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 06/20/26

**Agent Authorization Form**  
For Required Signature  
Edwards Aquifer Protection Program  
Relating to 30 TAC Chapter 213  
Effective June 1, 1999

I Dhaval Sheth  
Print Name

Managing Member  
Title - Owner/President/Other

of Silver Gate Taylor Investments LLC  
Corporation/Partnership/Entity Name

have authorized Nick Sandlin, P.E.  
Print Name of Agent/Engineer

of Sandlin Services, LLC  
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
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4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.



5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

  
\_\_\_\_\_  
9/18/25 Date

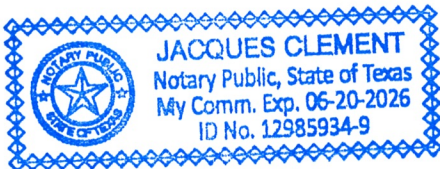
THE STATE OF TEXAS §

County of TRAVIS §

BEFORE ME, the undersigned authority, on this day personally appeared DHAVAL U. SHETH known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 18<sup>TH</sup> day of SEPTEMBER, 2025.

  
\_\_\_\_\_  
NOTARY PUBLIC



JACQUES CLEMENT  
\_\_\_\_\_  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 06/20/26

**Application Fee Form**  
**TCEQ-0574**

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Berry Lane C-Store

Regulated Entity Location: 3711 E. University Avenue, Georgetown, Texas

Name of Customer: Silver Gate Taylor Investments, LLC

Contact Person: Dhaval Sheth

Phone: 732-589-9272

Customer Reference Number (if issued):CN \_\_\_\_\_

Regulated Entity Reference Number (if issued):RN \_\_\_\_\_

### Austin Regional Office (3373)

☐ Hays

☐ Travis

☒ Williamson

### San Antonio Regional Office (3362)

☐ Bexar

☐ Medina

☐ Uvalde

☐ Comal

☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

☐ Austin Regional Office

☐ San Antonio Regional Office

☒ Mailed to: TCEQ - Cashier

☐ Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

### Site Location (Check All That Apply):

☐ Recharge Zone

☐ Contributing Zone

☒ Transition Zone

| <i>Type of Plan</i>                                                                                     | <i>Size</i> | <i>Fee Due</i> |
|---------------------------------------------------------------------------------------------------------|-------------|----------------|
| Water Pollution Abatement Plan, Contributing Zone<br>Plan: One Single Family Residential Dwelling       | Acres       | \$             |
| Water Pollution Abatement Plan, Contributing Zone<br>Plan: Multiple Single Family Residential and Parks | Acres       | \$             |
| Water Pollution Abatement Plan, Contributing Zone<br>Plan: Non-residential                              | Acres       | \$             |
| Sewage Collection System                                                                                | L.F.        | \$             |
| Lift Stations without sewer lines                                                                       | Acres       | \$             |
| Underground or Aboveground Storage Tank Facility                                                        | 1 Tanks     | \$ 650.00      |
| Piping System(s)(only)                                                                                  | Each        | \$             |
| Exception                                                                                               | Each        | \$             |
| Extension of Time                                                                                       | Each        | \$             |

Signature: \_\_\_\_\_



Date: 10/7/2025

## Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

### ***Water Pollution Abatement Plans and Modifications***

#### ***Contributing Zone Plans and Modifications***

| <b><i>Project</i></b>                                                                                                                             | <b><i>Project Area in Acres</i></b> | <b><i>Fee</i></b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------|
| One Single Family Residential Dwelling                                                                                                            | < 5                                 | \$650             |
| Multiple Single Family Residential and Parks                                                                                                      | < 5                                 | \$1,500           |
|                                                                                                                                                   | 5 < 10                              | \$3,000           |
|                                                                                                                                                   | 10 < 40                             | \$4,000           |
|                                                                                                                                                   | 40 < 100                            | \$6,500           |
|                                                                                                                                                   | 100 < 500                           | \$8,000           |
|                                                                                                                                                   | ≥ 500                               | \$10,000          |
| Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur) | < 1                                 | \$3,000           |
|                                                                                                                                                   | 1 < 5                               | \$4,000           |
|                                                                                                                                                   | 5 < 10                              | \$5,000           |
|                                                                                                                                                   | 10 < 40                             | \$6,500           |
|                                                                                                                                                   | 40 < 100                            | \$8,000           |
|                                                                                                                                                   | ≥ 100                               | \$10,000          |

