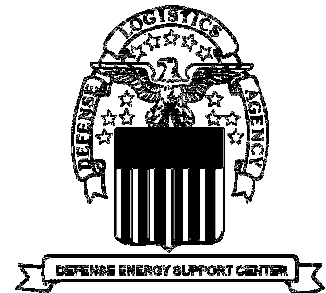


Norwalk Tank Farm Update

*Defense Energy Support Center-
Americas West
Norwalk Tank Farm
Restoration Advisory Board*

April 26, 2007



Presentation Overview

Topics to be Covered

- Quarterly Groundwater Monitoring Event
- Holifield Park & Dolland Elementary School Investigation Activities
- Groundwater System Upgrade
- Baseline GWT Sample Results
- Central Plume Remediation
- Eastern Boundary Update
- Pipe Declogging
- Schedule

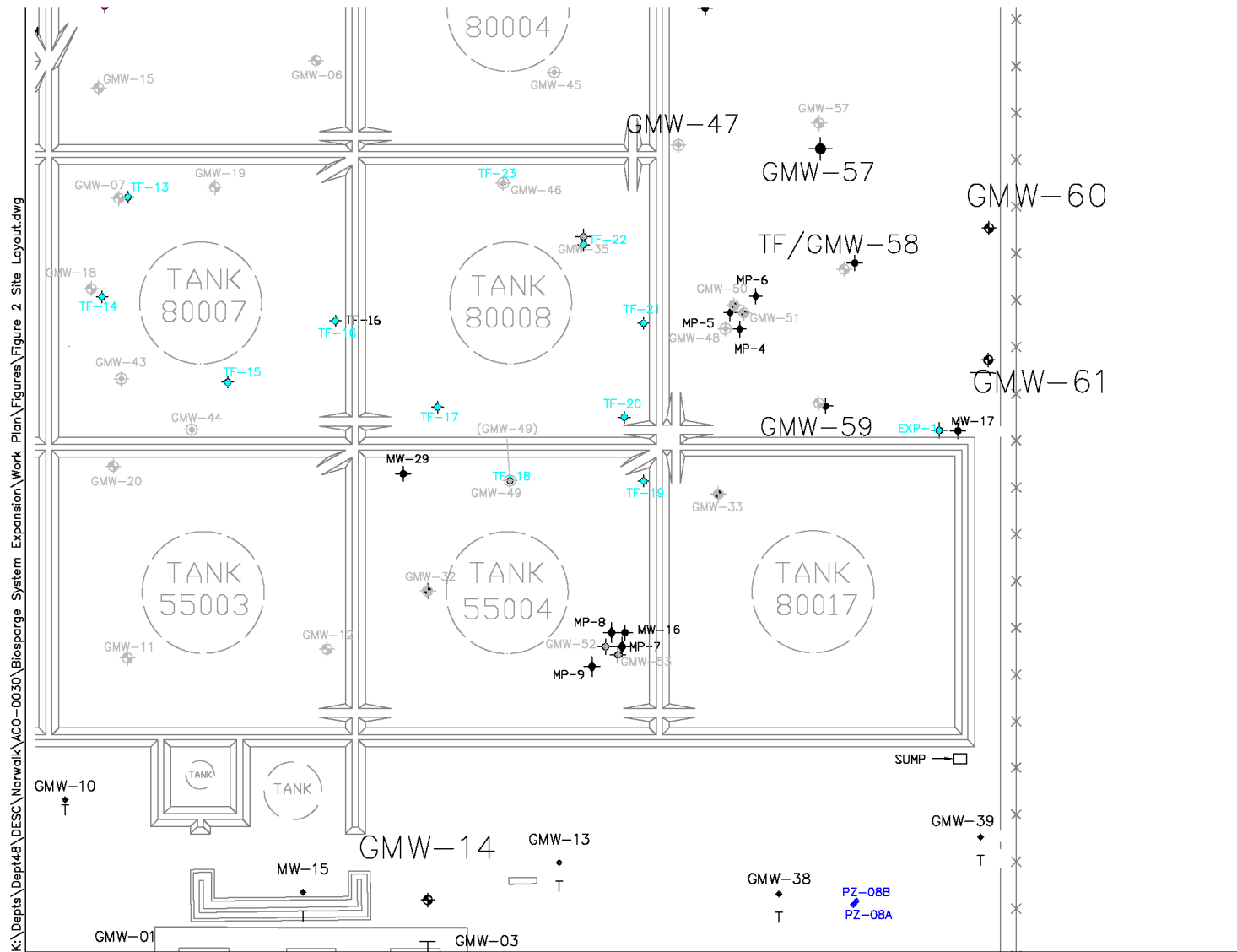
Groundwater Monitoring

- First quarterly event conducted in March 2007
 - 54 wells were gauged
 - 5 wells contained free-phase product
 - 7 wells were sampled (eastern area)
 - Data summary table on next slide
- Semiannual event scheduled for April 30 through May 4, 2007

1st Quarter 2007 Groundwater Monitoring Data Summary

