Norwalk Tank Farm Update

Presented to the Norwalk Tank Farm Restoration Advisory Board

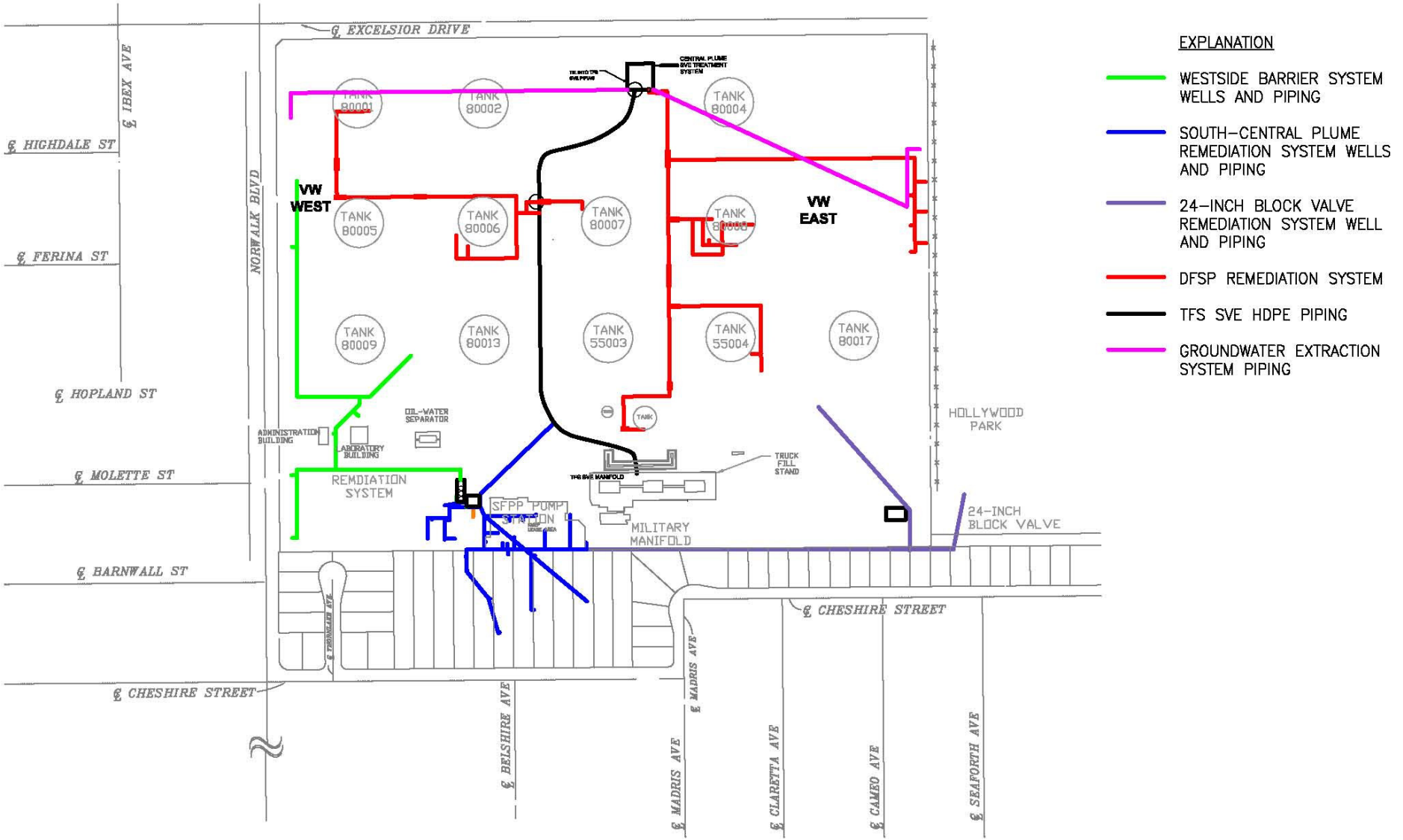
October 29, 2009

Presentation Overview

Topics to be Covered

- Remediation Operations Update
  - GMW-O-15 Status Update
- Third Quarter 2009 Sentry Event
- Additional Assessment Update

Map of Remediation Systems



Soil Vapor Extraction System

- 24 on-site and 6 off-site vapor extraction wells in the South-Central Plume area.
- 2 vapor extraction wells in the Southeastern 24-Inch Block Valve area.

