



*Commonwealth of Virginia*

***VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY***

[www.deq.virginia.gov](http://www.deq.virginia.gov)

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September 19, 2024

Logan Johnson  
Human Resources Manager  
Tenneco Inc.  
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**VIA ELECTRONIC MAIL**

**RE: Long Term Stewardship Evaluation Report  
Federal-Mogul Powertrain LLC – Blacksburg, VA  
EPA ID VAD054039961**

Dear Mr. Johnson:

The Virginia Department of Environmental Quality, Office of Remediation Programs (VDEQ) has prepared the attached report following the Long-Term Stewardship evaluation performed on the Federal-Mogul Powertrain LLC site located in Blacksburg, Virginia. The evaluation found no outstanding items with compliance of engineering/institutional controls and the RCRA corrective action remedy.

Sincerely,

A handwritten signature in cursive script that reads "Ryan J. Kelly".

Ryan J. Kelly  
Corrective Action Project Manager  
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1111 E. Main St.  
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ECC: Tara Mason, – VDEQ-CO  
Nichole Herschler, DEQ-BRRO  
Jacqueline Morrison, Kristin Koroncai – USEPA Region III  
Jim Spencer – AECOM  
Douglas Brooks – Federal-Mogul

Attachments



**Long-Term Stewardship Assessment Report  
Federal-Mogul Powertrain LLC – Blacksburg, VA  
EPA ID VAD054039961**

Prepared by: Ryan Kelly

Date: September 19, 2024

**Introduction:**

Long-term stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be observed. The purpose of the EPA Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e, ECs and ICs) and to update the community on the status of the RCRA Corrective Action facilities. The assessment is conducted in two-fold, which consists of a record review and a field inspection (if needed), to ensure that the remedies are implemented and maintained in accordance to the final decision.

The RCRA Corrective Action Program has identified key elements of effective Long-Term Stewardship for Corrective Action cleanups. The LTS Report took into consideration the following elements while preparing this report:

Element 1 – Legal Authorities

Element 2 – Information Regarding Engineering and Institutional Controls

Element 3 – Long-Term Facility Oversight, Monitoring, and Maintenance

Element 4 – Recordkeeping and Tracking

Element 5 – Meaningful Engagement and Consultation

Element 6 – Funding

Element 7 – Enforcement

Element 8 – Enforceable Mechanisms

Element 9 – Dedicated Resources

**Site Background:**

The Federal-Mogul Facility in Blacksburg, Virginia occupies approximately 58 acres of property in an industrial park. An unnamed tributary of Wilson Creek is located south of the property and receives discharge from natural springs located between the Federal-Mogul Facility and Jennelle

Road. Groundwater is present primarily in the bedrock underlying the Facility and is found at depths between approximately 30 and 70 feet below ground surface.

The Facility has produced precision, high specification engine crankshaft and piston rod bearings for the automotive and industrial engine industries since 1971, when the Facility was constructed. The bearing manufacturing process previously included electroplating of components using an automated plating line. Copper, tin, zinc, and lead were used in the electroplating process. In the past, the Facility performed vapor degreasing of parts using trichloroethylene (TCE).

The DEQ issued Federal-Mogul a Post-Closure Permit in 1994 for two closed hazardous waste management units. In 1998, the Post-Closure Permit was modified to implement a Base Corrective Action (also sometimes referred to as “Regulated Unit Corrective Action”) Program for groundwater at the Facility to address concentrations of TCE above the groundwater protection standard (GPS). On August 21, 1998, the Baseline Corrective Action Program was implemented at the Facility with startup of a groundwater recovery and treatment (pump and treat) system. This system initially consisted of two extraction wells (RW-1 and RW-2) to extract and treat groundwater containing TCE by air stripping and carbon filtration. In October 2002, the existing groundwater recovery and treatment system was expanded by the Facility to include a third on-site extraction well (RW-3). From 2002 to 2007, Federal-Mogul implemented off-site institutional and engineering controls at several off-site properties to control and prevent potential human health exposure to any TCE that may be present in the groundwater or springs.

