

Municipal Setting Designations



MSDs: Another tool for Houston

Richard Chapin
Sr. Project Manager

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Brownfields Program Manager

Municipal Setting Designations (MSDs)

Agenda



■ City of Houston

- Why we are here
- Who the MSD impacts
- What an MSD is
- Why support an MSD
- Steps in the MSD process
- Questions/Comments

■ MSD Applicant

- Specific information on the site
18310 Market Street
- Questions/Comments

Why Are We Here



- Inform you about an MSD application
 - MSJ Holdings, L.P. (Southwest Shipyard)
 - MSD #2011-036-SWS
- Explain what an MSD is and what it does for the applicant, the local community, and the City
- Receive public comments

MSD Notice Letters



CITY OF HOUSTON
Public Works and Engineering Department

Annie D. Parker
Mayor

Michael S. Marotta, P.E., D.WRE, BCEE
Director
P.O. Box 1962
Houston, Texas 77251-1962

www.houstontx.gov

February 3, 2010

RE: MSD Application #2009-022-FCE
1111 Lockwood Drive, Houston, TX 77020

Dear Recipient:

Enclosed is a public meeting notice about an upcoming meeting in your area. This is an informational meeting about a property at 1111 Lockwood Drive, Houston, TX 77020 that has contaminated groundwater. We welcome you to attend the public meeting, but it is not mandatory that you come.

The public meeting will be held at:
3/11/2010
6:00 PM
Ripley House
4410 Navigation, Houston, TX 77011

The following notice will give you additional details about the type of contamination that has been found at the site. Please note: the groundwater contamination at the site is very shallow and is not the groundwater that the City of Houston uses for some of its drinking water. Most of the City's drinking water is now from surface water (Lakes Houston, Conroe, and Livingston).

The purpose of this public meeting is to inform you, the nearby neighbors and well owners, about the Municipal Settings Designation (MSD) program and the application. During the meeting a representative from the city will talk about the MSD program and then the MSD applicant will talk about the site. You may come to the meeting just to listen or you can share a comment. Comments can be given in person at the meeting or you can send them to the State of Texas and/or to the City of Houston at the following addresses.

Mr. Scott Setlemeyer
Remediation Division
Texas Commission on Environmental Quality
P.O. Box 13087, MC-225
Austin, Texas 78711.

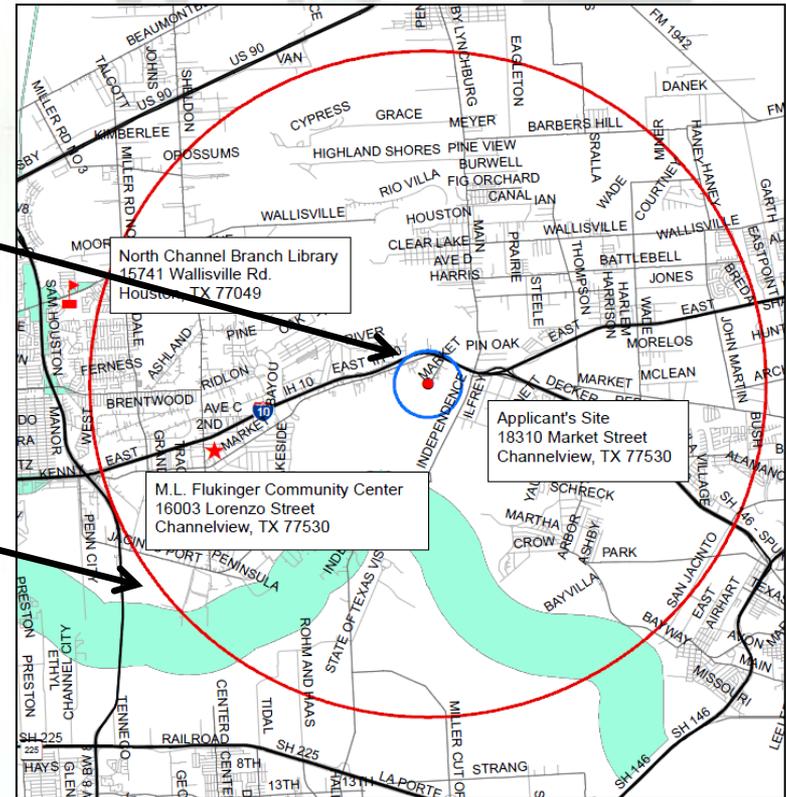
Richard Chapin
Public Works and Engineering Department
City of Houston
611 Walker, 19th Fl.
Houston, Texas 77002
msd@cityofhouston.net
(713) 837-0928

A MSD is the way the city can legally say that the contaminated groundwater at a property cannot be used for drinking water now or in the future, thereby protecting public health. It may also help a contaminated site develop or redevelop because the state's requirements to clean up contaminated groundwater may be set at levels based on this restriction. The MSD does not excuse the applicant from clean up activities such as removing the surface soil or reducing other risks to the public.

Council Members: Brenda Stapp, Janis Johnson, Anne Clatterbun, Wanda Adams, Mike Sullivan, Al Huang, Oliver Pennington, Edward Gonzalez, James C. Rodriguez, Stephen C. Canale, Sue Lovell, Melissa Santiago, C.O. "Short" Bradford, Amanda G. Jones, Constance Floriano, Green

Property Owners
First-Class Mail
½-Mile Radius
City Requirement

Water Well Owners
Certified Mail
5-Mile Radius
State Requirement



Who the MSD Impacts



- Unless you are the applicant:
 - An MSD **does not affect** your property
 - An MSD **does not affect** your water well
 - There are **no requirements** on you
- Drinking water supplied by the City is not affected

What an MSD is



- Voluntary deed restriction to prevent the use of contaminated groundwater
 - State program created in 2003
 - Texas Commission on Environment Quality (TCEQ)
 - City process created in November 2007
 - Public Works & Engineering
- TCEQ cannot approve an MSD without the City Council's support

What an MSD is



- Another tool to address groundwater contamination



- Houston has shallow groundwater contamination scattered across the city
 - Program considers 200 feet below the surface

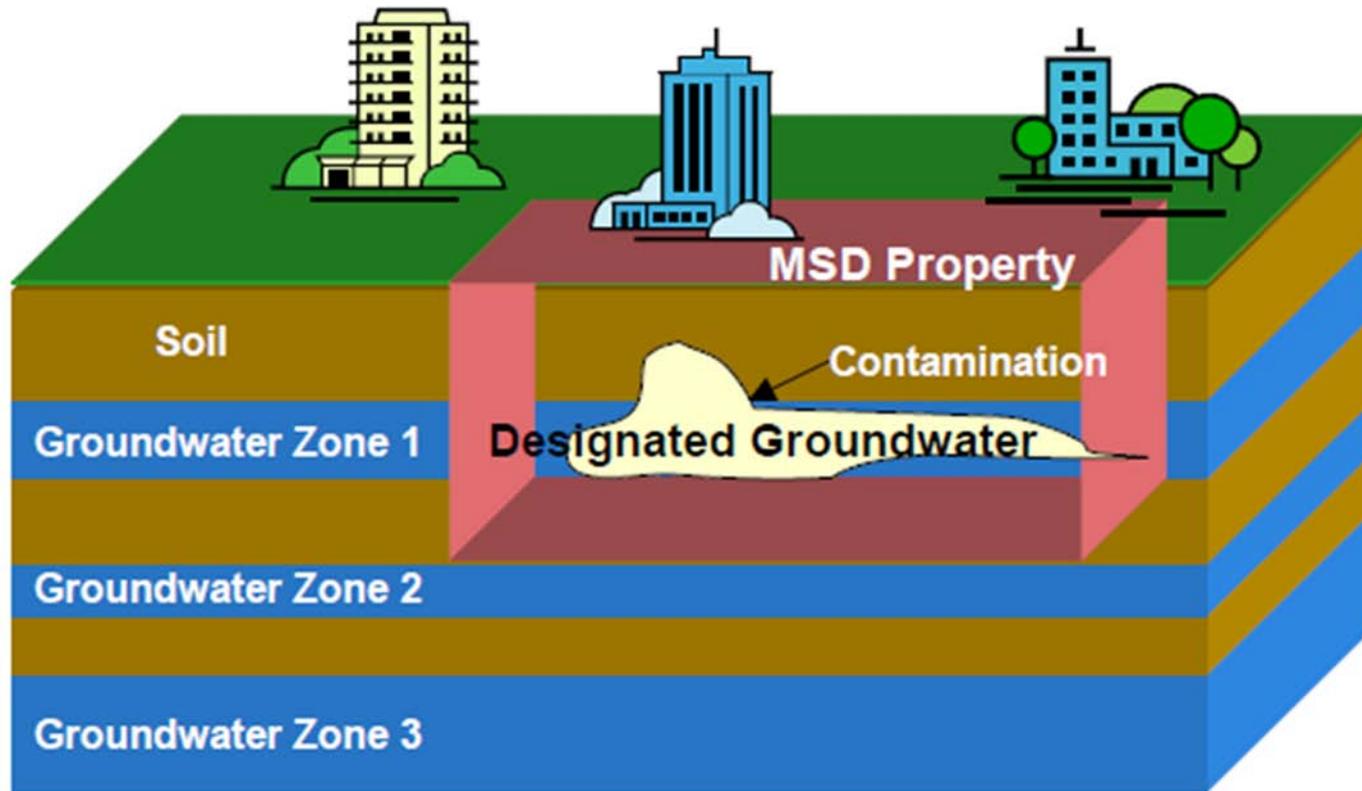
City Water Supply



- Houston's drinking water comes from either deep aquifers (20%) or surface water (80%)
 - Surface water supply
 - Lake Houston
 - Lake Conroe
 - Lake Livingston
 - Trinity River



Shallow Contamination



Impacted groundwater is typically between 20 and 60 feet below the surface.

Drinking Water Supply Wells typically get water from 600 feet or deeper below the surface.

Problems of Traditional Remediation Methods



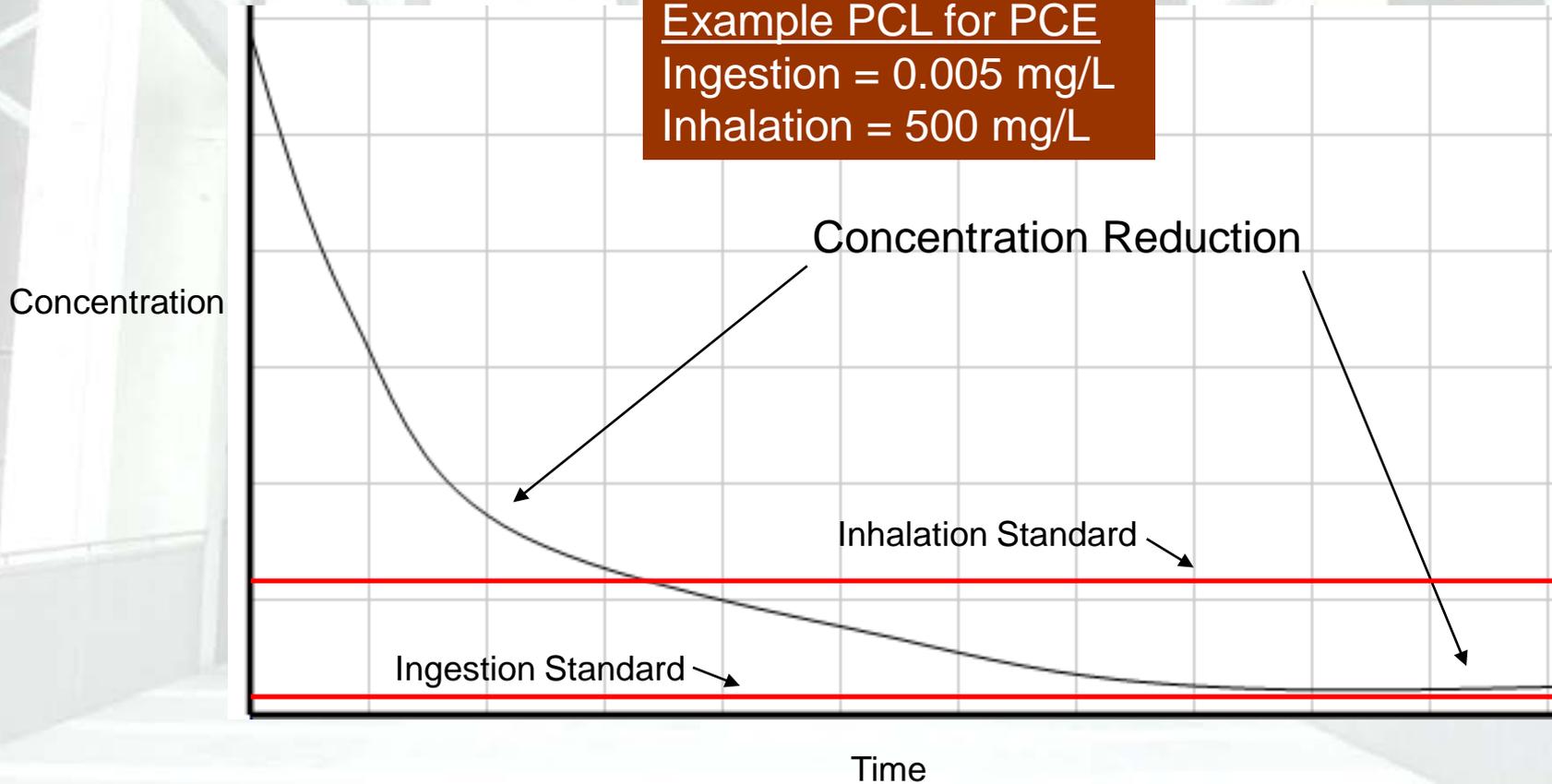
- Groundwater must be cleaned to drinking water standards even if:
 - There is no need or desire to use it, or
 - Water bearing zone is too silty, too salty, or low
 - producing
- Groundwater remediation to drinking water standards is inefficient, costly, and can take decades



