

Norwalk Tank Farm Update

Defense Logistics Agency Energy

*Norwalk Tank Farm
Restoration Advisory Board*

August 11, 2011

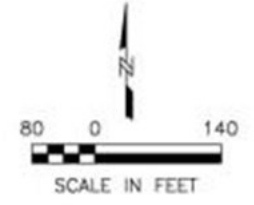
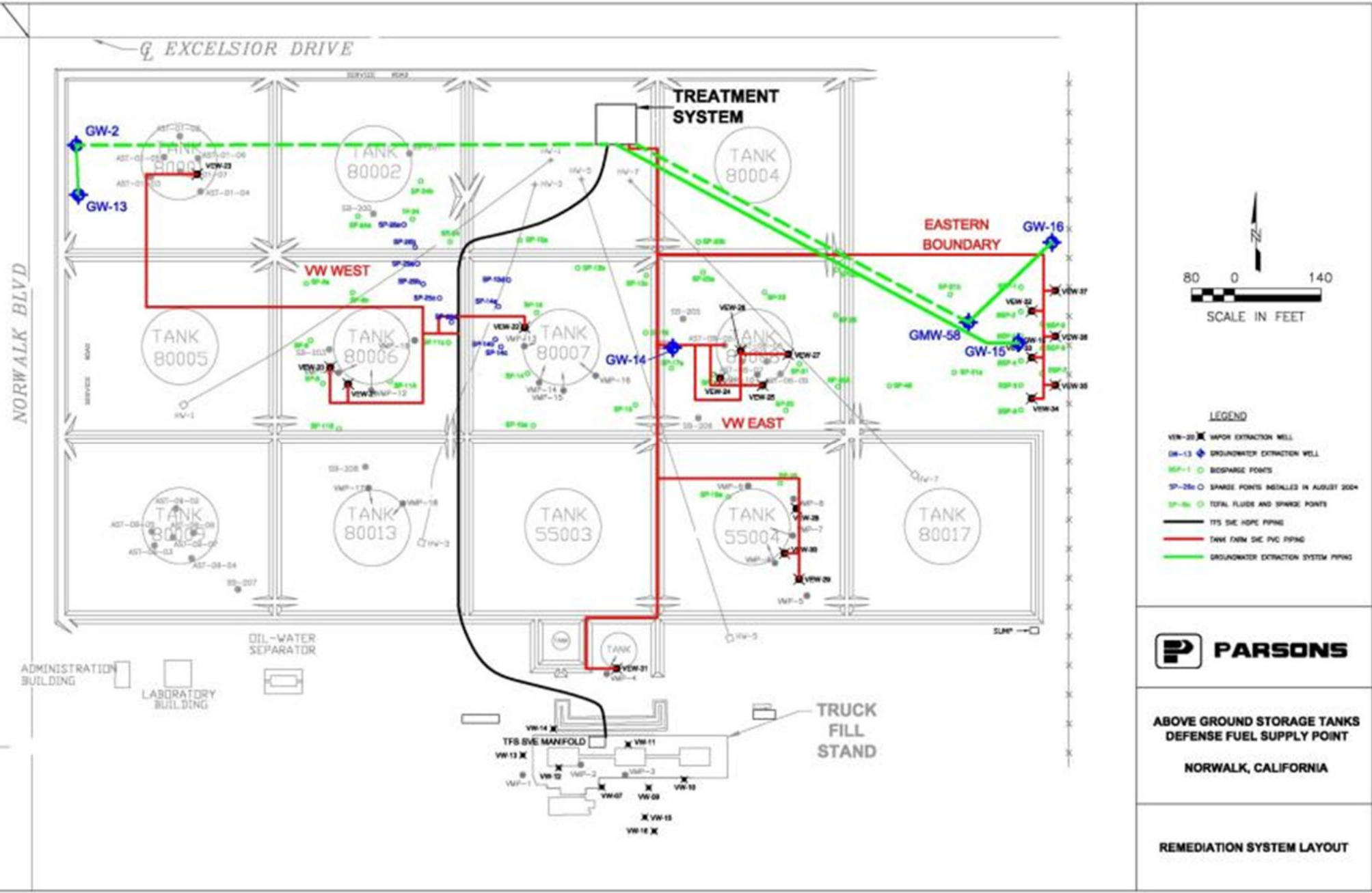