SAMPLE ID	Unit	Benzene	Ethyl benzene	MTBE	o-Xylene	p/m-xylene	Toluene	TPH as Fuel Product	TPH as Gasoline
GMW-14	ug/L	ND(0.5)	ND(0.5)	3.5	ND(0.5)	ND(0.5)	ND(0.5)	3400	670
GMW-14DUP	ug/L	ND(0.5)	0.64	3.4	ND(0.5)	ND(0.5)	ND(0.5)	3800	570
GMW-47	ug/L	11	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	420	ND(100)
GMW-57	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	540	120
GMW-58	ug/L	350	5.9	ND(1)	ND(1)	1.5	ND(1)	4100	1700
GMW-59	ug/L	840	ND(2.5)	ND(2.5)	ND(2.5)	ND(2.5)	ND(2.5)	15000	8200
GMW-60	ug/L	490	87	ND(2.5)	37	43	ND(2.5)	1700	3500
GMW-61	ug/L	1200	220	ND(5)	240	1100	16	3100	7500
TRIP BLANK	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)		

1st Quarter Sampled Wells



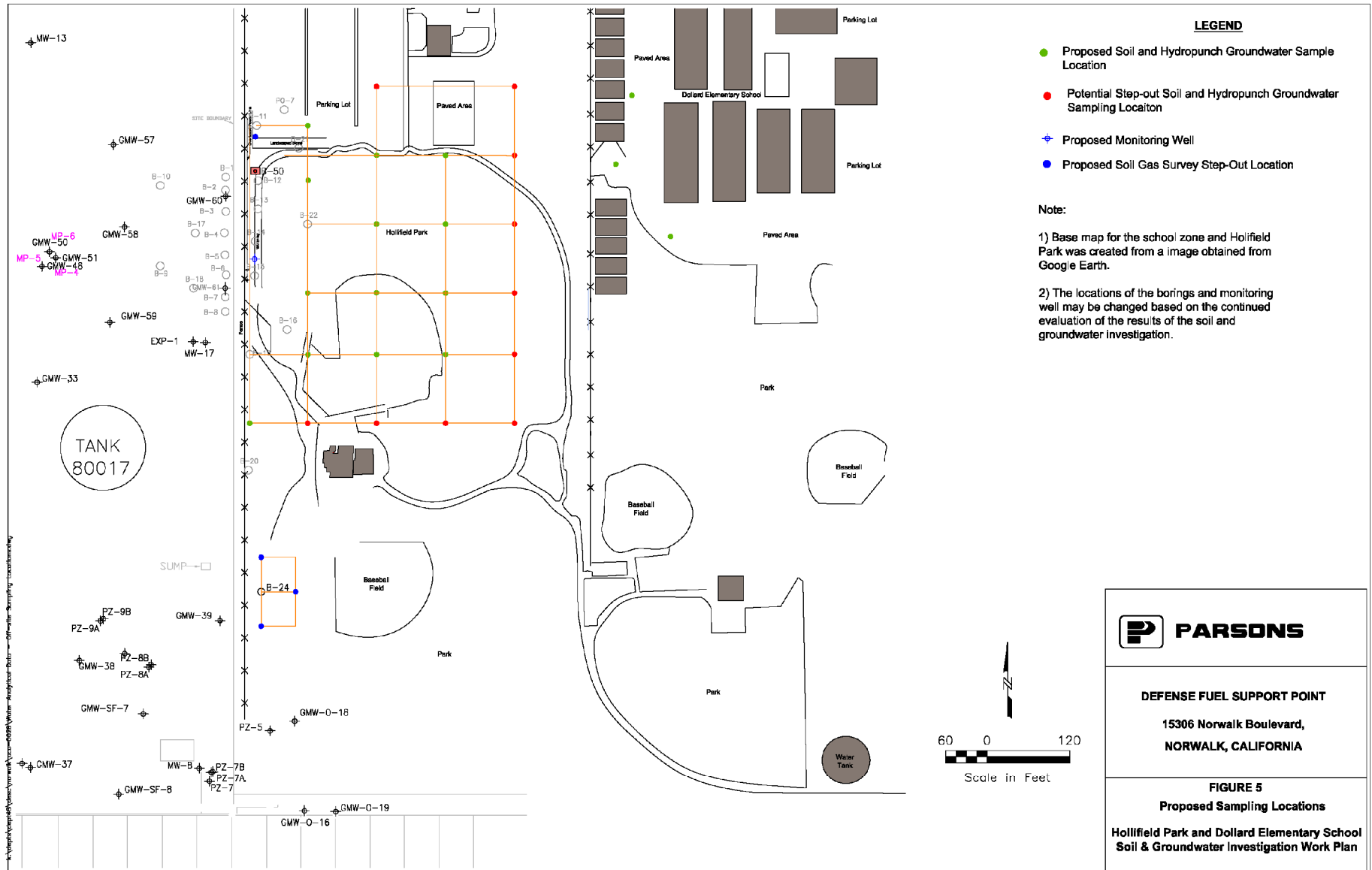
Holifield Park and Dolland Elementary School Investigation

