

**Abandonment Plan for the  
Offsite Remediation System  
Motiva Fairfax Terminal**

Presented by EPA Region III  
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August 31, 2016



## Agenda

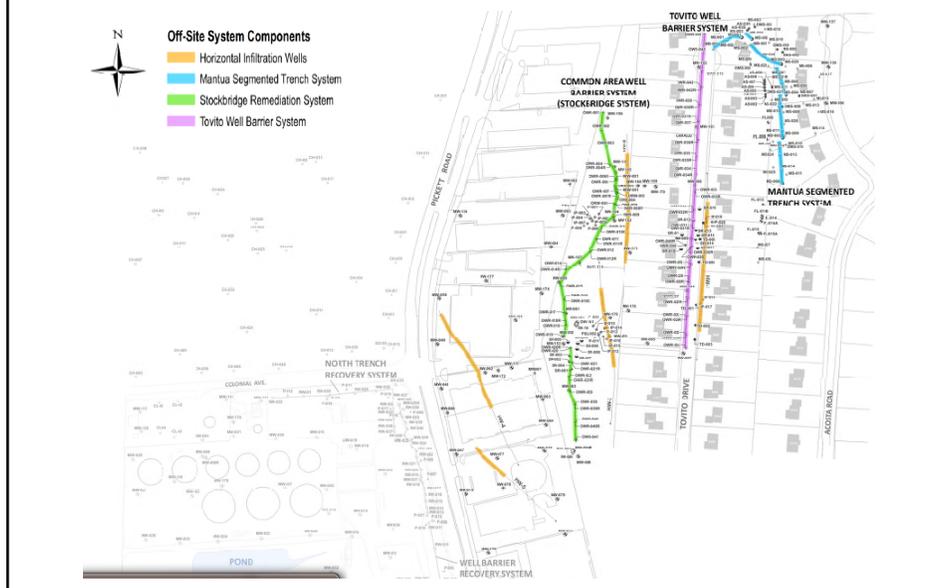
- Introduction
- Off-Site System Overview
- Off-Site System Removal & Abandonment
- Schedule
- Long-Term Monitoring & Reporting

## Introduction Off-Site Remediation and Containment System Timeline

- 1993–2009 Off-Site Remediation System Installed and Operated
- Feb 2009 USEPA Approved Shutdown Test
- May 2011 USEPA Approved 1-yr Shutdown Test Extension
- May 2012 Interagency Task Force Met to Review Results
- Aug 2013 EPA Approved Off-Site System Permanent Shutdown
- Sep 2016 Begin Off-Site System Removal & Abandonment
- Dec 2016 Complete System Removal & Abandonment