Presentation Overview

- Remediation Operations Update
- Concrete Demolition Update
- Revised Remedial Action Plan Progress Report
- Planned Activities

Remediation Operations Update

DLA Remediation System Layout



- LEGEND**
- VW-20 X WAPOR EXTRACTION WELL
 - GW-13 X GROUNDWATER EXTRACTION WELL
 - SP-1 O BIOSPARGE POINTS
 - SP-20x O SPARGE POINTS INSTALLED IN AUGUST 2004
 - SP-20x O TOTAL FLUIDS AND SPARGE POINTS
 - TFS SVE HDPE PIPING
 - TANK FARM SVE PVC PIPING
 - GROUNDWATER EXTRACTION SYSTEM PIPING



**ABOVE GROUND STORAGE TANKS
DEFENSE FUEL SUPPLY POINT
NORWALK, CALIFORNIA**

REMEDIATION SYSTEM LAYOUT

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General Site Activities

- Completed weed abatement in April and conducted weed chemical spraying in June
- Submitted Quarterly NPDES Discharge Monitoring Reports (DMR) for 4th Quarter (Q4) 2010 and Q1 2011
- Submitted Remediation Monthly Status Summary Reports
- Conducted Groundwater Monitoring (GWM)
 - January 10 – 11: Q1 2011 GWM sentry event
 - April 11 – 15: Q2 2011 GWM semiannual event
 - July 11 – 12: Q3 2011 GWM sentry event
- Front site access gate repaired (Jun 29)
- Recovered product from GMW-62 (Jun 29)

Groundwater Treatment System Activities and Operations Summary

- GWTS Activities:
 - Replaced float switched in surge tank (Mar 30)
 - Installed new bag filter housing (May 5)
 - Replaced pump in GW-2 (Jun 6)
 - Installed new ladder on surge tank (Jun 17)
 - Carbon change-out (Feb 24)

- System **On** from January 1, 2011 through July 31, 2011 except for the following periods when it was **Off**:
 - Feb 24 - half day for GAC change-out
 - April 4 - 15 for Q2 GWM
 - July 5 - 13 for Q3 GWM

Vapor Extraction System Activities and Operations Summary

- Permit modification for blower upgrade submitted to South Coast Air Quality Management District (AQMD) (Feb 10)
- Final AQMD permit to operate the soil vapor extraction and treatment system received (Apr 15)
- Conducted startup, testing, and optimization (Jan)
- Began continuous operation from six eastern boundary wells (VEW-32 through VEW-37; Jan 25) and four horizontal wells (HW-1,3,5, and 7; Feb 25)
- System **On** from January 25, 2011 through July 31, 2011 except for the following periods when it was **Off**:
 - April 4 - 18 for Q2 GWM
 - July 5 - 13 for Q3 GWM

Remediation Systems Update

- GWTS & VES weekly system inspections
- VES performance & compliance sampling:
 - Q1 Feb 24
 - Q2 Apr 29, May 27, Jun 30
 - Q3 July 27
- GWTS performance & compliance inspections:
 - Q1 Jan 28, Feb 29, Mar 18
 - Q2 Apr 29, May 27, Jun 28
 - Q3 Jul 27
- GWTS GAC change-out at GAC-1 GAC-2, and GAC-3 on Feb 24

Overall Operations Summary

- Groundwater extracted and treated:
 - 1,031,468 gallons in Q1 2011
 - 1,597,142 gallons in Q2 2011
 - 54.9 million gallons since April 1996

- Vapor extraction system fuel treated:
 - 1.3 gallons (8.4 pounds) in Q1 2011
 - 12.4 gallons (82.7 pounds) in Q2 2011