- Due to the unresolved access agreement issue between the Norwalk/La Mirada School District and DESC, it has been decided to proceed with the implementation of the second work plan (soil and groundwater investigation) and the soil gas survey step-out sampling at the Holifield Park only.
- Data obtained from this second phase of the investigation along with previous results from the soil gas survey and soil sampling will be evaluated to see whether or not sampling at the school area is needed.

Holifield Park Investigation

- Proposed soil and groundwater sampling locations shown on next slide
- Resulting from the Soil Gas Survey, Step-outs around B-24 and B-50 will be drilled during the soil/groundwater investigation:
 - At B-24: step-outs to the north, south, and east at a distance of 50-feet from B-24
 - At B-50: step-out to the north at a distance of 50-feet from B-50
 - Soil gas sample collected at 5, 15, and 25 ft bgs

Proposed Sampling Locations for Holifield Park Soil and Groundwater Investigation



Groundwater System Upgrade

- Replaced 2 trays on Air Stripper
- Refurbished 2 carbon vessels
- Installed Arsenic Removal Tank of higher capacity (50 gpm)
- Installed Automation Devices (PLC processor & touch screen panel)
- Installed Rediflo Submersible pumps in GW-1, GW-2, GW-3 & GW-7

(Contd.)

Groundwater System Upgrade

- Installed pH pump (for bleach) and polymer (for carbon vessels)
- Collected grab samples from influent and effluent of GWT system
- Net capacity increased from 40 gpm to 90 gpm

Groundwater System Upgrade



Baseline GWT Sample Results

(March 1, 2007)

<u>Constituent</u>	<u>Unit</u>	<u>Influent</u>	<u>Effluent</u>
Arsenic	mg/L	0.194	0.0906
TRPH	mg/L	<1.0	<1.0
TPH as Gasoline	µg/L	240	<100
TPH as Diesel	µg/L	1,700	<100
TPH as FP	µg/L	1,500	<100
MTBE	µg/L	2.7	<0.5

