UNDERGROUND STORAGE TANK CLOSURE/CHANGE-IN-SERVICE GUIDANCE DOCUMENT

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
UNDERGROUND STORAGE TANK DIVISION
P. O. BOX 4313
BATON ROUGE, LOUISIANA 70821-4313

EFFECTIVE DATE – May 1, 2010

ENVIROSCHOOL

May 2010

Closure Guidance Document Revisions

- Addresses things previously allowed
- Requires using RECAP Screening Option practices to expedite closures
- New reporting format for analytical results and site diagram
- Some sample location changes
- Options to reduce sample numbers
- Changes in required analyses

New Closure Guidance Document
May 1, 2010 Effective Date

- A notification memo was mailed to all closure contractors on 11/01/09 asking for comments
- Accepted written comments until 1/1/10
- Comments received were reviewed and incorporated into the new document
- Effective Date of May 1, 2010

Section Numbers

- Document now has section #s for easy reference
  - Section 1 – General Information
  - Section 2 – Reporting Requirements
  - Section 3 – General Closure Guidelines
  - Section 4 – Closure Sample Locations
  - Section 5 – Sample Location Deviations
  - Section 6 – Temporary Closure Assessment Requirements
  - Section 7 – Sample Analyses
  - Section 8 – Sample Results Interpretation
  - Section 9 – Contaminated Soil Re-use or Disposal
  - Section 10 – Contaminated Water Discharge or Disposal
  - Section 11 – Record Keeping

Section 1
General Information

Section 1.1
Introduction

- LAC 33:XI.907.A required UST owners to follow this document
- Must also follow Industry Codes and Standards (LAC 33:XI.599.Appendix A)
- Document applies to petroleum USTs only
- Contact USTD Regional Office prior to closing hazardous substance USTs
- Goal is to perform a good site assessment

Section 1.2
Definitions

- Permanent Closure
- Change-in-Service
- Temporary Closure
- Petroleum

Section 1.3
Other Agency Jurisdiction and Notifications

- Louisiana One Call 48 hours prior to excavating, boring, ground-breaking activities
- Local Fire Departments and Fire Prevention Bureaus
  - City or local demolition permits may be required
  - Some FPBs don't allow in-place closures

Section 1.4
Use of LDEQ Certified Workers

- Certified Worker must be present at the site and exercising responsible supervisory control during closure-critical junctures
  - UST cleaning and vapor removal
  - All subsurface sampling
  - UST removal or filling in place
- Violation for both the UST owner and closure contractor

Closure-Critical Juncture

Purging – Steam Cleaning

Closure-Critical Juncture

Purging – Air Ventilation

Closure-Critical Juncture

Inerting – Dry Ice (Solid CO_2)

Closure-Critical Juncture

Sample Collection

Closure-Critical Juncture

Sample Collection

Closure-Critical Juncture

Tank Removal

Closure-Critical Juncture

Filling with Inert Material

Section 2
Reporting Requirements

Section 2.1
Registration

- When closing an un-registered UST
  - UST owner must register the UST
  - Complete UST-REG-01 form
  - UST owner must submit registration fee with registration form
  - Available on website

Section 2.2

30-Day Notification Prior to Closure

- UST Owner must submit UST-SURV-01 form
  - UST-SURV-01 form now available on website
  - Do not use multi-part forms, use the current form (Revised 08/09)
  - Send to appropriate Regional Office
- UST-SURV-01 form must be completed properly
  - Name and signature of UST owner
  - Name of certified worker
  - Name of lab performing analysis

Section 2.3
7-Day Notification Prior to Closure

- Notify Regional Office 7 days prior to scheduled closure date
  - UST-ENF-05 form available on website
  - LAC 33:XI.905.A.1.b states that it must be mailed or faxed to appropriate Regional Office
  - We will accept a telephone call, as long as we get the notification
  - Requirement since May 2005

Seven Day Closure Notification Form

- Appendix D
- LDEQ website (UST Forms section)
- UST-ENF-05

FAX TRANSMITTAL
SEVEN DAY PRIOR NOTICE TO PERFORMING CLOSURE OR CHANGE-IN-SERVICE TO AN UNDERGROUND STORAGE TANK

TO: Fax is to be transmitted to the following UST Division Regional Office:

- ☐ Southeast Regional Office (504) 736-7702
- ☐ Capital Regional Office (225) 219-3474
- ☐ Acadiana Regional Office (337) 262-5593
- ☐ Bayou Lafourche Office (985) 532-9945
- ☐ Southwest Regional Office (337) 491-2682
- ☐ Northwest Regional Office (318) 676-7573
- ☐ Northeast Regional Office (318) 362-5448
- ☐ Kisatchie Central Office (318) 487-5927

FROM: Name of Person Providing Notice:_____
Company:_____
Telephone Number:(_____)_____

SUBJECT: Seven-Day Notice Prior to Performing UST Closure or Change-in-Service

On ____/____/____at _____ a.m. / p.m., I contacted the above-noted regional office to provide notification of a UST closure/change-in-service. As all regional personnel were in the field at the time of my call, I am transmitting this notice that closure or change-in-service will be conducted at the following site:

Facility Name:_____ Agency Interest Number: _____

Date/Estimated Time of Closure/Change-in-Service:___/___/___ ____a.m./p.m.

Site Physical Location: _____

A **Notification of Intent to Perform a Closure or Change-in-Service to an Underground Storage Tank System** form was submitted to the Underground Storage Tank Division at least 30 days prior to the date noted above.

I AGREE THAT CLOSURE/CHANGE-IN-SERVICE OF THE UST WILL NOT COMMENCE UNTIL I HAVE RECEIVED APPROVAL FROM THE REGIONAL OFFICE. Also, I will contact the regional office as soon as possible if rescheduling of the tank closure/change-in-service is necessary due to inclement weather.

_____ _____
Signature of Person Providing Notice Date Time

UST-ENF-05

Section 2.4
Closure Assessment Form and Report

- Form and Report due within **60 days** following permanent closure or change-in-service
  - 60-day clock starts after tanks are removed or filled in place, or after closure samples are taken, whichever is later
  - Send 2 copies of form and report to appropriate Regional Office

Section 2.4.2

UST Closure Assessment Form

- UST-SURV-02 form must be completed properly
  - Name and signature of UST owner
  - Name and signature of certified worker
  - Completely filled out
  - Incomplete forms will be sent back to UST owner
  - UST-SURV-02 form now available on website
  - Don’t use multi-part forms any more
  - Use current form (Revised 2/10)

UST Closure Assessment Report

- Site Drawing
- Analytical Results Table
- Sample Chain-of-Custody
- Manifests
  - Tank
  - Tank Contents (product, sludge, water, wash water)
  - Contaminated Soil or Groundwater
- Tank Bill of Sale if not disposed
- Conveyance Notice (if filed)

Section 2.4.3
Site Drawing

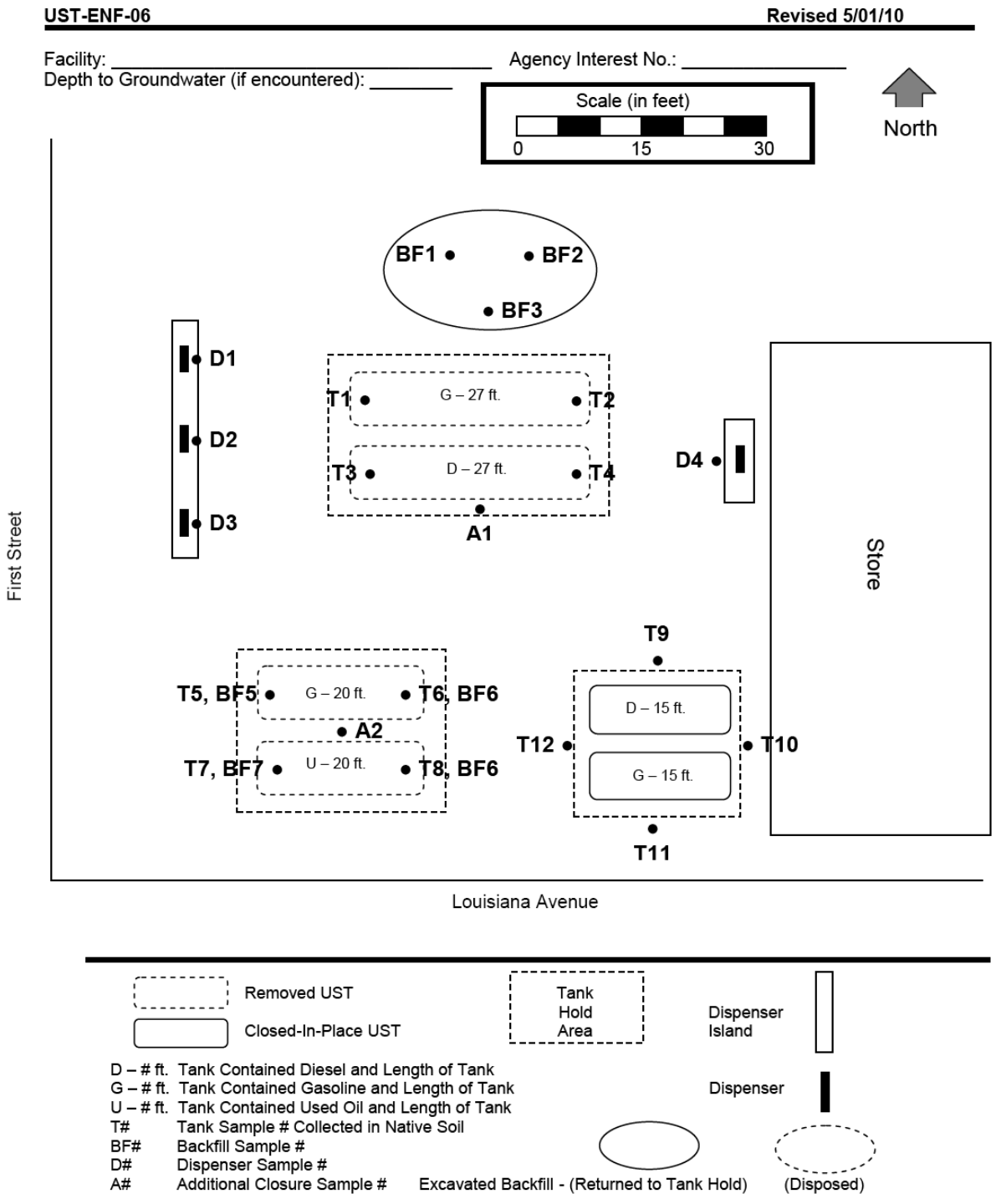
- Site diagram must be to scale
- Sample location identifiers:
  - T1 for Tank native soil sample #1
  - BF1 for Backfill sample #1
  - D1 for Dispenser sample #1
  - A1 for Additional sample #1
- Sample results no longer recorded on the site diagram

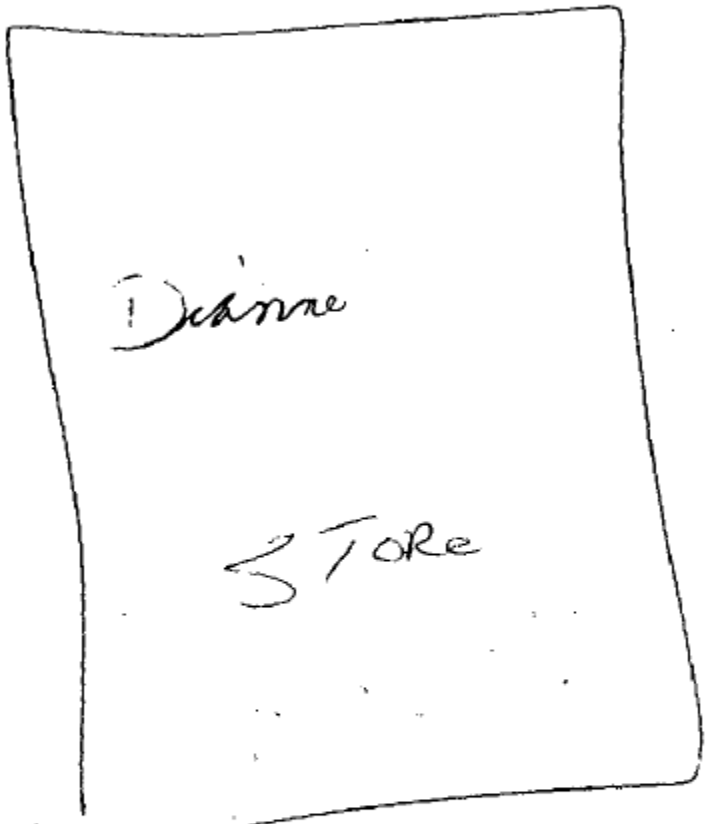
• T1 Indicates assigned sample number and location for Tank Sample #1	• BF1 Indicates assigned sample number and location for Backfill Sample #1	• D1 Indicates assigned sample number and location for Dispenser Sample #1	• A1 Indicates assigned sample number and location for Additional Sample #1
Tank Hold Area	Dispenser Island	D - 27 ft. Indicates a 27 ft. diesel UST was closed-in-place	
	Dispenser	U - 27 ft. Indicates a 27 ft. used oil UST was removed	
Excavated Soils		G - 27 ft. Indicates a 27 ft. gasoline UST was removed	

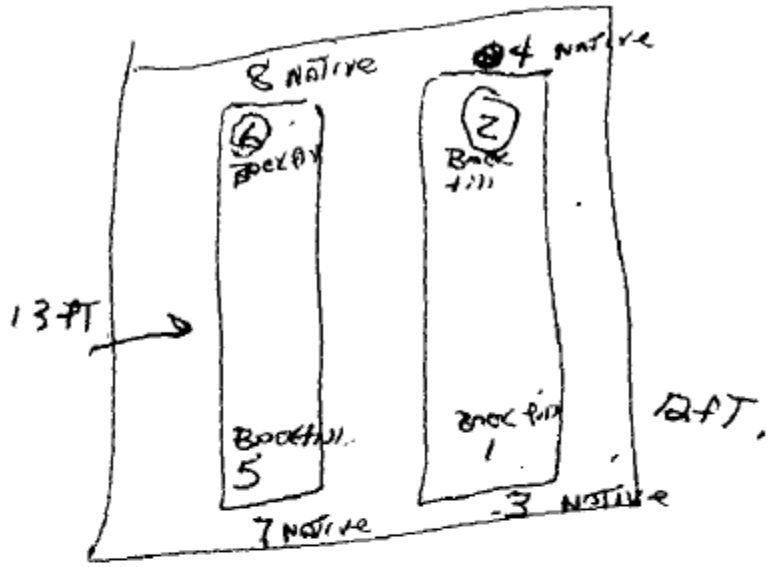
Appendix F

Sample Site Drawing

- General site layout
- Tank locations, sizes, substance stored
- Dispenser locations
- Depth to GW
- Dimensions of excavation (when occurs)
- North arrow
- Structures (buildings, landmarks, roads)
- Sample locations (must match sample analytical table)