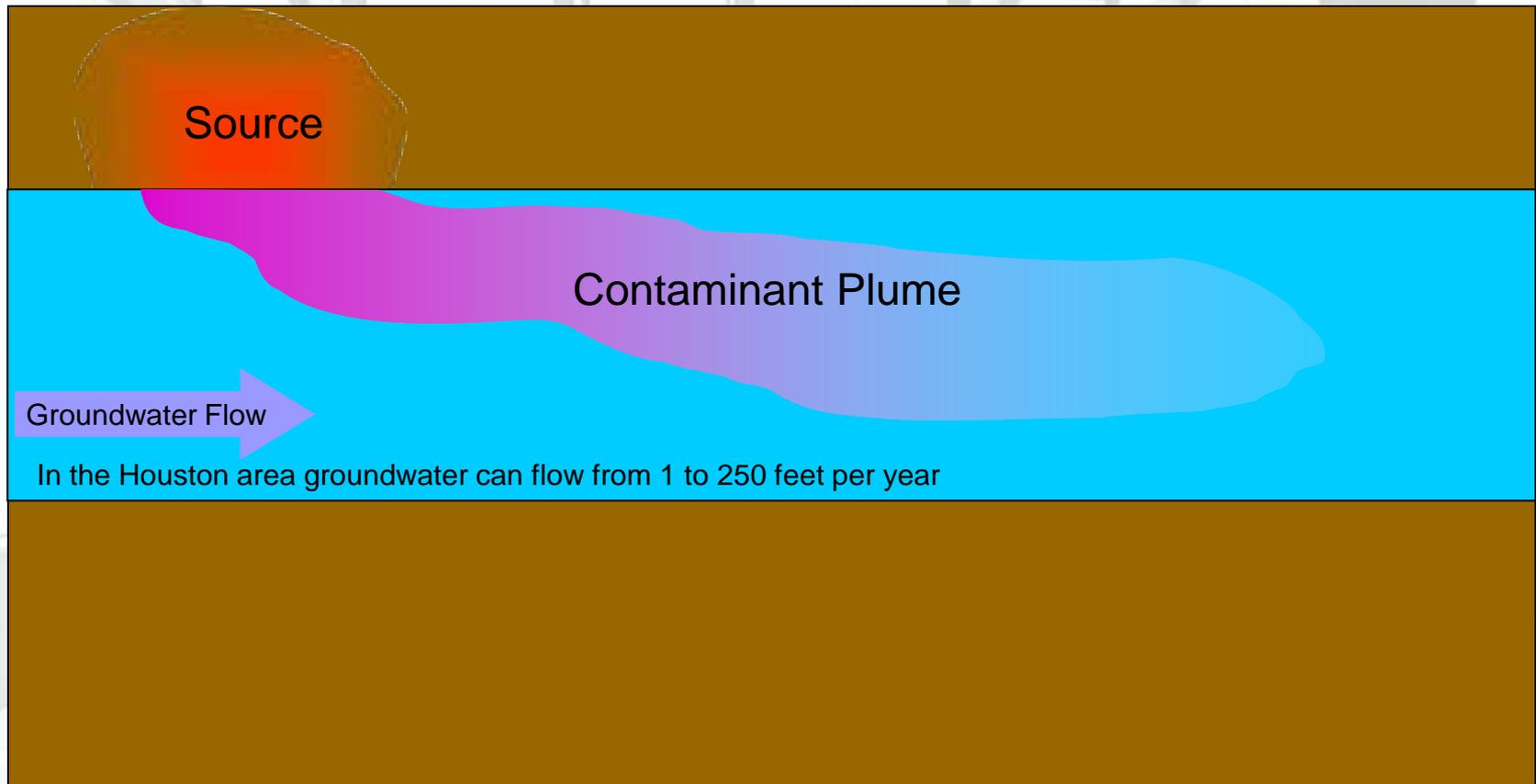
Groundwater Remediation



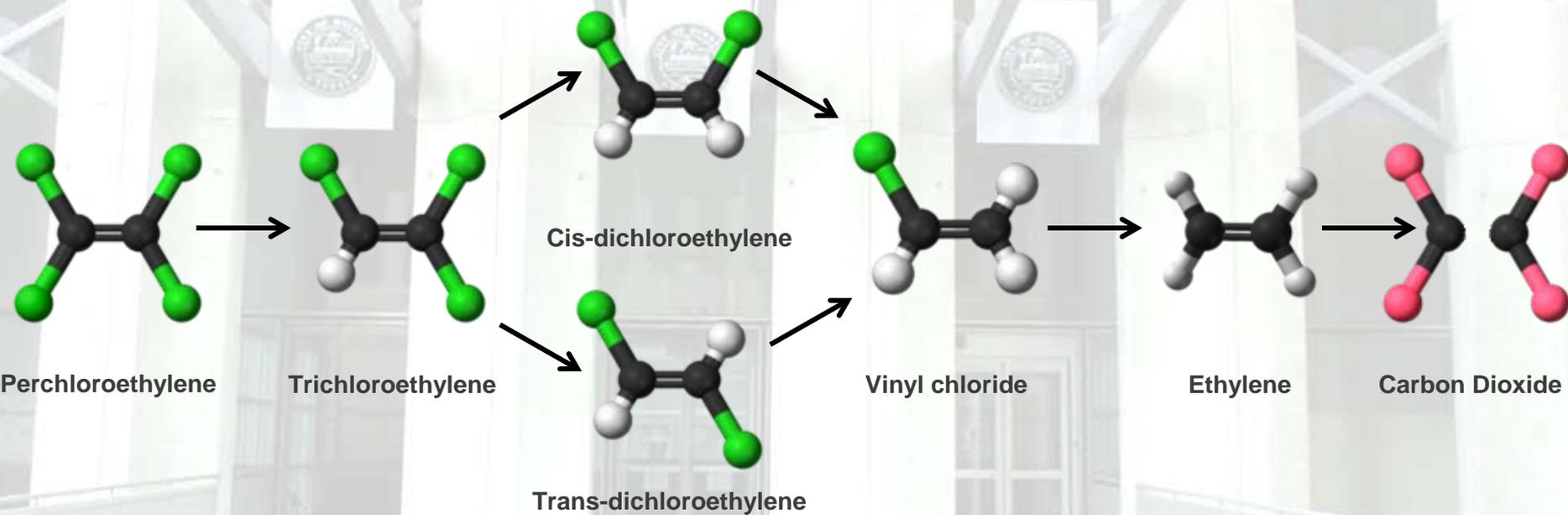
Example PCL for PCE
Ingestion = 0.005 mg/L
Inhalation = 500 mg/L



Contaminant Flow



Natural Attenuation



Applicant's Responsibility



- An MSD does **NOT** excuse the applicant from reducing other risks to the public

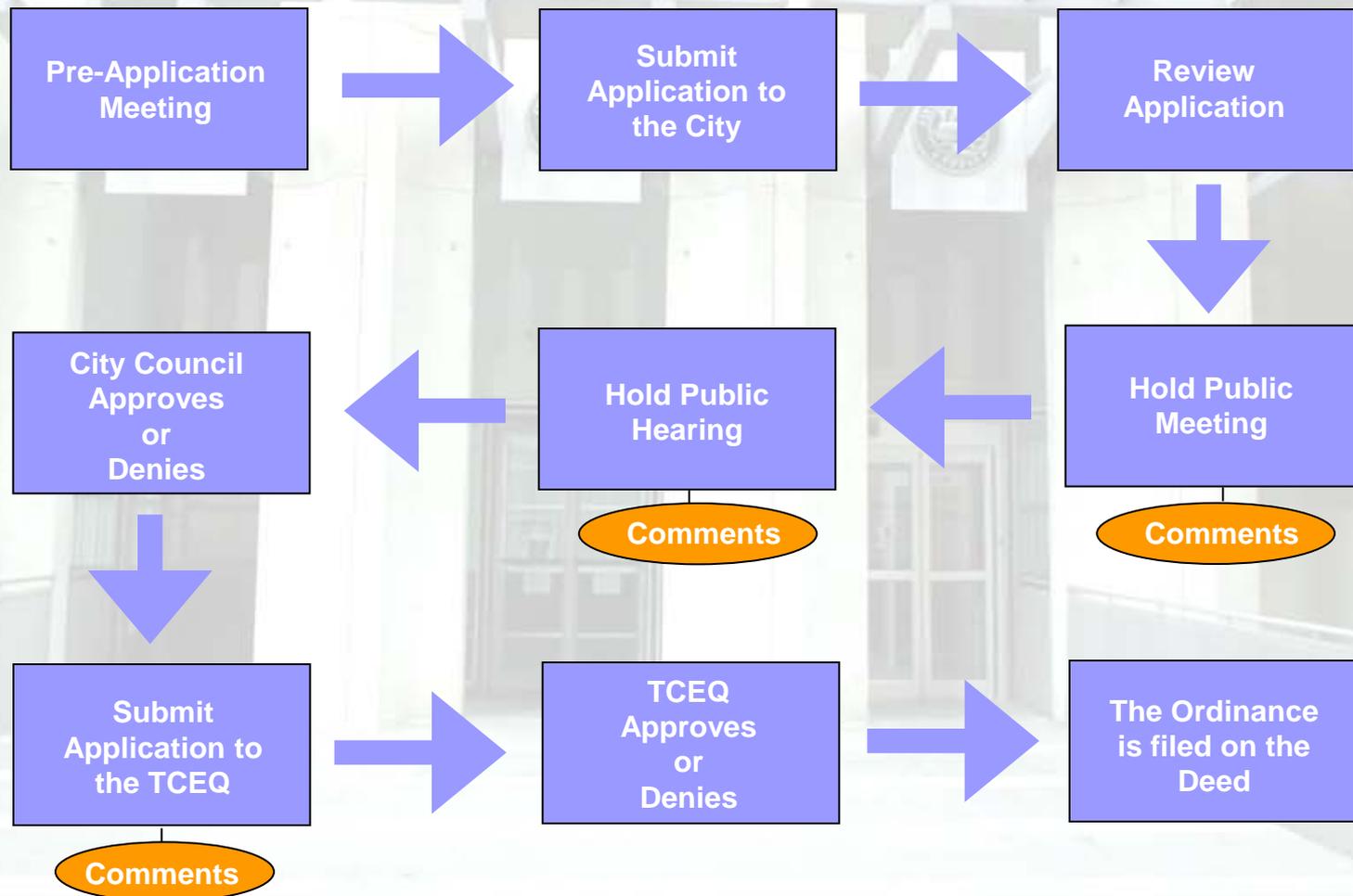
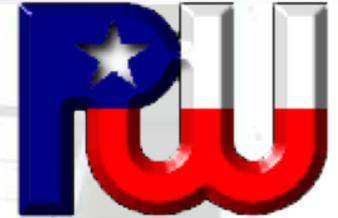
- Owner must address other exposure pathways
 - Non-Ingestion
 - Soil
 - Vapors
 - Runoff and other flows

City's Requirements of the Applicant



- Enrollment in a State or Federal cleanup program
- Thorough investigation
 - Data must show that the groundwater plume is stable or decreasing.
- A **third party** Professional Engineer (P.E.) or Professional Geologist (P.G.) must be willing to certify that the plume is stable or decreasing.