#### ***Organized Sewage Collection Systems and Modifications***

| <b><i>Project</i></b>     | <b><i>Cost per Linear Foot</i></b> | <b><i>Minimum Fee-<br/>Maximum Fee</i></b> |
|---------------------------|------------------------------------|--------------------------------------------|
| Sewage Collection Systems | \$0.50                             | \$650 - \$6,500                            |

#### ***Underground and Aboveground Storage Tank System Facility Plans and Modifications***

| <b><i>Project</i></b>                             | <b><i>Cost per Tank or Piping System</i></b> | <b><i>Minimum Fee-<br/>Maximum Fee</i></b> |
|---------------------------------------------------|----------------------------------------------|--------------------------------------------|
| Underground and Aboveground Storage Tank Facility | \$650                                        | \$650 - \$6,500                            |

#### ***Exception Requests***

| <b><i>Project</i></b> | <b><i>Fee</i></b> |
|-----------------------|-------------------|
| Exception Request     | \$500             |



***Extension of Time Requests***

| <b><i>Project</i></b>     | <b><i>Fee</i></b> |
|---------------------------|-------------------|
| Extension of Time Request | \$150             |

**Core Data Form**  
**TCEQ-10400**



# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

|                                                                                                                                                  |                                                                       |                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------|
| 1. Reason for Submission (If other is checked please describe in space provided.)                                                                |                                                                       |                                                  |
| <input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.) |                                                                       |                                                  |
| <input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)                                                      | <input type="checkbox"/> Other                                        |                                                  |
| 2. Customer Reference Number (if issued)                                                                                                         | Follow this link to search for CN or RN numbers in Central Registry** | 3. Regulated Entity Reference Number (if issued) |
| CN                                                                                                                                               |                                                                       | RN                                               |

## SECTION II: Customer Information

|                                                                                                                                                                                                         |  |                                                                                                                                                                                    |  |                                                                                |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------|----|
| 4. General Customer Information                                                                                                                                                                         |  | 5. Effective Date for Customer Information Updates (mm/dd/yyyy)                                                                                                                    |  | 9/15/2025                                                                      |    |
| <input checked="" type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership                                  |  |                                                                                                                                                                                    |  |                                                                                |    |
| <input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)                                                                    |  |                                                                                                                                                                                    |  |                                                                                |    |
| The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).                |  |                                                                                                                                                                                    |  |                                                                                |    |
| 6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)                                                                                                                         |  |                                                                                                                                                                                    |  | If new Customer, enter previous Customer below:                                |    |
| Silver Gate Taylor Investments, LLC                                                                                                                                                                     |  |                                                                                                                                                                                    |  |                                                                                |    |
| 7. TX SOS/CPA Filing Number                                                                                                                                                                             |  | 8. TX State Tax ID (11 digits)                                                                                                                                                     |  | 9. Federal Tax ID (9 digits)<br>86-2524431                                     |    |
|                                                                                                                                                                                                         |  |                                                                                                                                                                                    |  | 10. DUNS Number (if applicable)                                                |    |
|                                                                                                                                                                                                         |  |                                                                                                                                                                                    |  |                                                                                |    |
| 11. Type of Customer:                                                                                                                                                                                   |  | <input checked="" type="checkbox"/> Corporation                                                                                                                                    |  | <input type="checkbox"/> Individual                                            |    |
| Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other |  | <input type="checkbox"/> Sole Proprietorship                                                                                                                                       |  | Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited |    |
| 12. Number of Employees                                                                                                                                                                                 |  | <input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher |  | 13. Independently Owned and Operated?                                          |    |
|                                                                                                                                                                                                         |  |                                                                                                                                                                                    |  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No            |    |
| 14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following                                                                   |  |                                                                                                                                                                                    |  |                                                                                |    |
| <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:                                                   |  |                                                                                                                                                                                    |  |                                                                                |    |
| <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant                                                                    |  |                                                                                                                                                                                    |  |                                                                                |    |
|                                                                                                                                                                                                         |  |                                                                                                                                                                                    |  |                                                                                |    |
| 15. Mailing Address:                                                                                                                                                                                    |  |                                                                                                                                                                                    |  |                                                                                |    |
| 1508 Dessau Ridge Lane                                                                                                                                                                                  |  |                                                                                                                                                                                    |  |                                                                                |    |
| Ste. 102                                                                                                                                                                                                |  |                                                                                                                                                                                    |  |                                                                                |    |
| City                                                                                                                                                                                                    |  | Austin                                                                                                                                                                             |  | State                                                                          | TX |
| ZIP                                                                                                                                                                                                     |  | 78754                                                                                                                                                                              |  | ZIP + 4                                                                        |    |
| 16. Country Mailing Information (if outside USA)                                                                                                                                                        |  |                                                                                                                                                                                    |  |                                                                                |    |
| 17. E-Mail Address (if applicable)                                                                                                                                                                      |  |                                                                                                                                                                                    |  |                                                                                |    |
| dhaval.sheth88@gmail.com                                                                                                                                                                                |  |                                                                                                                                                                                    |  |                                                                                |    |
| 18. Telephone Number                                                                                                                                                                                    |  | 19. Extension or Code                                                                                                                                                              |  | 20. Fax Number (if applicable)                                                 |    |
| ( 732 ) 589-9272                                                                                                                                                                                        |  |                                                                                                                                                                                    |  | (    )    -                                                                    |    |