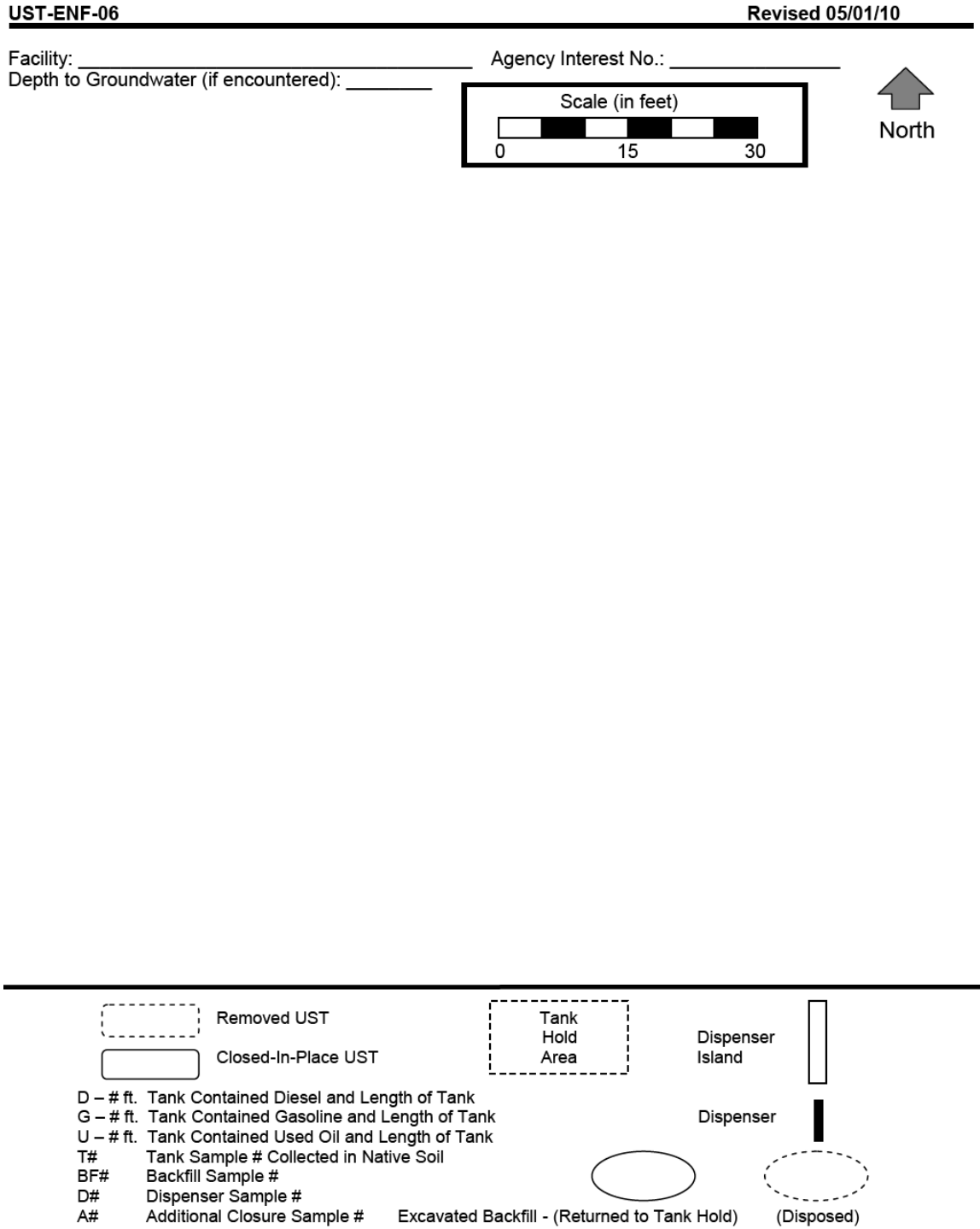


HWY 152 South

Appendix G

Site Drawing Form Template

- LDEQ website (UST Forms section)
- UST-ENF-06



Section 2.4.4

Laboratory Analytical Results Table

- All sample data in tabular format
- All use same sample identifiers (T1, BF1, D1, A1)
- Table must include
  - Sample ID and #
  - Date collected
  - Constituents analyzed
  - Sample depth
  - Concentration of each constituent analyzed
  - Soil vapor screening concentrations for each interval measured if performed
  - SPLP concentrations where applicable

Appendix K

Sample Laboratory Analytical Results Table

Sample ID	Date Collected	Constituent	Depth (Feet)	Concentration (mg/kg)	Soil Vapor Screening (ppmv)	SPLP (mg/L)
T1	1/26/2009		2		5	
T1	1/26/2009		4		8	
T1	1/26/2009		6		15	
T1	1/26/2009		8		20	
T1	1/26/2009	Benzene	10	0.95	30	
T1	1/26/2009	Toluene	10	15	30	
T1	1/26/2009	Ethylbenzene	10	18	30	
T1	1/26/2009	Xylenes	10	10	30	
T1	1/26/2009	MTBE	10	0.75	30	
T1	1/26/2009	TPH-GRO	10	150	30	
T1	1/26/2009		12		15	
T2	1/26/2009		2		10	
T2	1/26/2009		4		8	
T2	1/26/2009		6		25	
T2	1/26/2009		8		100	
T2	1/26/2009	Benzene	10	5.1	500	0.08
T2	1/26/2009	Toluene	10	35	500	4.1
T2	1/26/2009	Ethylbenzene	10	50	500	0.8
T2	1/26/2009	Xylenes	10	75	500	7.2
T2	1/26/2009	MTBE	10	1.5	500	0.1
T2	1/26/2009	TPH-GRO	10	1500	500	
T2	1/26/2009	Aliphatics C6-8	10	1250	500	
T2	1/26/2009	Aliphatics C8-10	10	150	500	
T2	1/26/2009	Aromatics C8-10	10	100	500	5.1
T2	1/26/2009		12		75	
D1	1/26/2009	Benzene	3	0.3		0.01
D1	1/26/2009	Toluene	3	5		
D1	1/26/2009	Ethylbenzene	3	3		
D1	1/26/2009	Xylenes	3	7		
D1	1/26/2009	MTBE	3	0.01		
D1	1/26/2009	TPH-GRO	3	27		
D2	1/26/2009	Benzene	3	0.04		
D2	1/26/2009	Toluene	3	10		
D2	1/26/2009	Ethylbenzene	3	7		
D2	1/26/2009	Xylenes	3	13		
D2	1/26/2009	MTBE	3	0.05		
D2	1/26/2009	TPH-GRO	3	15		

Appendix K

Sample Laboratory Analytical Results Table

Sample ID	Date Collected	Constituent	Depth (Feet)	Concentration (mg/kg)	Soil Vapor Screening (ppmv)	SPLP (mg/L)
T3	1/26/2009	TPH-DRO	10	52		
T4	1/26/2009	TPH-DRO	10	1120		
T4	1/26/2009	Aliphatics C10-12	10	100		
T4	1/26/2009	Aliphatics C12-16	10	80		
T4	1/26/2009	Aliphatics C16-35	10	620		
T4	1/26/2009	Aromatics C10-12	10	110		4.6
T4	1/26/2009	Aromatics C12-16	10	110		
T4	1/26/2009	Aromatics C16-21	10	100		
T4	1/26/2009	Acenaphthene	10	16		
T4	1/26/2009	Acenaphthylene	10	4.0		
T4	1/26/2009	Anthracene	10	3.0		
T4	1/26/2009	Benz(a)anthracene	10	0.3		
T4	1/26/2009	Benzo(a)pyrene	10	0.3		
T4	1/26/2009	Benzo(b)fluoranthene	10	0.3		
T4	1/26/2009	Benzo(k)fluoranthene	10	0.3		
T4	1/26/2009	Chrysene	10	5.1		
T4	1/26/2009	Dibenz(a,h)anthracene	10	0.3		
T4	1/26/2009	Fluoranthene	10	26.1		
T4	1/26/2009	Fluorene	10	10.2		
T4	1/26/2009	Indeno(1,2,3-cd)pyrene	10	0.3		
T4	1/26/2009	Methylnaphthalene,2-	10	2.8		0.06
T4	1/26/2009	Naphthalene	10	5.3		0.12
T4	1/26/2009	Phenanthrene	10	710		21.0
T4	1/26/2009	Pyrene	10	17		
D3	1/26/2009	TPH-DRO	3	21.0		0.01
D4	1/26/2009	TPH-DRO	3	51.7		
D4	1/26/2009	Acenaphthene	3	2		
D4	1/26/2009	Acenaphthylene	3	3		
D4	1/26/2009	Anthracene	3	0.01		
D4	1/26/2009	Benz(a)anthracene	3	3		
D4	1/26/2009	Benzo(a)pyrene	3	0.3		
D4	1/26/2009	Benzo(b)fluoranthene	3	0.3		
D4	1/26/2009	Benzo(k)fluoranthene	3	0.3		
D4	1/26/2009	Chrysene	3	2		
D4	1/26/2009	Dibenz(a,h)anthracene	3	0.3		
D4	1/26/2009	Fluoranthene	3	9		
D4	1/26/2009	Fluorene	3	3		
D4	1/26/2009	Indeno(1,2,3-cd)pyrene	3	0.3		
D4	1/26/2009	Methylnaphthalene,2-	3	0.3		
D4	1/26/2009	Naphthalene	3	0.3		
D4	1/26/2009	Phenanthrene	3	10		
D4	1/26/2009	Pyrene	3	10		

Section 2.5

Reporting Evidence of a Release

- LAC 33:XI.707.A - All owners, operators, employees, agents, contractors, or assigns having knowledge of any of the listed conditions shall notify SPOC within 24 hours of becoming aware of the occurrence (immediately if an emergency condition)
- LAC 33:XI.707.A.1 - Released regulated substances found at UST site or in surrounding area must be reported to DEQ

Section 2.5

Reporting Evidence of a Release

- If any of the constituents analyzed exceeds the Limiting Soil Standard listed in Appendix M, Column A, or if free-phase product is discovered during the closure, the **UST owner or UST closure contractor** must notify the LDEQ SPOC
- If Limiting Soil Standard is exceeded but SPLP and/or VPH/EPH analysis passes, **a notification to SPOC is still required**

Section 2.5

Reporting Evidence of a Release

- Different ways to contact LDEQ Single Point of Contact (SPOC)
  - Report by phone
    - 225-219-3640 or 225-342-1234
  - Report online
    - www.dew.louisiana.gov
    - Divisions; Emergency Response; Online Incident Reporting
  - Report by email
    - spoc@la.gov

Single Point of Contact Procedures

The following are the procedures used for reporting any spills or releases to the Single Point of Contact (SPOC) at the DEQ.

Emergency Conditions: (LAC 33:I.3915)

For all Emergency incidents, as defined in (LAC 33:I.3915), call Louisiana State Police at (225) 925-6595 as soon as possible within the first hour of the emergency. There is no need to call the DEQ for any Emergency incident notification. However, a written notification report by the facility to the DEQ is still required within seven calendar days after the initial reporting to the Louisiana State Police.

Non-Emergency Conditions: (LAC 33:I.3917)

A Prompt Notification, as defined in (LAC 33:I.3917), must be reported by a facility to SPOC within 24 hours upon discovering the unauthorized discharge or release. There are three methods for reporting all non-emergency spills, releases, permit excursions, exceedances or complaints.

The first is the a verbal notification can be made by calling the DEQ Hotline at (225) 342-1234. The DEQ-SPOC phone line is manned during working hours (M - F, 8:00 am - 4:30 pm). The DEQ-SPOC office line is (225) 219-3640. If calls are made after hours, leave a voice mail.

Another option for reporting is the Online Incident Reporting system. This function allows facilities to make reportable spills, releases, permit excursions and exceedances. Simply follow the onscreen instructions and complete the necessary fields. The onscreen user will receive a summary of the notification along with a confirmation tracking number which can be printed for a record of the notification.

As a final alternative, a direct email may be used to contact the DEQ at the following address with the necessary information to make a spill, release notification or submit a complaint: spoc@LA.GOV. (This option does not produce a confirmation.)

Written reports (LAC 33:I.3925) should be mailed to:

Louisiana Department of Environmental Quality
Post Office Box 4312
Baton Rouge, LA 70821-4312
ATTENTION: EMEREGENCY AND RADIOLOGICAL SERVICES DIVISION - SPOC
"UNAUTHORIZED DISCHARGE NOTIFICATION REPORT"

Or, the Written Notification Report may be found to the Louisiana Department of Environmental Quality, Office of Environmental Compliance, Emergency and Radiological Services Division

Section 2.5
Reporting Evidence of a Release

- Emergency conditions must be reported:
  - Immediately, but not later than 1 hour
  - Report by phone to Louisiana State Police
    - **225-925-6595**
- Emergency Condition - any condition which could reasonably be expected to endanger the health and safety of the public, cause significant adverse impact to the land, water or air environment, or cause severe damage to property

Section 3
General Closure Guidelines

Section 3.2
Accredited Laboratories

- All UST closure samples must be submitted to an accredited laboratory for analysis
- List of accredited laboratories:
  - www.deq.louisiana.gov
  - Divisions; Permit Support Services; Laboratory Accreditations
- LDEQ will reject the data if an unaccredited lab is used

Laboratory Accreditations

Welcome to the Louisiana

Environmental Laboratory Accreditation Program (LELAP)

Louisiana Department of Environmental Quality
OES - Permit Support Services Division

Notifications and Accreditations Section, LELAP Group
P.O. Box 4313, Baton Rouge, LA 70821-4313
Physical Address: 602 North 5th St, BR, LA 70802
Phone No. (225) 219-3181; Fax No. (225) 219-3310

The **Louisiana Environmental Laboratory Accreditation Program** is designed to ensure the accuracy, precision, and reliability of the data generated, as well as the use of the department-approved methodologies in the generation of that data. Laboratory data generated by commercial environmental laboratories that are not accredited under these regulations will not be accepted by the department in accordance with **LAC 33:I.4501.A.2**. Whenever samples are subcontracted to another environmental testing laboratory, the original laboratory shall maintain a verifiable copy the results with a chain of custody. The procedure may not be used to circumvent proper accreditation or any state requirements. The original laboratory is responsible for ensuring that the secondary laboratory used is properly accredited for the scope of testing performed in accordance with **LAC 33:I.5307.D**.

Staff Contacts

Frequently Asked Questions

Please note: A $660 Accreditation Application Fee must accompany this application form in order for the application to be processed. Your laboratory will be invoiced at a later date for your Annual Fees.

- **Instructions for Submitting a Laboratory/Stack Tester Application Package for Accreditation**
- **Instructions for Completing the Application Form**
- **Laboratory/ Stack Tester Accreditation Application; Download in Microsoft Word**
- **Laboratory/ Stack Tester Accreditation Application; View and print in Adobe Acrobat PDF**

- **Accredited Laboratories**

Section 3.3
Ozone Action Days

- Ozone season is from May 1 – Sept 30
- *Recommend* not to vapor-free USTs or excavate at UST sites contaminated with volatile organic constituents during Ozone Action Days
- Any of the following air quality conditions in the ozone forecast is considered an Ozone Action Day
  - Unhealthy for Sensitive Groups
  - Unhealthy
  - Very Unhealthy
  - Hazardous

Section 3.3
Ozone Action Days

- Ozone forecast on DEQ website
  - Divisions; Air Quality Assessment; Ozone; Ozone Forecast
- Air quality reports for specific regions on DEQ website
  - Divisions; Air Quality Assessment; Ambient Air Monitoring Program; Air Monitoring Data
- Receive up-to-date air quality information electronically via email, cell phone, or pager by subscribing to EnviroFlash found on the LDEQ website
  - Divisions; Air Quality Assessment; EnviroFlash

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- Radiological Services
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- Air Permits
- Waste Permits
- Water Permits
- Underground Storage Tank
- Business and Community Outreach

- Air Modeling Resources
- Air Quality Planning
- Air Toxics Monitoring Program
- Ambient Air Monitoring Program
- Emission Testing Program
- ERIC Homepage and Emission Inventory Operations
- Ozone
- Toxics Release Inventory
- Understanding Air Quality
- Enviroflash
- Diesel Emissions Reduction Act (DERA)

- HRVOC Work Group
- Technical Review Team
- Ozone Forecast
- 8-Hour Ozone NAAQS Modeling Project
- Statewide Ozone Steering Committee
- Air Quality Forecast Map

alleged illegal dumping of

The Louisiana Department of Environmental Quality is co... Lead Workshop on Thursday, April 29, at DEQ Headquarters It will be held in the Oliver Pollock and Pensacola Rooms of the Conference Center, 602 N. Fifth Street, Baton Rouge.

Lafourche Parish to hold Household Hazardous Materials Collection Day, April 24

DEQ Communications - 8 days ago

The Lafourche Parish Government, under a cooperative agreement from the Louisiana Department of Environmental Quality, is sponsoring a Household Hazardous Materials Collection Day on Sat., April 24 from 8 a.m. until noon. The event will be held at the Mathews Government Complex, 4876 Hwy 1, Mathews.

DEQ-CID arrests man for alleged felony forgery

DEQ Communications - 11 days ago

Today, investigators within the Criminal Investigation Division of the Louisiana Department of Environmental Quality arrested an asbestos abatement worker in DeQuincy, Louisiana, on one count of felony forgery.