Steps in the Process

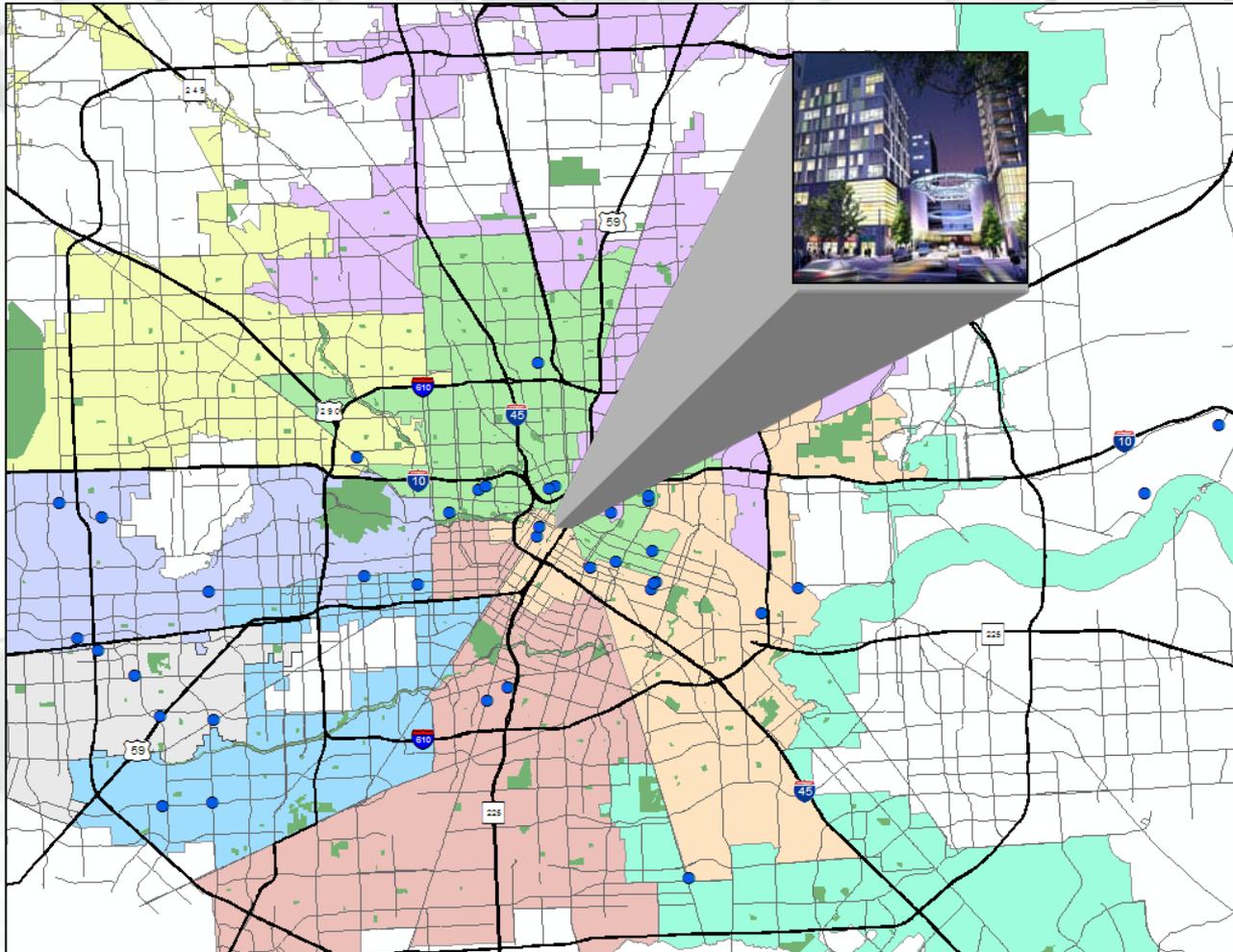


Why Support An MSD?



- Protects the public from consumption of shallow contaminated groundwater
- Encourages clean-up of contaminated sites through participation in a State or Federal program
- Promotes redevelopment of under-utilized properties

MSD Sites in Houston



Municipal Setting Designations (MSDs)

MSD Application



- North Channel Branch Library reference desk
- 15741 Wallisville Rd.
Houston, TX 77049

The MSD Website



The screenshot shows the City of Houston website interface. At the top, there is a navigation bar with links for Home, Government, Residents, Business, Departments, Visitors, and En Español. Below this is a search bar and a main content area titled 'Public Works and Engineering'. On the left, there is a 'Departmental Links' sidebar with various categories like Engineering and Construction, Planning and Development, Public Utilities, Resource Management, Right of Way and Fleet Maintenance, Traffic and Transportation, and Directors Office. The main content area is titled 'Municipal Settings Designation' and features a 'History' section, 'General Information' with a bulleted list of site requirements, and 'Forms and Information' with links to application forms and FAQs. An arrow points from the 'MSD in Review' link in the sidebar to a larger, detailed view of the website content on the right.

www.houstonmsd.org

For more information concerning the application or process of an MSD in Houston, call:

Carol Ellinger Haddock
Senior Assistant Director, PE
PW&E/Planning & Development Services Division
PH 713.837.0928
FX 713.837.0658

- o [MSD Calendar](#)
- o [MSD Completed](#)
- o [MSD in Review](#)

Municipal Setting Designations (MSDs)

The MSD Website



MSD in Review

Carol Ellinger Haddock , Assistant Director, P.E.

MSD in Review

Differential Development – 1994, Ltd. #2008-012-DD (Lantern Lane Shopping Center Site)	
Executive Summary	
Full Application	
Hoerbiger Corp. of America Inc. and Morgan Advanced Materials and Tech. Inc. # 2009-016-Milby (Milby Street Site)	
Executive Summary	
Full Application	
Estate of Isadore and Esther Robinson # 2009-020-GMI (Former Gulf Metals Industries Landfill Site)	
Executive Summary	
Full Application	
Public Meeting Notice	
Public Meeting Presentation	
Silver Bishop Holdings, LP #2010-025-NOR (Navigation-Norwood Site)	
Executive Summary	
Full Application	
Public Meeting Notice	
Public Meeting Presentation	

MSD Calendar

Carol Ellinger Haddock , Assistant Director, P.E.

Municipal Settings Designations Calendar

Information on the latest meetings, conferences, and events.

Date	Time	Event
07/14/2010	9:00 AM	Public Hearing: FPA/PinPoint Mykawa, LLC. (MSD # 2009-020-GMI) City Hall Council Chambers, 2nd Floor, 901 Bagby, Houston, TX 77002
07/20/2010	6:00 PM	Public Meeting: Schlumberger Technology Corporation (MSD #2010-027-STC) Judson Robinson Jr. Community Center, 2020 Hermann Dr., Houston, TX 77004
08/03/2010	6:00 PM	Public Meeting: Differential Development - 1994, Ltd. (MSD #2008-012-DD) Tracey Gee Community Center, 3599 Westchase Dr., Houston, TX 77042
08/04/2010	9:00 AM	Public Hearing: BAE Systems Resolutions Corporation, Inc. (MSD #2010-026-FSS) City Hall Council Chambers, 2nd Floor, 901 Bagby, Houston, TX 77002
08/24/2010	6:00 PM	Public Meeting: Board of Regents of the University of Texas System (MSD #2010-028-ACD) Judson Robinson Jr. Community Center, 2020 Hermann Dr., Houston, TX 77004

Public Hearing



- Date: Thursday, June 16, 2011
- Time: 10:00 am
- Place: City Council Chamber (Committee Meeting)
Development and Regulatory Affairs
- Address: 901 Bagby, Second Floor
Houston, Texas 77002

Any person wishing to speak on this issue must arrive at least 15 min early and sign the speakers list located on the front desk.

Contact Information



Richard Chapin
Senior Project Manager

&

Jedediah Greenfield
Brownfields Program Manager

Public Works & Engineering
City of Houston,
611 Walker, 19th Floor
Houston, Texas 77002



msd@houstontx.gov
(832) 395-2699

Municipal Setting Designations (MSDs)

Contact Information



Scott Settemeyer

Remediation Division

Texas Commission on Environmental Quality

P.O. Box 13087, MC-225

Austin, Texas 78711

ssetteme@tceq.state.tx.us



MSJ Holdings, LP Municipal Setting Designation Public Meeting

W&M Environmental Group
May 16, 2010



W&M Environmental Group

- **Andy Adams, CAPM**
 - **BS Environmental Studies, University of Kansas**
 - **MS Environmental Chemistry, University of Minnesota**
 - **On-Site Project Manager**
- **Gene Murray, PG**
 - **BS Geology, University of South Dakota**
 - **MS Geology, University of Nebraska**
 - **MS Management, University of Texas-Dallas**
 - **30 years of experience**