In 2001, DEQ issued a Hazardous and Solid Waste Amendments Corrective Action Permit for facility-wide corrective action at solid waste management units (SWMUs) and areas of concern (AOCs) identified at the Facility. This permit was superseded in 2006 by a Hazardous Waste Management Post-Closure Permit (Permit) issued by DEQ, which included the Base Corrective Action Program for the two (2) closed hazardous waste management units (HWMUs) and facility-wide corrective action.

The Facility completed RCRA Facility Investigations (RFI) in 2003 and submitted an RFI Report to DEQ on March 26, 2004. The RFI Report was accepted by the DEQ on June 8, 2006. The RFI report recommended remedies be evaluated for soil in and around HWMU 9 and for groundwater. Both soil and groundwater were shown to have elevated levels of TCE and degradation by-products.

From November 2007 through December 2009, the Facility performed short term pilot tests for soil vapor extraction (SVE) using two extraction wells and six vapor monitoring points. In April 2010, a full scale SVE pilot test was initiated using 18 extraction wells and 16 vapor monitoring points.

### **Current Site Status:**

In September 2012, the facility's Hazardous Waste Management Permit was modified to incorporate a final remedy detailed in a Statement of Basis developed by the Virginia Department of Environmental Quality (DEQ), which included operation of existing groundwater pump and treat systems and soil vapor extraction system, long term groundwater monitoring, and institutional/engineering controls. The modified permit became effective on September 18, 2012.

The Hazardous Waste Management Permit was renewed on September 19, 2016. The facility's name was updated to Federal-Mogul Powertrain LLC as part of Class 1 modification to the facility's permit effective August 7, 2018.

The facility is under continued industrial use by Federal-Mogul Powertrain LLC for automotive and industrial engine parts production.

### **Element 1: Legal Authorities**

The Facility is subject to the Corrective Action (CA) Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and waste constituents that have occurred at their site.

The remedy was imposed by Class 2 modification of the Facility's Hazardous Waste Management Permit on September 18, 2012.

### **Element 2: Information Regarding Engineering and Institutional Controls**

The following controls are required as part of the CA remedy:

<b>Associated Tax Parcel</b>	<b>Restriction</b>	<b>Applies to Polygon</b>
<u>Tax Map:</u>  347-A-41	1. Prohibit use of the property for residential purposes (including single family homes, multiple family dwellings, schools, day care facilities, child care centers, apartment buildings, dormitories, other residential style facilities, hospitals, and in-patient health care facilities). 2. Prohibit the use of groundwater beneath the property except for non-contact cooling water and purposes to support selected corrective measures. No new wells will be	Entire Facility

Associated Tax Parcel	Restriction	Applies to Polygon
	installed on Facility property unless it is demonstrated to VDEQ that such wells are necessary to implement the final remedy and VDEQ provides prior written approval to install such wells.	
<u>Tax Map:</u> 347-A-41	Require vapor barriers be utilized in or beneath new, totally enclosed structures designed for occupation within the foot print of the VOC soil remediation area.	VOC Soil Remediation Area
<u>Tax Map:</u> 347-A-41	Restrict subsurface soil excavation within the footprint of the VOC soil remediation area, the footprint of the soil management area, and within any areas with contaminants in soil above residential levels except in conformance with an appropriate soil management plan that has been approved by VDEQ. All earth moving activities, including excavation, drilling and construction activities, in the areas at the Facility where any contaminants remain in soils above EPA's Screening Levels for residential use or groundwater above Federal MCLs/Tap Water RSLs, shall be prohibited unless it is demonstrated to VDEQ that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy, and VDEQ provides prior written approval for such use;	VOC Soil Remediation Area and Soil Management Area
<u>Tax Map:</u> 347-A-41	Maintain any current soil cover (concrete floor, asphalt, etc.) in the soil management area.	Soil Management Area

Associated Tax Parcel	Restriction	Applies to Polygon
<u>Tax Map:</u>  067-A176 378-A5 067-A177 378-A1 378-A4 378-A3 378-A2 067-A914 378-A6, A7 067-A195	1. Acquisition of property water rights through executed legal instruments, which consist of declaration of restrictive covenants and deeds of easement to prevent use of groundwater, springs, and surface water for any purpose. 2. Decommissioning and removal of water supply well pumps, associated appurtenances, and securing the former water supply wells for use by Federal-Mogul as monitoring points, as appropriate. 3. Secured any spring boxes, collection pipes or other devices on associated properties for use by Federal-Mogul as monitoring points, as appropriate. 4. Connection of properties to the Montgomery County public water system or Town of Blacksburg water system depending on the location. 5. Notification to the local health department about the extent of the plume.	Off-Site ICs/ECs  Jennelle Road Properties – Street #s 621, 646, 655, 662, 680, 715, 758, 781

### **Element 3 – Long-Term Facility Oversight, Monitoring and Maintenance**

The facility’s RCRA permit requires operation and maintenance of the active treatment systems, groundwater monitoring, and maintenance of the institutional and engineering controls.