Extension of Sixteenth Amended Declaration of Emergency and

QUI

- St...
- Oz...
- DE...
- De...
- 2008-09 Annual Report
- Discover DEQ - 4th quarter E-NEWS - February 2010
- Subscribe to Enviro Flash
- Statewide Ozone Steering Committee
- Red-Tagged UST Facilities
- Asbestos and Lead
- ERIC Online!
- Events Calendar
- Groundwater Construction Advisory Documents
- Mercury Risk Reduction Plan
- Regional Offices
- Rules & Regulations
- Hurricanes Katrina & Rita - information

Internet

Ozone and PM2.5 Air Quality Index (AQI) Forecast

Air Quality Forecast Map

Current Air Data

Issued: 7:45 AM,WED APR 28 2010

Baton Rouge	Wednesday	Thursday	Friday
Ozone	97-Moderate	58-Moderate	45-Good
PM25	60-Moderate	60-Moderate	39-Good

Alexandria	Wednesday	Thursday	Friday
Ozone	77-Moderate	49-Good	43-Good
PM25	42-Good	42-Good	26-Good

Lake Charles	Wednesday	Thursday	Friday
Ozone	80-Moderate	49-Good	42-Good
PM25	55-Moderate	55-Moderate	32-Good

Lafayette	Wednesday	Thursday	Friday
Ozone	87-Moderate	61-Moderate	47-Good
PM25	42-Good	42-Good	29-Good

Monroe	Wednesday	Thursday	Friday
Ozone	74-Moderate	48-Good	42-Good
PM25	39-Good	39-Good	23-Good

New Orleans	Wednesday	Thursday	Friday
Ozone	87-Moderate	67-Moderate	47-Good
PM25	57-Moderate	57-Moderate	39-Good

Shreveport	Wednesday	Thursday	Friday
Ozone	80-Moderate	50-Good	43-Good

Done Internet 100%

Air Quality Index (AQI) Values) *When the AQIis in this range:*	Levels of Health Concern *...air quality conditions are:*	Colors *..as symbolized by this color:*
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

Air Quality Notifications

EnviroFlash Home

EnviroFlash Fact Sheet (175kb, PDF)
Learn how EnviroFlash works!

EnviroFlash on Twitter!

AIRNow RSS Feeds

EnviroFlash Toolkit
Available to AIRNow partner agencies

About the Air Quality Index (AQI)
(905kb, PDF)

Today's National Air Quality Forecast

About EnviroFlash

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Sign up and Start Receiving Your Air Quality Forecast Today!

Fill out the form below to get started.

Subscriber Information

Email Address:*

First Name:

Last Name:

ZIP Code:*

*required fields

Forecast City Selection

Change City

Nearest EnviroFlash City:

Email Preferences

Format: HTML Text Only Short

Receive Action Day Notifications:

Receive Forecasts: Forecasts are unavailable for this city.

Receive Current Conditions: Current Conditions are unavailable for this city.

Select minimum level at which to receive daily forecast Emails

Forecasts	Current	AQI Values	Levels	Colors
		0-50	Good (receive daily forecast)	Green
		51-100	Moderate	Yellow
		101-150	Unhealthy for Sensitive Groups	Orange
		151-200	Unhealthy	Red
		201-300	Very Unhealthy	Purple
		301+	Hazardous	Maroon

Next

Section 3.4
Recommended Safety Practices

- Recommended practices
- Regulations require following the Industry Codes and Standards that deal with any aspect of a UST closure (listed in Appendix A of Guidance Document and in LAC 33:XI.599)
- Encourage safe closure practices
- Purging and inerting USTs properly
- Using appropriate testing equipment correctly

Section 3.4.1
Site Safety

- LA One Call
- Overhead obstructions
- Safe working areas
- Barricades
- Proper PPE
- Health & Safety Plan

Section 3.4.2
Sloping or Shoring the Excavation

- Follow OSHA Standard 29 CFR 1926.650-652 if workers will enter the excavation

Section 3.4.3
Purging or Inerting the UST

- All USTs must be emptied, cleaned, and purged or inerted **prior to**:
  - Removing the tank from the excavation
  - Filling the tank with a solid, inert material
  - Placing a non-regulated substance into a UST (change-in-service)

Section 3.4.3
Purging or Inerting the UST

- Purging removes flammable vapors from UST
- Inerting is displacement of oxygen from a UST
- Both cause flammable vapors to be expelled from the UST
- Vent vapors at least 12 feet above grade and 3 feet above adjacent roof lines

Section 3.4.4
Testing Equipment

- Use properly calibrated equipment
- Purging - obtain < 10% LEL prior to removing UST
- Inerting - obtain < 5% O_2 prior to removing UST
- Do not take reading through the drop tube
- Take readings:
  - At each end and in middle of the UST
  - Bottom, center, and top of UST

Section 3.5

UST System Removal and Labeling

- All tanks and piping must be removed from the ground (unless closing in place)
- Label tank prior to transport
- Retest LEL or O_2 prior to transporting the UST
- Cut holes if scrapping
- Use non-sparking tools when cutting
  - Requirement in API 1604

Section 3.6
UST Disposal and UST Re-Use

- Dispose properly
- Re-use as UST only if recertified by manufacturer and meets new secondary containment requirements
- Get approval from State Fire Marshal or Local Fire Prevention Bureau prior to using as AST
- Cannot use gasoline USTs as culverts
- Proof of disposal or bill of sale required in Closure Assessment Report

Section 3.7
Closing UST Systems in Place

- An explanation statement for closing tanks in place should be attached with the NOI form submittal
- Get approval from Local Fire Prevention Bureau prior to closing in place
- Soil samples must be collected prior to closing tanks in place

Section 3.7
Closing UST Systems in Place

- If soil analytical results indicate further corrective action is warranted, all involved parties and USTD staff should discuss available remediation and closure options prior to closing tanks in place
- Tank and piping emptied, cleaned, vapor freed prior to filling with solid, inert material
- Fill tank completely
- Piping rendered unusable (remove or fill and cap)

Section 3.8
Sample Collection Procedures

- No changes
- Follow appropriate EPA SW-846 protocols
- SW-846 Method 5035 still applies for volatile sampling (BTEX, MTBE, and TPH-GRO)
- Submit samples to the laboratory within 24 hours to avoid exceeding recommended holding times
- Chain-of-custody procedures must be followed

Section 4
Closure Sample Locations

Section 4.1
General Requirements

- Goal is to determine if contamination exists
- Document identifies minimum # of samples required and sample locations
- Site conditions can vary, so use best professional judgment when assessing site
- If proposing different sample locations or #s, submit proposal with NOI

Section 4.1

General Requirements

- **Any areas of obvious contamination must be included in the sampling, and additional samples beyond those specified in this document may be required at the discretion of the Department in order to ensure protection of human health and the environment**
- UST owner can collect additional investigation samples to define extent of contamination

Section 4.1.1
Soil Vapor Screening

- Field screening can be used to reduce sample numbers
- Field screen in 2 foot intervals throughout entire length of each boring or at each sample location if excavating
- Analyzer must be properly calibrated and maintained – inspector may request calibration log in the field

Section 4.1.1
Soil Vapor Screening

- If LDEQ determines analyzer is not calibrated or not functioning properly, reducing sample numbers will not be allowed
- Analyzer must be able to detect the target COCs
- Soil vapor concentrations for each interval or location measured must be included in Laboratory Analytical Results Table

Section 4.2

Closure Samples Collected During Excavation and Removal

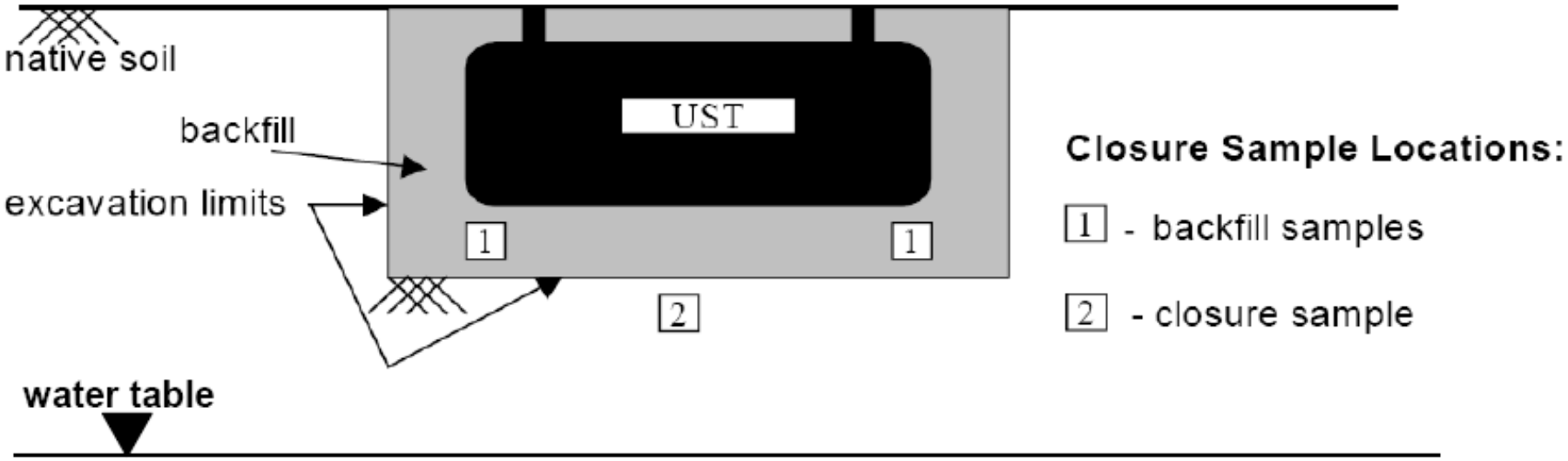
- Same native soil and backfill sample locations and number of samples as before
- Option to reduce sample numbers if soil vapor screening is conducted

Section 4.2

Closure Samples Collected During Excavation and Removal

- Native Soil
  - Below base of tank if no groundwater
  - Groundwater interface if groundwater is present
  - Highest PID if field screening
- Backfill
  - Below base of tank
  - From stockpile if all backfill is removed

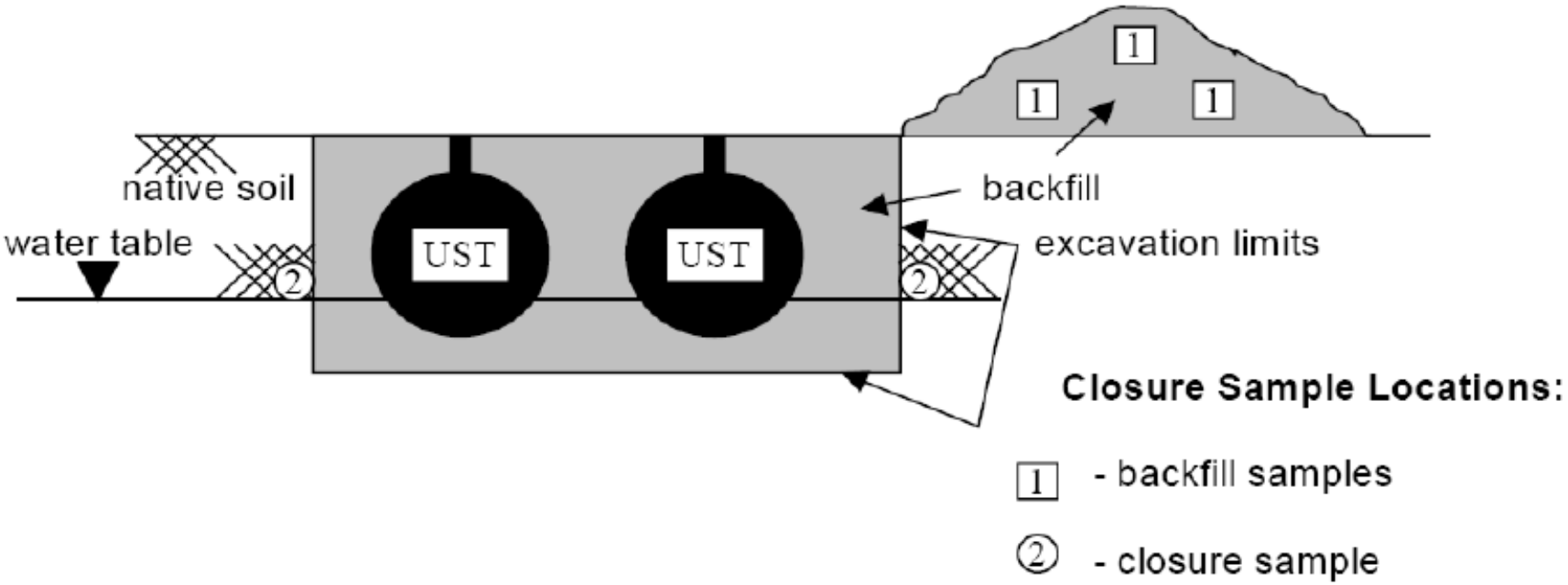
Tanks Less Than 7 Feet Long
(When Groundwater Is Below the Excavation)



- No field screening
  - 1 native soil sample per tank
  - 2 backfill samples per tank
- Field screening
  - 1 native soil sample per tank (highest PID)
  - 1 backfill sample per tank (highest PID)

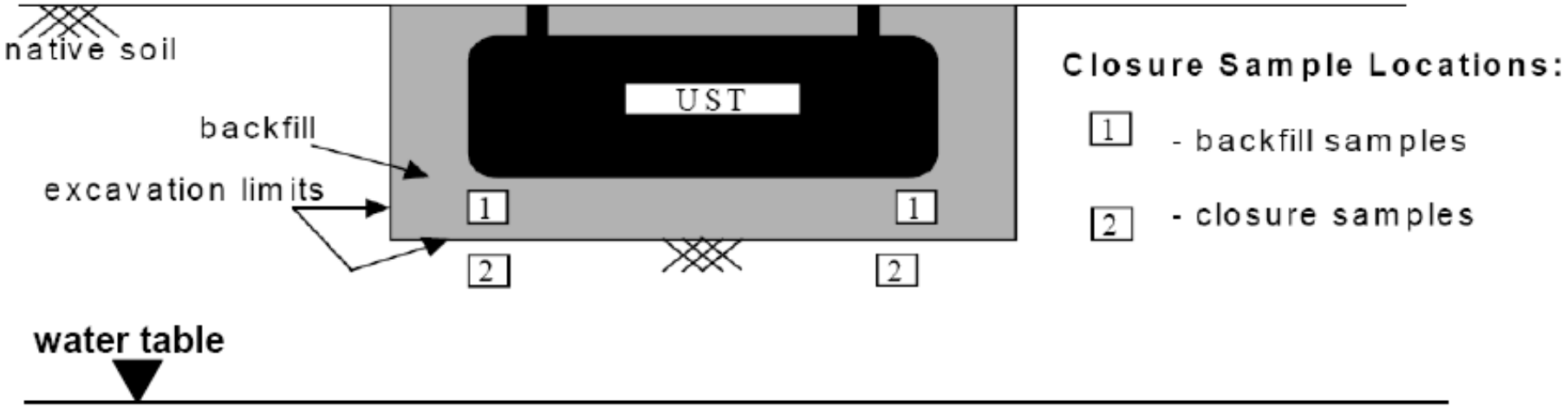
Tanks Less Than 7 Feet Long

(When Groundwater Is Within the Excavation)



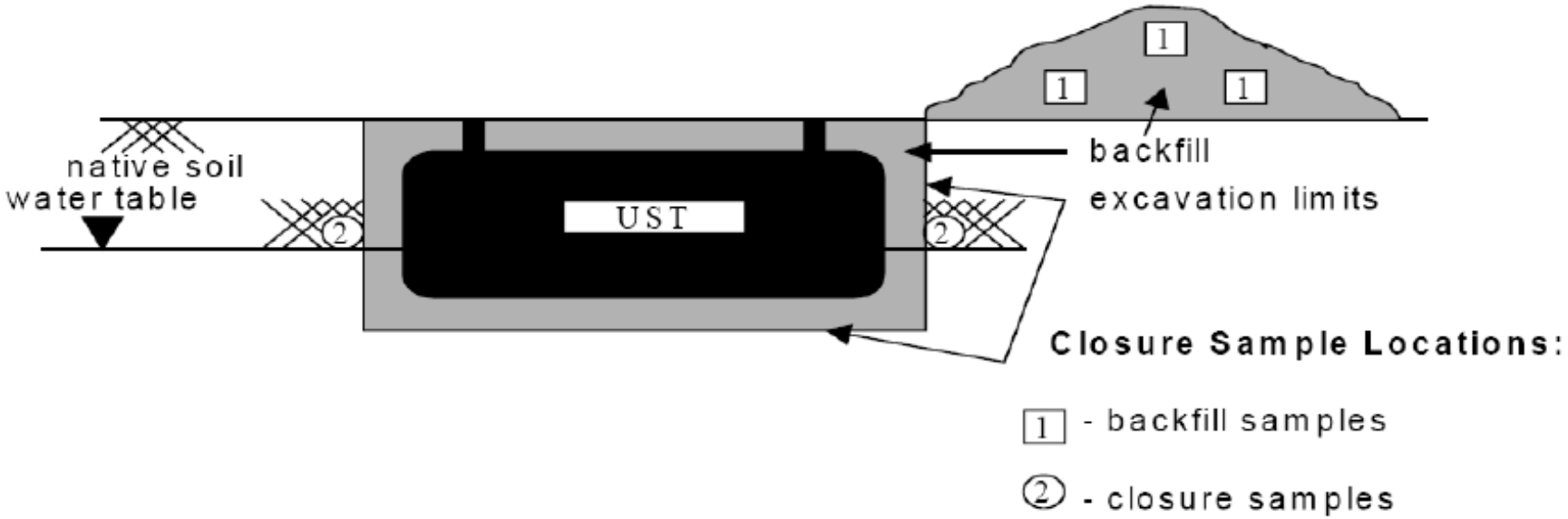
- No field screening
  - 2 native soil samples per tank hold
  - 3 backfill samples per tank hold
- Field screening
  - 1 native soil sample per tank hold (highest PID)
  - 1 backfill sample per tank (highest PID)