Baseline GWT Sample Results

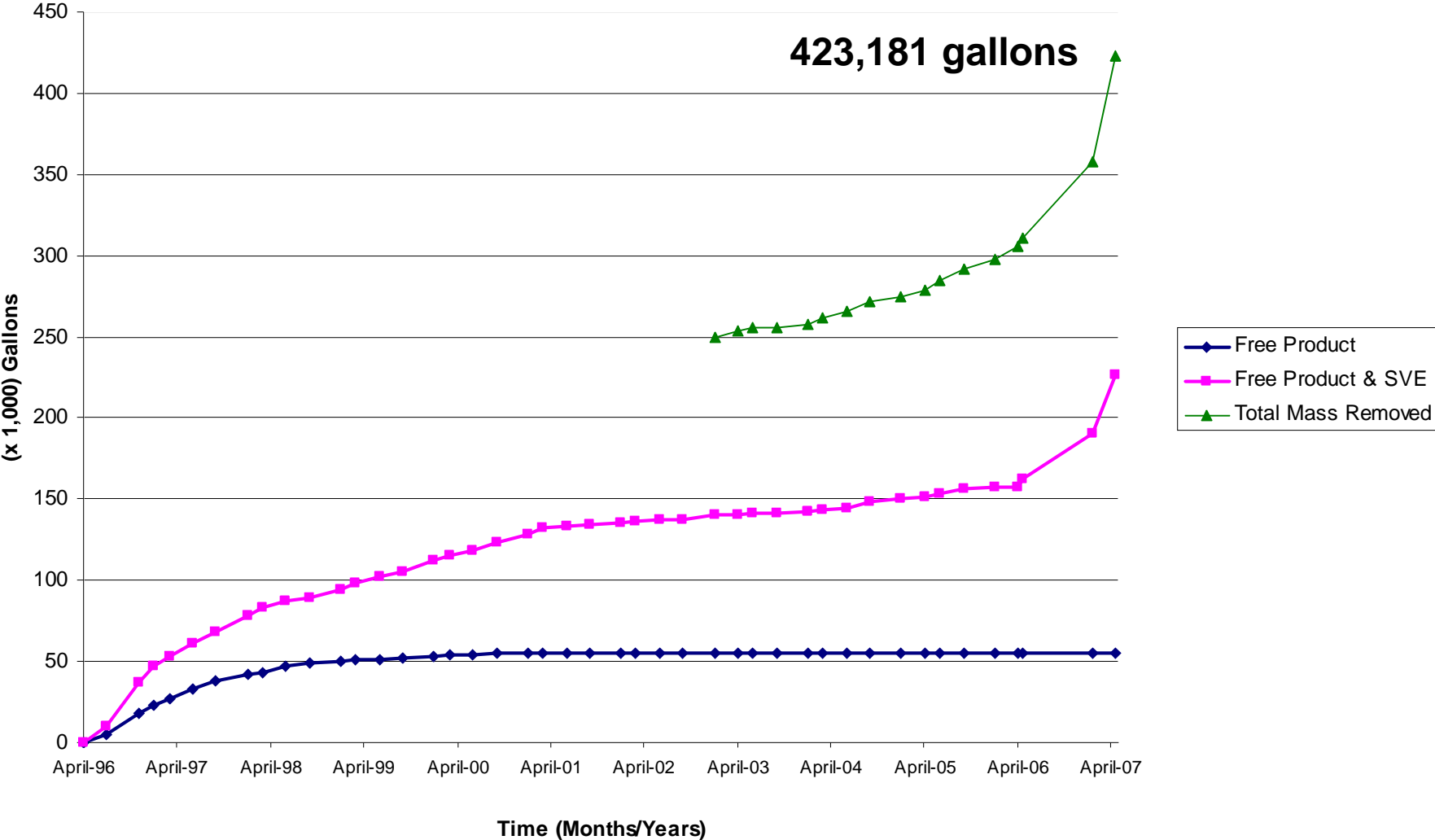
- BTEX components below laboratory reporting limit
- Additional analysis for Total Suspended Solids, Biological Oxygen Demand, Turbidity, Total Sulfides etc. from influent and effluent of the GWT system.

