DECISION DOCUMENT

Federal-Mogul/Huck
Voluntary Cleanup Program
Kingston, Ulster County
Site No. V00171
July 2018

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

Federal-Mogul/Huck
Voluntary Cleanup Program
Kingston, Ulster County
Site No. V00171
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Statement of Purpose and Basis

This document presents the remedy for the Federal-Mogul/Huck site, a voluntary cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and applicable guidance.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Federal-Mogul/Huck site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternatives analysis (AA). The IRM(s) undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore, No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

July 2, 2018

Date

George Heitzman, Director
Remedial Bureau C

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SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternative analysis (AA). The IRMs undertaken at this site are discussed in Section 6.2. Contaminants include hazardous wastes and/or petroleum.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the selected remedy. A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This DD identifies the IRM(s) conducted and discusses the basis for No Further Action.

The Voluntary Cleanup Program (VCP) is a voluntary program. The goal of the VCP is to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfields." This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Kingston Library
Attn: Margie Menard
55 Franklin Street
Kingston, NY 12401-0494
Phone: (845) 331-0507

NYSDEC Region 3
Attn: Stephanie Whatton
21 South Putt Corners Road
New Paltz, NY 12561-1696
Phone: (845) 256-3154

Receive Site Citizen Participation Information by E-Mail

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county e-mail listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html.

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Federal-Mogul/Huck Site is located at 85 Grand Street in the City of Kingston in Ulster County.

Site Features: The site consists of two buildings, a former manufacturing building and an attached office building, together occupying 105,000 square feet of the approximately 4-acre site. The remainder of the site consists of paved parking lots, access roads, a grassy area near the office building and narrow landscaped areas in the eastern and southern parking lots.

Current Zoning and Land Use: The site is zoned M-2 General Manufacturing, which includes wholesale storage and warehousing. The former manufacturing building houses self-storage units and the office building is used by a moving and truck rental company. Residential and commercial properties border the site across Tenbroeck Avenue to the northeast and residences and a vacant commercial building are located across Grand Street to the southeast. Two commercial properties, a bottle return center and a warehouse, adjoin the property to the south and CSX Transportation, Inc. (railroad tracks) border the site to the west. Commercial and light industrial properties are directly west of the CSX railroad tracks. All properties within a one-mile radius of the site are serviced by municipal water.

Past Use of the Site: The site has been in operation since 1889, used by various companies for automotive, electrical, and refrigeration supplies manufacturing. Site media have been impacted

from various manufacturing processes that are known to have occurred at the site, including metal finishing, heat treating, degreasing, and chemical handling and storage. Chlorinated VOCs, SVOCs, metals, and PCBs have been identified in the soil and storm sewer sediment at the site, while metals and VOCs have also been identified in the groundwater at the site. A Phase I environmental assessment was performed in 1991 and Phase II investigations were performed in 1993 and 1997 to evaluate site conditions. Based on the results of the Phase II investigations, Federal-Mogul entered into a Voluntary Cleanup Agreement with the New York State Department of Environmental Conservation on February 6, 2002 (Index no. A3-0372-9807) to investigate and remediate the site.

Site Geology and Hydrogeology: Site soils generally consist of 0 to 3 feet of sand or sand and gravel fill material that contains fragments of concrete, glass, asphalt, wood, and other construction debris. The fill material is underlain by a dark yellowish-brown, poorly sorted, fine- to medium-grained sand that grades to a silty sand with increasing depth. The silty sand is underlain by a low permeability clayey silt unit at a depth of approximately 68 feet below ground surface (bgs). The shallow water bearing zone is located approximately 13 to 15 feet bgs. Groundwater flows in a west-southwest direction across the site area.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, at a minimum, alternatives (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in DER-10, Technical Guidance for Site Investigation and Remediation were/was evaluated.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the Remedial Investigation (RI) Report.

SECTION 5: ENFORCEMENT STATUS

The Voluntary Cleanup Agreement (VCA) is with a responsible party. In June of 1998 Federal-Mogul Corporation (Federal-Mogul) of Detroit, Michigan, submitted an application to participate in the Voluntary Cleanup Program (VCP). In February 2002 Federal-Mogul entered into a VCA with the Department as a responsible party to implement remedial activities to address environmental contamination present at 85 Grand Street in Kingston, New York (Site). The VCA obligates Federal-Mogul to address on-site and off-site contamination related to the Site. Therefore, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in Section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor
- indoor air

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html.