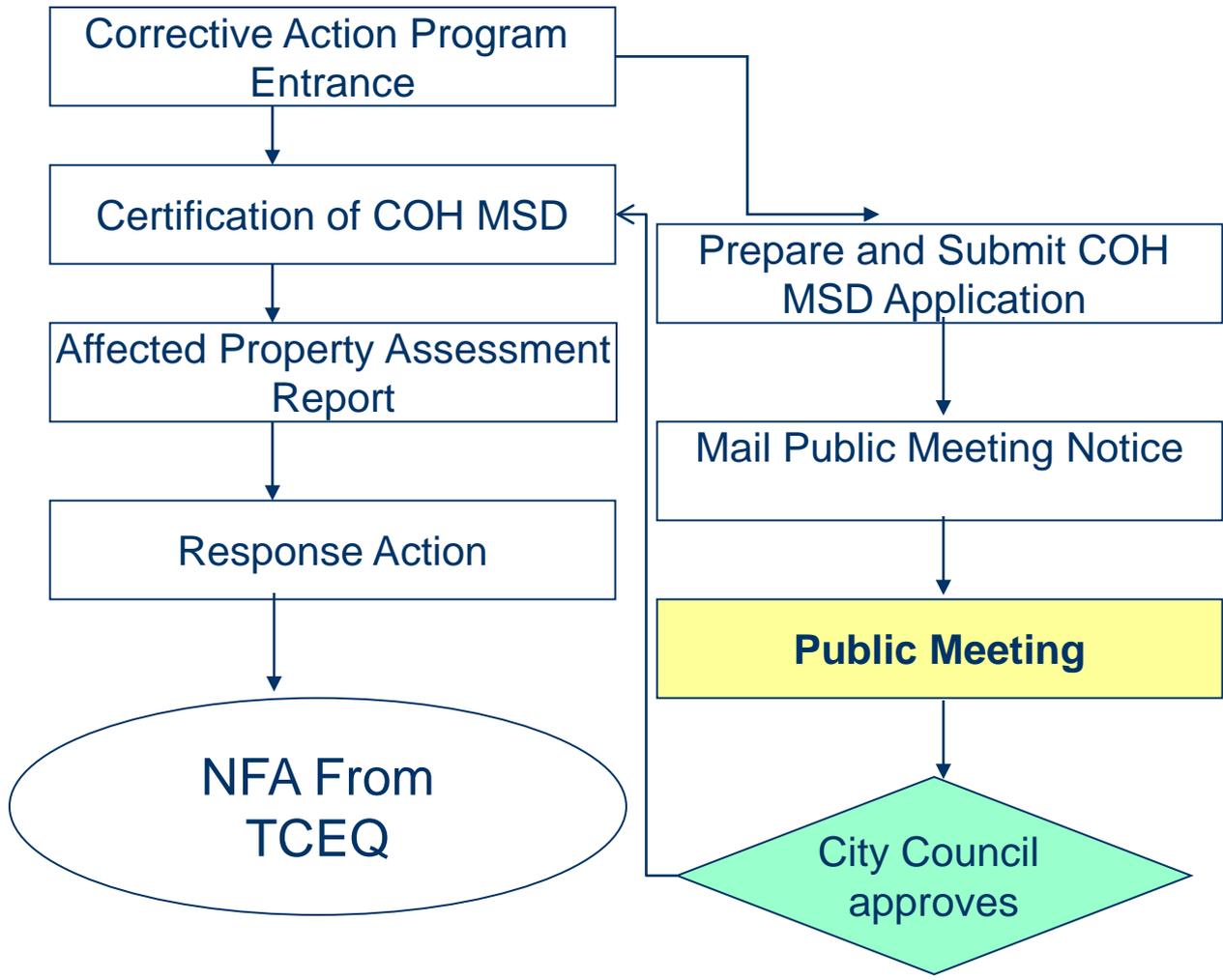


Public Information

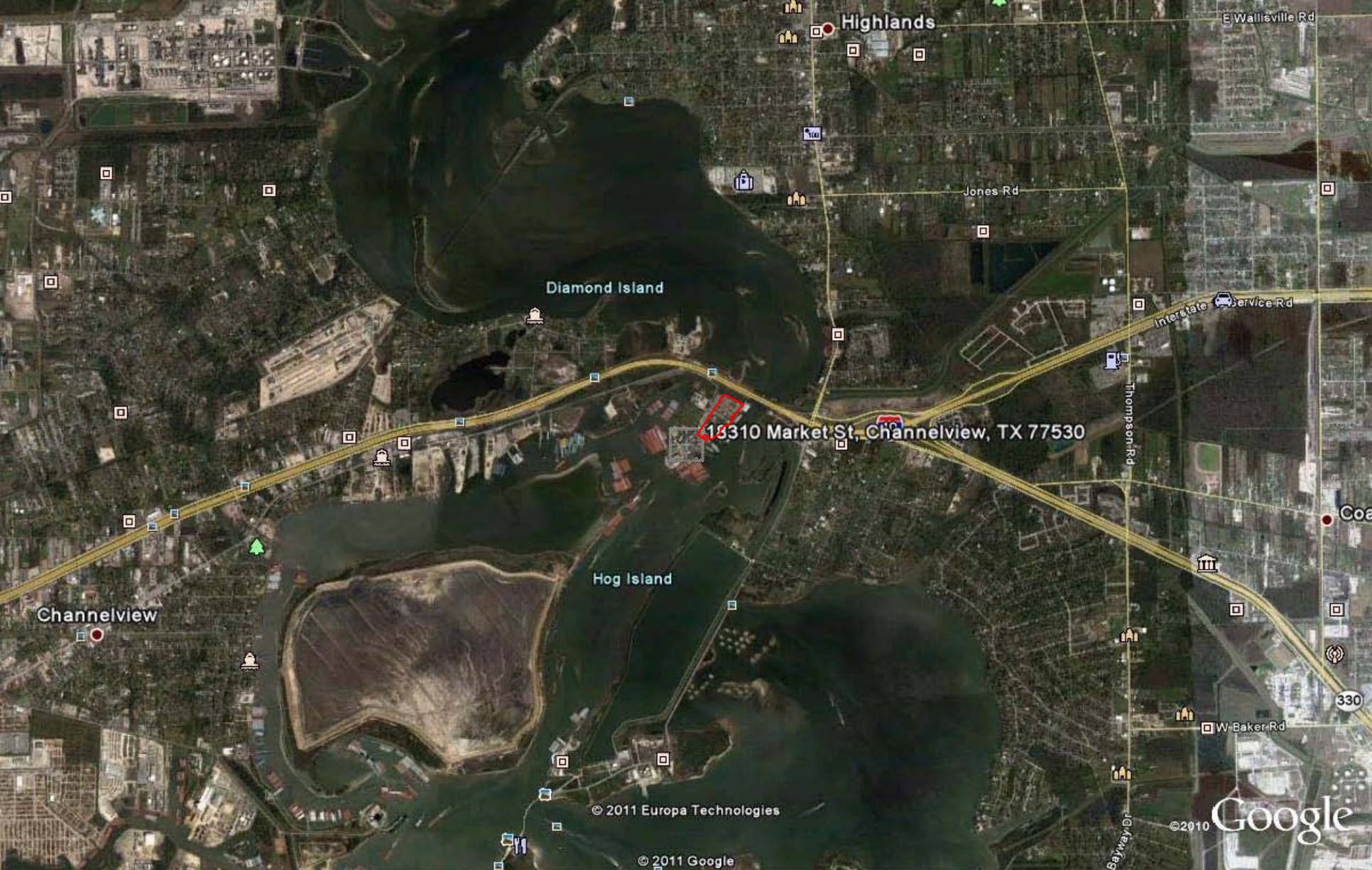
- This Meeting is to Notify the Public
 - MSD = Municipal Setting Designation
 - An Ordinance for MSD AREA of the Site only
 - Protect the Public Health and Environment
 - Prevent Groundwater in MSD as Potable Source
 - Allows Site to Pursue Additional Expansion
 - Not Associated with San Jacinto Pits Superfund



Texas Risk Reduction Program Process



No Further Action Letter From TCEQ – Certifies Protection of Human Health and the Environment.







Site Basic Characteristics

- Heavy Industrial
- Operations Started in 1952
- Property Size – 23.5 acres
- MSD Area – 6.4067 acres
- Surface Impoundment used from 1957 until 1979
- Groundwater Flow – East/Southeast
- Groundwater Utilized by Site – Chicot Aquifer
 - Water Wells **Outside** MSD Area



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© 2011 Google

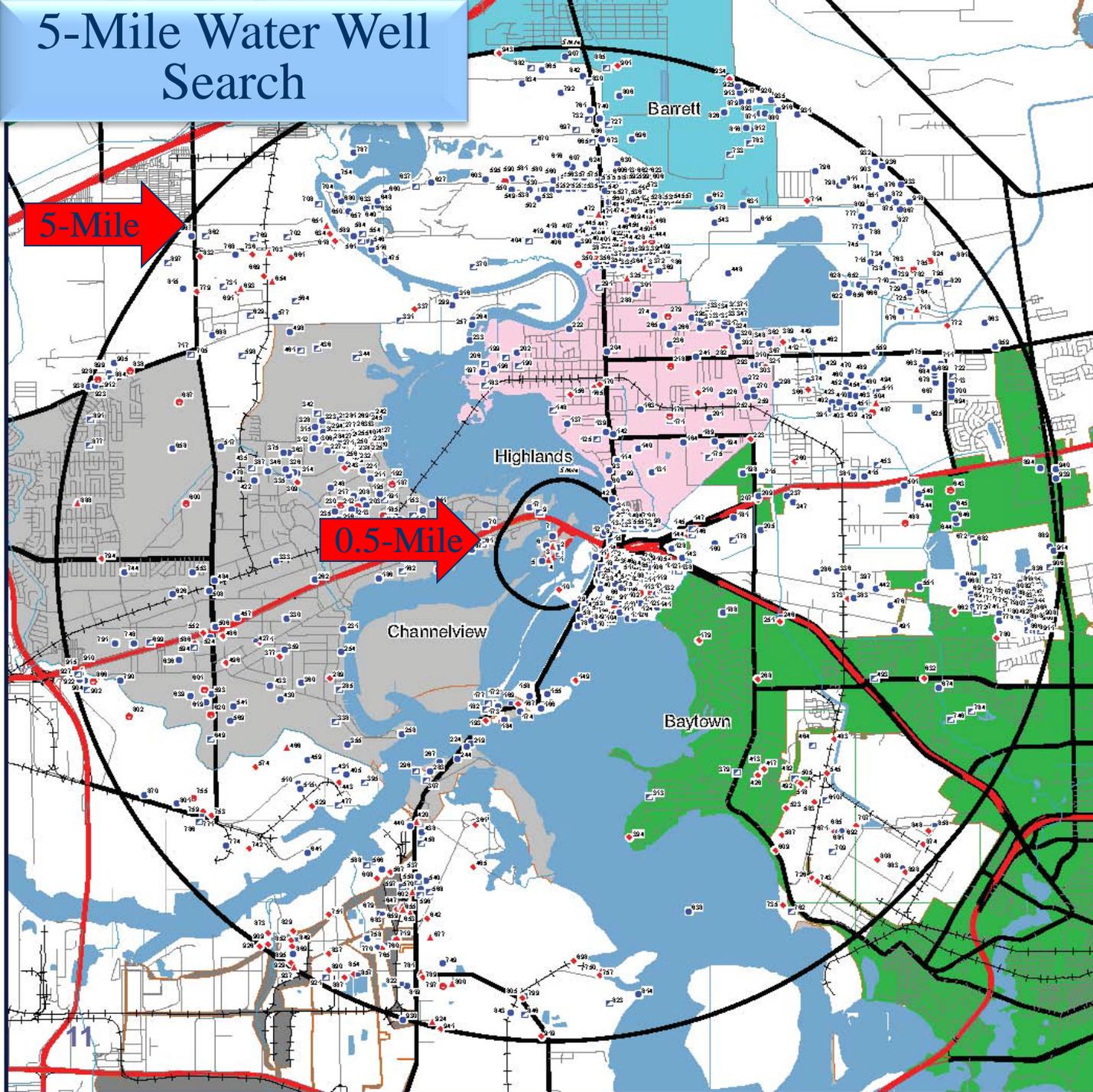
© 2010 Google™



Where Did the Impact Come From

- MSJ Holdings is Landowner
- Southwest Shipyards is Operator
 - Barge Repair
 - Grinding, Sanding, Descaling, etc.
 - Barge Cleaning
 - Wash Water Impacted with Barge Contents
- Groundwater Impacts
 - VOCs – Solvents, Base Level Chemicals - Cleaning
 - SVOCs – Chemical Intermediates - Repair

5-Mile Water Well Search



- 3 Water Wells on the Site
- 49 Wells within 0.5-mile
- 1,424 Wells within 5-miles
- 804 Separate Entities
- **No Affected or Potentially Affected Wells**

May 16, 2011

Regional Geology

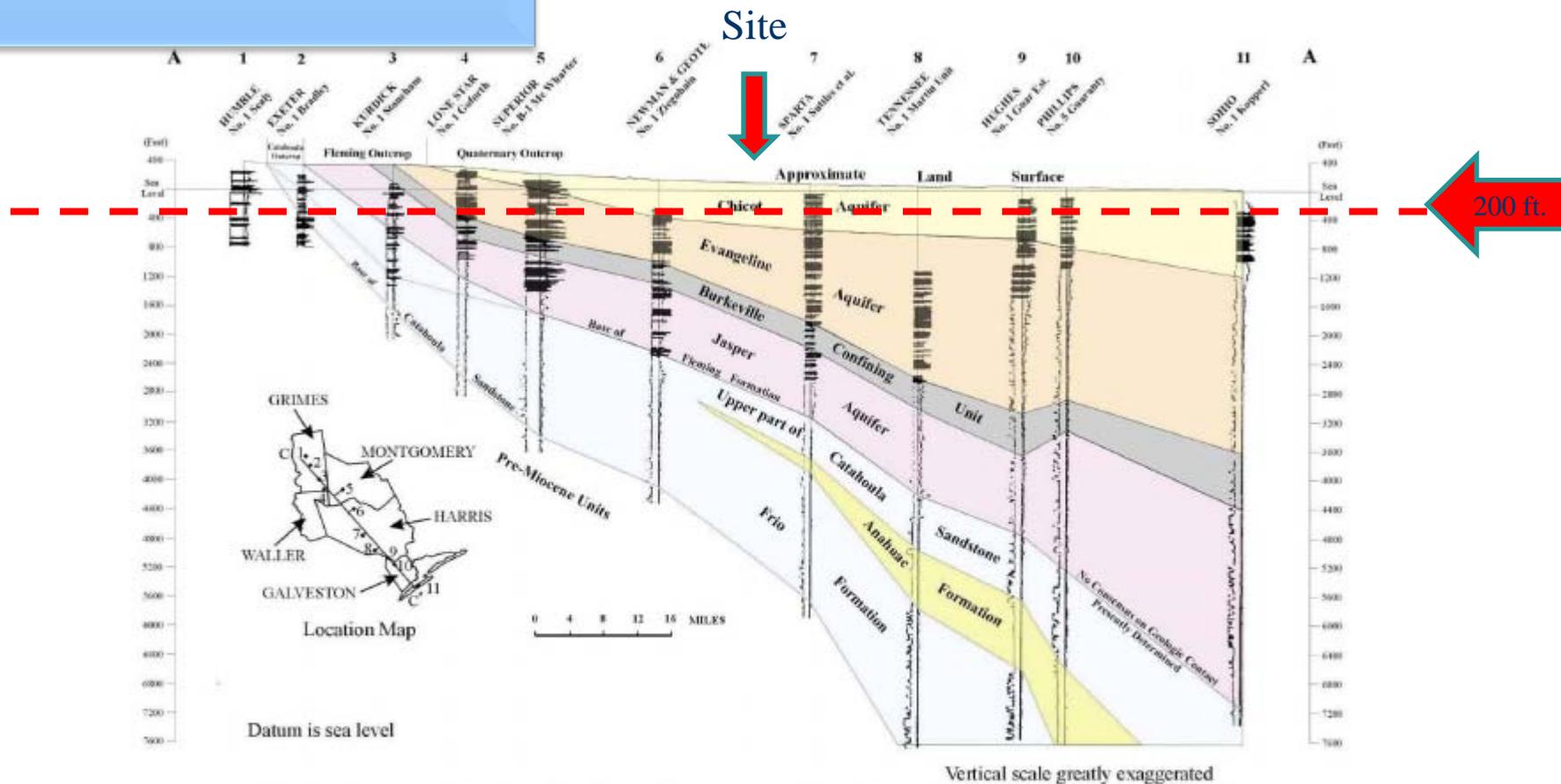
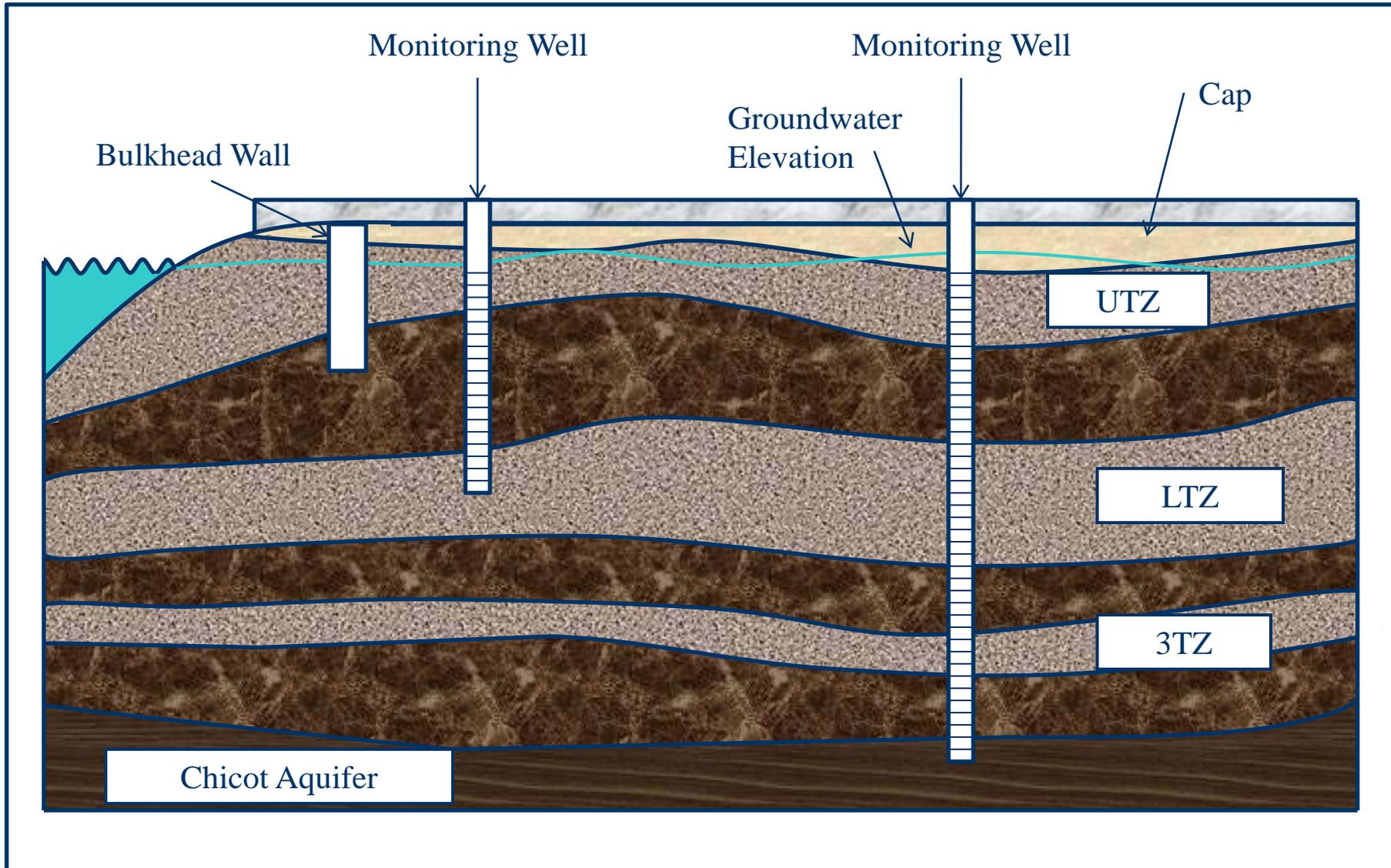