## SECTION III: Regulated Entity Information

|                                                                                                                                                                                   |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 21. General Regulated Entity Information (If "New Regulated Entity" is selected, a new permit application is also required.)                                                      |  |
| <input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information |  |
| The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).                        |  |
| 22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)                                                                                    |  |
| Berry Lane C-Store                                                                                                                                                                |  |

|                                                                     |                         |            |       |    |     |       |         |  |
|---------------------------------------------------------------------|-------------------------|------------|-------|----|-----|-------|---------|--|
| 23. Street Address of the Regulated Entity:<br><i>(No PO Boxes)</i> | 3711 E. University Ave. |            |       |    |     |       |         |  |
|                                                                     |                         |            |       |    |     |       |         |  |
|                                                                     | City                    | Georgetown | State | TX | ZIP | 78626 | ZIP + 4 |  |
| 24. County                                                          | Williamson              |            |       |    |     |       |         |  |

If no Street Address is provided, fields 25-28 are required.

|                                                                                                                                                                                                                     |                                                                                                  |                                      |                       |                                           |                                       |                                             |           |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------|-------------------------------------------|---------------------------------------|---------------------------------------------|-----------|--|
| 25. Description to Physical Location:                                                                                                                                                                               | Located at the corner of E State Hwy 29 (E. University Ave.) and Berry Lane in Georgetown, Texas |                                      |                       |                                           |                                       |                                             |           |  |
| 26. Nearest City                                                                                                                                                                                                    |                                                                                                  |                                      |                       | State                                     |                                       | Nearest ZIP Code                            |           |  |
| Georgetown                                                                                                                                                                                                          |                                                                                                  |                                      |                       | Tx                                        |                                       | 78626                                       |           |  |
| Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy). |                                                                                                  |                                      |                       |                                           |                                       |                                             |           |  |
| 27. Latitude (N) In Decimal:                                                                                                                                                                                        |                                                                                                  | 30.64306                             |                       |                                           | 28. Longitude (W) In Decimal:         |                                             | -97.62867 |  |
| Degrees                                                                                                                                                                                                             | Minutes                                                                                          | Seconds                              |                       | Degrees                                   | Minutes                               | Seconds                                     |           |  |
|                                                                                                                                                                                                                     |                                                                                                  |                                      |                       |                                           |                                       |                                             |           |  |
| 29. Primary SIC Code<br>(4 digits)                                                                                                                                                                                  |                                                                                                  | 30. Secondary SIC Code<br>(4 digits) |                       | 31. Primary NAICS Code<br>(5 or 6 digits) |                                       | 32. Secondary NAICS Code<br>(5 or 6 digits) |           |  |
| 5541                                                                                                                                                                                                                |                                                                                                  |                                      |                       | 447110                                    |                                       |                                             |           |  |