Soil Vapor Extraction System Operations Summary

- Approximately 293 gallons equivalent of fuel removed from soil and destroyed by catalytic oxidation during third quarter 2009.

- Approximately 454,559 gallons equivalent of fuel removed from soil and destroyed by catalytic and thermal oxidation since September 1995.

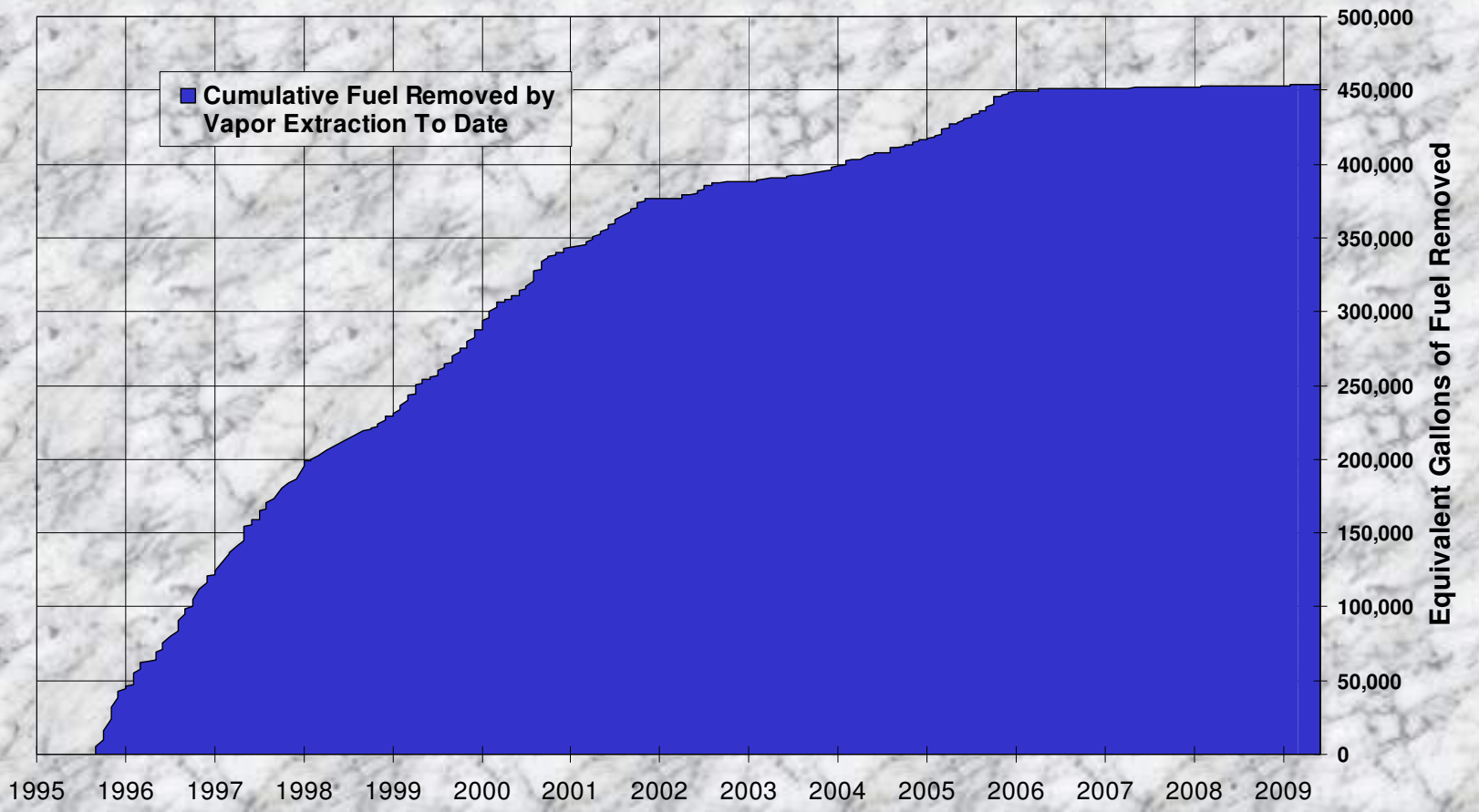
- Approximately 67,370 hours of operation since September 1995.