Figure 2-14. Cross-section showing thicknesses of the aquifers down-dip in the northern part of the Gulf Coast (after Baker, 1979; Kasparek, unpublished data).

San Jacinto Bulkhead



- 33 Soil Borings
- 26 Monitoring Wells
- >72 Soil Samples
- 884 Groundwater Samples

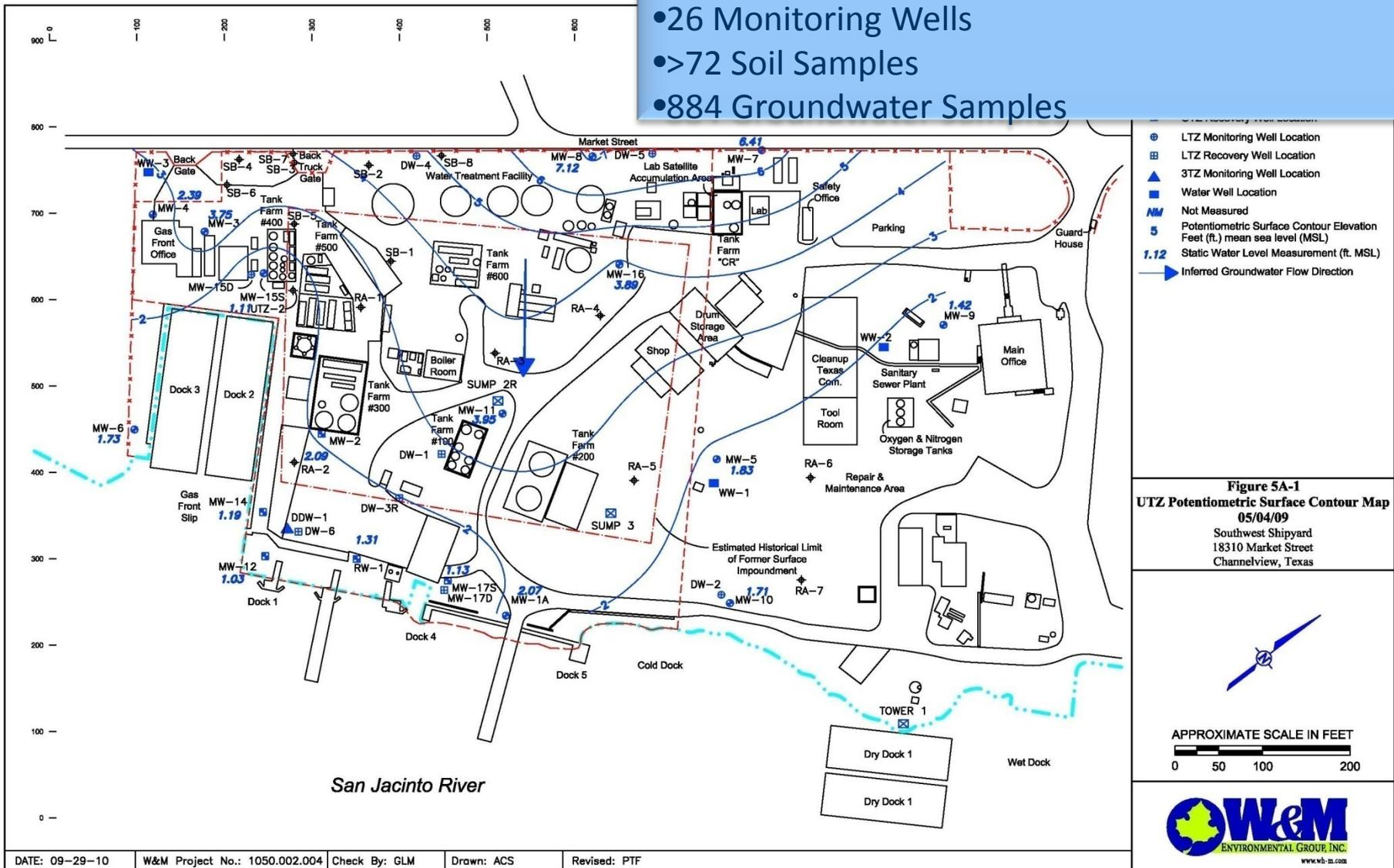
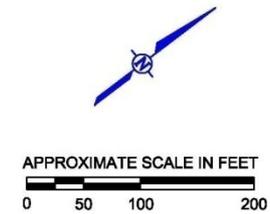


Figure 5A-1
UTZ Potentiometric Surface Contour Map
 05/04/09
 Southwest Shipyards
 18310 Market Street
 Channelview, Texas



- Groundwater flows to the east/southeast
- Surface Water and Sediment Samples are **Not Impacted** by Groundwater Migration.

May 16, 2011

Delineation & Remediation Efforts

- 1979 – Surface Impoundment Remediated
 - Soil Removed, Sump Installed, Deed Recorded, Cap
- 1989 – Two Additional Sumps Installed
- 1992 – Entered Corrective Action - TWC
- 1995 – Sediment and Surface Water Investigated
- 1996 – Recovery System Designed
 - 2 sumps, 9 recovery wells
 - WWTP

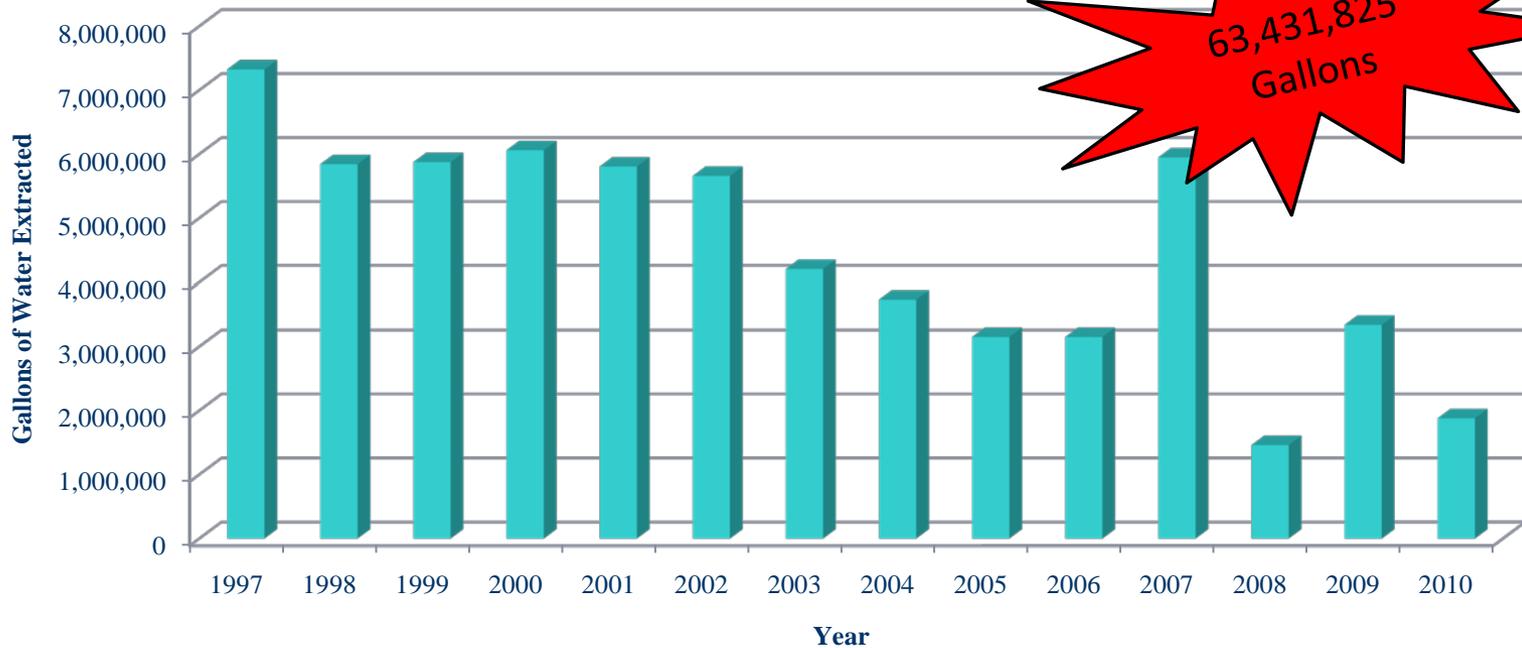


Delineation & Remediation Efforts

- 1997 – Surface Impoundment Concrete Cap
- 2007 – Recovery System Redesign
 - 5 Recovery Wells
 - Asymptotic
- 30 Soil Borings (72 Samples)
- 25 Monitoring Wells (884 Samples)
 - More than 17 Years of Monitoring Data
- Corrective Action Program – SWR No. 31208