Condition I.I.1 of the facility’s RCRA permit requires that the Permittee shall submit an annual Corrective Measures Remedy Performance Report by March 1. The latest annual report was submitted on March 1, 2024, and deemed complete by DEQ in a letter dated June 17, 2024.

No portion of the Facility is located within the Regulatory Floodway or Flood Hazard Areas as indicated on [FEMA’s National Flood Hazard Layer \(NFHL\) Viewer](#). Remedies are therefore not likely susceptible to climate impacts based on these flood criteria.

#### **Element 4 – Recordkeeping and Tracking**

DEQ maintains a complete historical and current administrative record for the Facility.

**Mapping:** The EPA Facility website includes a figure with a Geospatial PDF showing the entire facility and use restriction boundaries.

#### **Element 5 – Meaningful Engagement and Consultation**

The Facility is currently active with continued industrial use. The EPA Region 3 website maintains updated information and key documents for the facility. In addition, the community may request information and documents from the VDEQ Office of Remediation Programs.

#### **Element 6 – Funding**

**Financial Assurance:** Financial Assurance is required and in-place for this Facility.

#### **Element 7 – Enforcement**

The current RCRA permit allows DEQ to enforce the remedy. DEQ and/or EPA, without limitation, reserves its right to take administrative enforcement action under RCRA or other federal (or state) law for violations.

#### **Element 8 – Enforceable Mechanisms**

In September 2012, the facility's Hazardous Waste Management Permit was modified to incorporate a final remedy detailed in a Statement of Basis developed by the Virginia Department of Environmental Quality (DEQ), which included operation of active treatment systems, long term groundwater monitoring and institutional/engineering controls. The modified permit became effective on September 18, 2012. The permit serves as the authority for enforcing the final remedy at the site.

#### **Element 9 – Dedicated Resources**

The Performance Partnership Grant Workplan provides for Long-Term Stewardship activities. The Programmatic goal is to evaluate 20% of facilities with remedies older than 10 years.

#### **Long-term Stewardship Information Review:**

DEQ conducted a long-term stewardship information review to assess the status of the implemented remedies at the site. The review consisted of inspecting recent google earth imagery along with contacting the facility to review a checklist of site-specific items. The checklist is included with this letter and was verified by the facility per an email dated September 10, 2024.



**Documents Reviewed:**

EPA Region 3 Corrective Action Sites Webpage - Facility Fact Sheet  
Hazardous Waste Management Permit (modified 08/07/2018)  
Statement of Basis (07/09/2012)  
Deed Restriction (09/09/2013)  
Well Drilling Prohibition Notice to Health Department (09/09/2013)  
Google Earth imagery (06/02/2019)  
2023 Corrective Measures Remedy Performance Report (2/29/2024)

**Follow-up Activities:**

None.