Soil Vapor Extraction System Operations Summary

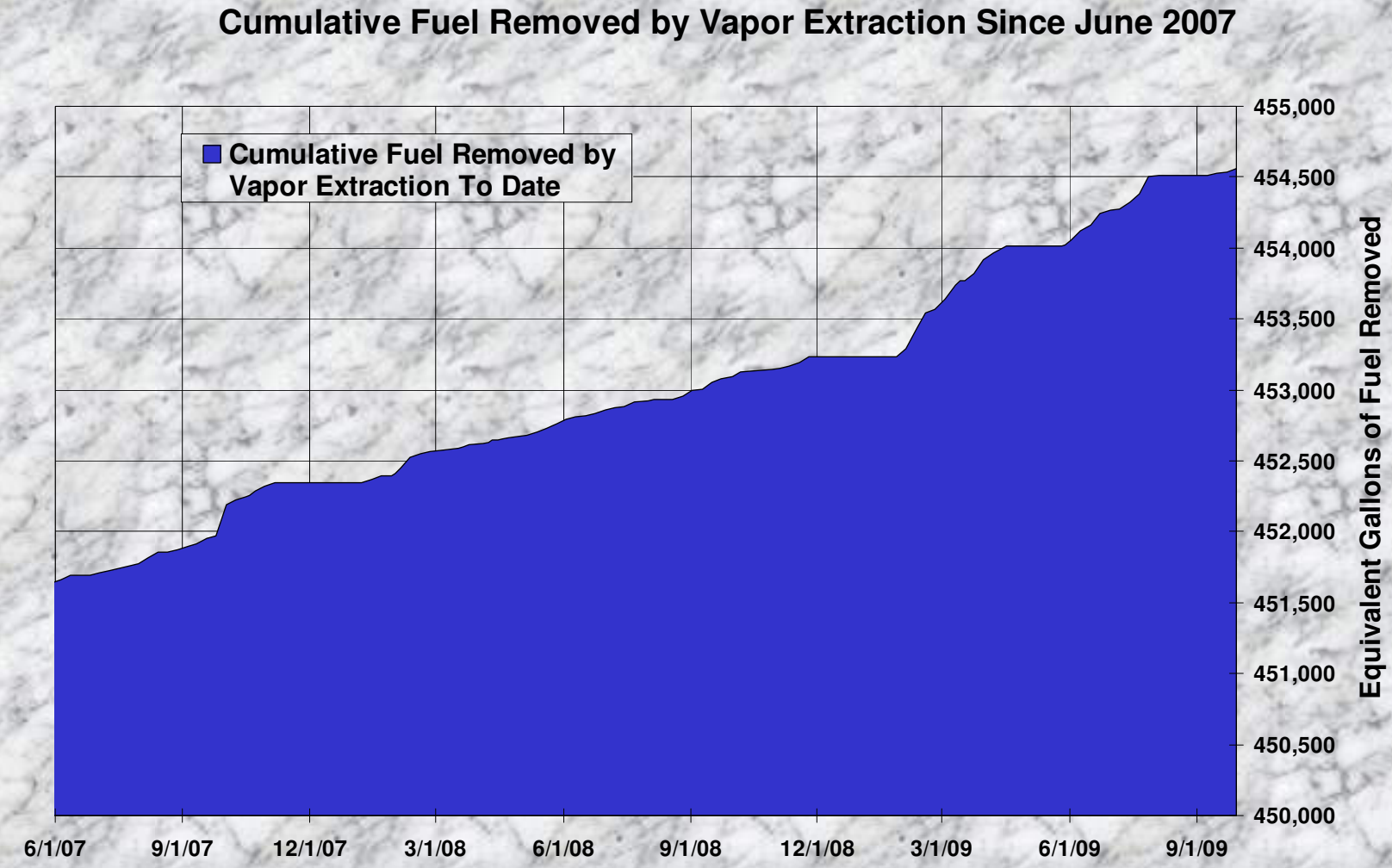
- The SVE system operated continuously during third quarter 2009 with the following exceptions:
  - SVE system was shut down for approximately 4 days due to tripped electrical breakers.
  - SVE system was shut down for approximately 25 days total due electrical malfunctions. An adjustment was made to the electrical panel on September 1, 2009.
  - SVE system was shut down for approximately 7 days due to power loss.
  - SVE system was shut down for approximately 4 days due to conflicting exhaust readings. One FID detected VOCs in the system exhaust above the 30 ppmv discharge limit and another FID detected VOCs below 30 ppmv. A laboratory sample confirmed that the system was operating in compliance with the permit, and the system was restarted.
- Percent operation for third quarter 2009: 56%
- Percent operation for September 2009 excluding downtime due to power loss: 78%