Groundwater Extraction

Groundwater Extraction By Year

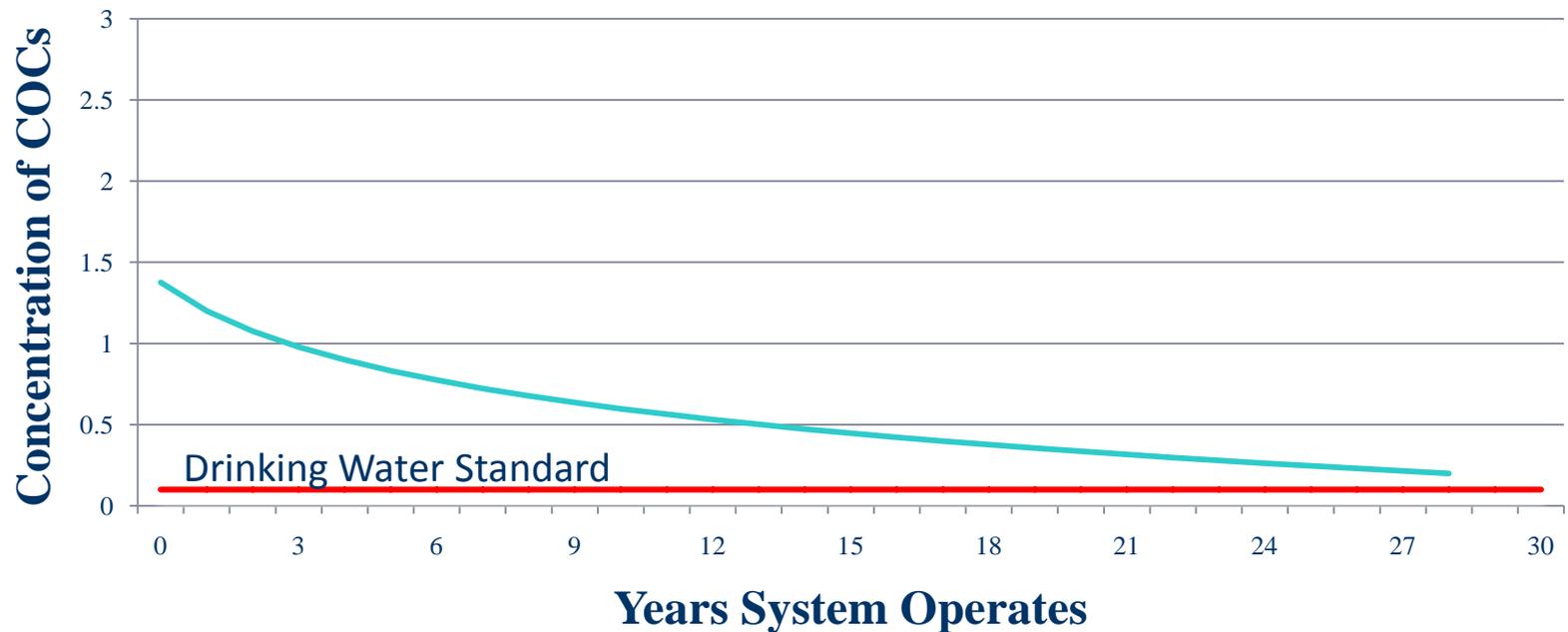


63,431,825 Gallons of Water Treated

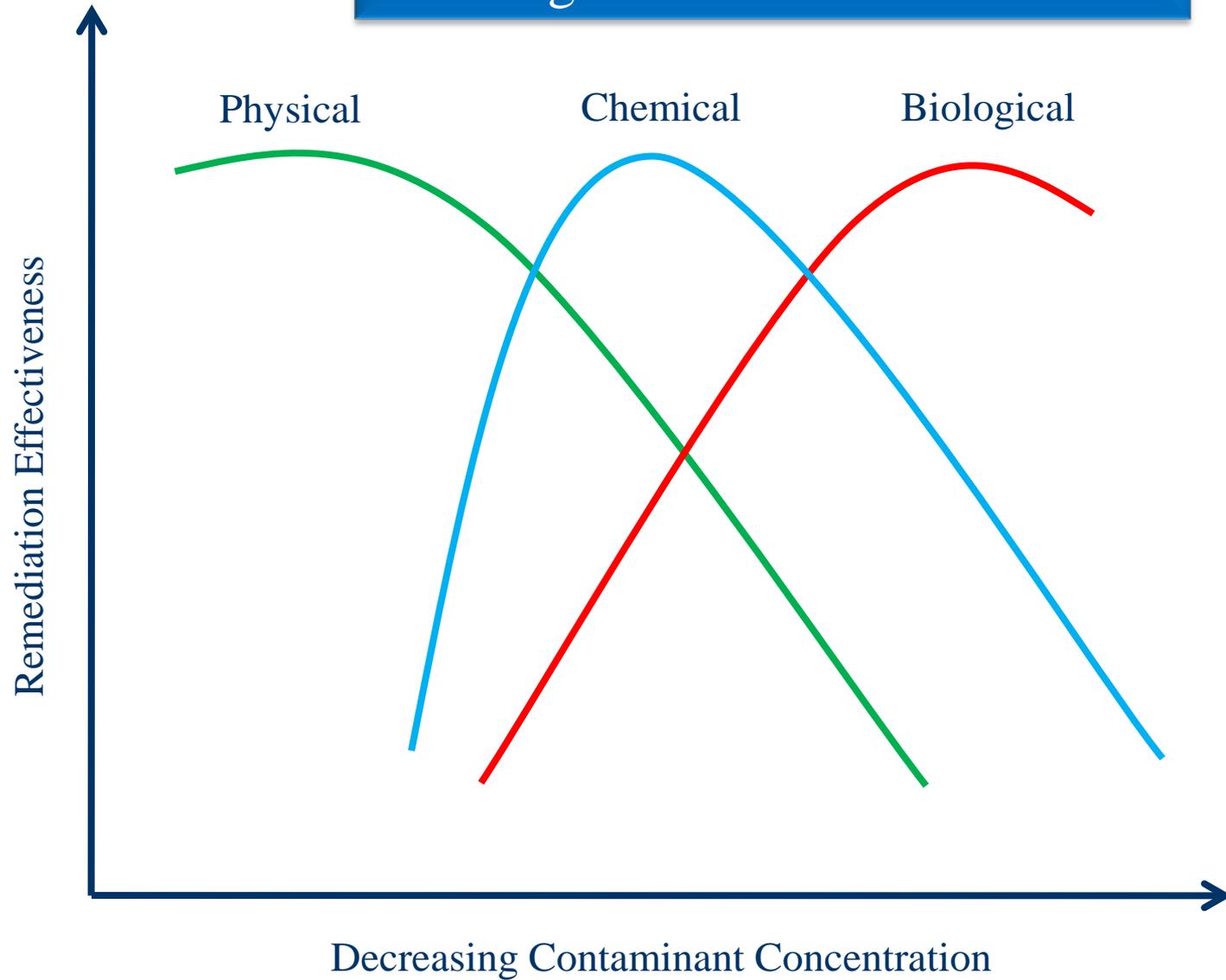
May 16, 2011

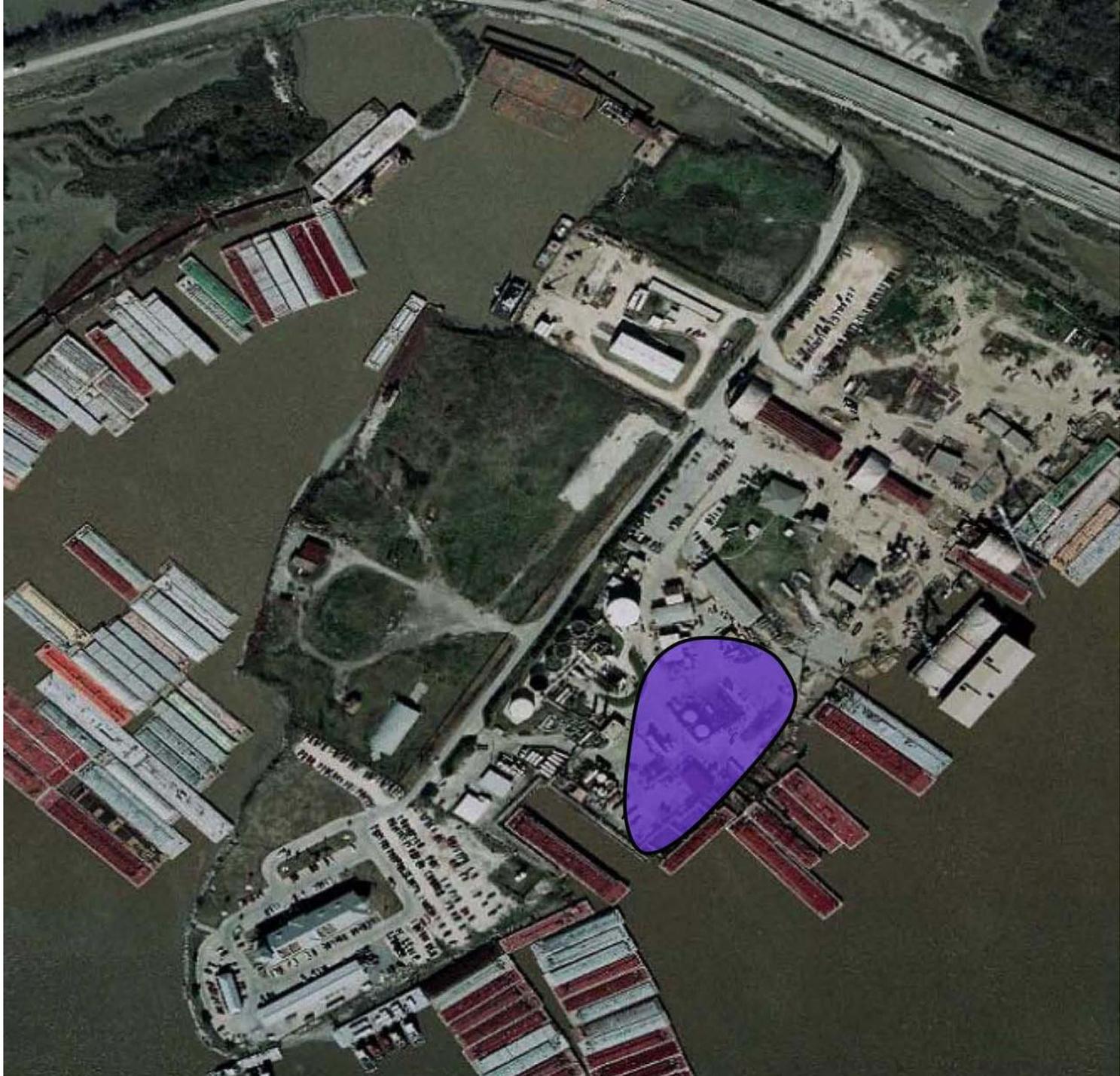
Remediation Limitations

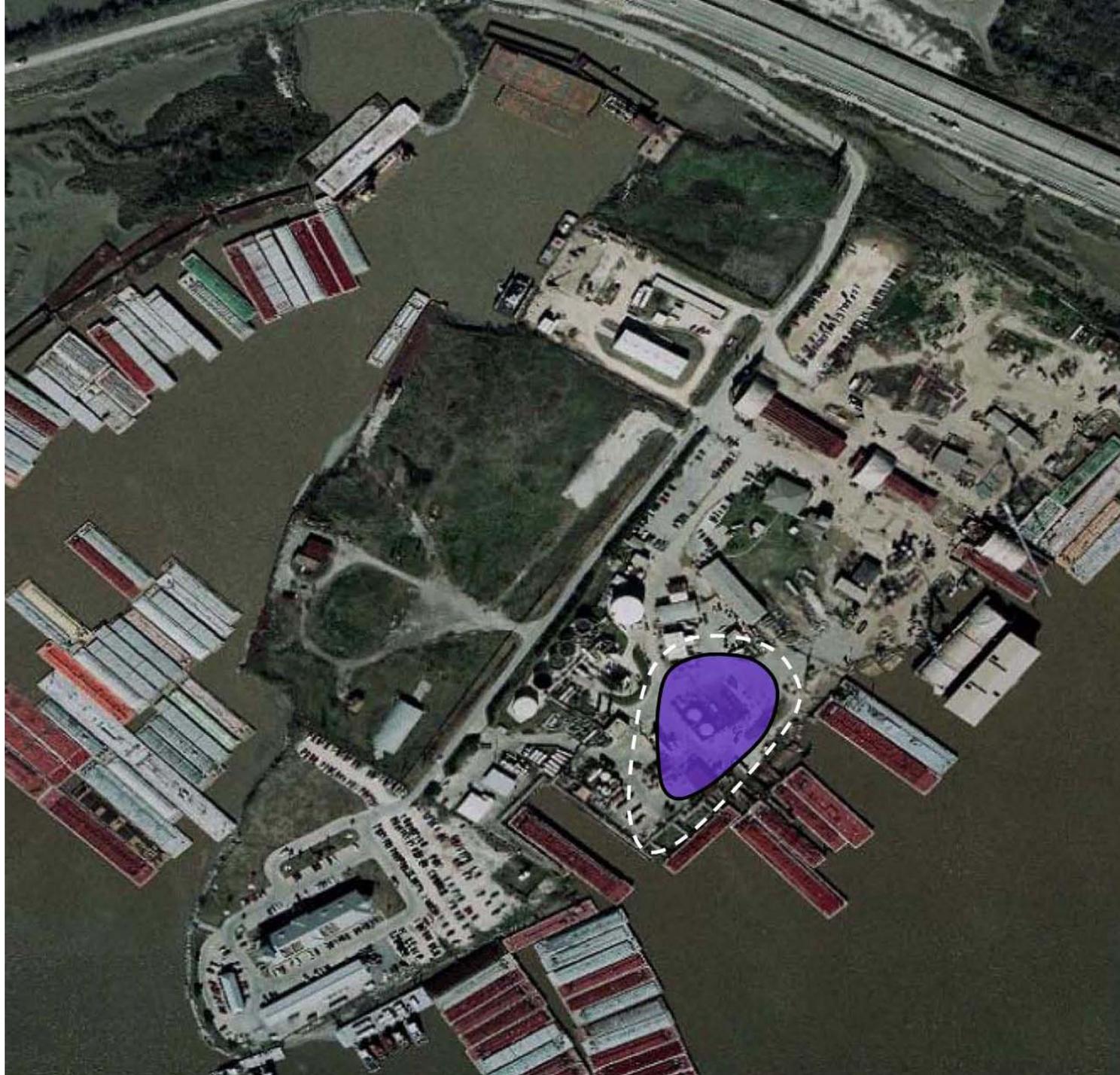
Pump and Treat Lifecycle

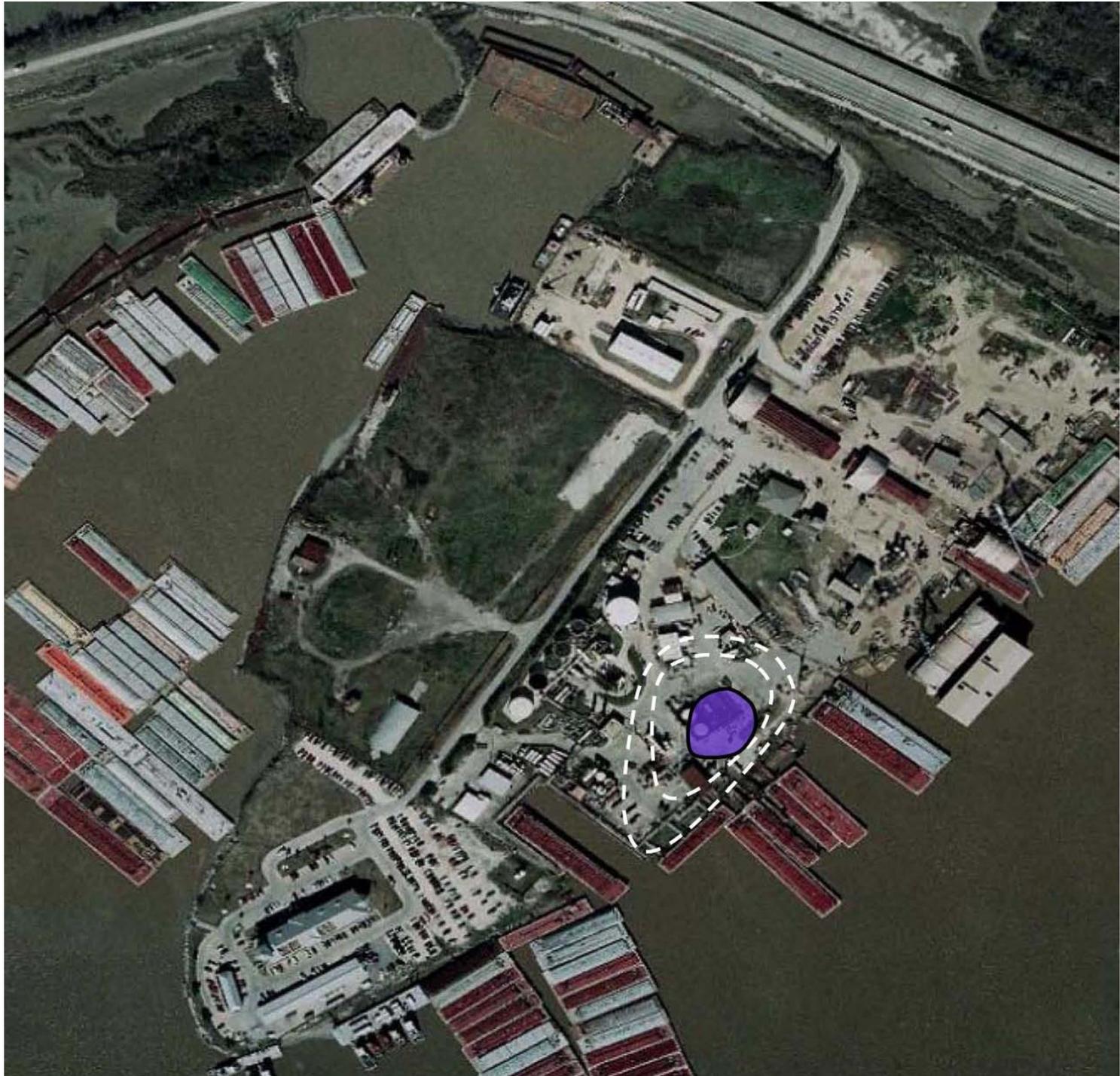


Integrated Site Remediation









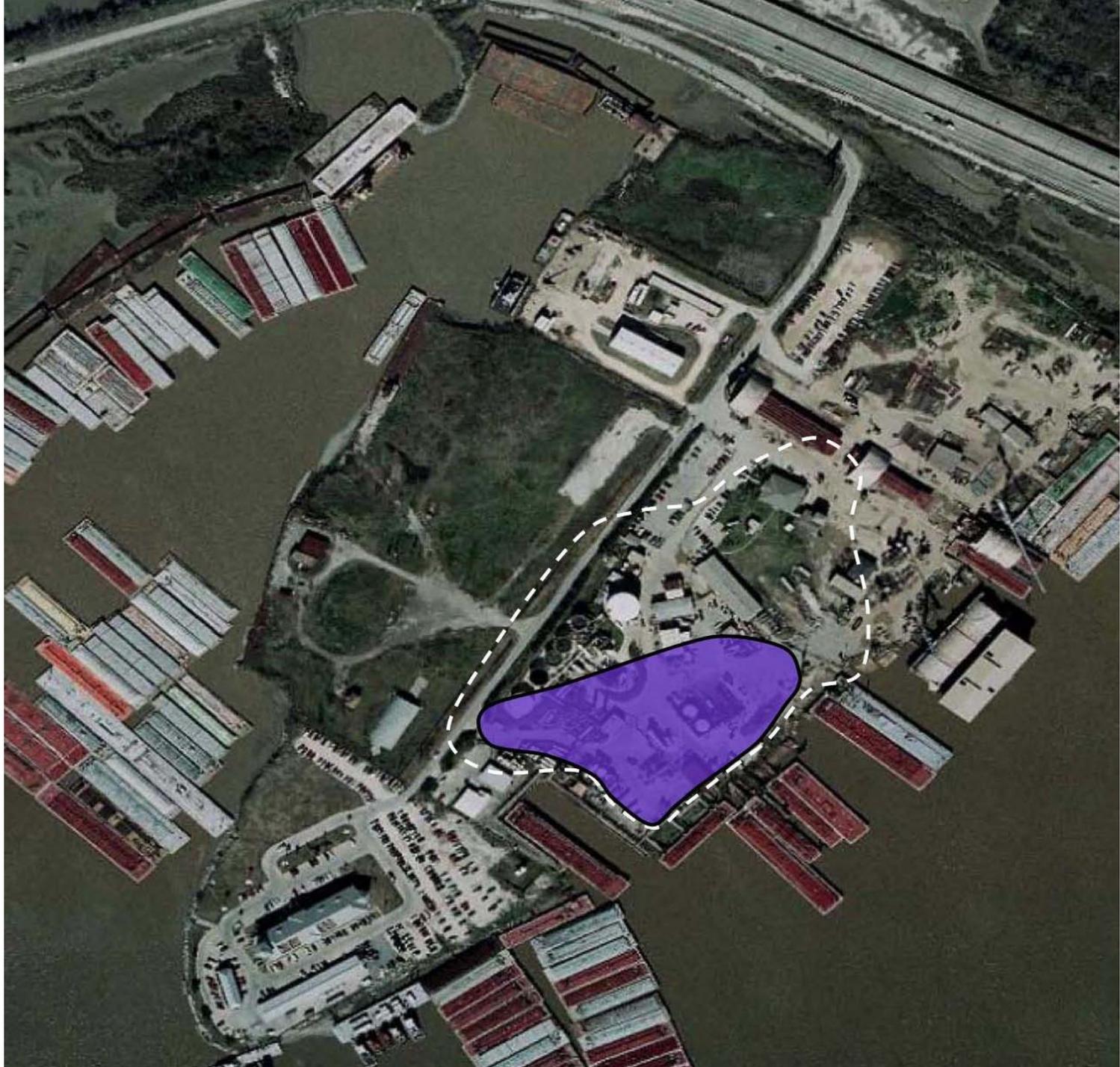


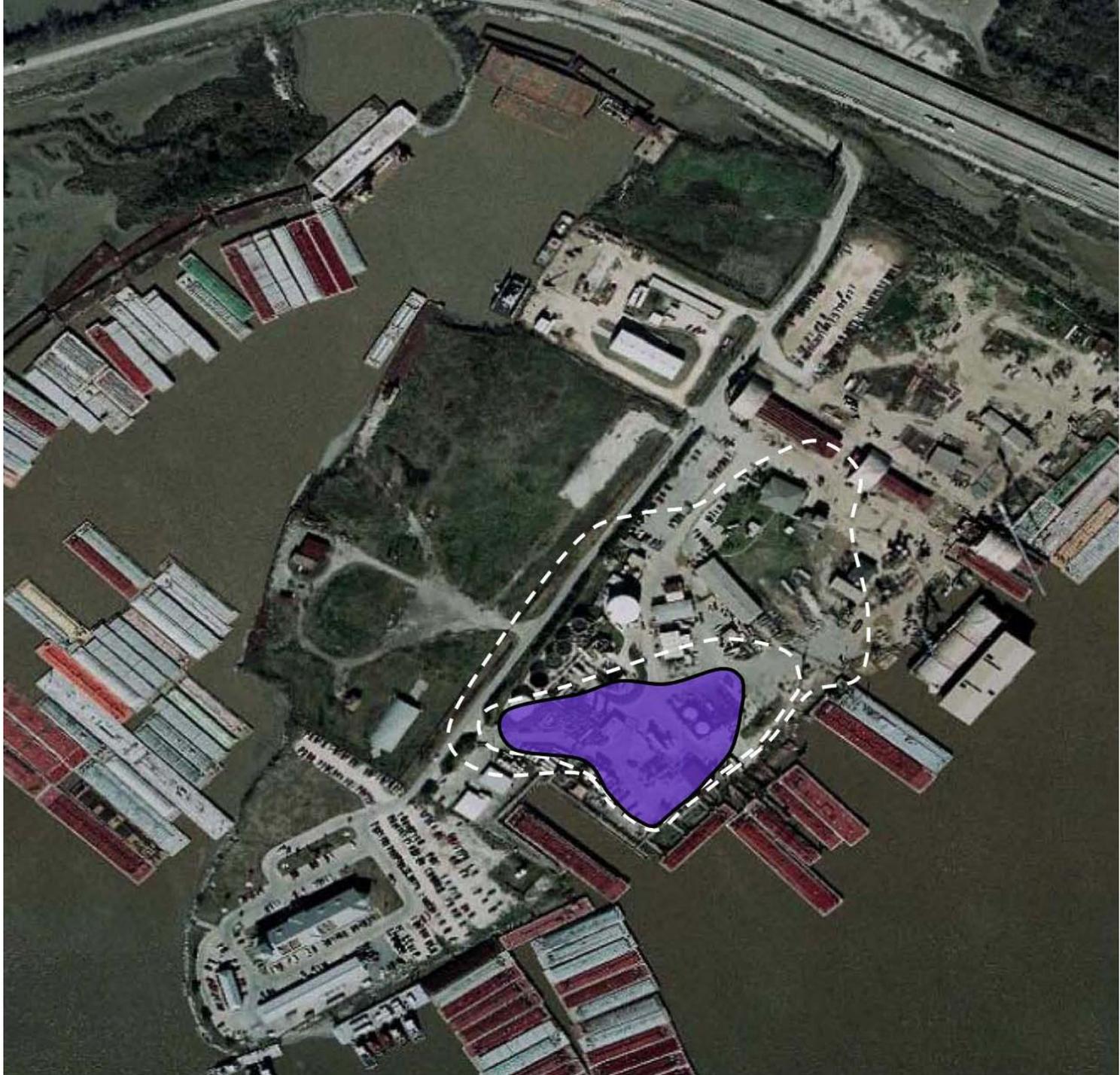
Chemicals of Concern

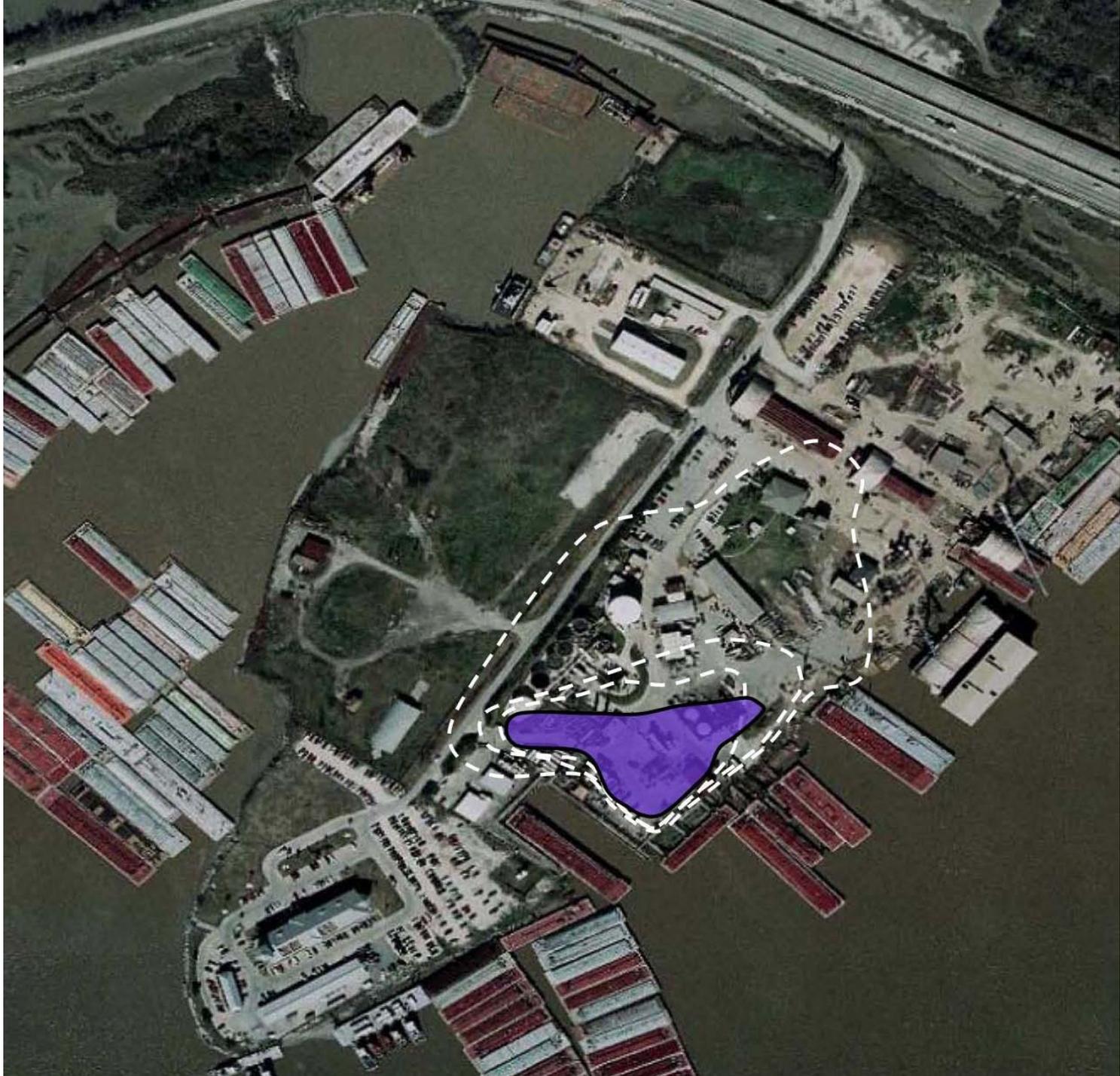
COC	Standard without MSD	Standard with MSD	Max Conc.
Benzene	0.005	300	14.6
Chloroform	0.73	33	1.1
1,2-Dichloroethane	0.005	55	18.5
1,1-Dichloroethene	0.007	2,300	0.194