## Off-Site System Overview

*Plan View of Components*

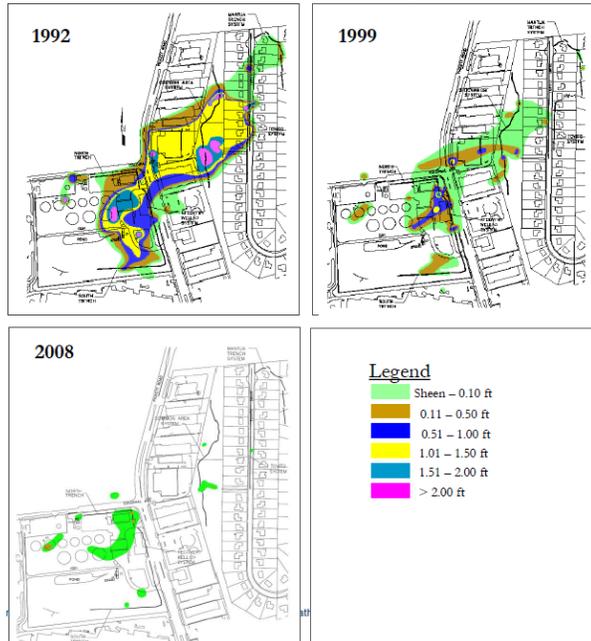


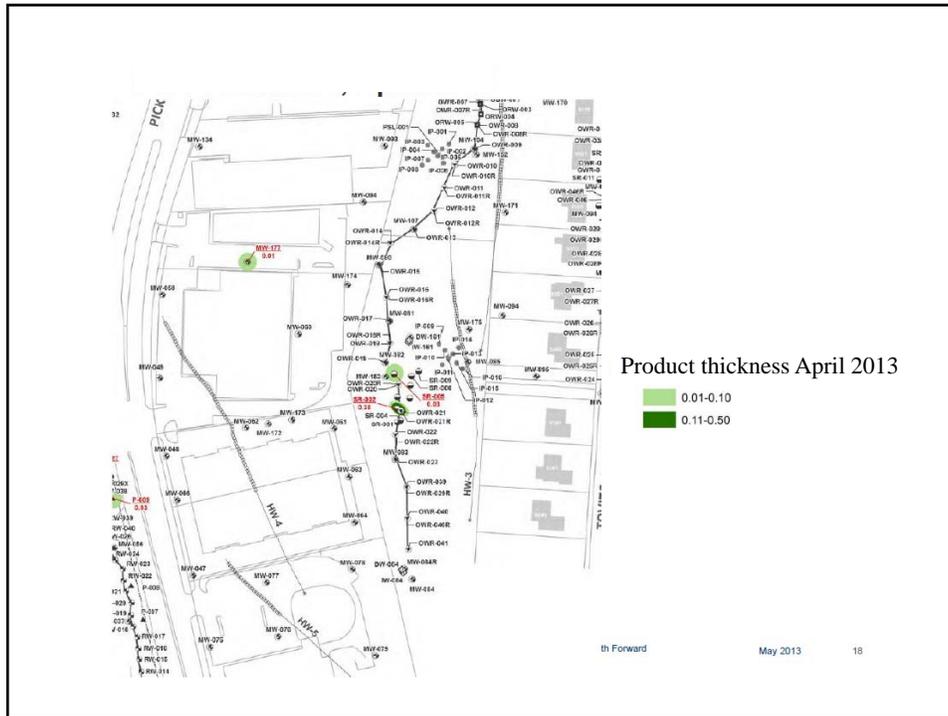
## System Shut Down Criteria

As stipulated in the Final Remedy, Motiva may request EPA's approval to shut down the remediation system in whole or part if the following conditions are met:

- The system performance has reached diminishing returns and further operation of the system will not be more effective than natural attenuation can achieve, and
- Shutting down the system will not pose unacceptable risks to human health or the environment

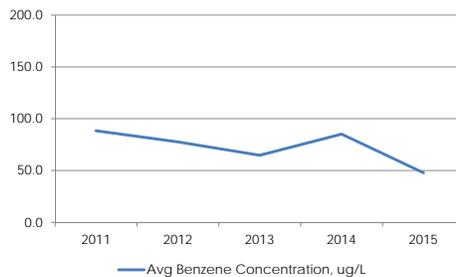
### Product Thickness Plume Maps Over Time

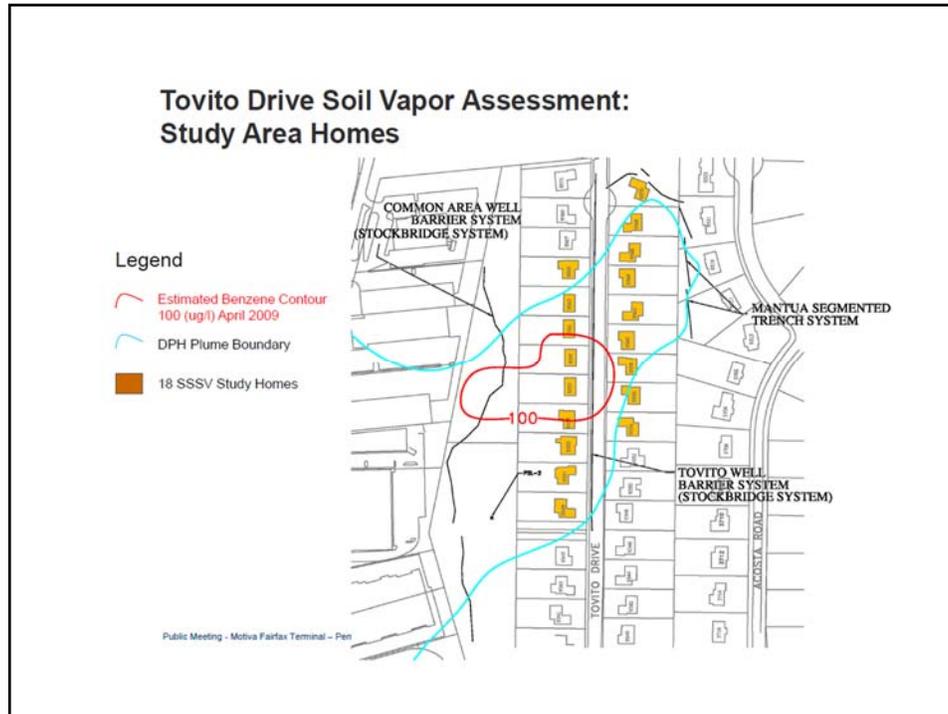




### Off-Site Benzene Concentration

- The off-site system was shut down when the engineered system had restored groundwater to a point where natural attenuation was equally as effective.
- Average off-site benzene concentrations have continued to decrease (almost 50%) since the last 2011 monitoring event:





## Off-Site System Removal & Abandonment

### *System Overview*

- Community Safety is Primary Consideration
- Areas
  - Residential Properties
  - Commercial Properties
  - Common Area
  - Tovito Drive
  - Pickett Road
- Components
  - Vertical and Horizontal Wells
  - Fluids and Electrical Piping
  - Plumbing and Electrical Vaults

## Off-Site System Abandonment

*Vertical and Horizontal Wells*

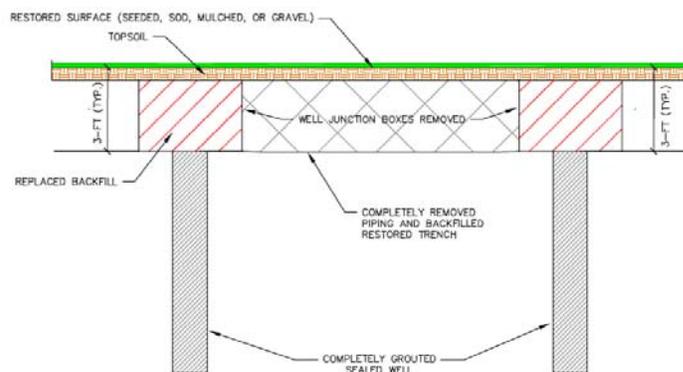
- Permanently abandon designated wells
  - Licensed water well driller
  - Fairfax County Health Department Well Abandonment Permit
- Remove pumps, controls and wiring
- Inject grout from well base to ground surface
- Remove upper foot and a half of the well
- Backfill excavation and restore surface



## Off-Site System Abandonment

*Fluids and Electrical Piping, Vaults*

- Residential Properties
  - Remove pumps, wiring, controls, vaults and piping
  - Backfill areas
  - Restore ground surface



## Off-Site System Abandonment

### *Fluids and Electrical Piping, Vaults*

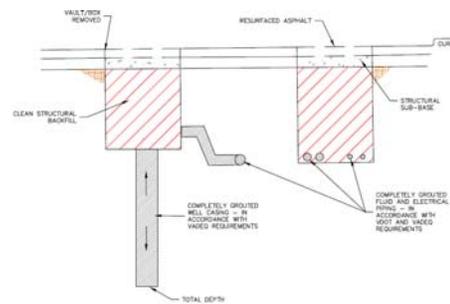
- Commercial Properties
  - Similar to Residential Properties, except
    - Grout interior of horizontal piping
- Common Area
  - Similar to Commercial Properties, except
    - Plant 8 -10 ft hardwood tree at each vault location
    - Place nominal 2-in gravel layer on the walking trail throughout the work area



## Off-Site System Abandonment

### *Fluids and Electrical Piping, Vaults*

- Tovito Drive
  - Similar to Commercial Properties, except:
    - Work per Virginia Department of Transportation permit and traffic control plan
    - Saw cut pavement adjacent to vault and remove surface completions
    - Fill vault with structural fill and/or concrete
    - Replace asphalt to match existing pavement



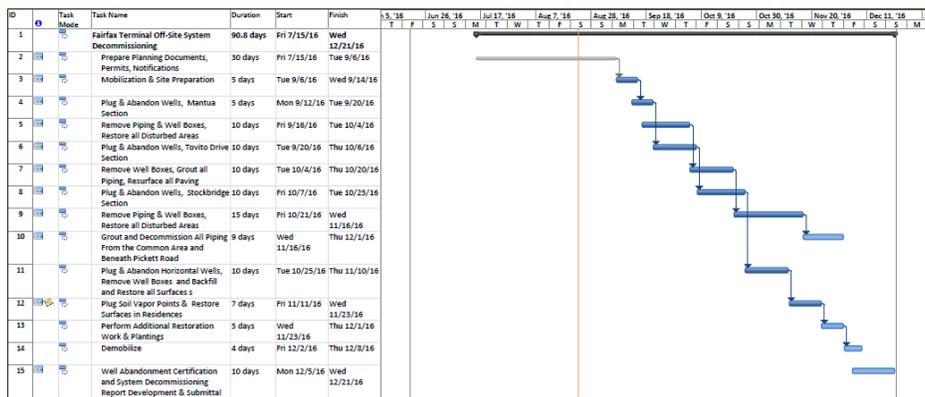
## Off-Site System Abandonment

*Fluids and Electrical Piping, Vaults*

- Pickett Road
  - Work coordinated with the City of Fairfax Department of Public Works
    - Access shafts and horizontal casing grouted in place
    - Work zone outside Pickett Road right-of-way

## Off-Site System Abandonment

*Implementation Schedule*



## Long-Term Monitoring Program

- Long-term monitoring will continue for foreseeable future
  - 13 off-site wells will be sampled annually, all located in public space outside private properties
  - Additional wells in the Common Area will be gauged for hydrocarbon presence
  - Conduct annual inspection of storm sewers in sections where liners were installed
- Annual reporting

QUESTIONS?