Soil Vapor Extraction System Operations Summary

Cumulative Fuel Removed by Vapor Extraction To Date



Soil Vapor Extraction System Operations Summary



Groundwater/Product Extraction System

- 18 total fluids (product and groundwater) extraction wells and 2 groundwater extraction wells in the South-Central Plume area
- 2 total fluids (product and groundwater) extraction wells in the Southeastern 24-Inch Block Valve area*
- Operation of the West Side Barrier system was discontinued in August 2008.

* The TFE pump for GMW-O-15 apparently had not been re-installed in this well by the previous operations and maintenance contractor after having been removed for the April 2009 groundwater monitoring event.

Groundwater/Product Extraction System Operations Summary

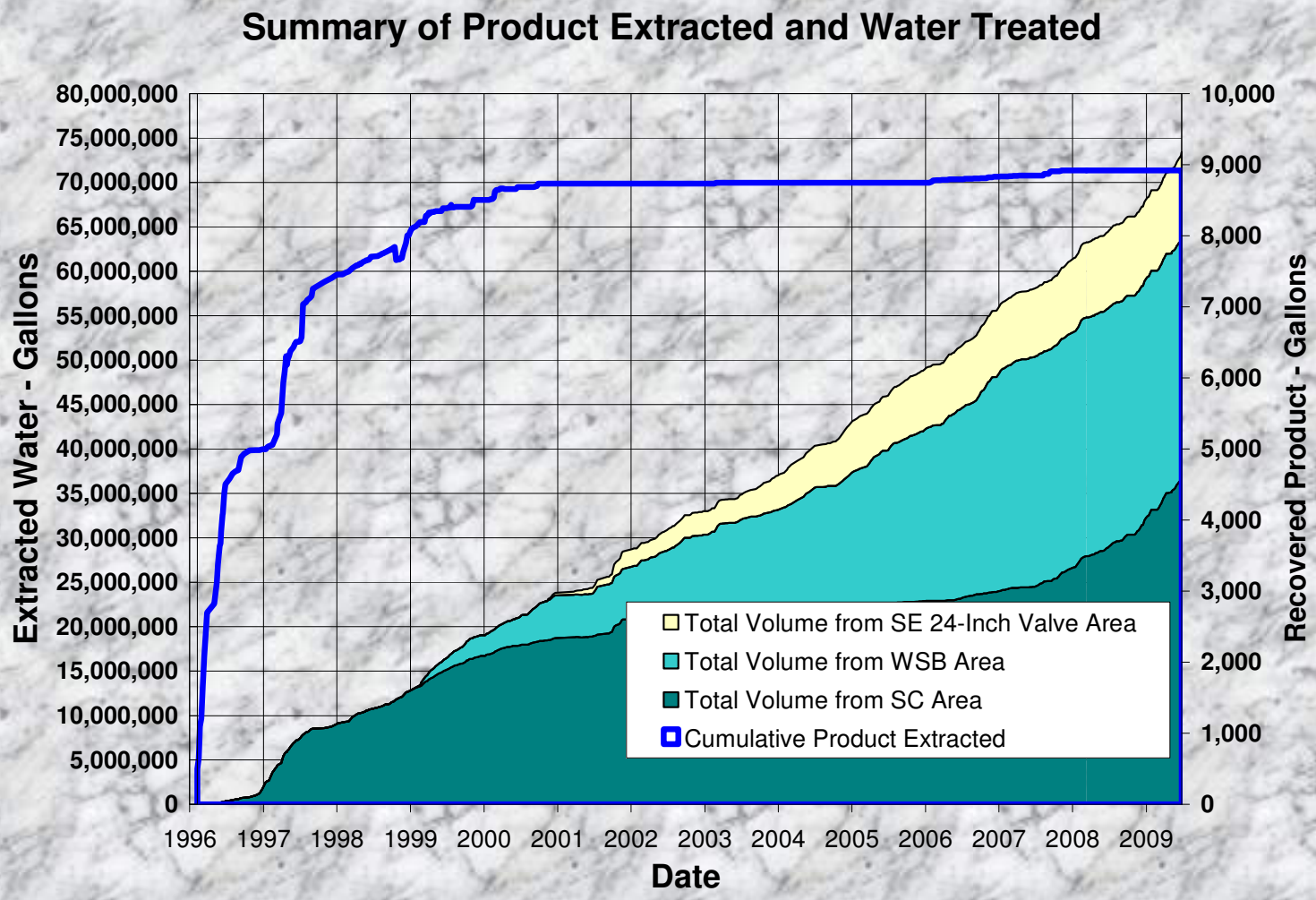
- Total groundwater extracted during third quarter 2009:
  - South-Central Plume area: 2,329,612 gallons
  - Southeastern 24-Inch Valve area: 64,224 gallons
  - West Side Barrier area: 0 gallons
- Total groundwater extracted since September 1995:
  - South-Central Plume area: 39.2 million gallons
  - Southeastern 24-Inch Valve area: 9.67 million gallons
  - West Side Barrier area: 26.9 million gallons
  - Total groundwater extracted: 75.8 million gallons
  - 8,917 gallons free product removed*

* The total volume of free product removed is estimated based on measurements of free product accumulation in the product holding tank and measurements of free product removed manually from individual wells. This estimate does not account for free product that is removed via total fluids extraction and becomes emulsified in the relatively larger volume of groundwater extracted.