Tanks 7–35 Feet Long
(When Groundwater Is Below the Excavation)



- No field screening
  - 2 native soil samples per tank
  - 2 backfill samples per tank
- Field screening
  - 1 native soil sample per tank (highest PID)
  - 1 backfill sample per tank (highest PID)

Tanks 7–35 Feet Long
(When Groundwater Is Within the Excavation)



- No field screening
  - 2 native soil samples per tank
  - 3 backfill samples per tank hold
- Field screening
  - 1 native soil sample per tank (highest PID)
  - 1 backfill sample per tank (highest PID)

Section 4.2.3

Closure Sample Locations for Tanks Greater Than 35 Feet Long

- Site-by-site basis
- Send proposal with sample numbers and locations with NOI
- Must receive LDEQ approval prior to closure

Section 4.2.4
Dispenser Sample Procedures and Locations

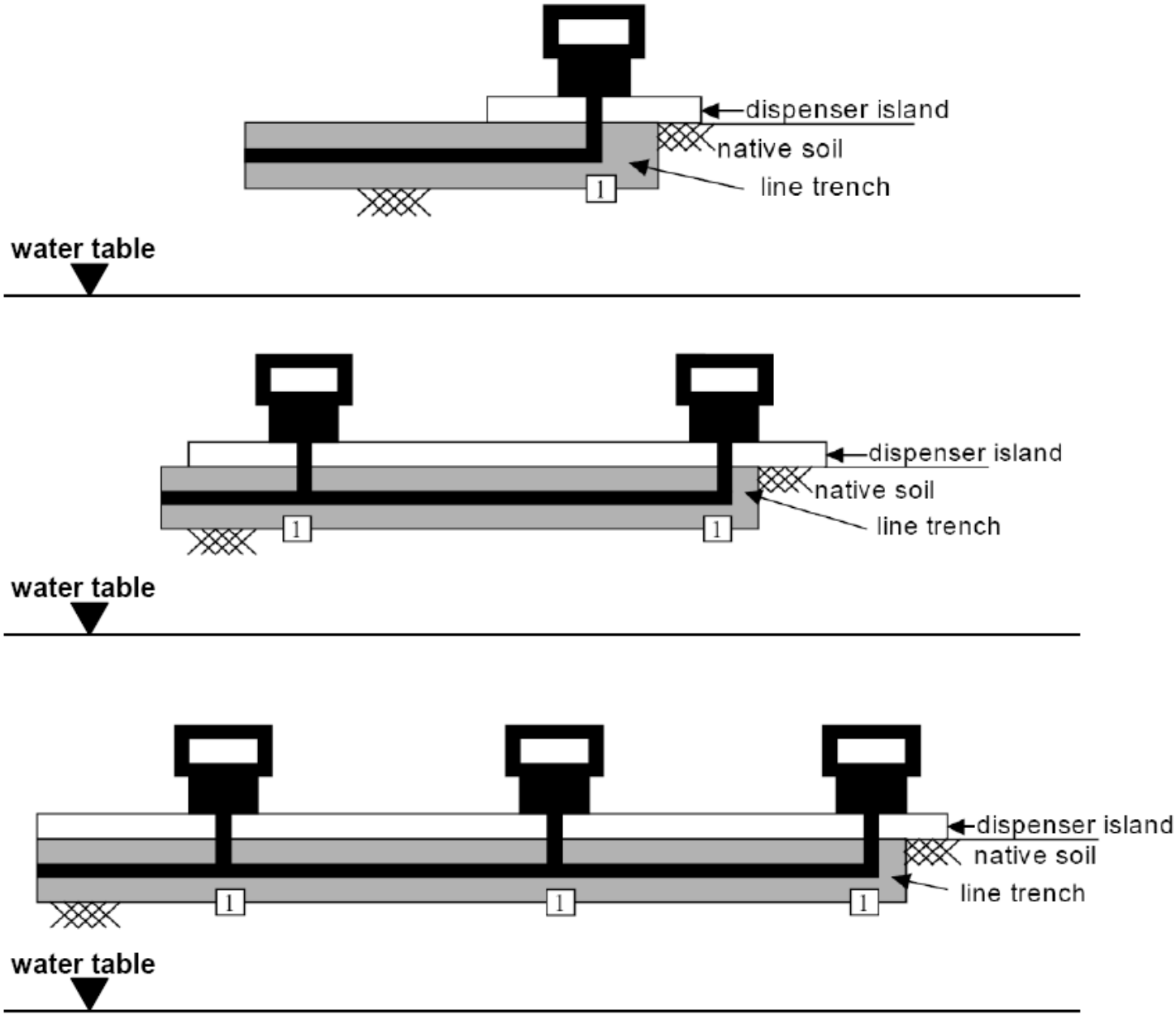
- Below each dispenser that is taken out of service
- 1 sample in native soil per dispenser at either:
  - Backfill-native soil interface but no deeper than 1 foot below base of piping trench
  - Groundwater interface
  - Highest PID

Section 4.2.4

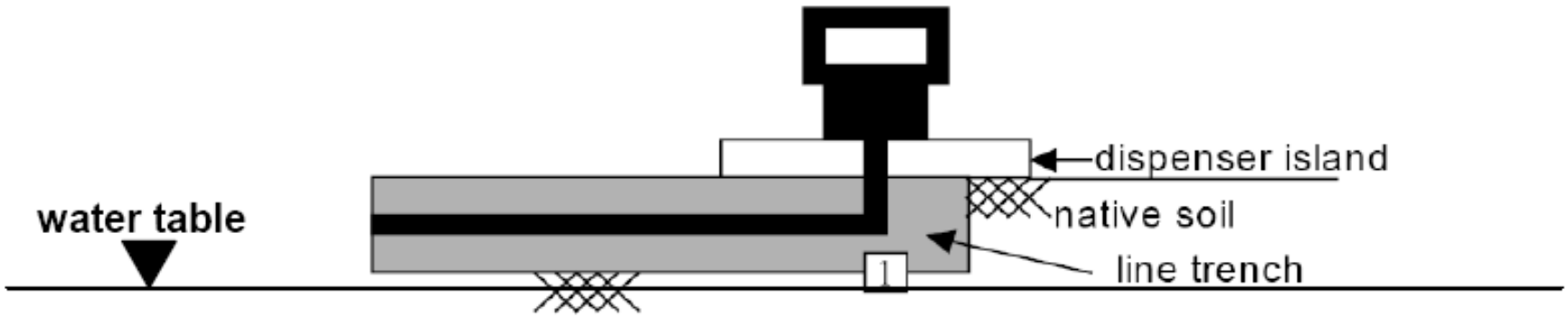
Dispenser Sample Procedures and Locations

- If dispensers within 5 feet of each other, can field screen and analyze 1 sample (highest PID) per each 2 dispensers
- If dispenser is located within perimeter of tank hold and tank is removed, dispenser sample not required

Dispenser Sample Locations



Dispenser Sample Locations
(When Groundwater Is Encountered)



Section 4.2.5

Backfill Sample Procedures and Locations

- Where indicated on diagrams; or
- From stockpile:
  - Sample as soon as possible (no later than 4 hours after excavation completed)
  - At least 1 foot into stockpile
  - Minimum of 3 samples required (Analyze 1 per tank if field screening – highest PID)
- Sampling of pea gravel not required unless visibly saturated with product

Section 4.2.5

Backfill Sample Procedures and Locations

- If excavating and disposing all backfill, no samples required (except for landfill profile and TF reimbursement if applicable)
- If contaminated backfill stockpiled on-site
  - Place on impervious surface
  - Keep covered
  - Prevent surface runoff
- Excavated areas should be filled or secured from public as soon as possible

Section 4.3
Closure Samples Collected From Soil Borings

- Same as RECAP Appendix B
  - Hollow stem auger, solid stem auger, direct push, etc.
  - Hand auger only allowed for volatiles if no other method works
  - Investigation derived waste managed properly
- Borings as close to tank hold as possible, no more than 5 feet away unless groundwater is present and GW interface cannot be collected within 5 feet

Section 4.3
Closure Samples Collected From Soil Borings

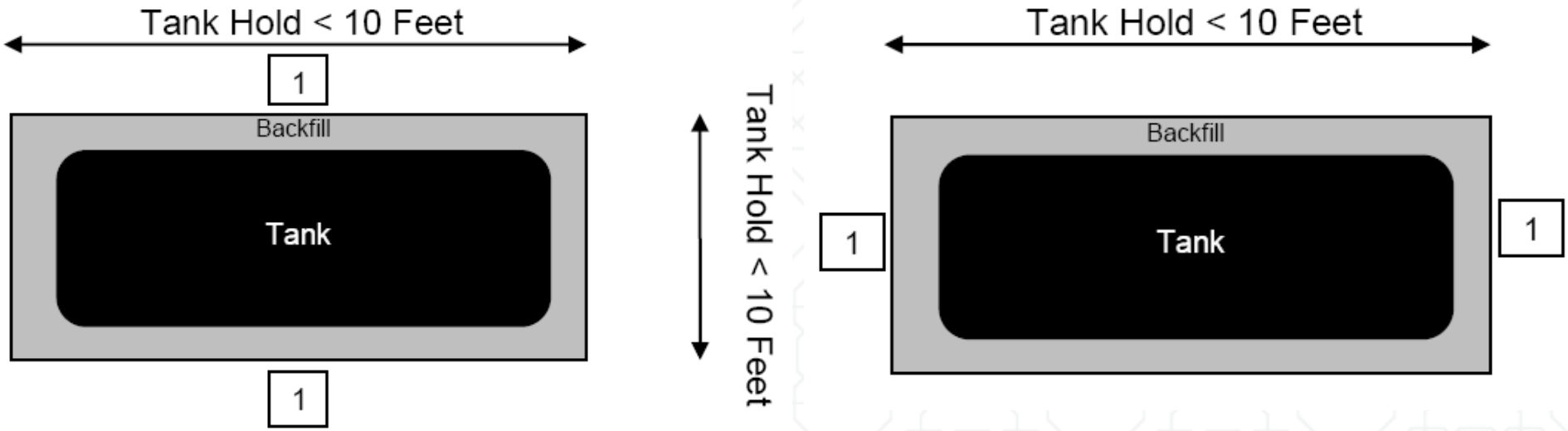
- Borings extend to at least 1 foot below nearest tank base
- Backfill sampling not mandatory
  - If encountered and contaminated, should collect samples
  - Backfill sampling may be required later if removing tanks instead of closing them in place

Section 4.3

Closure Samples Collected From Soil Borings

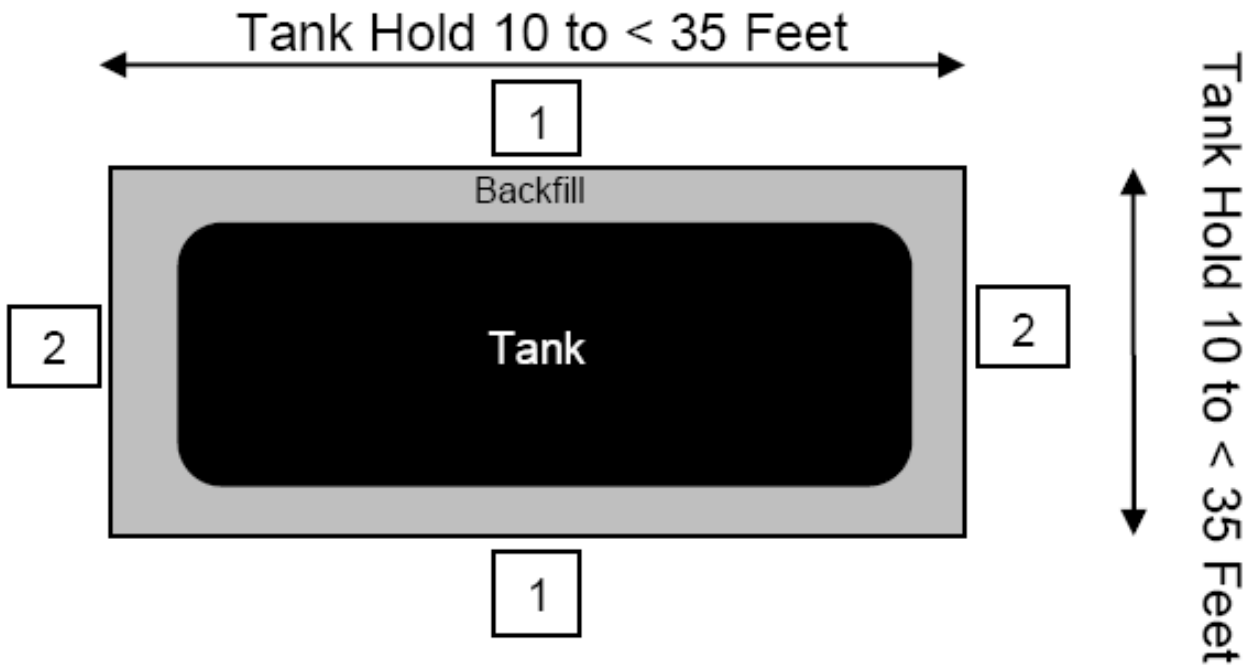
- One native soil sample per boring location at either:
  - 1 foot below tank base if no groundwater
  - Groundwater interface if present
  - Interval with highest PID
- Can reduce sample numbers if field screening

Tank Hold Lengths Less Than 10 Feet



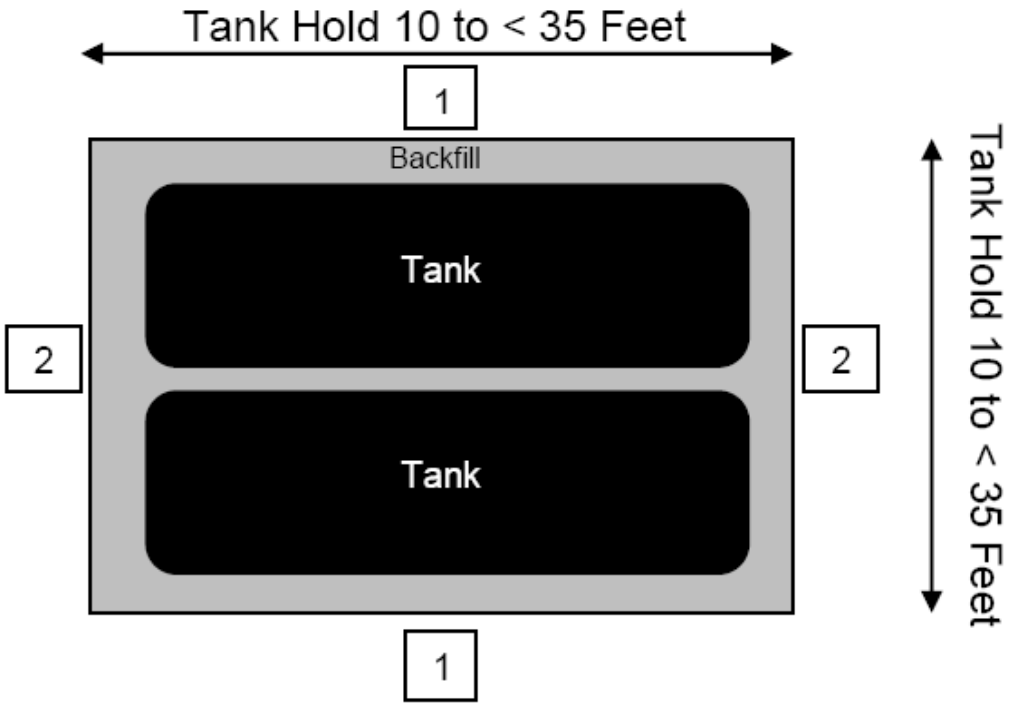
- Collect 2 samples - 1 from each side or 1 from each end
- No field screening
  - Analyze 2 samples per tank hold
- Field screening
  - Analyze 1 sample per tank hold (highest PID)

Tank Hold Lengths 10 to Less Than 35 Feet



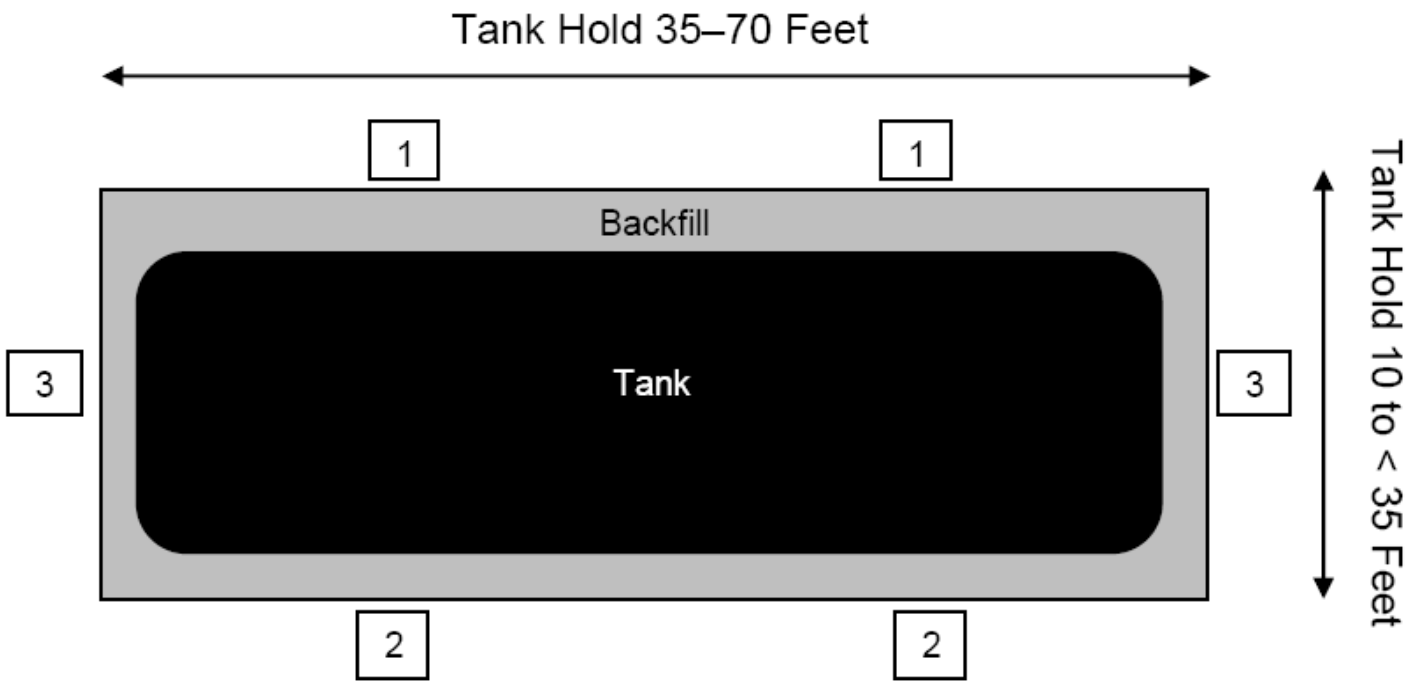
- Collect 1 sample from each side that is 10 to < 35 feet long
- No field screening
  - Analyze 1 sample per side that is 10 to < 35 feet long
- Field screening
  - Analyze 1 sample per opposing sides of the tank hold (highest PID from each side or each end)

Tank Hold Lengths 10 to Less Than 35 Feet

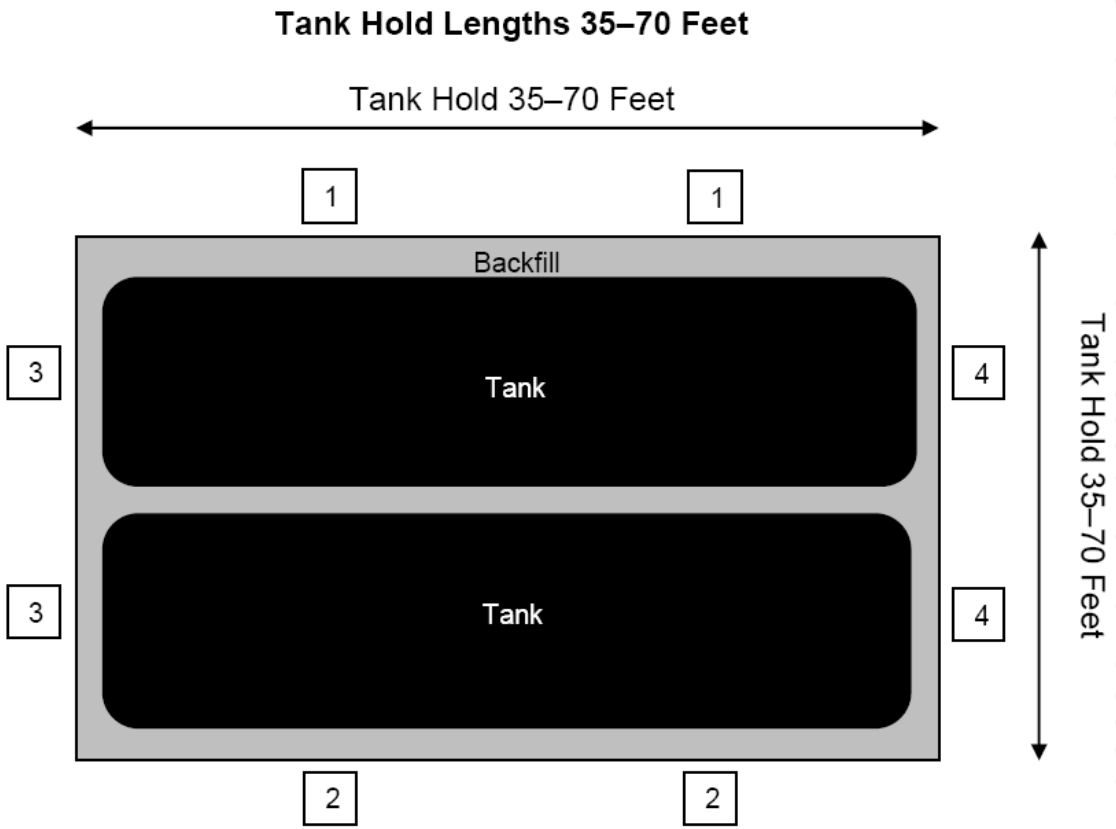


- Collect 1 sample from each side that is 10 to < 35 feet long
- No field screening
  - Analyze 1 sample per side that is 10 to < 35 feet long
- Field screening
  - Analyze 1 sample per opposing sides of the tank hold (highest PID from each side)

Tank Hold Lengths 35–70 Feet

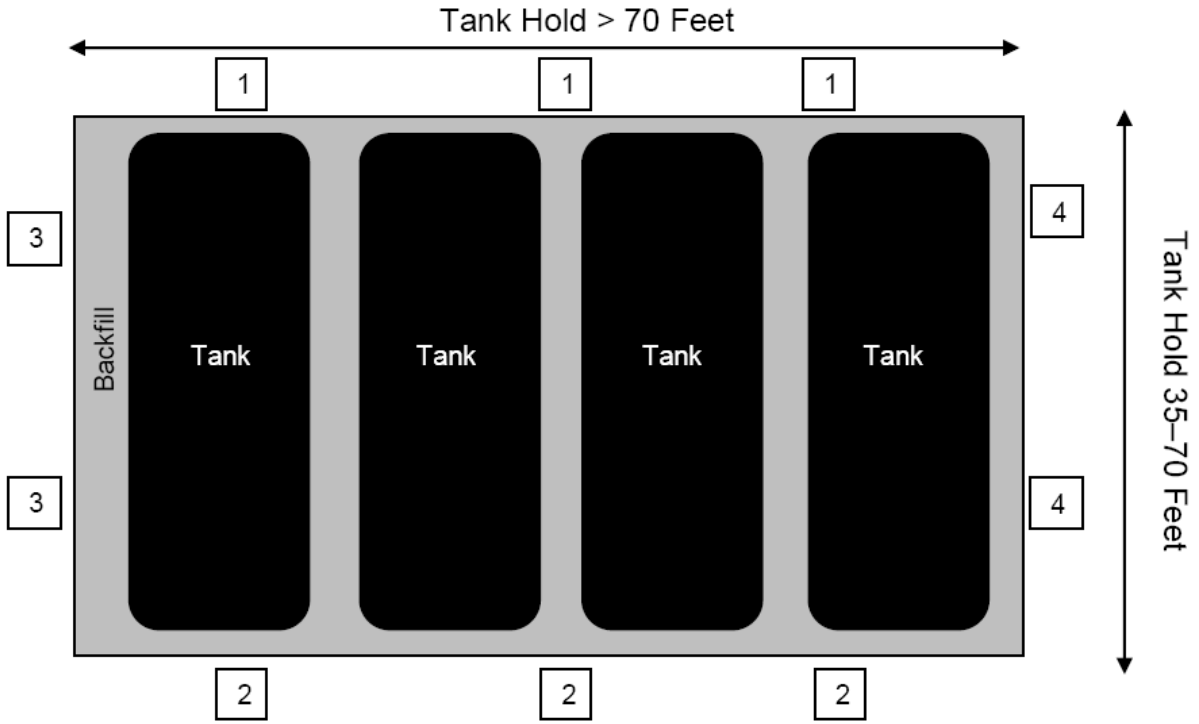


- Collect 2 samples from each side that is 35–70 feet long
- No field screening
  - Analyze 2 samples per side that is 35–70 feet long
- Field screening
  - Analyze 1 samples per side that is 35–70 feet long (highest PID from each side)



- Collect 2 samples from each side that is 35–70 feet long
- No field screening
  - Analyze 2 samples per side that is 35–70 feet long
- Field screening
  - Analyze 1 samples per side that is 35–70 feet long (highest PID from each side)

Tank Hold Lengths Greater Than 70 Feet



- Collect 3 samples from each side that > 70 feet long
- No field screening
  - Analyze 3 samples per side that is > 70 feet long
- Field screening
  - Analyze 2 samples per side that is > 70 feet long (2 highest PIDs from each side)

Section 4.3.5

Dispenser Samples Collected From Soil Borings

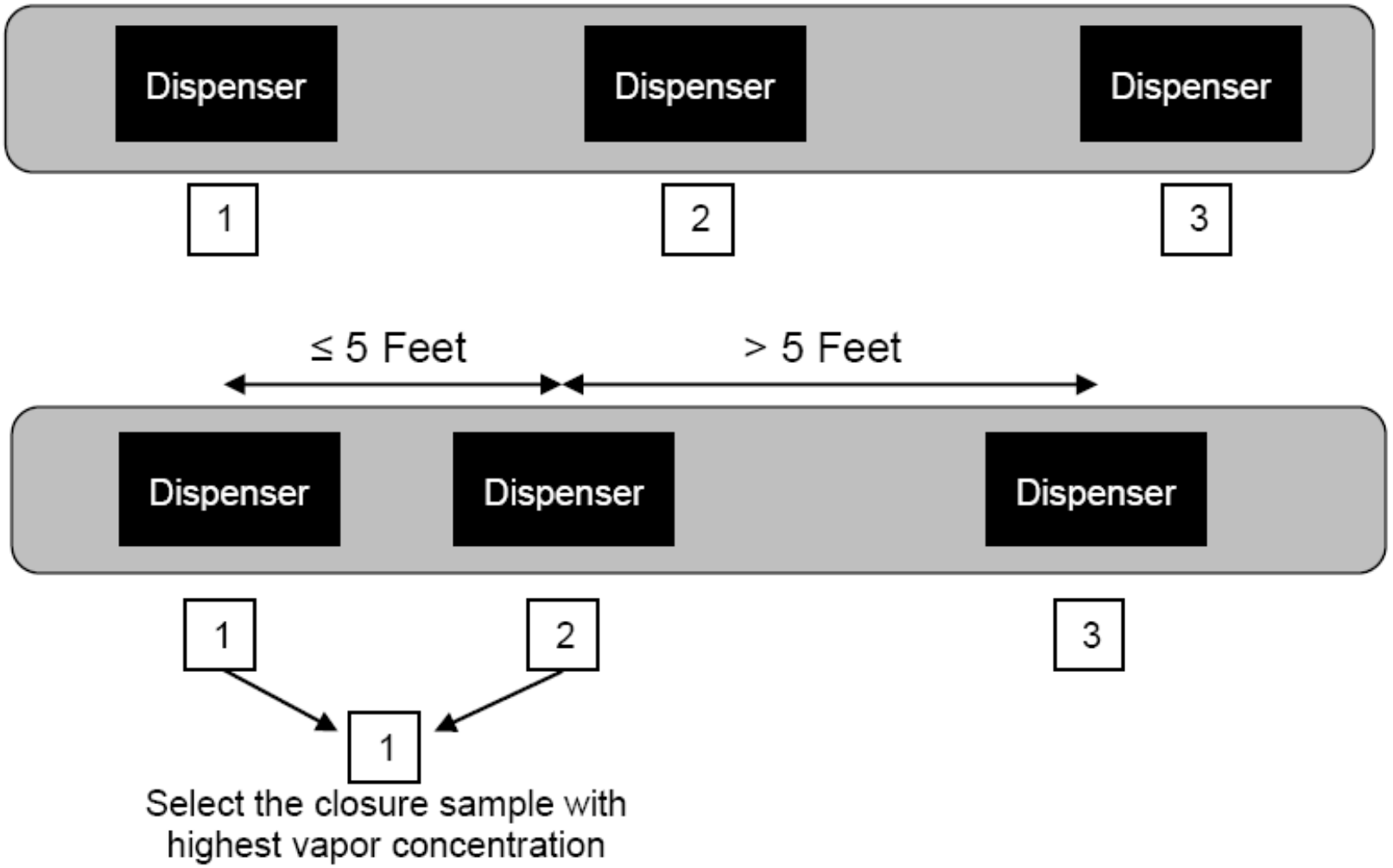
- Adjacent to each dispenser that is taken out of service
- 1 sample in native soil per dispenser at either:
  - Backfill-native soil interface but no deeper than 1 foot below base of piping trench
  - Groundwater interface
  - Highest PID

Section 4.3.5

Dispenser Samples Collected From Soil Borings

- If dispensers within 5 feet of each other, can field screen and analyze 1 sample (highest PID) per each 2 dispensers
- If dispenser is located within perimeter of tank hold and tank is removed, dispenser sample not required

Dispenser Sample Locations



Section 5
Sample Location Deviations

Section 5.2

Excavating Contamination During UST System Closures

- If excavating contamination, closure samples outlined above may not apply (unless needed for Trust Fund reimbursement)
- Collect confirmation samples at base of excavation in areas outlined in Section 4
- Collect sidewall confirmation samples if excavating horizontally
- Can reduce sample #s if field screening at discretion of USTD field staff

Section 5.3

Previously Contaminated UST Sites or Sites Undergoing Remediation

- Coordinate with USTD Regional Office staff, USTD Team Leader, UST owner, property owner, RAC, etc prior to closure
  - May eliminate samples for areas already assessed
  - Established site-specific RECAP standards used
- Handled on case-by-case basis

Section 5.4

UST Sites Contaminated With Free-Phase Product

- If known in advance, coordinate with USTD Regional Office staff, USTD Team Leader, UST owner, property owner, RAC, etc prior to closure
  - May not need samples for areas already assessed
  - Handled on case-by-case basis
- If discovered during closure
  - Immediate notification required
  - May not need any samples (case-by-case)
  - Free-product removal must begin as soon as possible (LAC 33:XI.715.E)

Section 6
Temporary Closure Assessment Requirements

Section 6.1

Temporary Closure Requirements

- Temporary Closure – “the temporary removal from service of a UST”
- If upgraded with corrosion protection and in temporary closure for > 24 months, must perform site assessment
  - Follow Section 4.5 Closure Samples Collected From Soil Borings
  - Soil borings > than 5 feet from tank and dispensers is allowed
  - Take previously assessed areas into consideration – assessment may not be needed (Section 5)

Section 6.1
Temporary Closure Requirements

- If tanks remain empty while in temporary closure
  - Assessment only required once
  - Can use this assessment as permanent closure samples
- Notify USTD prior to assessment
- Assessment report due within 60 days

Section 7
Sample Analyses

Sample Analyses Changes

- Same as RECAP Table D-1 except
  - For diesel, can run PAHs on the one (1) sample with the highest TPH-DRO concentration
  - For used oil, can run PAHs and Metals on the one (1) sample with the highest TPH-ORO concentration
- Mandatory to collect PAH and Metals samples at each location at time of closure

Sample Analyses Changes

- Mandatory to collect enough sample volume for SPLP and TPH fractions (VPH/EPH) analyses at each sample location at the time of closure
- Sample submitter will need to be more involved with the laboratories to provide instructions on which sample locations to analyze for PAHs, Metals, SPLP and TPH Fractions

PRODUCT STORED	SAMPLE MEDIA	ANALYSES REQUIRED	EPA SW-846 ANALYTICAL METHODS[1]	HOLDING TIMES
Gasoline	Soil	BTEX	8015, 8021, 8260, 8261	48 hours or 14 days
	Soil	MTBE	8015, 8260, 8261	48 hours or 14 days
	Soil	Lead[2]	6010, 6020, 6200, 6800, 7000, 7010	180 days
	Soil	TPH-GRO (C_6 - C_{10})	8015	48 hours or 14 days
Diesel	Soil	TPH-DRO (C_{10} - C_{28})	8015	14/40 days
	Soil	PAH[3]	8100, 8270, 8275, 8310	14/40 days
Used Oil	Soil	TPH-ORO ($C_{>28}$)	8015	14/40 days
	Soil	Total Metals[5]	6010, 6020, 6200	28/28 days[4]
	Soil	PAH[5]	8100, 8270, 8275, 8310	14/40 days
Kerosene, Jet Fuel	Soil	TPH-GRO (C_6 - C_{10})	8015	48 hours or 14 days
	Soil	TPH-DRO (C_{10} - C_{28})	8015	14/40 days
Hazardous or Other Substances	Soil	Analyze by approved method for the substance stored or primary constituent		
SPLP	Soil	Volatiles	Extraction: 1312, Analysis: 8260	14/14
SPLP	Soil	Semi-Volatiles	Extraction: 1312, Analysis: 8270	14/40
SPLP	Soil	Total Metals	Extraction: 1312, Analysis: 6010	28/28 days[4]

[1]Use most recent EPA SW-846 update of the selected method. The selected method should be capable of detecting the limiting soil standard.