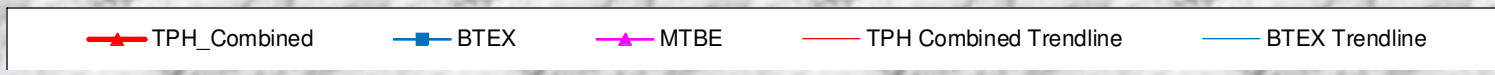
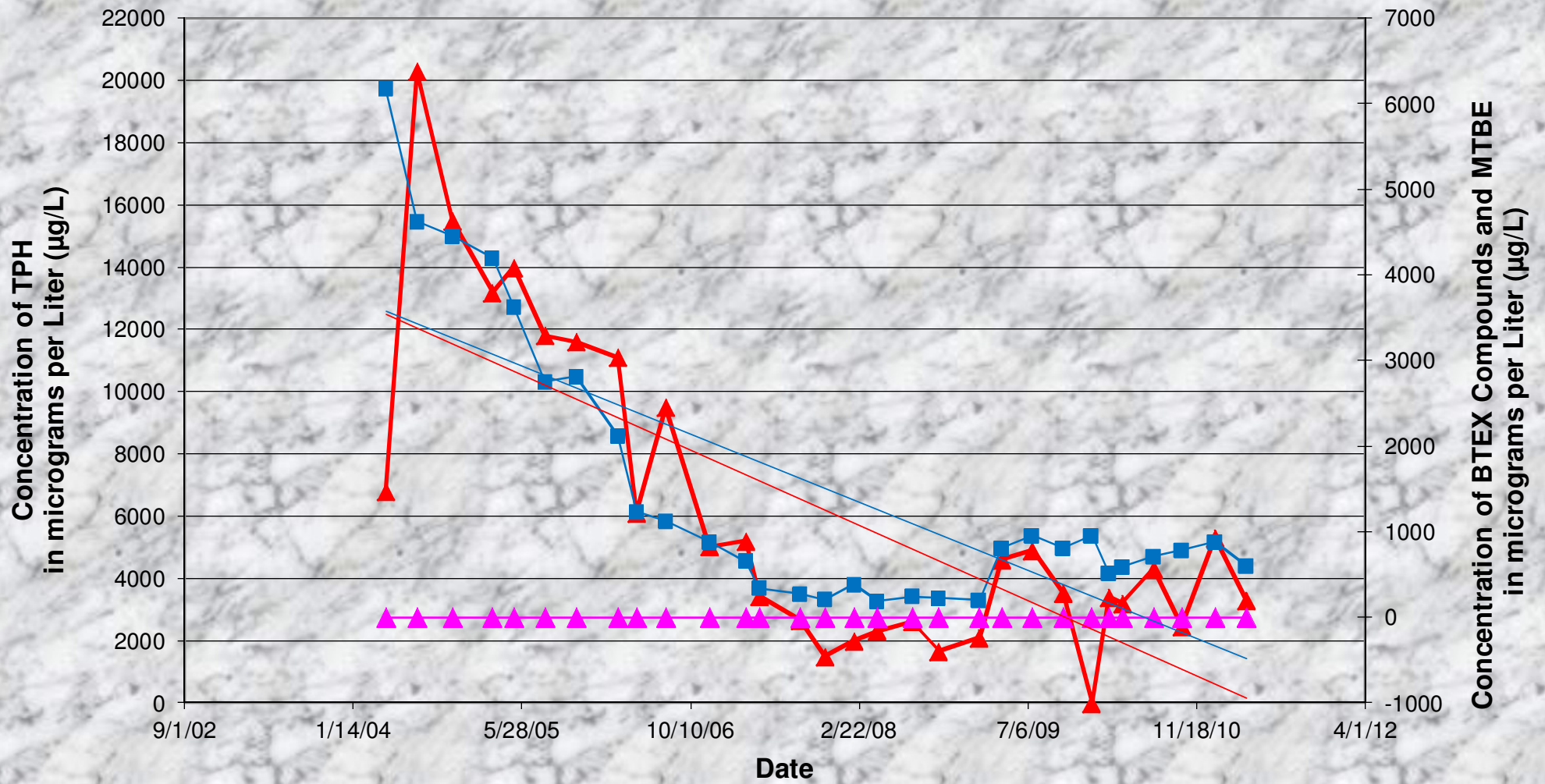
GMW-62 Gauging and Recovery