Groundwater/Product Extraction System Operations Summary

- The groundwater/product extraction system operated continuously during third quarter 2009 with the following exceptions:
  - The system was shut down for approximately 3 days due to a high water level alarm for the transfer tank. The water level sensors were cleaned and the system was restarted on August 11, 2009.
  - The system was shut down for approximately 3 additional days due to another high water level alarm for the transfer tank. The anti-scalant feed was changed, the water level sensors were re-cleaned, and the system was restarted on August 18, 2009.
- Percent operation for third quarter 2009: 93%

Groundwater/Product Extraction System Operations Summary



GMW-O-15 Status Update

- In assessing the increased concentrations noted in well PZ-5, the TFE pump for GMW-O-15 was found to be have been removed from the well by the previous operations and maintenance contractor potentially since the April 2009 groundwater monitoring event. Totalizing flowmeter measurements from the area did not indicate a conspicuous decrease in remediation system fluid extraction rate from the area.

GMW-O-15 Status Update

- Corrective actions taken:
  - AMEC Geomatrix notified the RWQCB on October 12, 2009 of the GMW-O-15 operational status.
  - The TFE pump for GMW-O-15 has been cleaned, inspected, and re-installed following the October 2009 groundwater monitoring.
  - The totalizing flowmeter measuring water pumped from the southeastern area has been replaced.