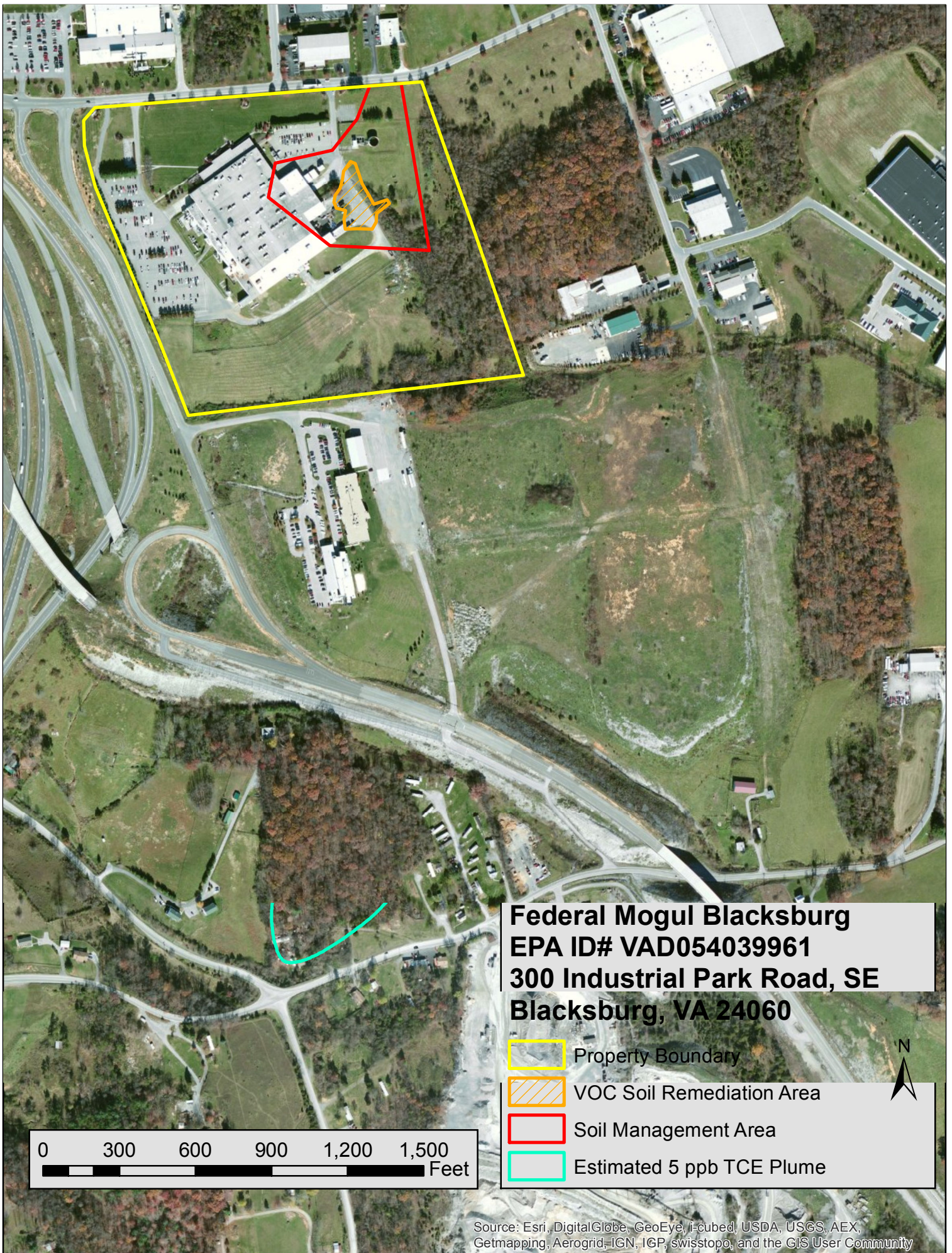
**Conclusion:**

The engineering and institutional controls selected and defined within the facility's RCRA permit have been implemented and maintained. The cap/cover for the HWMU remains intact, undamaged, and properly maintained. Additionally, the active treatment systems continue to operate to remove hazardous constituents from the soil/groundwater and control further migration.





Federal-Mogul Powertrain LLC  
2024 Long Term Stewardship Evaluation

**DEQ Long Term Stewardship Facility Map**  
Federal-Mogul Powertrain LLC – Blacksburg, Virginia





**Federal Mogul Blacksburg**  
**EPA ID# VAD054039961**  
**300 Industrial Park Road, SE**  
**Blacksburg, VA 24060**

-  Property Boundary
-  VOC Soil Remediation Area
-  Soil Management Area
-  Estimated 5 ppb TCE Plume



0 300 600 900 1,200 1,500 Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



VADEQ - Long Term Stewardship Checklist  
Federal-Mogul Powertrain LLC  
Blacksburg, VA  
EPA ID NO. VAD054039961

Date of Visit

Desktop Evaluation Only

DEQ Personnel

Ryan Kelly, Corrective Action PM

Facility Representatives

Jim Spencer, environmental consultant, AECOM

Douglas Brooks

Logan Johnson

Selected Remedies:

Operation and maintenance of groundwater pump and treat (P&T) system, operation and maintenance of soil vapor extraction (SVE) system, groundwater monitoring, compliance with and maintenance of Institutional and Engineering Controls (ICs and ECs)

AULs:

Associated Tax Parcel	Control/Restriction	Applies to Polygon
<u>Tax Map:</u> 347-A-41	1. Prohibit use of the property for residential purposes (including single family homes, multiple family dwellings, schools, day care facilities, child care centers, apartment buildings, dormitories, other residential style facilities, hospitals, and in-patient health care facilities). 2. Prohibit the use of groundwater beneath the property except for non-contact cooling water and purposes to support selected corrective measures. No new wells will be installed on Facility property unless it is demonstrated to VDEQ that such wells are necessary to implement the final remedy and VDEQ provides prior written approval to install such wells	Entire Facility

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Associated Tax Parcel	Control/Restriction	Applies to Polygon
<u>Tax Map:</u> 067-A176 378-A5 067-A177 378-A1 378-A4 378-A3 378-A2 067-A914 378-A6, A7 067-A195	<ol style="list-style-type: none"> <li>1. Acquisition of property water rights through executed legal instruments, which consist of declaration of restrictive covenants and deeds of easement to prevent use of groundwater, springs, and surface water for any purpose.</li> <li>2. Decommissioning and removal of water supply well pumps, associated appurtenances, and securing the former water supply wells for use by Federal-Mogul as monitoring points, as appropriate.</li> <li>3. Secured any spring boxes, collection pipes or other devices on associated properties for use by Federal-Mogul as monitoring points, as appropriate.</li> <li>4. Connection of properties to the Montgomery County public water system or Town of Blacksburg water system depending on the location.</li> <li>5. Notification to the local health department about the extent of the plume.</li> </ol>	Off-Site ICs/ECs  Jennelle Road Properties – Street #s 621, 646, 655, 662, 680, 715, 758, 781

<b><u>IC Review and Assessment Questions:</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>	<b><u>Notes</u></b>
• Have the ICs specified in the remedy been fully implemented? Implementation mechanism in place?	<b>X</b>		<i>Corrective Action Permit Modification 9/18/2012 to incorporate remedy.</i>  <i>Deed restrictions recorded 9/9/2013 for tax map No. 347-A-41.</i>  <i>Well drilling prohibition notice to Montgomery County 9/9/2013.</i>
• Do the ICs provide control for the entire extent of contamination (entire site or a specific portion)?	<b>X</b>		
• Are the ICs eliminating or reducing exposure of all potential receptors to known contamination?	<b>X</b>		
• Are the ICs effective and reliable for the activities (current and future) at the property to which the controls are applied?	<b>X</b>		
• Have the risk of potential pathway exposures addressed under Corrective Action changed based on updated screening levels and new technologies?		<b>X</b>	
• Are modifications to the IC implementation mechanism needed? (i.e. UECA Covenant, Permit or Order)		<b>X</b>	
• Are there plans to develop or sell the property?		<b>X</b>	
• Have all reporting requirements been met?	<b>X</b>		
<b><u>Groundwater Remedy Review and Assessment Questions:</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>	<b><u>Notes</u></b>
• For wells where groundwater monitoring is no longer required, have the wells be decommissioned?	NA	NA	Groundwater monitoring and extraction wells required and maintained.

<b><u>Surface and Subsurface IC Review and Assessment Questions:</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>	<b><u>Notes</u></b>
• Is the facility being used for residential purposes?		X	
• Have there been recent construction or earth-moving activities or future plans for such?		X	

<b><u>Engineered Cap or Cover Review and Assessment Questions:</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>	<b><u>Notes</u></b>
• Have engineered caps been properly maintained?	X		
• Does vegetative cover in Riparian Buffer area remain intact?	X		
• Have any repairs been necessary? (i.e. regrading, filling, root removal)		X	
• Is the leachate collection system operating and effectively preventing groundwater contamination?	NA	NA	NA

<b><u>Miscellaneous EC Review and Assessment Questions:</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>	<b><u>Notes</u></b>
• Is the security fence intact?	NA	NA	NA
• Is the appropriate signage posted?	NA	NA	NA

Additional Notes:

