

Municipal Setting Designations



MSDs: A new tool for Houston

Richard Chapin
Sr. Project Manager



Agenda

- Why are we here?
- Whom does it impact?
- What is an MSD?
- Why support an MSD?
- Steps in processing an MSD
- Particulars on this application
(Representatives of Applicant to speak)
- Public comment and questions



Why Are We Here?

- Inform you about an application for the City to support a Municipal Setting Designation (MSD) on a site
- Explain what is a MSD and what it does for the applicant, the local community, and the City
- Give you a chance to tell the City what you think about the site and the process.



Whom Does It Impact?

- Unless you are the applicant:
 - A MSD does not affect your property
 - A MSD does not affect your water well
 - There are no requirements on you
- The drinking water supplied by the City is not effected

Groundwater Contamination



- Houston has groundwater contamination scattered across the city from old industrial sites and businesses
- Houston's drinking water come from either deep aquifers or Lake Houston
- Groundwater contamination is usually shallow and rarely threatens Houston's water supplies

Problems of Traditional Remediation Methods



- Groundwater dictate most goals for remediation sites
- Groundwater is cleaned to drinking water standards even when water bearing zone is too silty, too salty, or low producing
- Groundwater remediation inefficient, costly, and can take decades

An Alternate Approach



- Prohibit the use of contaminated groundwater for drinking water purposes
- Use Risk Based Cleanup Standards from other exposure routes to determine cleanup standards
 - Ingestion of contaminated soil
 - Inhalation of vapors
 - Physical contact with contamination
 - Migration to surface water

City's Expectations of a MSD Applicant:



- Site must already be in a State or Federal clean up program
- Site must have been thoroughly investigated
- Data must show that the groundwater plume is stable or diminishing.
- A P.E. or P.G. must be willing to certify that the plume is stable or contracting.

What is Today's Meeting?



- Mandatory step in the process
- Applicant has requested City support for application:
 - MSD # MSD #2009-011-FDC
 - “Former Golden Fleetwood Cleaners ”
- TCEQ cannot approve an MSD without the City Council's support
- Gather input from surrounding property owners



What Is A MSD?

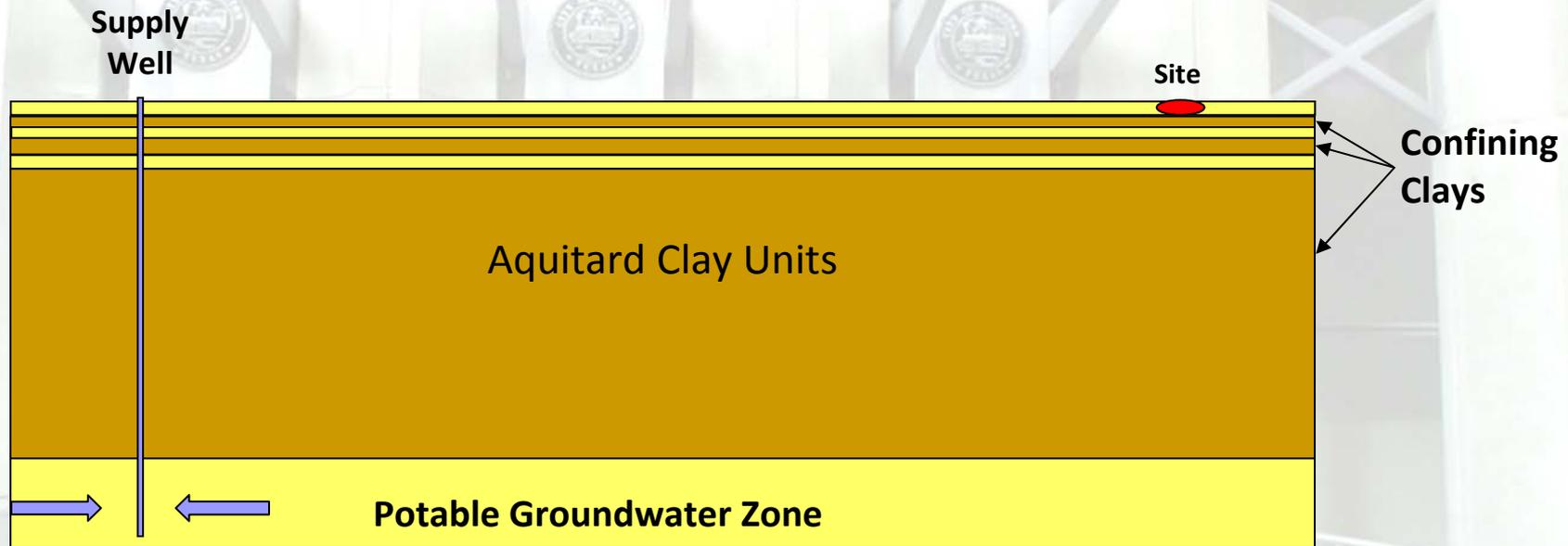
- Municipal Setting Designation
- Voluntary restriction to prevent ingestion of contaminated groundwater
- Alternate method to address groundwater contamination
 - State program created in 2003, administered by Texas Commission on Environmental Quality (TCEQ)
 - City process created in November 2007, administered by Public Works & Engineering
- Property owner requests participation (can be private or public owners)

How Are You Protected?