GMW-O-15 Status Update

- Additional Verification Measures:
  - Conduct field checks of pump presence and operation at each pumping well approximately one week after pumps have been reinstalled and resumed operation.
  - Conduct a visual confirmation of pump presence and operation at each pumping well on a monthly basis.
  - Take prompt action to reconcile any inconsistencies between observed well operation status and expected well operation status.
  - Inspect flow totalizers on a quarterly basis.

GMW-O-15 Status Update

- Performance Evaluation:
  - Review pump test data.
  - Perform additional capture zone modeling for the southeastern area.
  - Collect field measurements to evaluate the conceptual capture zone.
  - Continue to monitor PZ-5 for improvements to groundwater quality with resumed pumping.
  - Propose additional pumping if performance evaluation indicates additional pumping is needed.

Planned Remediation Activities

- Continue TFE, GWE, and SVE in the South-Central and Southeastern areas.
- Continue to monitor concentrations of dissolved 1,2-DCA and MTBE in western area.
- Continue routine system inspections.
- Continue data collection for monitoring and evaluation of remediation systems.
- Continue adjustments to remediation wells to optimize remediation.
- Continue SVE rebound tests as appropriate.
- Implement additional pump status verification measures and performance evaluation.

Third Quarter 2009
Sentry Monitoring Event

- 20 wells sampled, including 5 Exposition wells.
- Groundwater elevations have generally decreased in both the uppermost aquifer and the Exposition aquifer beneath the site since April 2009.
- Wells GMW-O-15, MW-SF-1, MW-SF-4, PZ-5, EXP-4, and GMW-38 were monitored voluntarily by KMEP during the sentry event. Free product was detected in MW-SF-4 and GMW-O-15.
- In the southern off-site area, VOCs, TPHg, and TPHfp were not detected in wells GMW-O-1, GMW-O-2, GMW-O-3.

Third Quarter 2009
Sentry Monitoring Event

- Bromodichloromethane was detected in EXP-4 at a low concentration (1.2 µg/L) and total petroleum hydrocarbons quantified as fuel product was detected at 120 µg/L in EXP-1 and EXP-4. These low concentrations may be anomalous and will be investigated in the October 2009 semi-annual groundwater monitoring event.*

* Preliminary results for groundwater samples collected from wells EXP-1 through EXP-5 indicate that TPH and VOCs were not detected during the groundwater monitoring event performed last week.

Third Quarter 2009
Sentry Monitoring Event

- In western off-site area, 1,2-DCA and MTBE were detected in only one well (WCW-7) at concentrations below RBCA levels.
- TBA, a breakdown product of MTBE, was detected in the southeastern area in wells GMW-38, PZ-5, PZ-10, and MW-SF-1, where MTBE has been detected, and in GMW-39, where MTBE has previously been detected.
- In the southeastern off-site area, concentrations of VOCs, TPHg, and TPHfp in well PZ-5 were generally greater than those detected in the same well during April 2009.

Additional Assessment Update

- In a letter dated November 26, 2008, the RWQCB commented on the report titled "Additional Off-Site Assessment Report, Off-Site 24-Inch Block Valve Area" dated August 28, 2008.
- The RWQCB questioned the presence or continuity of an aquitard in the vicinity of the block valve and requested a work plan for further vertical delineation of contaminants in that area.
- The work plan was submitted to the RWQCB on January 26, 2009.
- The work plan was approved by the RWQCB on July 23, 2009.

Additional Assessment Update

- Many of the pre-field activities have been completed.
- Currently, the access agreement between the City of Norwalk and KMEP is being finalized. As required by the agreement, the work will be scheduled to begin at least 10 days after the agreement has been signed by both parties.
- A report to summarize the findings of the supplemental assessment will be submitted to the RWQCB within 45 days after receipt of final laboratory results.