| 33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>                                                                                                               |                                                                                                  |                                      |                       |                                           |                                       |                                             |           |  |
| Gas Station and Convenience Store                                                                                                                                                                                   |                                                                                                  |                                      |                       |                                           |                                       |                                             |           |  |
| 34. Mailing Address:                                                                                                                                                                                                | 1508 Dessau Ridge Lane                                                                           |                                      |                       |                                           |                                       |                                             |           |  |
|                                                                                                                                                                                                                     | Ste. 102                                                                                         |                                      |                       |                                           |                                       |                                             |           |  |
|                                                                                                                                                                                                                     | City                                                                                             | Austin                               | State                 | TX                                        | ZIP                                   | 78754                                       | ZIP + 4   |  |
| 35. E-Mail Address:                                                                                                                                                                                                 |                                                                                                  | dhaval.sheth88@gmail.com             |                       |                                           |                                       |                                             |           |  |
| 36. Telephone Number                                                                                                                                                                                                |                                                                                                  |                                      | 37. Extension or Code |                                           | 38. Fax Number <i>(if applicable)</i> |                                             |           |  |
| ( 732 ) 589-9272                                                                                                                                                                                                    |                                                                                                  |                                      |                       |                                           | (   )   -                             |                                             |           |  |

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

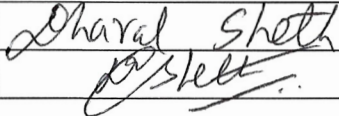
|                                                |                                                |                                                     |                                                            |                                                     |
|------------------------------------------------|------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> Dam Safety            | <input type="checkbox"/> Districts             | <input checked="" type="checkbox"/> Edwards Aquifer | <input type="checkbox"/> Emissions Inventory Air           | <input type="checkbox"/> Industrial Hazardous Waste |
| <input type="checkbox"/> Municipal Solid Waste | <input type="checkbox"/> New Source Review Air | <input type="checkbox"/> OSSF                       | <input checked="" type="checkbox"/> Petroleum Storage Tank | <input type="checkbox"/> PWS                        |
| <input type="checkbox"/> Sludge                | <input type="checkbox"/> Storm Water           | <input type="checkbox"/> Title V Air                | <input type="checkbox"/> Tires                             | <input type="checkbox"/> Used Oil                   |
| <input type="checkbox"/> Voluntary Cleanup     | <input type="checkbox"/> Wastewater            | <input type="checkbox"/> Wastewater Agriculture     | <input type="checkbox"/> Water Rights                      | <input type="checkbox"/> Other:                     |
|                                                |                                                |                                                     |                                                            |                                                     |

SECTION IV: Preparer Information

|                      |                             |                |                    |            |                        |  |  |
|----------------------|-----------------------------|----------------|--------------------|------------|------------------------|--|--|
| 40. Name:            | Chad M. Copeland, P.G., PWS |                |                    | 41. Title: | Senior Project Manager |  |  |
| 42. Telephone Number | 43. Ext./Code               | 44. Fax Number | 45. E-Mail Address |            |                        |  |  |
| ( 512 ) 335-1785     | 3                           | (   )   -      | chad@rangerenv.com |            |                        |  |  |

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

|                          |                                                                                     |  |            |                 |              |
|--------------------------|-------------------------------------------------------------------------------------|--|------------|-----------------|--------------|
| Company:                 | Silver Gate Taylor Investments LLC                                                  |  | Job Title: | Managing Member |              |
| Name <i>(In Print)</i> : | Dhaval Sheth                                                                        |  |            | Phone:          | 732 589-9272 |
| Signature:               |  |  |            | Date:           | 9/17/25      |