[2]Required if facility dispensed gasoline prior to 1/1/86.

[3]Analyze only on TPH-DRO sample exhibiting highest concentration.

[4] Based on holding time for Mercury (28 days)

[5]Analyze only on TPH-ORO sample exhibiting highest concentration.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes

TPH - Total Petroleum Hydrocarbons (GRO-Gasoline Range Organics, DRO-Diesel Range Organics, ORO-Oil Range Organics)

MTBE - Methyl tert-butyl ether

SPLP - Synthetic Precipitation Leaching Procedure

Total Metals - Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver

PAH - Polynuclear Aromatic Hydrocarbons (Acenapthene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, 2-Methylnaphthalene, Naphthalene, Phenanthrene, Pyrene)

48 hours or 14 days - Volatile organic compounds have either a 48 hour or 14 day holding time depending on the Method 5035 option selected.

14/14 - Samples extracted within 14 days and extracts analyzed within 14 days following extraction.

14/40 - Samples extracted within 14 days and extracts analyzed within 40 days following extraction.

28/28 - Samples extracted within 28 days and extracts analyzed within 28 days following extraction.

Section 8
Sample Results Interpretation

Section 8.1

Sample Results Interpretation

- Compare sample results to Limiting Soil Standard (Appendix M, Column A)
  - If all sample results are below the Limiting Soil Standards, no further action needed
- If any COC exceeds a Limiting Soil Standard
  - You must call SPOC (Section 2.5)
  - You must further evaluate that COC
- Limiting Soil Standard is the lowest of the non-industrial, industrial, and soil/groundwater screening standards

Appendix M
UST Soil Screening Standards

		A	B	C	D	E	F
Constituents	**CAS #**	**Limiting Soil Standards (mg/kg)**	**Non-Industrial Soil Standards (mg/kg)**	**Industrial Soil Standards (mg/kg)**	**Soil/Groundwater Standards (mg/kg)**	**Groundwater Standards (GW1) (mg/L)**	**SPLP (GW1 x 20) (mg/L)**
Petroleum Constituents:							
Benzene	71-43-2	**0.051**	1.5	3.1	0.051	0.005	0.1
Toluene	108-88-3	**20**	68	470	20	1.0	20
Ethyl benzene	100-41-4	**19**	160	230	19	0.7	14
Xylene(mixed)	1330-20-7	**18**	18	120	150	10	200
MTBE (methyl tert-butyl ether)	1634-04-4	**0.077**	650	4700	0.077	0.020	0.4
TPH-GRO	NA	**65**	65	510	65	0.34	6.8
TPH-DRO	NA	**65**	65	510	65	0.34	6.8
TPH-ORO	NA	**180**	180	2500	10000	1.1	22
Aliphatics C6-C8	NA	**1200**	1200	8000	10000	32	640
Aliphatics >C8-C10	NA	**120**	120	880	5300	1.3	26
Aliphatics >C10-C12	NA	**230**	230	2000	10000	1.4	28
Aliphatics >C12-C16	NA	**370**	370	3800	10000	1.4	28
Aliphatics >C16-C35	NA	**7100**	7100	10000	10000	73	1460
Aromatics >C8-C10	NA	**65**	65	510	65	0.34	6.8
Aromatics >C10-C12	NA	**100**	120	1100	100	0.34	6.8
Aromatics >C12-C16	NA	**180**	180	2100	200	0.34	6.8
Aromatics >C16-C21	NA	**150**	150	1700	2100	1.1	22
Aromatics >C21-C35	NA	**180**	180	2500	10000	1.1	22
Total Metals:							
Arsenic	7440-38-2	**12**	12	12	100	0.01	0.2
Barium	7440-39-3	**550**	550	14000	2000	2	40
Cadmium	7440-43-9	**3.9**	3.9	100	20	0.005	0.1
Chromium(III)	16065-83-1	**100**	12000	310000	100	0.1	2
Chromium(VI)[1]	18540-29-97	**23**	23	610	100	0.1	2
Lead (inorganic)	7439-92-1	**100**	400	1400	100	0.015	0.3
Mercury (inorganic)	7487-94-7	**2.3**	2.3	61	4	0.002	0.04
Selenium	7782-49-2	**20**	39	1000	20	0.05	1.0
Silver	7440-22-4	**39**	39	1000	100	0.18	3.6
Polynuclear Aromatic Hydrocarbons (PAH):							
Acenaphthene	83-32-9	**220**	370	6100	220	0.37	7.4
Acenaphthylene	208-96-8	**88**	350	5100	88	0.37	7.4
Anthracene	120-12-7	**120**	2200	48000	120	1.80	36
Benz(a)anthracene	56-55-3	**0.62**	0.62	2.90	330.00	0.0078	0.156
Benzo(a)pyrene	50-32-8	**0.33**	0.33	0.33	23.00	0.0002	0.004
Benzo(b)fluoranthene	205-99-2	**0.62**	0.62	2.90	220.00	0.0048	0.096
Benzo(k)fluoranthene	207-08-9	**6.2**	6.2	29	120	0.0025	0.050
Chrysene	218-01-9	**62**	62	290	76	0.0091	0.182
Dibenz(a,h)anthracene	53-70-3	**0.33**	0.33	0.33	540.00	0.0025	0.050
Fluoranthene	206-44-0	**220**	220	2900	1200	1.50	30
Fluorene	86-73-7	**230**	280	5400	230	0.24	4.8
Indeno(1,2,3-cd)pyrene	193-39-5	**0.62**	0.62	2.90	9.20	0.0037	0.074
Methylnaphthalene,2-	91-57-6	**1.7**	22.0	170.0	1.7	0.0062	0.124
Naphthalene	91-20-3	**1.5**	6.2	43.0	1.5	0.01	0.2
Phenanthrene	85-01-8	**660**	2100	43000	660	1.80	36
Pyrene	129-00-0	**230**	230	5600	1100	0.18	3.6

[1] If chromium is not speciated, evaluate total chromium using chromium (VI).

Adapted from LDEQ RECAP (October 20, 2003)

Section 8.1
Sample Results Interpretation

- Further action is required if COC concentration is above the **Limiting Soil Standard** (Appendix M, Column A)
- The required action depends on the concentration level and the type of contaminants involved
- Options:
  - SPLP
  - TPH Fractionation (VPH/EPH)
  - Excavation
  - Conveyance Notice
  - RECAP Evaluation

Appendix M
UST Soil Screening Standards

		A	B	C	D	E	F
Constituents	**CAS #**	**Limiting Soil Standards (mg/kg)**	**Non-Industrial Soil Standards (mg/kg)**	**Industrial Soil Standards (mg/kg)**	**Soil/Groundwater Standards (mg/kg)**	**Groundwater Standards (GW1) (mg/L)**	**SPLP (GW1 x 20) (mg/L)**
Petroleum Constituents:							
Benzene	71-43-2	**0.051**	1.5	3.1	0.051	0.005	0.1
Toluene	108-88-3	**20**	68	470	20	1.0	20
Ethyl benzene	100-41-4	**19**	160	230	19	0.7	14
Xylene(mixed)	1330-20-7	**18**	18	120	150	10	200
MTBE (methyl tert-butyl ether)	1634-04-4	**0.077**	650	4700	0.077	0.020	0.4
TPH-GRO	NA	**65**	65	510	65	0.34	6.8
TPH-DRO	NA	**65**	65	510	65	0.34	6.8
TPH-ORO	NA	**180**	180	2500	10000	1.1	22
Aliphatics C6-C8	NA	**1200**	1200	8000	10000	32	640
Aliphatics >C8-C10	NA	**120**	120	880	5300	1.3	26
Aliphatics >C10-C12	NA	**230**	230	2000	10000	1.4	28
Aliphatics >C12-C16	NA	**370**	370	3800	10000	1.4	28
Aliphatics >C16-C35	NA	**7100**	7100	10000	10000	73	1460
Aromatics >C8-C10	NA	**65**	65	510	65	0.34	6.8
Aromatics >C10-C12	NA	**100**	120	1100	100	0.34	6.8
Aromatics >C12-C16	NA	**180**	180	2100	200	0.34	6.8
Aromatics >C16-C21	NA	**150**	150	1700	2100	1.1	22
Aromatics >C21-C35	NA	**180**	180	2500	10000	1.1	22
Total Metals:							
Arsenic	7440-38-2	**12**	12	12	100	0.01	0.2
Barium	7440-39-3	**550**	550	14000	2000	2	40
Cadmium	7440-43-9	**3.9**	3.9	100	20	0.005	0.1
Chromium(III)	16065-83-1	**100**	12000	310000	100	0.1	2
Chromium(VI)[1]	18540-29-97	**23**	23	610	100	0.1	2
Lead (inorganic)	7439-92-1	**100**	400	1400	100	0.015	0.3
Mercury (inorganic)	7487-94-7	**2.3**	2.3	61	4	0.002	0.04
Selenium	7782-49-2	**20**	39	1000	20	0.05	1.0
Silver	7440-22-4	**39**	39	1000	100	0.18	3.6
Polynuclear Aromatic Hydrocarbons (PAH):							
Acenaphthene	83-32-9	**220**	370	6100	220	0.37	7.4
Acenaphthylene	208-96-8	**88**	350	5100	88	0.37	7.4
Anthracene	120-12-7	**120**	2200	48000	120	1.80	36
Benz(a)anthracene	56-55-3	**0.62**	0.62	2.90	330.00	0.0078	0.156
Benzo(a)pyrene	50-32-8	**0.33**	0.33	0.33	23.00	0.0002	0.004
Benzo(b)fluoranthene	205-99-2	**0.62**	0.62	2.90	220.00	0.0048	0.096
Benzo(k)fluoranthene	207-08-9	**6.2**	6.2	29	120	0.0025	0.050
Chrysene	218-01-9	**62**	62	290	76	0.0091	0.182
Dibenz(a,h)anthracene	53-70-3	**0.33**	0.33	0.33	540.00	0.0025	0.050
Fluoranthene	206-44-0	**220**	220	2900	1200	1.50	30
Fluorene	86-73-7	**230**	280	5400	230	0.24	4.8
Indeno(1,2,3-cd)pyrene	193-39-5	**0.62**	0.62	2.90	9.20	0.0037	0.074
Methylnaphthalene,2-	91-57-6	**1.7**	22.0	170.0	1.7	0.0062	0.124
Naphthalene	91-20-3	**1.5**	6.2	43.0	1.5	0.01	0.2
Phenanthrene	85-01-8	**660**	2100	43000	660	1.80	36
Pyrene	129-00-0	**230**	230	5600	1100	0.18	3.6

[1] If chromium is not speciated, evaluate total chromium using chromium (VI).

Adapted from LDEQ RECAP (October 20, 2003)

RECAP Screening Option

- UST Closure Guidance Document requires the use of RECAP Screening Option to close sites
- Current Version of RECAP is October 20, 2003
- Appendix M is the same as RECAP Table 1 – Screening Option

Criteria For Using Screening Option

- Area of impacted soil is < 0.5 acres (some exceptions)
- Impacted soil is in declining condition (source of release has been mitigated)
- NAPL (non-aqueous phase liquid) is not present
- Impacted area with volatile COCs not present beneath an enclosed structure
- High fugitive dust emissions not present

Section 8.1
Sample Results Interpretation

- Compare sample results to Limiting Soil Standard (Appendix M, Column A)
  - If all sample results are below the Limiting Soil Standards, no further action needed
- If any COC exceeds a Limiting Soil Standard
  - You must call SPOC (Section 2.5)
  - You must further evaluate that COC
- Limiting Soil Standard is taken from the lowest of the Non-Industrial, Industrial, and Soil Protective of Groundwater screening standards

RECAP Screening Option

- Must address the soil and groundwater pathways separately
- Soil pathway:
  - Compare results to lowest of Non-Industrial Soil Standard (Column B) and Industrial Soil Standard (Column C)
    - If results are below Non-Industrial Soil Standards, then the soil pathway needs no further action

RECAP Screening Option

- Groundwater pathway:
  - Compare results to Soil/Groundwater Standard (Column D)
    - If below, groundwater pathway needs no further action
    - If above, then SPLP can be used
    - If SPLP results below SPLP standard (Column F), groundwater pathway needs no further action