Cis-1,2-Dichloroethene	0.07	23,000	98.3
Trans-1,2-Dichloroethene	0.1	1,100	0.336
Ethyl benzene	0.7	22,000	2.23
Tetrachloroethene	0.005	840	24
Toluene	1	89,000	1.55
Trichloroethene	0.005	170	21
Vinyl chloride	0.002	6.4	147
Benzo(a)anthracene	0.0013	3,400	0.074
Benzo(a)pyrene	0.0002	650	0.071
Benzo(b)fluoranthene	0.0013	2,700	0.0485
Benzo(k)fluoranthene	0.013	160,000	0.0463
Bis(2-ethylhexyl)phthalate	0.006	--	0.0641
Dibenzofuran	0.098	--	0.167
2,4-Dimethylphenol	0.49	230,000	1.62
Indeno(1,2,3-c,d)pyrene	0.0013	16,000	0.0857
4-Methylphenol	0.37	170,000	1.22
1,2-Dichloropropane	0.005	16	0.132
Naphthalene	0.49	440	8.28

- COCs Above Standard
- Maximum Concentration from 2007 to 2010
- Standard with/without MSD
- Additional Remediation to Perform **With** MSD

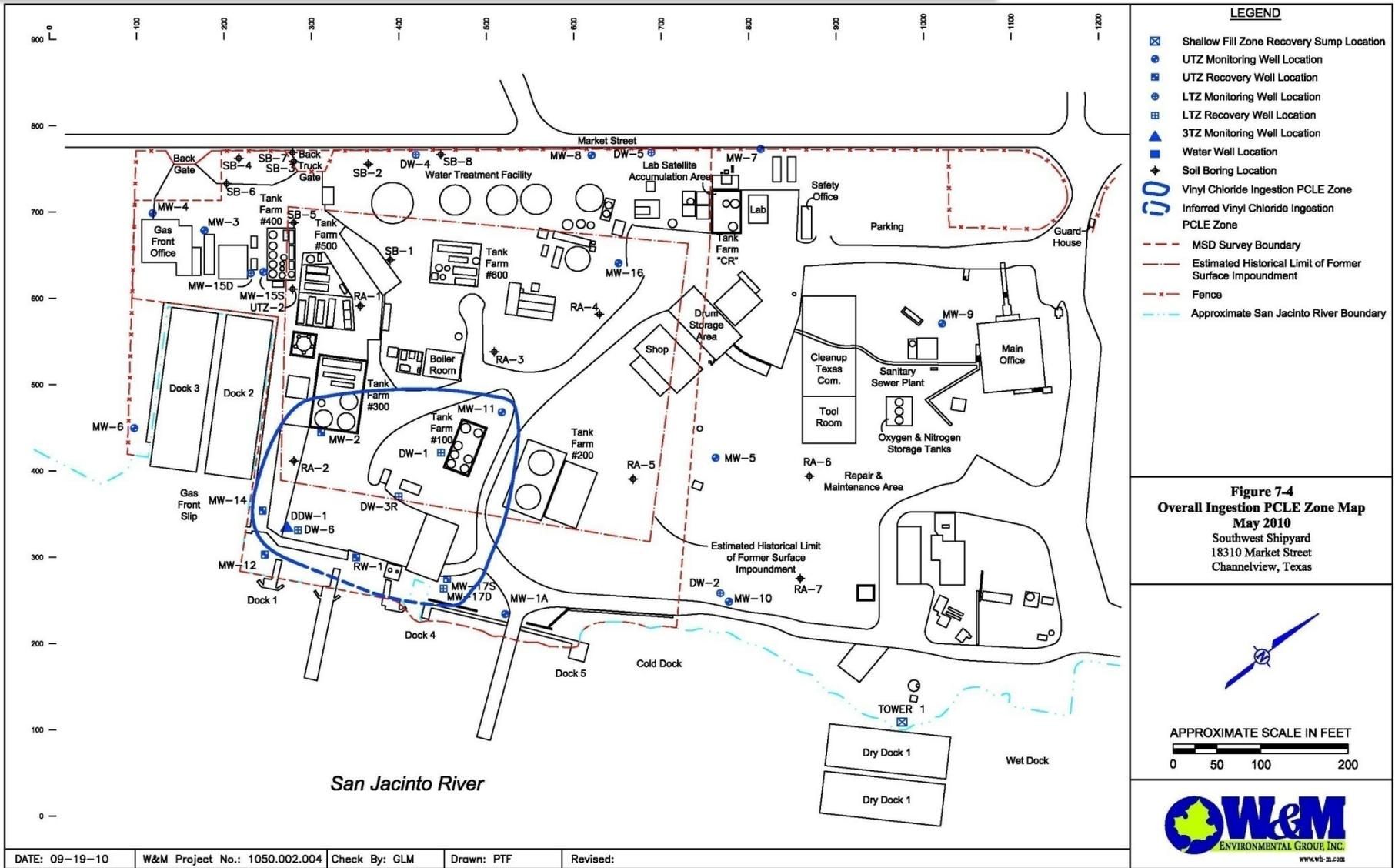




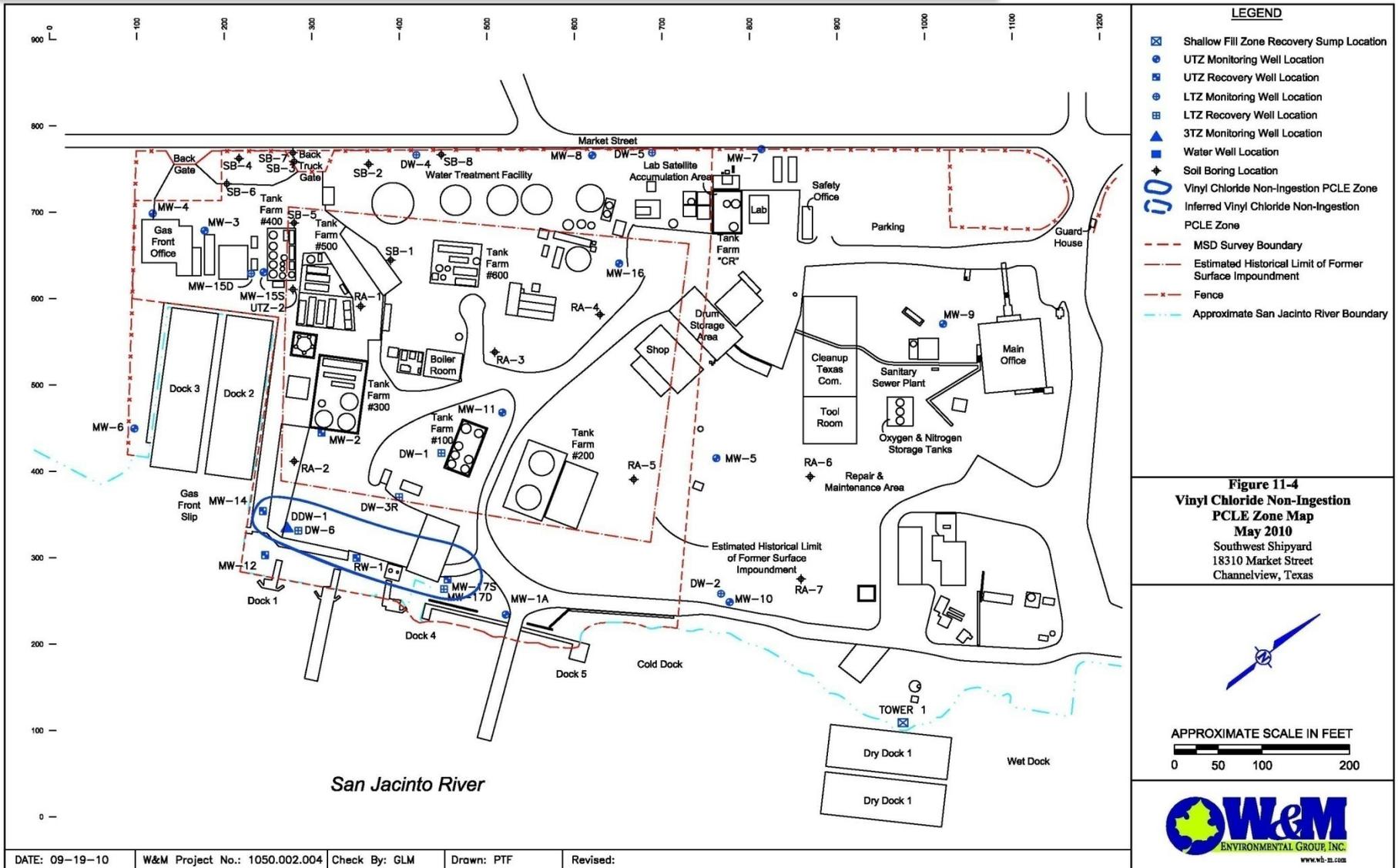




Overall Ingestion PCLE



Vinyl Chloride Non-Ingestion PCLE



Summary

- Old Shrinking Groundwater Plume
- No Impacted Groundwater Migrating into San Jacinto River
- No Vapor Impacts Identified – Cap in Place
- Response Actions **will be** Required for Groundwater **with** MSD
- Site is in the Corrective Action Program
- **No** Affected or Potentially Affected Water Wells
- Water for the Site and much of Surrounding is from the Chicot Aquifer - Chicot Aquifer is Not Affected
- City of Houston or Baytown is Capable of Providing Drinking Water