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action

are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

tetrachloroethene (PCE)
vinyl chloride
trichloroethene (TCE)
cis-1,2-dichloroethene
trans-1,2-dichloroethene
xylene (mixed)
toluene
arsenic
barium
cadmium
cyanides (soluble cyanide salts)
lead
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
dibenz[a,h]anthracene
indeno(1,2,3-CD)pyrene

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Soil Vapor Extraction Trench and Sub-Slab Depressurization Systems

Soil Vapor Extraction (SVE) Trench System - A SVE trench system was installed in February 2004 to collect and treat soil gas containing VOCs in shallow soils located within 6 feet below ground surface (bgs) in the parking lots along the eastern and southern property boundaries, and along the adjacent off-site areas; and to address potential VOCs present in soil gas under the former manufacturing building near the main office and former metal finish and chemical storage area. The SVE system consists of approximately 1,200 feet of horizontally-placed extraction (screened) and conveyance pipe, which is connected to a treatment system housed inside the main building. VOCs are physically removed from the soil by applying a vacuum to extraction piping network that has been installed horizontally through the impacted shallow soil zone. The vacuum draws air through the soil matrix which carries the VOCs from the soil to the extraction piping network. The air extracted from the SVE piping network is then treated by passing the air stream through granular activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere. Currently, the SVE system continues to operate for a period of approximately 24 hours per month. More complete information regarding the on-site SVE trench system IRM can be found in the Interim Remedial Measures Summary Report (August 6, 2004).

The effectiveness of the SVE trench system has been verified through the collection of vacuum measurements, coupled with the collection and analysis of soil vapor samples from the 12 permanent on-site and off-site monitoring points installed during this IRM. Post-remediation indoor air samples collected within the former manufacturing building in in June, July and August 2008 contained TCE at concentrations of 21.5 $\mu g/m^3$, 18.27 $\mu g/m^3$, and 9.62 $\mu g/m^3$, respectively. Additional indoor air sampling will be completed in the 2018/2019 heating season.

Sub-Slab Depressurization System (SSDS) - A SSDS was installed in March 2004 in the basement of the two-story office building located on-site to mitigate potential soil vapor intrusion of VOCs to indoor air. Nine below grade suction points were installed in the main basement area by removing the concrete slab, excavating sufficient soil to accommodate perforated sump basins, lining the excavation with filter fabric, installing the sump basin, backfilling around the basin with crushed stone, and restoring the concrete slab. Manometers were installed on all nine suction points and the sub-membrane suction line in the crawl space of the basement. A single radon-type fan was installed on an exhaust stack at the west side of the building. The exhaust stack extends at least 2 feet above the eave line of the building. At the completion of system installation, visible cracks and holes in the floor slab were sealed to improve the efficiency of the system. More complete information regarding the on-site SSDS IRM can be found in the Interim Remedial Measures Summary Report (August 6, 2004).

Following installation of the SSDS, two rounds of indoor air samples were collected from the basement and first floor of the attached office building in April 2004 and January 2005. The April 2004 sample results, collected approximately one month after SSDS system startup, indicated the presence of TCE at concentrations of 3.92 $\mu g/m^3$ on the first floor and 4.89 $\mu g/m^3$ in the basement. The sample results from January 2005 indicated a reduction in the TCE concentrations to non-detectable levels on the first floor and 0.81 $\mu g/m^3$ in the basement. In addition, the on-site SSDS system is inspected on an annual basis to verify proper operation.

Off-Site Sub-Slab Depressurization Systems

The off-site soil vapor intrusion investigation began in 2005, and is ongoing. To date, a total 22 buildings have been investigated for soil vapor intrusion where sub-slab vapor and concurrent indoor air samples were collected for analysis from all 22 buildings. Indoor air concentrations at off-site buildings ranged from non-detect to 68.3 $\mu g/m^3$ for PCE and non-detect to 5.84 $\mu g/m^3$ for TCE. Commencing in 2006, actions have been taken to install SSDSs at 17 off-site buildings to prevent contaminated vapors beneath the building from entering and affecting the indoor air. No other actions were needed for the remaining buildings sampled.

Following the installation of each off-site SSDS, post-mitigation pressure field tests were performed to confirm vacuum influence below the building slab. Post-mitigation indoor air sampling was performed at two of the mitigated properties at the request of the property owners. The indoor air results for both properties were below the current NYSDOH indoor air action levels. The need for post-mitigation indoor sampling at the other buildings will be evaluated. In addition to the post-mitigation pressure field tests, the off-site SSDSs are inspected on an annual basis to verify proper operation.

Air Sparging and Soil Vapor Extraction System

An Air Sparging and Soil Vapor Extraction System (AS/SVE) was installed at this site in April 2014 to address the soil and groundwater contaminated by volatile organic compounds (VOCs). VOCs are physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface via air sparge (AS) wells. As the injected (sparge) air rises through the groundwater, the VOCs volatilize and transfer from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the unsaturated zone (the area below the ground surface, but above the water table) where a soil vapor extraction (SVE) system is used to remove the injected air. The SVE system applies a vacuum to the SVE wells installed in the unsaturated zone to remove the VOCs along with the air introduced by the sparging process. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere. The same treatment system used to remove VOCs from the SVE trench system also services the AS/SVE system. Currently, the AS/SVE system operates on a continuous basis, with the exception of one 24-hour period each month when the SVE trench system is in operation. More complete information regarding the on-site AS/SVE system IRM can be found in the Interim Remedial Measure Air Sparging and Soil Vapor Extraction System Construction Completion Report (March 5, 2015).