Example

Benzene = 0.04mg/kg

- Below Limiting Soil Standard of 0.051mg/kg
- No action required

Appendix M
UST Soil Screening Standards

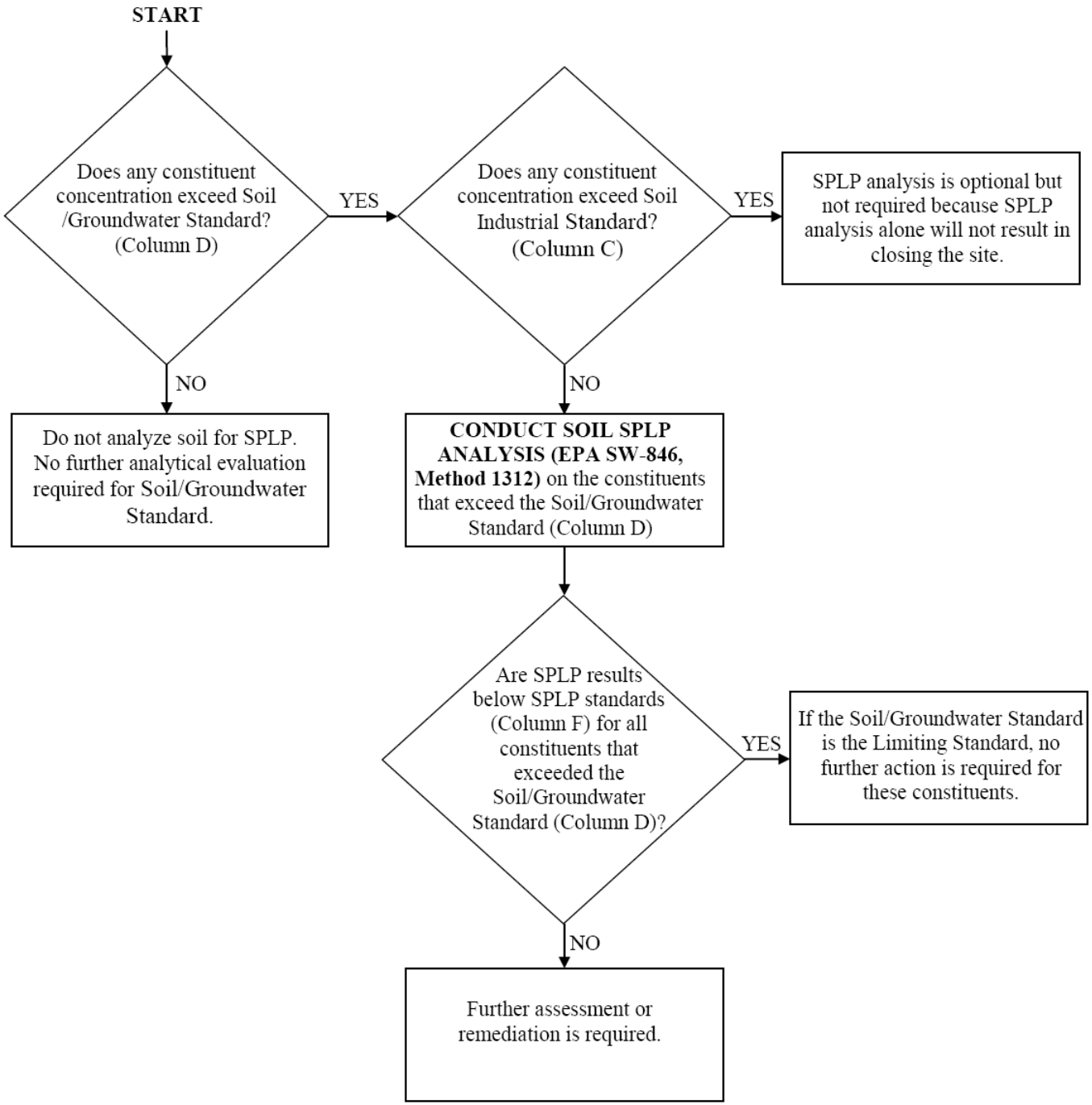
Constituents	CAS #	A Limiting Soil Standards (mg/kg)	B Non-Industrial Soil Standards (mg/kg)	C Industrial Soil Standards (mg/kg)	D Soil/Groundwater Standards (mg/kg)	E Groundwater Standards (GW1) (mg/L)	F SPLP (GW1 x 20) (mg/L)
Petroleum Constituents:							
Benzene	71-43-2	**0.051**	1.5	3.1	0.051	0.005	0.1
Toluene	108-88-3	**20**	68	470	20	1.0	20
Ethyl benzene	100-41-4	**19**	160	230	19	0.7	14
Xylene(mixed)	1330-20-7	**18**	18	120	150	10	200
MTBE (methyl tert-butyl ether)	1634-04-4	**0.077**	650	4700	0.077	0.020	0.4
TPH-GRO	NA	**65**	65	510	65	0.34	6.8
TPH-DRO	NA	**65**	65	510	65	0.34	6.8
TPH-ORO	NA	**180**	180	2500	10000	1.1	22
Aliphatics C6-C8	NA	**1200**	1200	8000	10000	32	640
Aliphatics >C8-C10	NA	**120**	120	880	5300	1.3	26
Aliphatics >C10-C12	NA	**230**	230	2000	10000	1.4	28
Aliphatics >C12-C16	NA	**370**	370	3800	10000	1.4	28
Aliphatics >C16-C35	NA	**7100**	7100	10000	10000	73	1460
Aromatics >C8-C10	NA	**65**	65	510	65	0.34	6.8
Aromatics >C10-C12	NA	**100**	120	1100	100	0.34	6.8
Aromatics >C12-C16	NA	**180**	180	2100	200	0.34	6.8
Aromatics >C16-C21	NA	**150**	150	1700	2100	1.1	22
Aromatics >C21-C35	NA	**180**	180	2500	10000	1.1	22

Section 8.2

Synthetic Precipitation Leaching Procedure (SPLP)

- Must run SPLP where applicable in order to close site if Soil/Groundwater Standard is the Limiting Soil Standard and the sample concentrations are below Non-Industrial Soil Standards
- Must collect enough sample volume at each sample location to be able to run SPLP
- Must run SPLP on the sample with the highest concentration

SPLP Decision Flowchart



Example

Benzene = 0.7mg/kg

- Above Limiting Soil Standard of 0.051mg/kg
- Some action is required
- If sample results are above the Limiting Soil Standard: Address the soil and groundwater pathways separately

Example

Benzene = 0.7mg/kg

- Soil Pathway:
  - Below Non-Industrial Soil (1.5mg/kg) and below Industrial Soil (3.1mg/kg)
  - Soil Pathway is ok
- Groundwater Pathway:
  - Above Soil/Groundwater Standard (0.051mg/kg)
  - Groundwater Pathway is not ok
  - Run SPLP
  - If SPLP result is below SPLP standard (0.1mg/l), NFA
  - If SPLP result is above SPLP standard, some action is required (excavate or RECAP evaluation)
- Running SPLP in this case is mandatory because it can be used to close out the site

Example

Benzene = 2.0mg/kg

- Above Limiting Soil Standard of 0.051mg/kg
- Some action is required
- If sample results are above the Limiting Soil Standard: Address the soil and groundwater pathways separately

Example

Benzene = 2.0mg/kg

- Soil Pathway:
  - Above Non-Industrial Soil (1.5mg/kg) and below Industrial Soil (3.1mg/kg)
  - Soil Pathway is not ok, some action is required
- Options
  - Excavate all soil that is above 1.5mg/kg
  - Conveyance notice
  - RECAP evaluation

Example

Benzene = 2.0mg/kg

- Groundwater pathway:
  - Above Soil/Groundwater Standard (0.051mg/kg)
  - Groundwater pathway is not ok
  - Run SPLP (always run on sample with highest concentration)
  - If SPLP result is below SPLP standard, GW pathway is ok
  - If SPLP result is above SPLP standard, further action is required (excavate or RECAP evaluation)
- Running SPLP in this case is not mandatory if soil pathway is not going to be addressed and the site is referred to USTD for a RECAP evaluation and/or remediation

Example

Benzene = 5.0mg/kg

- Above Limiting Soil Standard of 0.051mg/kg
- Some action is required
- If sample results are above the Limiting Soil Standard: Address the soil and groundwater pathways separately

Example

Benzene = 5.0mg/kg

- Soil Pathway:
  - Above Non-Industrial Soil (1.5mg/kg) and above Industrial Soil (3.1mg/kg)
  - Soil Pathway is not ok, some action is required
- Options
  - Excavate all soil that is above 1.5mg/kg
  - Excavate all soil that is above 3.1mg/kg and use a conveyance notice
  - RECAP evaluation and/or remediation

Example

Benzene = 5.0mg/kg

- Groundwater pathway:
  - Above Soil/Groundwater Standard (0.051mg/kg)
  - Groundwater pathway is not ok
  - Run SPLP (always run on sample with highest concentration)
  - If SPLP result is below SPLP standard, GW pathway is ok
  - If SPLP result is above SPLP standard, action required (excavate or RECAP evaluation)
- Running SPLP in this case is not mandatory if soil pathway is not going to be addressed and the site is referred to USTD for a RECAP evaluation and/or remediation

Example

Xylene = 130mg/kg

- Above Limiting Soil Standard of 18mg/kg
- Some action is required
- If sample results are above the Limiting Soil Standard: Address the soil and groundwater pathways separately

Example

Xylene = 130mg/kg

- Soil Pathway:
  - Above Non-Industrial Soil (18mg/kg) and above Industrial Soil (120mg/kg)
  - Soil Pathway is not ok, some action is required
- Options
  - Excavate all soil that is above 18mg/kg
  - Excavate all soil that is above 120mg/kg and use a conveyance notice
  - RECAP evaluation and/or remediation

Example

Xylene = 130mg/kg

- Groundwater pathway:
  - Below Soil/Groundwater Standard (150mg/kg)
  - Groundwater pathway is ok
  - No need to run SPLP

Section 8.3

Total Petroleum Hydrocarbon (TPH) Fraction Analysis

- Fractionate the TPH mixtures into their respective hydrocarbon fractions (carbon ranges) by running VPH/EPH analysis
- Hydrocarbon fraction data (VPH/EPH) always takes precedence over TPH mixture data
- VPH for TPH-GRO
- EPH for TPH-DRO and TPH-ORO

Section 8.3

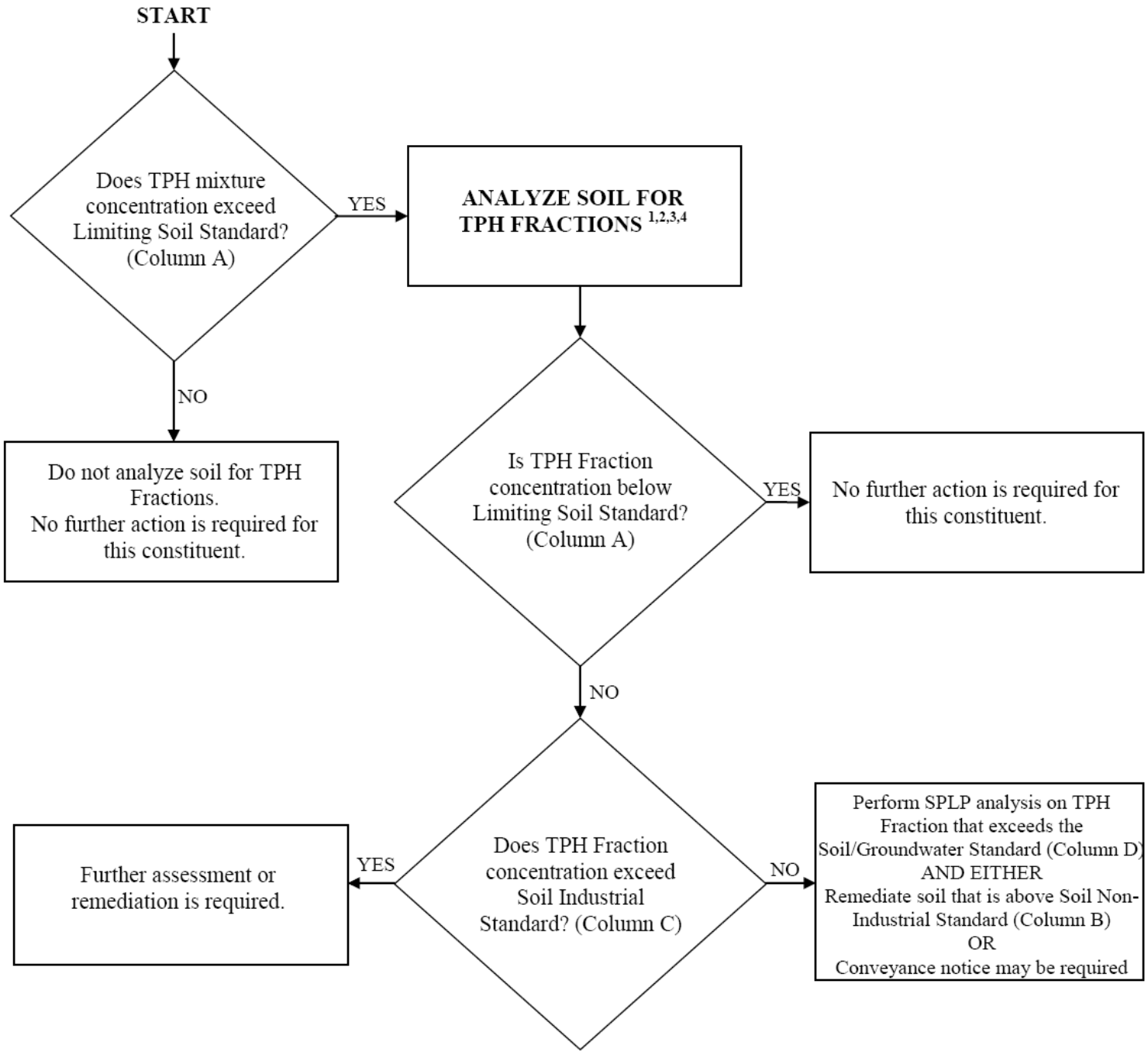
Total Petroleum Hydrocarbon (TPH) Fraction Analysis

- If a TPH mixture concentration exceeds Limiting Soil Standard, must run TPH fraction analysis
- Must collect enough sample volume at each location to be able to run TPH fraction analysis
- Must run TPH fraction analysis on the sample with the highest TPH mixture concentration
- If TPH mixture exceeds 10,000 mg/kg, contact USTD regional Office staff prior to fractionating

Table 1: Appropriate Hydrocarbon Fractions for Hydrocarbon Mixtures

Indicator Compound	TPH-GRO $C_{>6}$ - C_8 (Purgeable)	TPH-DRO C_{10} – C_{28} (Extractable)	TPH-ORO $C_{>28}$ (Extractable)
Aliphatics $C_{>6}$ - C_8	X		
Aliphatics $C_{>8}$ - C_{10}	X		
Aliphatics $C_{>10}$ - C_{12}		X	
Aliphatics $C_{>12}$ - C_{16}		X	
Aliphatics $C_{>16}$ - C_{35}		X	X
Aromatics $C_{>8}$ - C_{10}	X		
Aromatics $C_{>10}$ - C_{12}		X	
Aromatics $C_{>12}$ - C_{16}		X	
Aromatics $C_{>16}$ - C_{21}		X	
Aromatics $C_{>21}$ - C_{35}			X

TPH Fraction Decision Flowchart



Example

TPH-GRO = 550mg/kg

- Above Limiting Soil Standard of 65mg/kg
- Some action is required
  - Evaluate using VPH and/or SPLP
  - Excavate
- If sample results are above the Limiting Soil Standard: Address the soil and groundwater pathways separately

Example

TPH-GRO = 550mg/kg

- Run VPH analysis
  - For this example, the VPH results are
    - Aliphatics C_6-C_8 = 400mg/kg
    - Aliphatics $C_{>8}$-C_{10} = 100mg/kg
    - Aromatics C_8-C_{10} = 50mg/kg
  - Compare the individual hydrocarbon fraction results to the Limiting Soil Standards for each constituent
  - All are below Limiting Soil Standards for each carbon fraction – no action needed

		A	B	C	D	E	F
Constituents	**Result**	**Limiting Soil Standards (mg/kg)**	**Non-Industrial Soil Standards (mg/kg)**	**Industrial Soil Standards (mg/kg)**	**Soil/Groundwater Standards (mg/kg)**	**Groundwater Standards (GW1) (mg/L)**	**SPLP (GW1 x 20) (mg/L)**
Petroleum Constituents:							
Benzene		**0.051**	1.5	3.1	0.051	0.005	0.1
Toluene		**20**	68	470	20	1.0	20
Ethyl benzene		**19**	160	230	19	0.7	14
Xylene(mixed)		**18**	18	120	150	10	200
MTBE (methyl tert-butyl ether)		**0.077**	650	4700	0.077	0.020	0.4
TPH-GRO		**65**	65	510	65	0.34	6.8
TPH-DRO		**65**	65	510	65	0.34	6.8
TPH-ORO		**180**	180	2500	10000	1.1	22
Aliphatics C6-C8	400	**1200**	1200	8000	10000	32	640
Aliphatics >C8-C10	100	**120**	120	880	5300	1.3	26
Aliphatics >C10-C12		**230**	230	2000	10000	1.4	28
Aliphatics >C12-C16		**370**	370	3800	10000	1.4	28
Aliphatics >C16-C35		**7100**	7100	10000	10000	73	1460
Aromatics >C8-C10	50	**65**	65	510	65	0.34	6.8
Aromatics >C10-C12		**100**	120	1100	100	0.34	6.8
Aromatics >C12-C16		**180**	180	2100	200	0.34	6.8
Aromatics >C16-C21		**150**	150	1700	2100	1.1	22
Aromatics >C21-C35		**180**	180	2500	10000	1.1	22

Example

TPH-DRO = 8000mg/kg

- Above Limiting Soil Standard of 65mg/kg
- Some action is required
  - Evaluate using EPH and/or SPLP
  - Excavate
- If sample results are above the Limiting Soil Standard: Address the soil and groundwater pathways separately

Example

TPH-DRO = 8000mg/kg

- Run EPH analysis
  - For this example, the VPH results are
    - Aliphatics $C_{>10}$-C_{12} = 300mg/kg
    - Aliphatics $C_{>12}$-C_{16} = 300mg/kg
    - Aliphatics $C_{>16}$-C_{35} = 7000mg/kg
    - Aromatics $C_{>10}$-C_{12} = 110mg/kg
    - Aromatics $C_{>12}$-C_{16} = 150mg/kg
    - Aromatics $C_{>16}$-C_{21} = 140mg/kg
  - Compare the individual hydrocarbon fractions to the Limiting Soil Standards for each constituent