- A MSD reduces the health risk to people living and working in the area by preventing the use of the contaminated ground water.
- But it does not excuse the applicant from clean up activities such as removing the surface soil or reducing other risks to the public.

How Are You Protected? (continued)



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

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

Why Support A MSD?



- Protects the public from consumption of shallow contaminated groundwater (drinking water is supplied by the City through a separate system)
- Encourages cleanup of contaminated sites through participation in a State or Federal program
- Promotes redevelopment of under-utilized properties

Steps In Processing A MSD



- Site must be enrolled in a state or federal clean-up program
- Applicant request City support of their MSD application
- If supported, applicant submit their application to TCEQ
- TCEQ grants or denies MSD
- If granted, City files restriction on property deed

Public Hearing



- Date: _____
- Time: 9:00 am
- Place: City Council Chambers
- Address: 901 Bagby, Second Floor
- Address: Houston, Texas 77002

Any person wishing to speak on this issue must contact the City Secretary's office at (832) 393-1100 to reserve time not later than 8:30 am on _____.

Contact Information



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Former Golden Fleetwood Cleaners MSD #2009-011-FDC

Presented By:

Michael F. Marcon, P.G.
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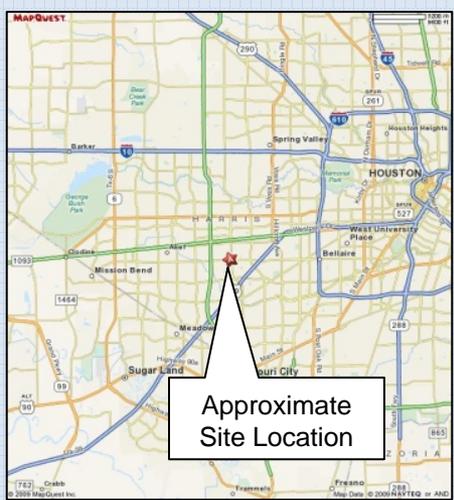
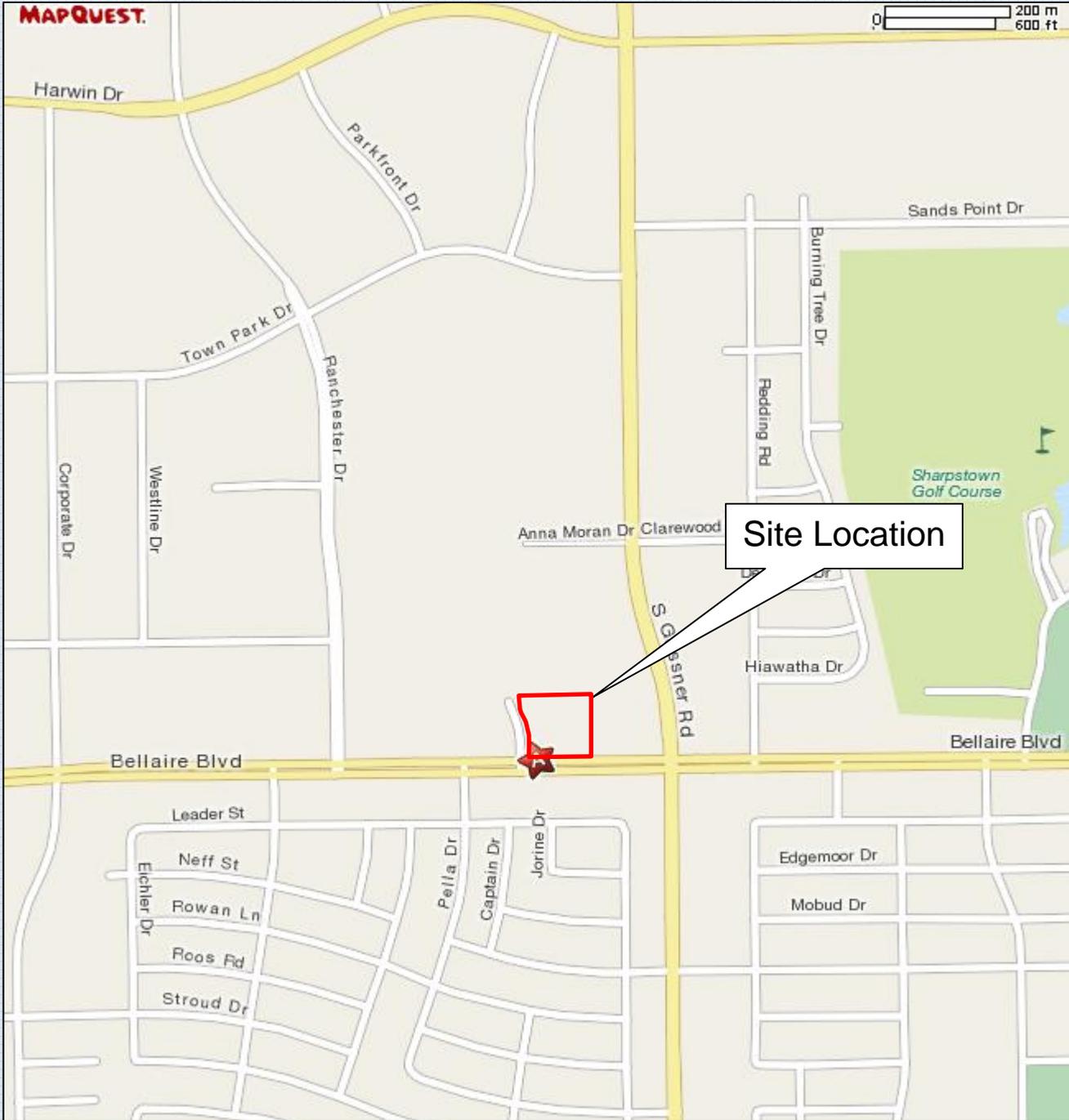
Benefits of a MSD