Central Plume Remediation

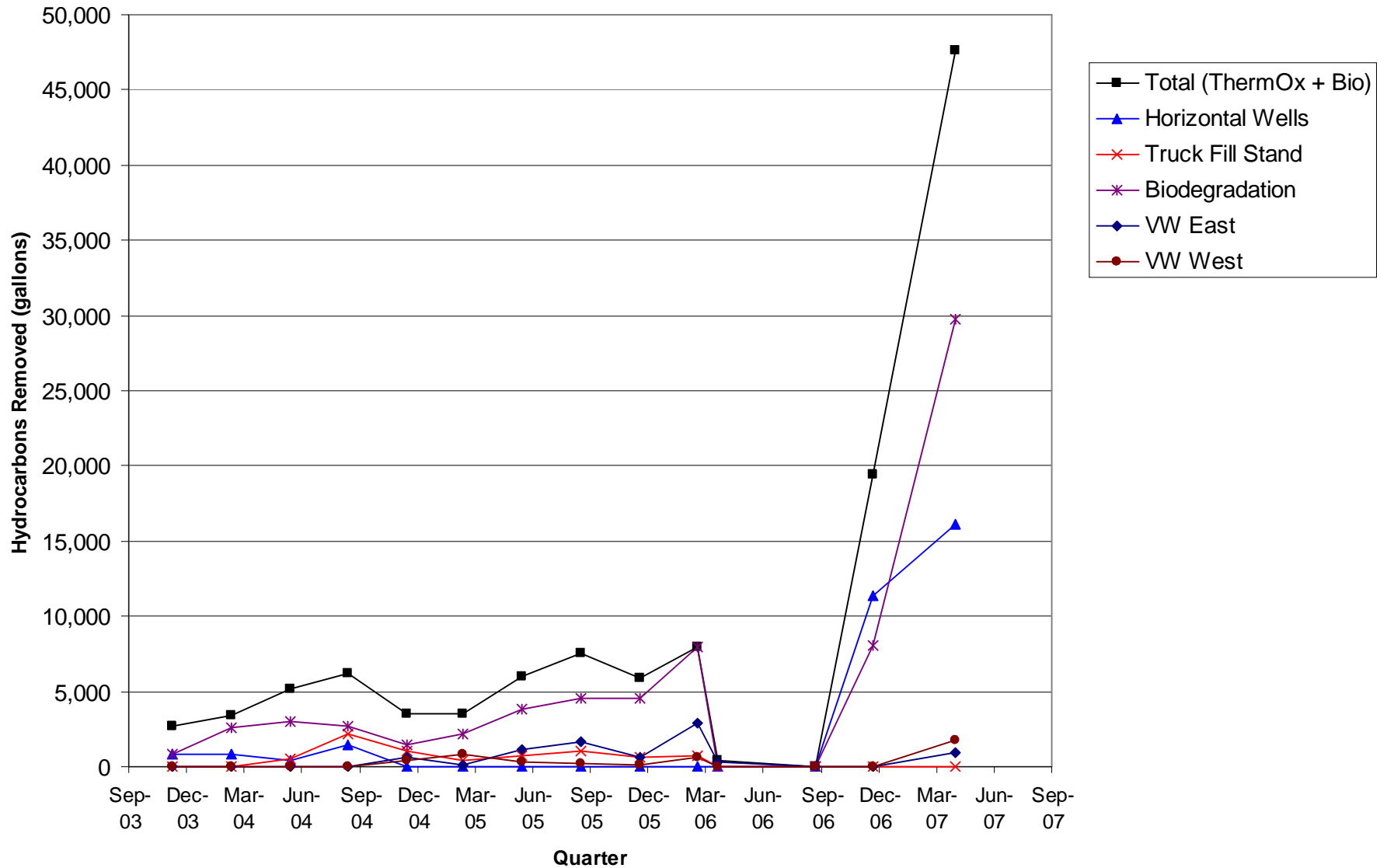
- System Performance since April 1996
 - Total Hydrocarbons Mass Removed:
423,181 gallons.
 - Approx. 226,431 gallons recycled and destroyed
 - 55,538 gallons of free product recovered
 - 1,397 gallons of dissolved-phase hydrocarbons recovered
 - 151,352 gallons of volatile hydrocarbons recovered through SVE
 - Estimated 196,750+ gallons of hydrocarbons destroyed due to enhanced biodegradation
 - 42.3 M gallons of water treated
 - Note: GWT system is operational now but has been temporarily shut off for semiannual sampling.