		A	B	C	D	E	F
Constituents	**Result**	**Limiting Soil Standards (mg/kg)**	**Non-Industrial Soil Standards (mg/kg)**	**Industrial Soil Standards (mg/kg)**	**Soil/Groundwater Standards (mg/kg)**	**Groundwater Standards (GW1) (mg/L)**	**SPLP (GW1 x 20) (mg/L)**
Petroleum Constituents:							
Benzene		**0.051**	1.5	3.1	0.051	0.005	0.1
Toluene		**20**	68	470	20	1.0	20
Ethyl benzene		**19**	160	230	19	0.7	14
Xylene(mixed)		**18**	18	120	150	10	200
MTBE (methyl tert-butyl ether)		**0.077**	650	4700	0.077	0.020	0.4
TPH-GRO		**65**	65	510	65	0.34	6.8
TPH-DRO		**65**	65	510	65	0.34	6.8
TPH-ORO		**180**	180	2500	10000	1.1	22
Aliphatics C6-C8		**1200**	1200	8000	10000	32	640
Aliphatics >C8-C10		**120**	120	880	5300	1.3	26
Aliphatics >C10-C12	300	**230**	230	2000	10000	1.4	28
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Aromatics >C8-C10		**65**	65	510	65	0.34	6.8
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Aromatics >C12-C16	150	**180**	180	2100	200	0.34	6.8
Aromatics >C16-C21	140	**150**	150	1700	2100	1.1	22
Aromatics >C21-C35		**180**	180	2500	10000	1.1	22

Example

TPH-DRO = 8000mg/kg

- Aliphatics $C_{>10\text{-}12}$ and Aromatics $C_{>10\text{-}12}$ concentrations exceed Limiting Soil Standards
- Both the Soil and Groundwater pathways have to be addressed for these constituents before the site can be NFA'd

Example

TPH-DRO = 8000mg/kg

- Aliphatics $C_{>10\text{-}12}$ = 300mg/kg
- Soil pathway:
  - Aliphatics $C_{>10\text{-}12}$ concentration is greater than Non-Industrial Soil (230mg/kg) and less than Industrial Soil Standards (2000mg/kg)
  - Soil pathway is not ok, further action is required
- Groundwater pathway:
  - Aliphatics $C_{>10\text{-}12}$ concentration is less than the Soil/Groundwater Standard (10000mg/kg)
  - Groundwater pathway is ok, no further action is required for this pathway

Example

TPH-DRO = 8000mg/kg

- Aliphatics $C_{>10\text{-}12}$ = 300mg/kg
- Soil pathway options:
  - Excavate until Aliphatics $C_{>10\text{-}12}$ concentration remaining in the soil is less than the Non-Industrial Soil Standard (230mg/kg)
  - Close with a Conveyance Notice
  - RECAP evaluation and/or remediation

		A	B	C	D	E	F
Constituents	**Result**	**Limiting Soil Standards (mg/kg)**	**Non-Industrial Soil Standards (mg/kg)**	**Industrial Soil Standards (mg/kg)**	**Soil/Groundwater Standards (mg/kg)**	**Groundwater Standards (GW1) (mg/L)**	**SPLP (GW1 x 20) (mg/L)**
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Aliphatics >C10-C12	300	**230**	230	2000	10000	1.4	28
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Aliphatics >C16-C35	7000	**7100**	7100	10000	10000	73	1460
Aromatics >C8-C10		**65**	65	510	65	0.34	6.8
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Aromatics >C12-C16	150	**180**	180	2100	200	0.34	6.8
Aromatics >C16-C21	140	**150**	150	1700	2100	1.1	22
Aromatics >C21-C35		**180**	180	2500	10000	1.1	22

Example

TPH-DRO = 8000mg/kg

- Aromatics $C_{>10\text{-}12}$ = 110mg/kg
- Soil pathway:
  - Aromatics $C_{>10\text{-}12}$ concentration is less than the Non-Industrial Soil Standard (120mg/kg)
  - Soil pathway is ok, no further action is required for this pathway
- Groundwater pathway:
  - Aromatics $C_{>10\text{-}12}$ concentration exceeds the Soil/Groundwater Standard (100mg/kg)
  - Groundwater pathway is not ok, further action is required

Example

TPH-DRO = 8000mg/kg

- Aromatics $C_{>10\text{-}12}$ = 110mg/kg
- Groundwater pathway:
  - Run SPLP on Aromatics $C_{>10\text{-}12}$
  - If SPLP Aromatics $C_{>10\text{-}12} \leq 6.8$mg/l, then NFA
  - If SPLP Aromatics $C_{>10\text{-}12} > 6.8$mg/l, then further action is required (excavation or RECAP evaluation and/or remediation)

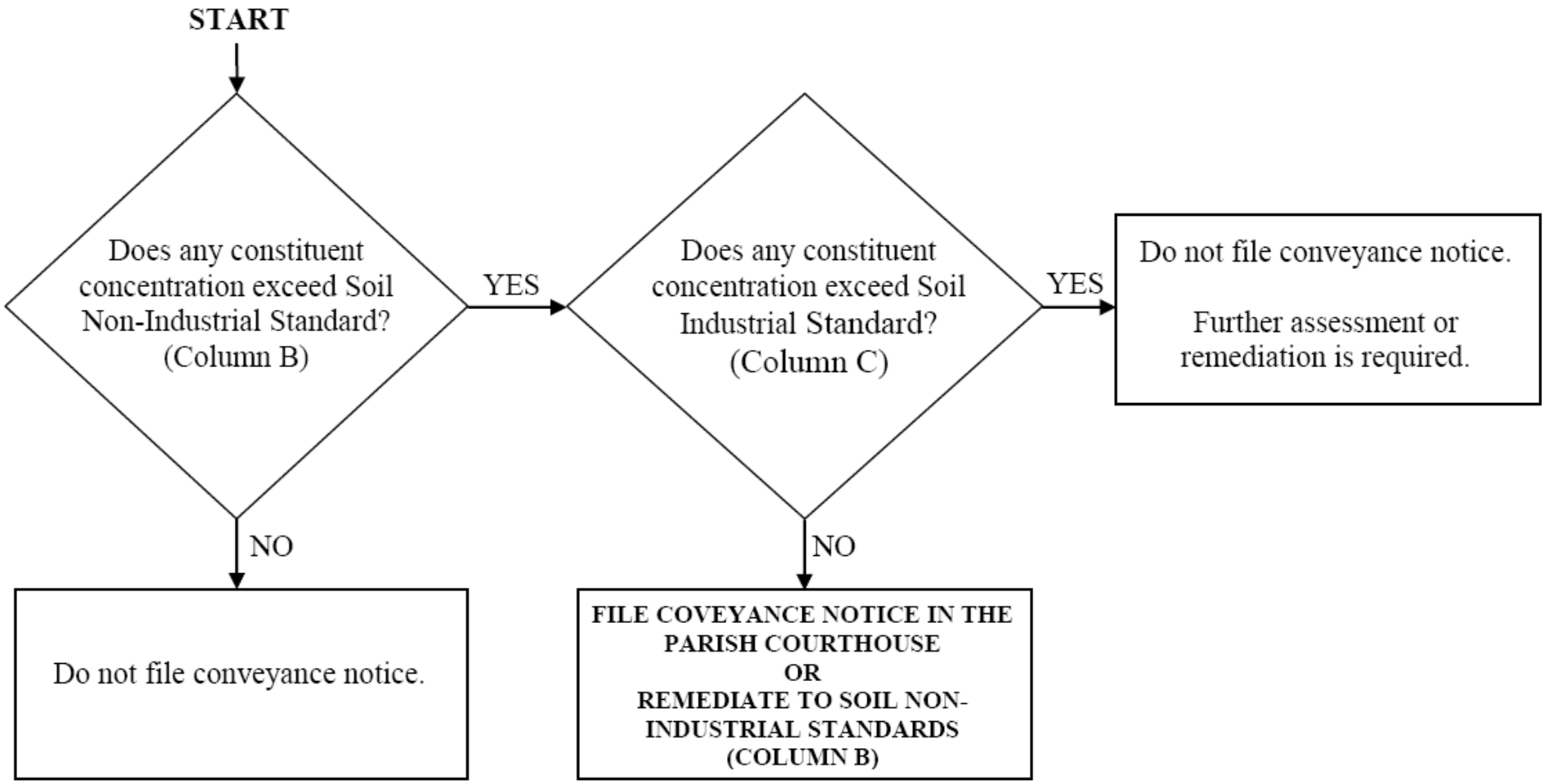
Section 8.4
Conveyance Notice Filing

- Conveyance notice is a legal instrument recorded in the parish conveyance records for the subject property
- If residual soil contamination concentrations exceed Non-Industrial Soil Standards, conveyance notice filing is required

Section 8.4
Conveyance Notice Filing

- Can be used in lieu of remediating to Non-Industrial Soil Standards, but is not mandatory
- Property owner must approve its use
- Submit draft conveyance to USTD staff prior to filing
- Must be completed within 60 days of closure and submitted with Assessment Report

Conveyance Notice Decision Flowchart



Section 8.5
Enclosed Structure Evaluation

- LDEQ UST Division may evaluate site to enclosed structure standards if any structure (on a slab with roof) is located within 10 feet of any soil sample location
- Site-specific basis
- Reason why “to scale” map is required

Section 9
Contaminated Soil Re-Use or Disposal

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Contaminated Soil Re-Use or Disposal

- Contaminated soil must be managed properly
- Returned into tank hold
  - Manage using UST Soil Screening Standards
- Re-used on-site (different location from tank hold) or off-site
  - Manage using Soil Re-Use section in RECAP
- Disposed
  - Must profile (contact disposal facility for sample requirements)
  - If non-hazardous – industrial solid waste facility (Appendix L)
  - If hazardous, contact LDEQ Regional Office Surveillance Division for assistance

Section 10
Contaminated Water Discharge or Disposal

Section 10

Contaminated Water Discharge or Disposal

- Contaminated water must be managed properly
- Discharged
  - Requires a LDEQ Permit
  - Contact Municipal and General Permits Division – 225-219-3181
- Recycled
  - Appropriate recycling facility
- Disposed
  - Must profile (contact disposal facility for sample requirements)
  - If non-hazardous – industrial solid waste facility (Appendix L)
  - If hazardous, contact LDEQ Regional Office Surveillance Division for assistance

Section 11
Record Keeping

Section 11
Record Keeping

- UST owner must keep records (LAC 33:XI.509.B.7)
  - NOI (UST-SURV-01)
  - Assessment form (UST-SURV-02)
  - Assessment report
    - Site Drawing
    - Analytical Results Table
    - Sample Chain-of-Custody
    - Manifests
      - Tank
      - Tank Contents (product, sludge, water, wash water)
      - Contaminated Soil or Groundwater
    - Tank Bill of Sale if not disposed
    - Conveyance Notice (if filed)
  - All correspondence with LDEQ
  - Photographs of closure

USTD Regional Office Contacts

Southeast Regional Office (SERO)
201 Evans Road, Bldg. 4, Suite 420
New Orleans, LA 70123
(504) 736-7701
Fax (504) 736-7702

Northeast Regional Office (NERO)
1823 Hwy 546
West Monroe, LA 71292
(318) 362-5439
Fax (318) 362-5448

Bayou Lafourche Office (BLRO)
(BLRO is a sub-office of SERO)
110 Barataria Street
Lockport, LA 70374
(985) 532-6206
Fax (985) 532-9945

Kisatchie Central Office (KCRO)
(KCRO is a sub-office of NERO)
402 Rainbow Drive, Bldg 402
Pineville, LA 71360
(318) 487-5656
Fax (318) 487-5927

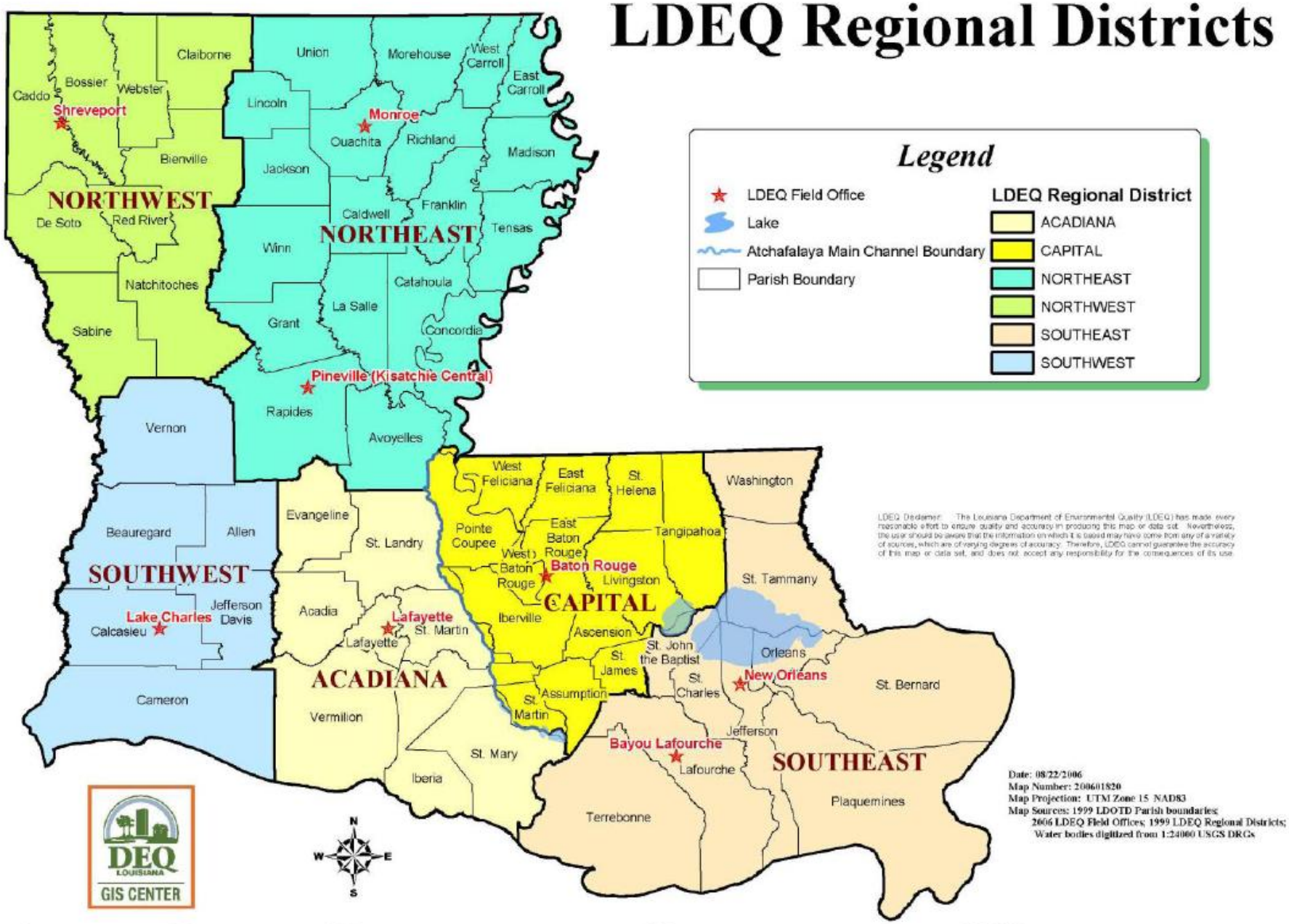
Capital Regional Office (CRO)
Attn: UST Division – Surveillance Process
P. O. Box 4313
Baton Rouge, LA 70821
(225) 219-3236
Fax (225) 219-3474

Northwest Regional Office (NWRC
1525 Fairfield Avenue, Room 520
Shreveport, LA 71101
(318) 676-7476
Fax (318) 676-7573

Acadiana Regional Office (ARO)
111 New Center Drive
Lafayette, LA 70508
(337) 262-5584
Fax (337) 262-5593

Southwest Regional Office (SWRC
1301 Gadwall St.
Lake Charles, LA 70615
(337) 491-2667
Fax (337) 491-2682

LDEQ Regional Districts



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Map Sources: 1999 LDOTD Parish boundaries;
2606 LDEQ Field Offices; 1999 LDEQ Regional Districts;
Water bodies digitized from 1:24000 USGS DRGs

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