- Protects the public from the consumption of shallow contaminated groundwater (drinking water is supplied by the City through a separate system)
- Encourages cleanup of contaminated sites through participation in a State or Federal program
- Promotes the re-development of under-utilized properties

Former Golden Fleetwood Cleaners



- Golden Fleetwood Cleaners operated tenant space G of the Bellaire Boulevard Retail Center from 1983 through 2001.
- During a historical investigation, a release of dry cleaning related chlorinated solvents was discovered from the dry cleaning facility to the shallow groundwater.
- The property was enrolled in the Texas Voluntary Cleanup Program in March 2000.
- Investigations completed between 1998 and 2008 defined the horizontal and vertical extents of the contaminants in soil and groundwater.



Proposed
MSD
Boundary

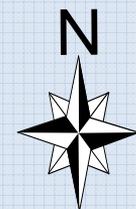
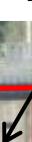


Proposed
MSD
Boundary



Location of
Former Dry
Cleaner

Bellaire Blvd.
Retail Center



620 ft
60° N 95°32'26.16" W elev 72 ft

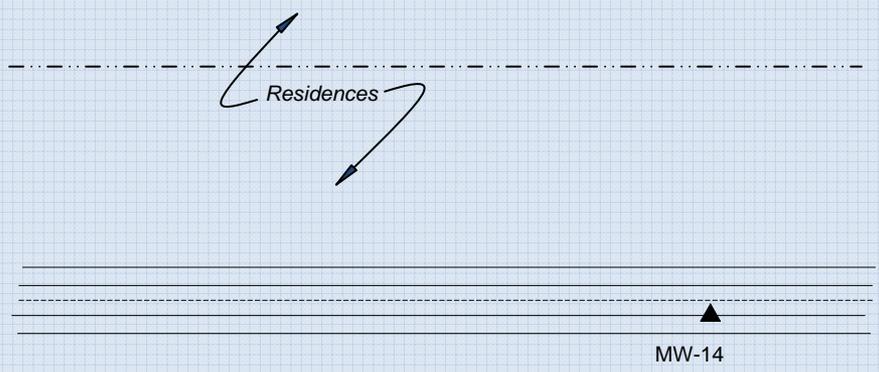
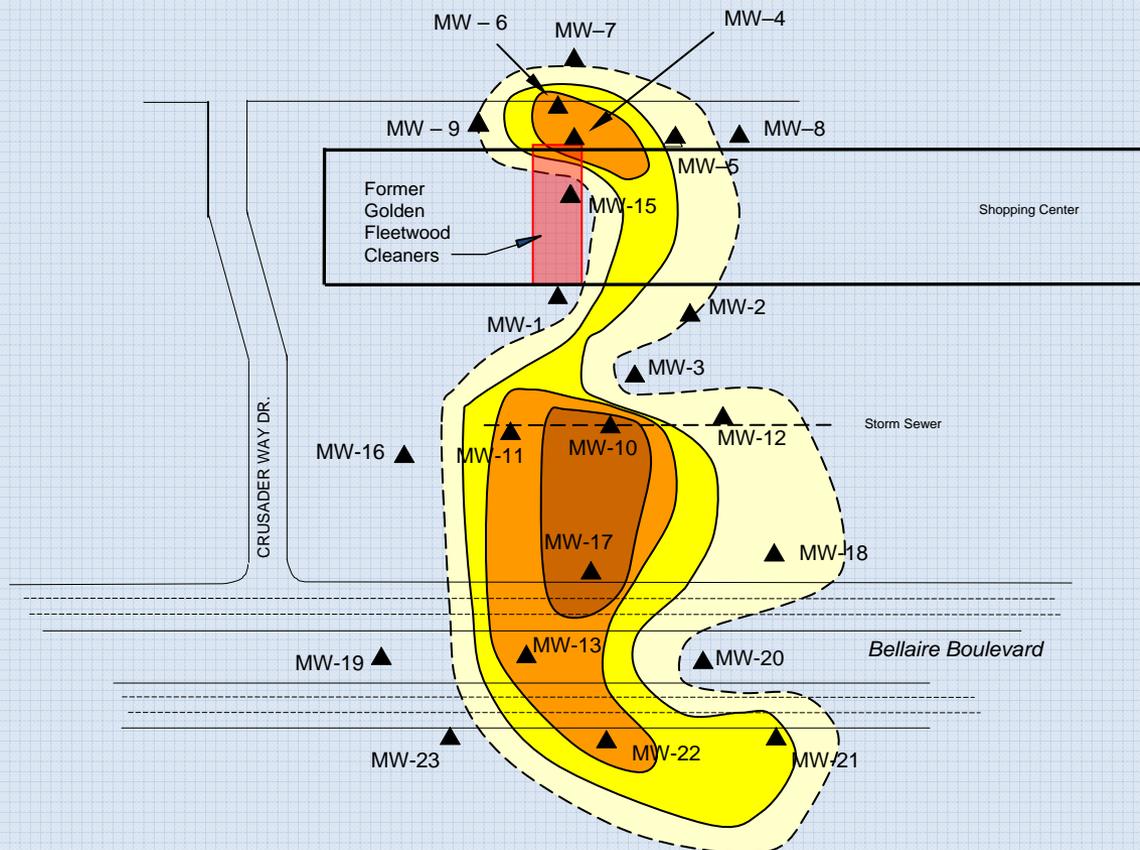
Image Houston-Galveston Area Council
© 2008 Tele Atlas
Streaming 100%

Former Golden Fleetwood Cleaners



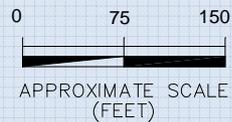
- Chlorinated solvents (tetrachloroethene (PCE) and its degradation products) are the constituents identified in the shallow groundwater plume.
- Shallow groundwater bearing zone is approximately 20- to 30-feet below surface.
- Two soil source areas were identified. Area 1 was inside the dry cleaner. Area 2 was behind the shopping center.
- Groundwater flow is towards the south-southwest.
- Groundwater impacts were delineated in a shallow plume extending across the Bellaire Boulevard right-of-way.

Strake Jesuit High School



LEGEND:

- ▲ MONITORING WELL
- PCE 0.005 mg/L Isoconcentration Contour
- PCE 0.05 mg/L Isoconcentration Contour
- PCE 0.5 mg/L Isoconcentration Contour
- PCE 5.0 mg/L Isoconcentration Contour



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PCE Isoconcentration Map
 July 2002