- GWM-62 (located in Holifield Park adjacent to the site) contained LNAPL during the 2nd quarter 2011
- GMW-62 LNAPL gauging history and recovery:
 - Q3 2010 July: no measureable product but a sheen observed
 - Q4 2010 October: 0.18 feet of product
 - Q1 2011 January: 0.30 feet of product
 - Q2 2011 April: 1.68 feet of product
 - June 29th: 2.55 feet of product; recovery conducted using a vacuum-truck and approximately 9 gallons of product was recovered.
 - Q3 2011 July: 0.11 feet of product
- GMW-62 will be gauged a minimum of twice a week and once the measureable LNAPL reaches at least 2 feet, the product will be recovered from the well using vacuum-truck extraction

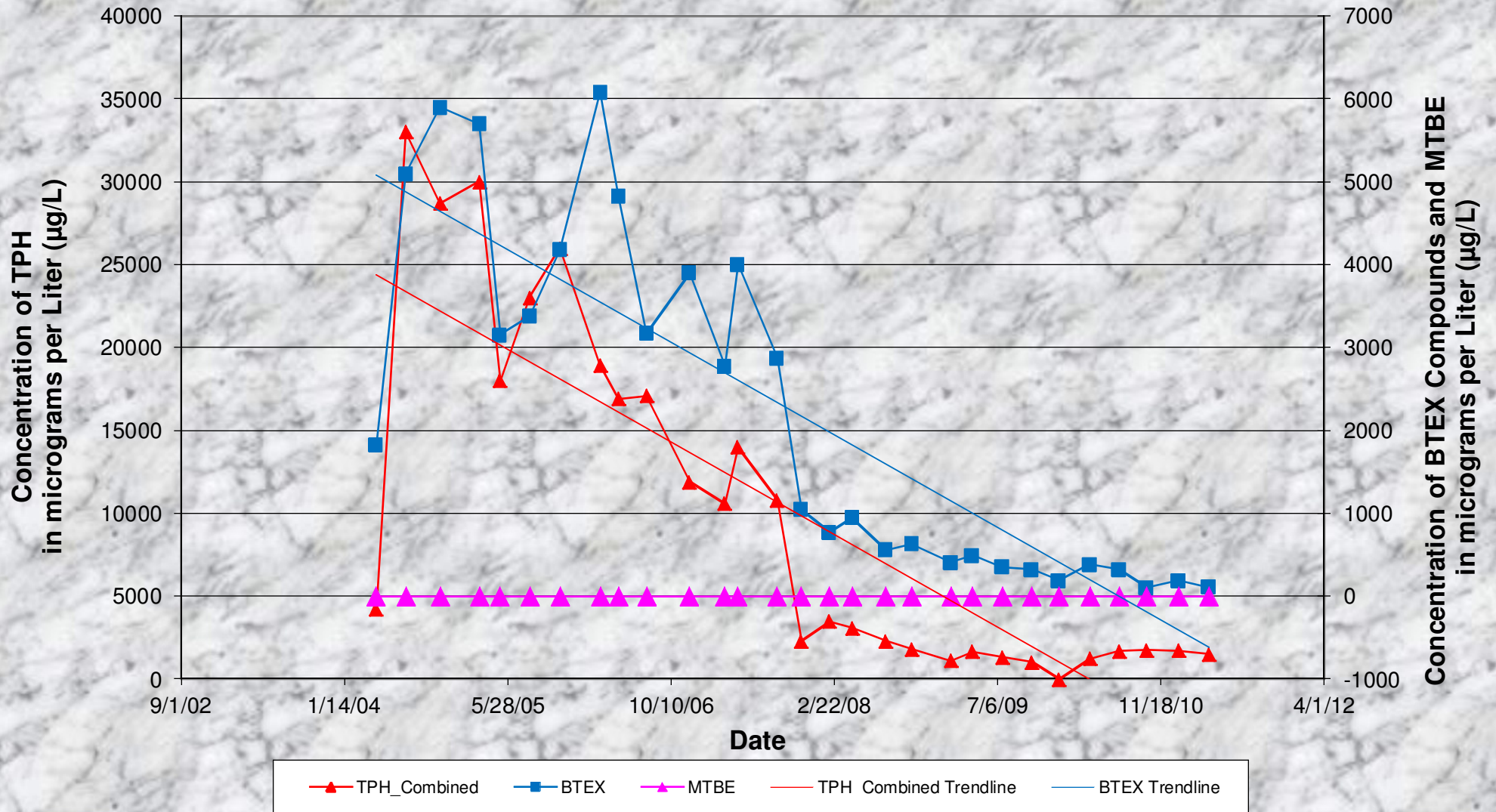
North-Eastern Area Groundwater Extraction Update

- Concentrations of TPH in April 2011 have increased at GMW-58, GMW-59, and GMW-60 during this event since October 2010; has decreased slightly at GMW-61; and TPH has not been detected in wells GMW-63, GMW-64, and GMW-65 since these wells were installed in 2008
- Concentration graphs were prepared for all the north-eastern area GMWs. All graphs for the eastern GWM wells indicate an overall decreasing trend in TPH except at GMW-62 where the trend has been overall stable and shows a slight increase for BTEX trend. The following slides present the graphs for a few of the wells in the north-eastern area.

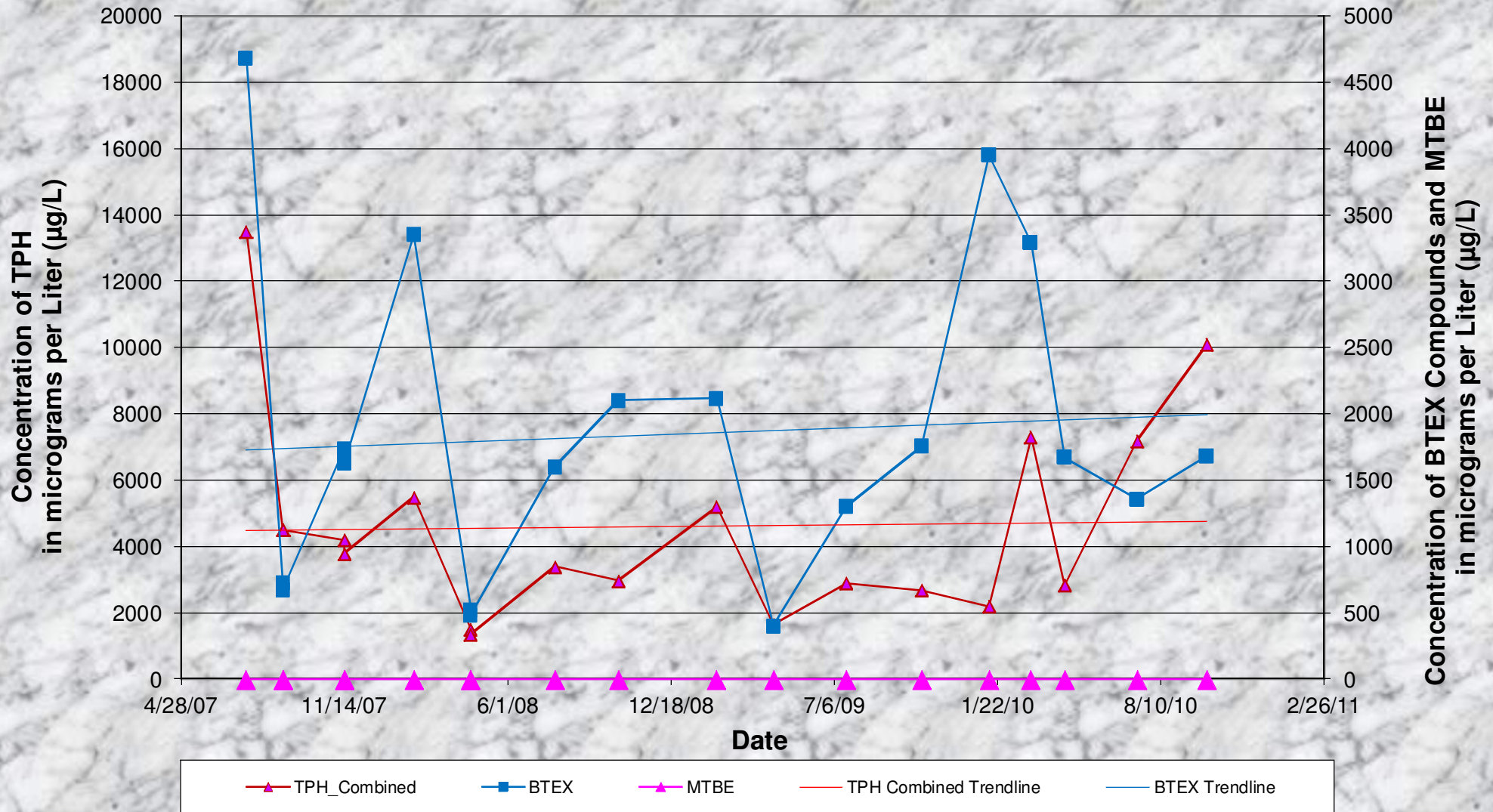
GMW-60 Concentration Trends



GMW-61 Concentration Trends



GMW-62 Concentration Trends



LNAPL Characterization and Vapor Monitoring Program

- Investigation report submitted (Jan 14) and summary provided at January RAB meeting
- RWQCB comments on report received (May 10)
- Second addendum work plan submitted (Jun 30)
- Received RWQCB concurrence and approval on work plan (Aug 10)
- 3 quarters have been sampled (4Q2010, 1Q2011, and 2Q2011) under the vapor monitoring program and the next round will be sampled 3Q2011
 - A semiannual summary report with data evaluation will be generated and submitted later this month

Concrete and Miscellaneous Tasks Demolition Update

Demolition Update

- Selected El Capitan Environmental Services for the concrete demolition task (award date April 4)
- Submitted Work Plan and Addendum for the concrete demolition and soil sampling (April 11 and June 7)
- Health and safety plan, operations plan, all permitting were completed prior to the start of work
- Berm soil sampling conducted (April)
- Geophysical survey conducted (May)
- Fire water system has been capped and two fire hydrants remain active at the site

Demolition Update (cont.)

- Concrete has been removed from all former tank areas and a portion of the truck fill station area
- Approximately 7,200 tons of concrete shipped for recycling
- 6 of the 7 steel tank pads have been shipped for recycling. One tank pad is double layered and is impacted with tar. A cleanup strategy is currently being developed.
- Approximately 2,600 feet of transfer fuel lines have been removed and shipped for recycling
- Approximately 430 feet of steel storm drain piping has been removed and will be shipped for recycling
- Approximately 85 tons of contaminated soil has been disposed to a certified treatment facility
- Miscellaneous fuel lines and electrical conduits in former tank areas are also being removed

Berm Soil Sampling Activities

- 3 soil samples collected at a total of 64 locations (approximately every 100 ft of berm)
- Soil samples collected at approximately 1 feet and 3 feet below top of berm
- A third sample collected at approximately 6 feet below top of berm to further delineate soil characterization below berms
- A total of 189 samples were collected (at three locations refusal was encountered and no samples were collected)

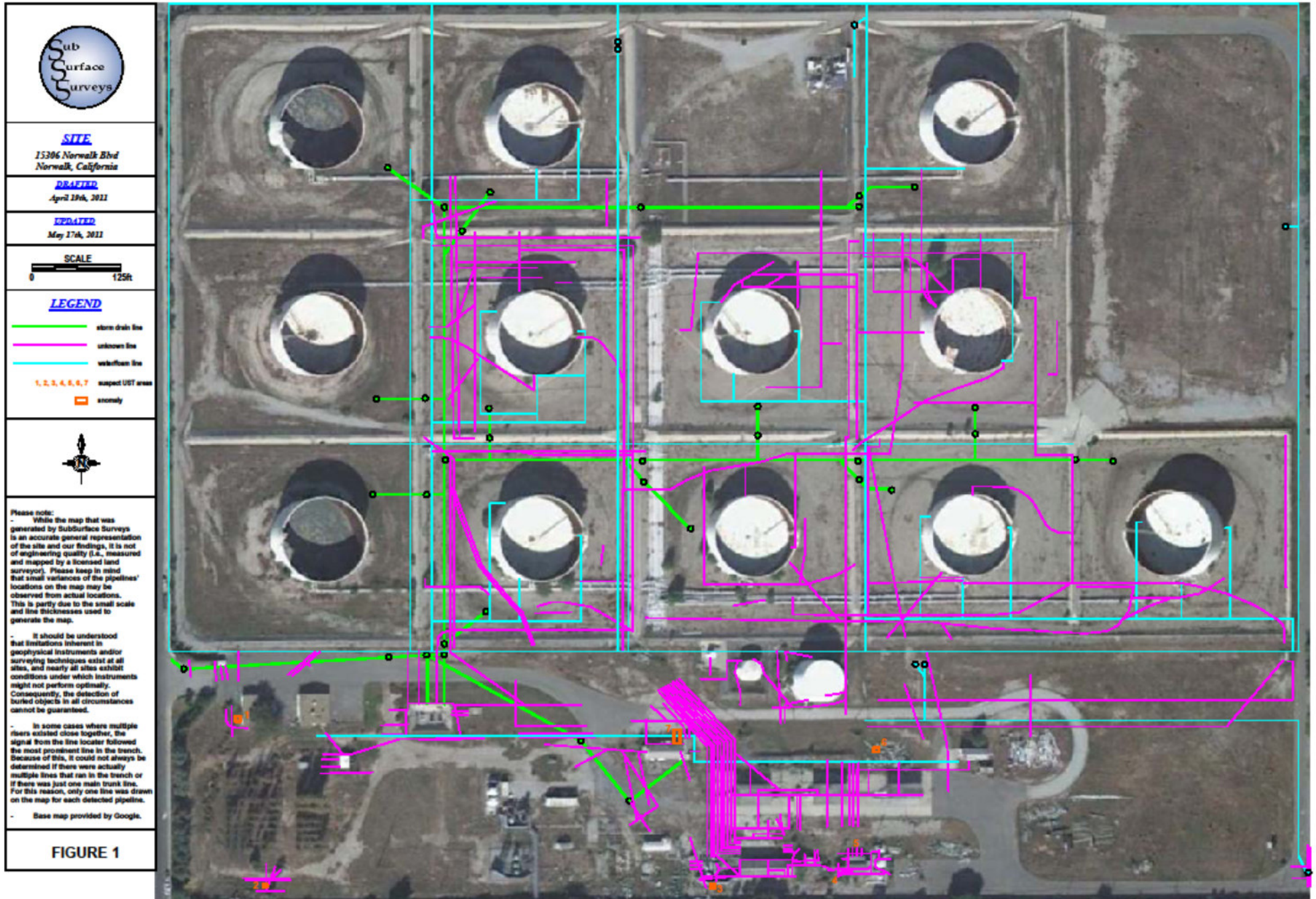
Berm Soil Sampling Program

- All samples were analyzed for the following:
 - Volatile organic compounds (VOCs)
 - Total petroleum hydrocarbons (TPH) as gasoline
 - TPH as JP-5
- 40 of the samples were also analyzed for metals
- Soil results were compared to the following screening levels:
 - EPA Region 9 Industrial Regional Screening Levels (RSLs)
 - California Human Health Screening Levels (CHHSLs)
 - California Regional Water Quality Control Board (CRWQCB) screening levels

Berm Soil Sampling Results Summary

- TPH results are below all the screening levels
- All metals results below industrial RSLs except arsenic
 - Maximum detect of arsenic was 10.5 mg/kg which is below the background threshold value for soil in southern California of 12 mg/kg
- VOC results are below their respective industrial RSLs
- Recommended NOT to remove the berms as part of the environmental investigation
- Submitted data to RWQCB; pending concurrence and approval

Geophysical Survey



Concrete Tank Bottom Removal



Tank Pad Steel Removal



Tank Pad Steel Filled with Tar



Transfer Fuel Line Removal



Asbestos Material

- Approximately 1,900 feet of storm drain pipes composed of transite
- Approximately 1,800 feet of water main composed of transite
- Approximately 1,000 feet of transfer fuel lines were found to be wrapped in asbestos containing material (ACM)
- 8,000 linear feet of fire water piping estimated on site. A portion of these lines were found to be wrapped in ACM. Currently under further assessment.

Revised Remedial Action Plan Progress Report

Update on 5-Year Action Plan

- Free product recovery
 - Fuel thickness and extent of free product in wells throughout the northern tank farm area have decreased
 - April 2011 free product only detected in 4 wells (GMW-62, GW-15, MW-15, and TF-18) in the north-central, north-eastern, and TFS areas with thicknesses ranging from 0.01 feet (GW-15) to 1.68 feet (GMW-62)
 - Began vacuum-truck LNAPL recovery from GMW-62 located in Holifield Park

Update on 5-Year Action Plan

- Soil venting & Biosparging
 - Expanded well network in various areas
 - SVES began continuous operation from the north and north-eastern areas in Jan 2011
 - In 2011 approximately 91 pounds (14 gallons) of hydrocarbons have been destroyed from the SVES

Update on 5-Year Action Plan

- Groundwater extraction
 - Effectively decreased free product plumes
 - Extraction from north-west corner and north-eastern area for containment has been effective
 - Off-site wells continue to show non-detect or decreasing trends in TPH and BTEX concentrations
 - Although TPH concentrations in most wells are lower and/or are declining, GW extraction is used for plume containment

Remedial Action Plan Update

- *Soil Remediation Schedule*
- SVE operation - Jan 2011 – Dec 2013
- Conduct additional soil investigation under concrete foundations – Aug 2011 to Mar 2012
- SVE & bioventing operation combined - Mar 2012 to Dec 2013
- Respiration test & soil confirmation sampling – Jan 2014 to June 2014
- Potential new remedial solution – date TBD

Remedial Action Plan Update (cont.)

- *Groundwater Remediation Schedule*
- Groundwater extraction
- Biosparging
- Potential new remedial solution
- Monitored natural attenuation
- Confirmatory groundwater sampling
- Request no further action

Planned Activities

Planned Activities for Next Semiannual Period

- Continue weekly system inspections, required sampling, evaluation, and optimization of GWTS
- Continue operation, system inspections, required sampling, and optimization of VES
- Site-wide weed abatement and spraying
- Conduct 4th quarter GMW semi-annual event (Oct) and 1st quarter 2012 GWM sentry event
- Prepare and submit NPDES DMR for 2nd and 3rd quarters 2011

Planned Activities for Next Semiannual Period

- Concrete Demolition and Miscellaneous Tasks:
 - Continue removal of non ACM storm drain system
 - Continue removal of non ACM fuel lines
 - Continue concrete demolition of pump houses, truck fill station area, and oil water separator
 - Removal of septic tanks
 - Further delineation of asbestos lines prior to removal and removal of these lines
 - Bidding of asbestos work has been initiated
 - Green waste removal

Discussion