Hydrocarbon Mass Removal

Hydrocarbons & Free Product -- Central Plume



Hydrocarbon Mass Removal – SVE System



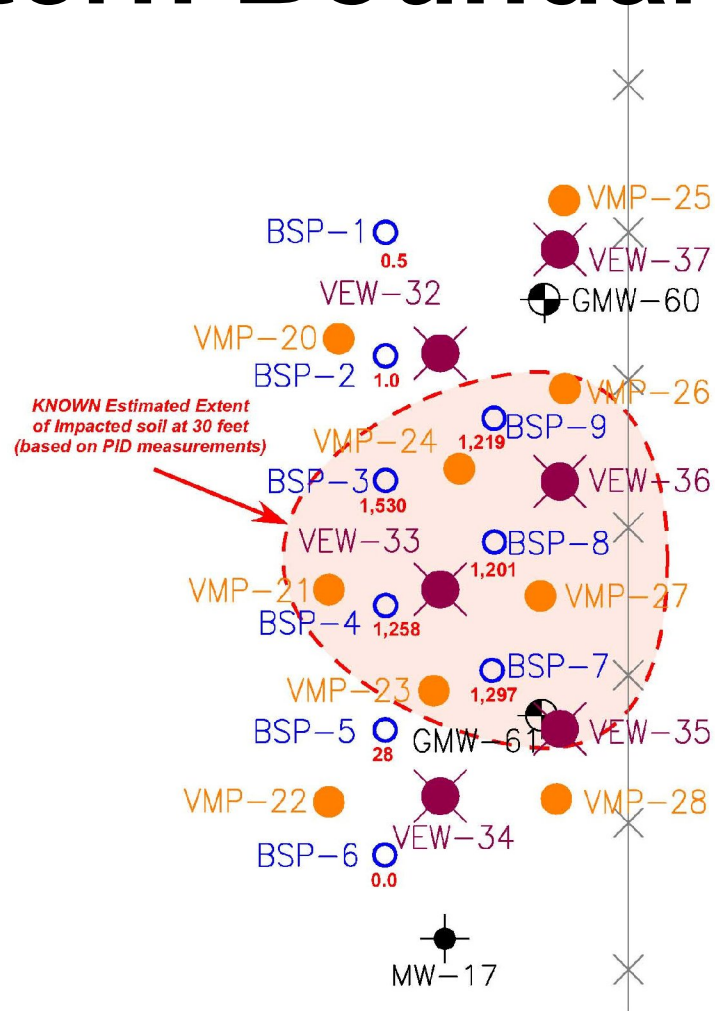
Eastern Boundary Update

- Installed Vapor Extraction Wells
- Installed Vapor Monitoring Wells
- Installed Biosparge Wells
- Ongoing work includes installation of groundwater extraction well

Eastern Boundary Update



Eastern Boundary Update



1,297 = PID measurement (in ppm) of soil sample collected at 30 feet bgs.
 Soil samples collected at 25 feet generally reported as 0.0 ppm (except BSP-8 = 380 ppm)
 PID concentrations decrease with depth - generally 0.0 ppm at 45 and 50' (except BSP-8 = 54.7 & 21.8 ppm).

Pipe Declogging



Revised Schedule (pg 1)

(April 2007)

- Finish implementing scope of work on eastern boundary.
- Install groundwater extraction wells as per addendum to revised RAP.
- Continue operation of GWT system and SVE system
- Initiate biosparging in the central tank farm area and the eastern boundary of the tank farm
- Install adsorbent socks in the TF wells
- Pipe declogging operation

Upcoming Schedule

(May 2007)

- Implement remaining scope of work for the central tank farm area as per the revised RAP.
- Perform second quarter groundwater monitoring

(April/July 2007)

- Update RAB
- Perform soil/groundwater and soil gas survey step-outs in the Holifield Park

(October 2007)

- Stop SVE operation and perform vapor monitoring from vapor monitoring probes
- If low methane concentrations are observed, switch to bioventing

Upcoming Schedule

(November 2007)

- Stop SVE operation and perform vapor monitoring from vapor monitoring probes
- If low methane concentrations are observed, perform bioventing along with SVE

(May 2008)

- Perform respiration test

(July 2008)

- Submit first annual progress report

Discussion