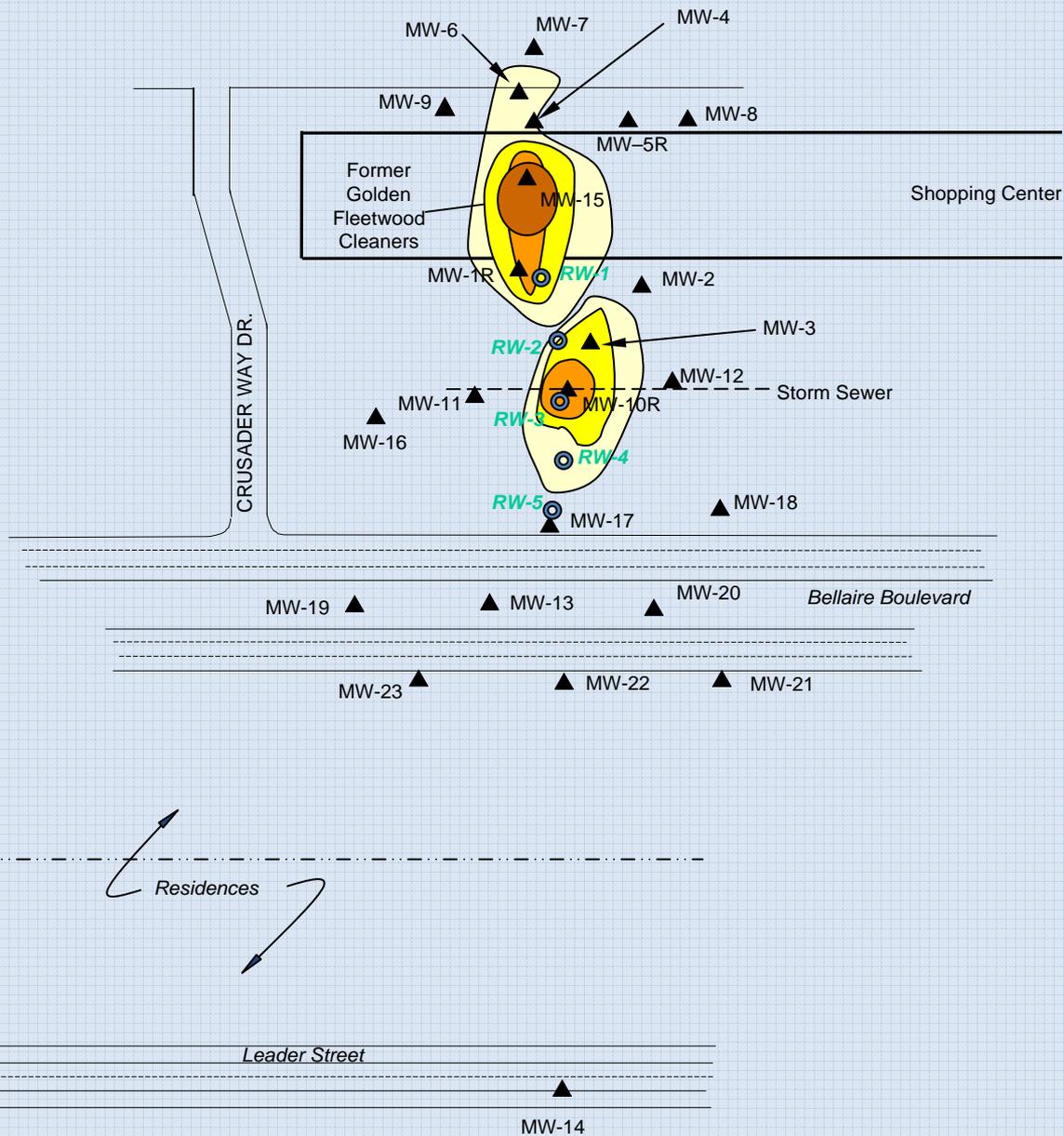
CLIENT: 8880 BELLAIRE LTD.		P.M. TLM	
LOCATION: 8880 BELLAIRE HOUSTON, TEXAS		CHECKED: MFM	
DETAILED: 7/20/01	DESIGNED: TLM	PROJECT NO: 153-105	FIGURE:

Remediation Activities



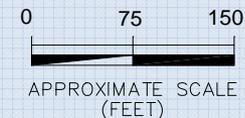
- In October 2000, approximately 165 cubic yards of impacted soil was removed in the alley behind the dry cleaning facility (Area 2).
- In June 2001, approximately 70 cubic yards of impacted soil was removed from beneath the dry cleaning facility (Area 1).
- Between Fall 2001 and early 2003, groundwater remediation consisted of the injection of potassium permanganate (KMnO_4) into the groundwater to reduce concentrations (In-Situ Chemical Oxidation).
- A Dual-Phase Groundwater Extraction System operated from August 2004 through January 2006.
- This was coupled with the periodic injection of a solution of bacteria and nutrients into the groundwater to degrade the concentrations. Multiple injections were completed between August and November 2005.

Strake Jesuit High School



LEGEND:

- ▲ MONITORING
- ⊙ RECOVERY WELL
- PCE 0.005 mg/L Isoconcentration Contour
- PCE 0.05 mg/L Isoconcentration Contour
- PCE 0.5 mg/L Isoconcentration Contour
- PCE 5.0 mg/L Isoconcentration Contour



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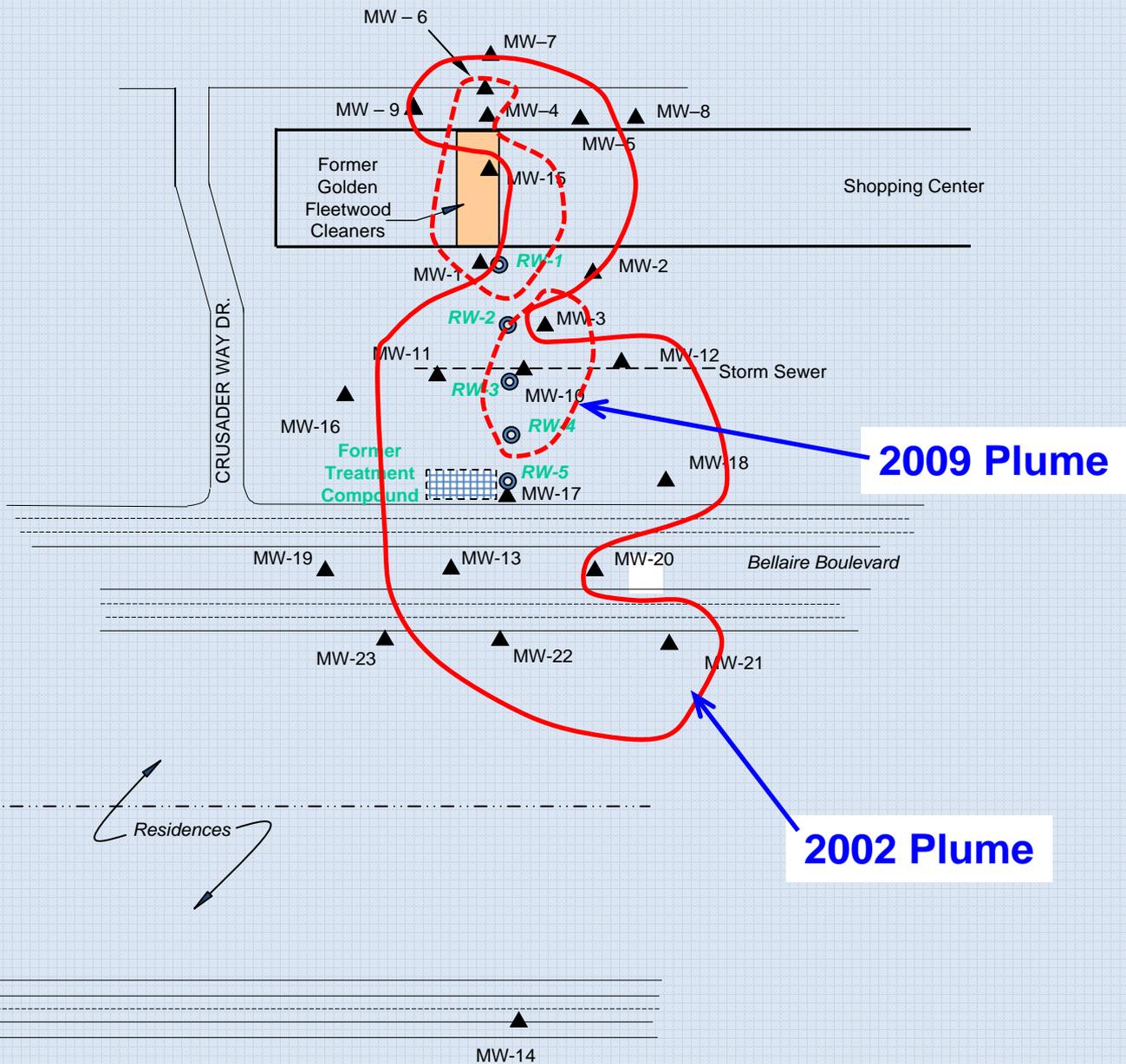
**PCE Isoconcentration Map
 August 2009**

CLIENT:		8880 BELLAIRE, LTD.		P.M. MFM	
LOCATION:		8880 BELLAIRE HOUSTON, TEXAS		CHECKED: JGW	
DETAILED:	DESIGNED:	PROJECT NO.:	FIGURE:		
	CP	153-105			

Strake Jesuit High School

LEGEND:

- MW - 4 ▲ MONITORING WELL
- RW-4 ● RECOVERY WELL

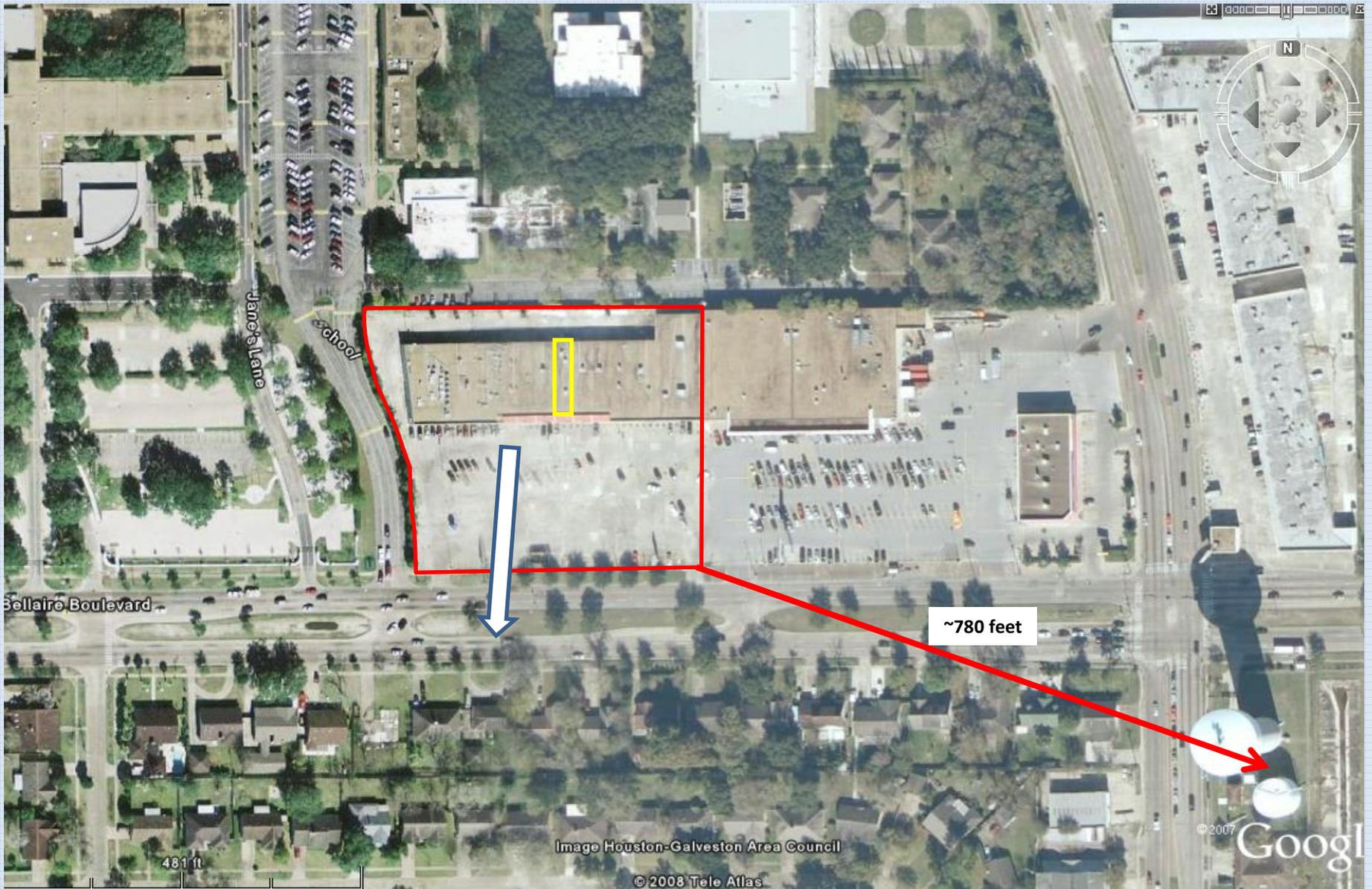


0 75 150
APPROXIMATE SCALE (FEET)

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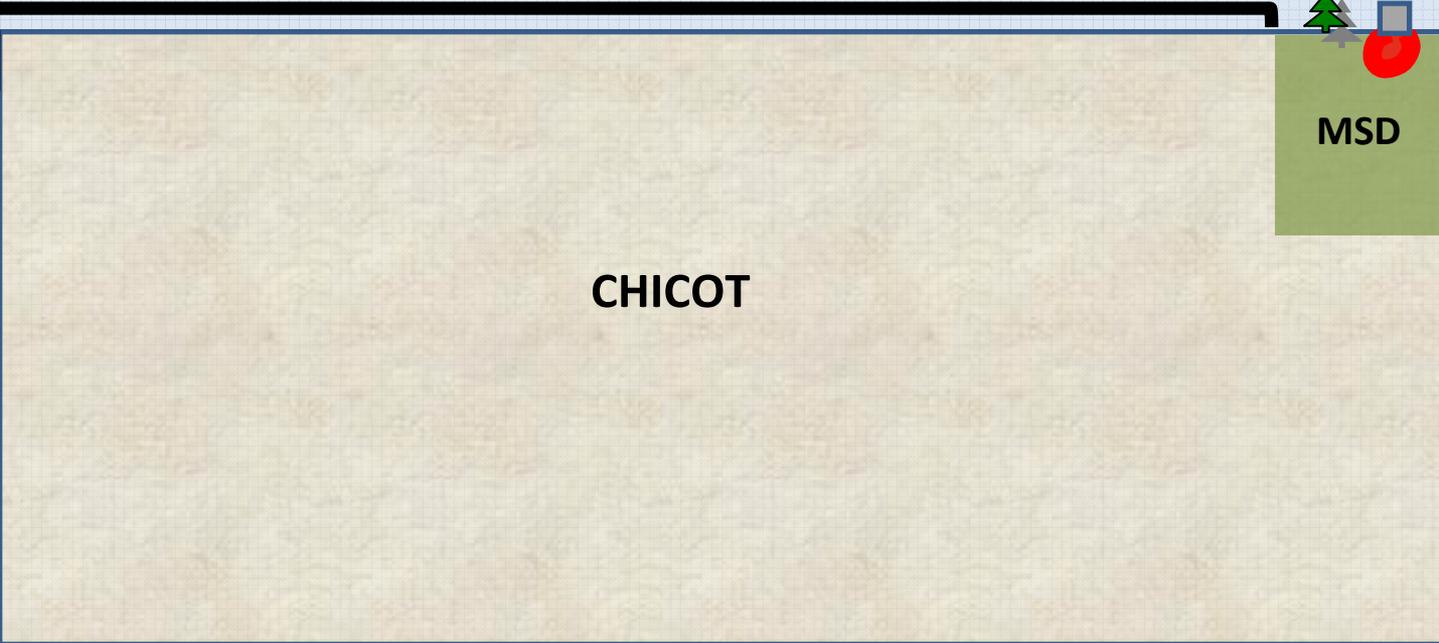
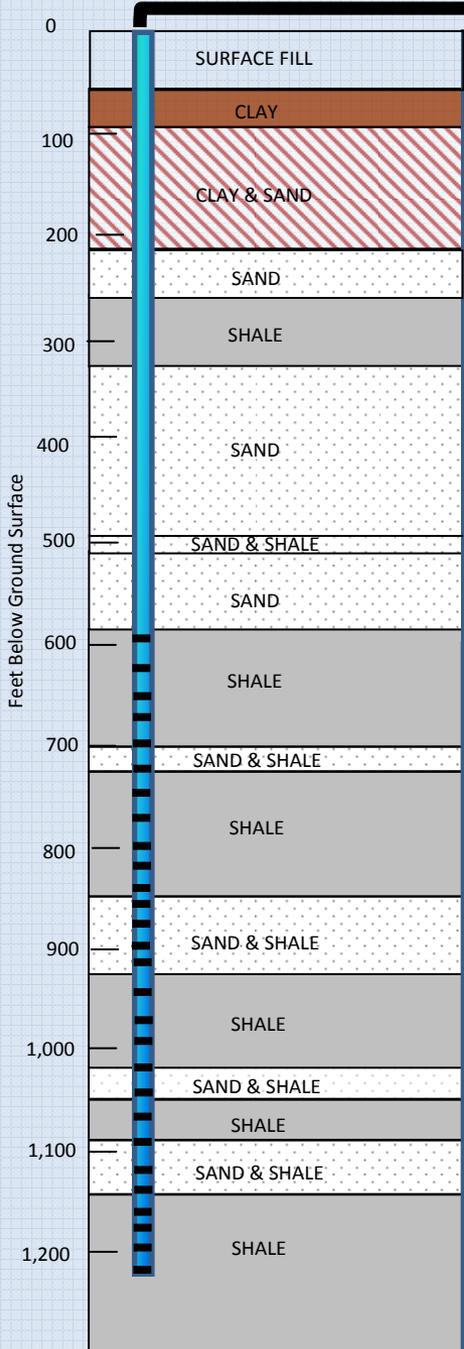
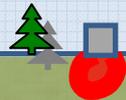
Site Layout Map

CLIENT:		8880 BELLAIRE, LTD.	P.M.
			MFM
LOCATION:		8880 BELLAIRE HOUSTON, TEXAS	CHECKED:
			JGW
DATED:	DESIGNED:	PROJECT NO:	FIGURE:
12/12/03	TLM	153-105	



The closest active water supply well is approx. 900 feet southeast of the subject property in a cross-gradient direction. The depth of this well is greater than 1,000 feet.

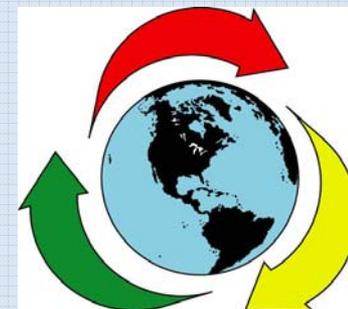
~ 780 feet Separation



MSD



Summary



- Soil source areas were removed between October 2000 (Area 2) and June 2001 (Area 1).
- Aggressive response actions have reduced the groundwater plume size and concentrations greater than 80 percent.
- The constituents have been vertically and horizontally defined and are not spreading.
- Remediation efforts conducted to date have created declining concentration trends.
- The closest active public water supply well is approximately 750 feet away from the subject property in a cross-gradient direction. This well is screened at greater than 580-feet below ground surface.
- The nearest water well in a downgradient direction is approximately 4,500 feet away from the subject property.