The effectiveness of the AS/SVE system has been verified through the collection of quarterly groundwater samples. The groundwater sample results indicate a decrease in the VOC concentrations in groundwater within the treatment areas and in wells located downgradient of these areas. In addition, influent soil vapor samples are collected from the SVE system treatment train on a semi-annual basis to monitor the status of the vapor granular activated carbon (VGAC) units and to measure the removal of VOCs from below the ground surface, and vacuum measurements are collected from vacuum monitoring points on a quarterly basis.

A site map showing the IRMs implemented on-site is attached as Figure 2.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:

Based upon investigations conducted to date, the primary contaminants of concern include chlorinated VOCs, namely trichloroethene (TCE) and tetrachloroethene (PCE). While most of the site has been sufficiently investigated, the nature and extent of contamination in areas under the former manufacturing building and office building where access was previously limited or unavailable has not been fully delineated.

Soil

Numerous soil borings were installed on-site from 2002 to 2008 to delineate the horizontal and vertical extent of VOCs in the soil. Based on the results of these investigations, the primary VOCs detected in the on-site soils were TCE, PCE and cis-1,2-dichloroethene (cis-1,2-DCE). They were found at several locations in shallow and deeper soils at concentrations above both the commercial and industrial use soil cleanup objectives (SCOs) established for these compounds. TCE, PCE and cis-1,2-DCE were detected at maximum concentrations of 610 parts per million (ppm), 540 ppm and 1,200 ppm, respectively. Commercial use SCOs for these compounds are 200 ppm, 150 ppm and 500 ppm, respectively. Industrial use SCOs for these compounds are 400 ppm, 300 ppm and 1,000 ppm respectively. SVOCs detected in soil include benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene at maximum concentrations of 18 ppm, 15 ppm and 15ppm, respectively. Commercial use SCOs for these compounds are 5.6 ppm, 1.0 ppm and 5.6 ppm, respectively. Industrial use SCOs for these compounds are 11 ppm, 1.1 ppm and 11 ppm, respectively. Metals detected in soil include lead at a maximum concentration of 13,600 ppm, arsenic at a maximum concentration of 32 ppm and cadmium at a maximum concentration of 490 ppm. Commercial use SCOs for these metals are 1,000 ppm, 16 ppm and 9.3 ppm, respectively. Industrial use SCOs for these metals are 3,900 ppm, 16 ppm and 60 ppm, respectively. PCBs were not detected above commercial use SCOs in any of the soil samples.

Groundwater

Several groundwater investigations have been performed in relation to this site from 2002 through 2011. These investigations found the highest VOC concentrations in groundwater in two areas located under the former manufacturing building. VOCs detected in the groundwater include PCE, TCE, and their breakdown products. Evaluation of the vertical extent of VOCs in the groundwater indicated VOC levels above the New York State Ambient Water Quality Standards were confined mainly to the upper ten feet of the groundwater table. As a result, an AS/SVE system was installed as an IRM in April 2014 with the primary objective of reducing VOCs in groundwater in two source areas under the former manufacturing building that exhibited the highest VOC concentrations.

The on-site groundwater sampling results from December 2017 showed a reduction in concentration of the primary contaminants in groundwater compared to the June 2014 sampling results. Maximum concentrations of PCE dropped from 723 parts per billion (ppb) to 330 ppb, while TCE dropped from 4,480 ppb to 2,210 ppb. There was however, a slight increase in the degradation product concentrations; cis-1,2-DCE from 4,570 ppb to 4,800 ppb and trans-1,2-DCE from 10.6 ppb to 18.1 ppb, indicating that breakdown is occurring. Likewise, the off-site groundwater sampling results from June 2017 showed a reduction in concentration of the primary contaminants in groundwater when compared to the June 2014 results. Maximum concentrations of PCE dropped from 174 ppb to 119 ppb, while TCE dropped from 151 ppb to 143 ppb. There was a slight increase in the degradation product concentrations; cis-1,2-DCE from 35.3 ppb to 53.5 ppb and trans-1,2-DCE from non-detect to 0.44 ppb, indicating that breakdown is occurring. The sample results indicate that concentrations of site-related VOCs in groundwater have generally decreased in the source areas and in areas adjacent to, and downgradient from, the source areas. VOC concentrations in monitoring wells located outside the influence of the AS/SVE system have generally remained stable with concentrations of PCE

ranging from non-detect to 26.6 ppb, TCE from non-detect to 605 ppb, and cis-1,2-DCE ranging from non-detect to 41.1 ppb.

Soil Vapor and Indoor Air

Former Manufacturing Building - In 2003 soil vapor samples were collected on-site and found to be impacted by site-related contamination. Additionally, indoor air samples collected in the former manufacturing building were found to be impacted by site-related contamination. As a result, a soil vapor extraction (SVE) system was installed on-site in February 2004 as an IRM along the periphery of the former finish and chemical storage area of the former manufacturing building, and along the eastern and southern property boundaries to address shallow soil vapor impacts in these areas and mitigate their off-site migration. TCE levels measured in the indoor air of the former manufacturing building in 2003 ranged from 17.7 to 258 µg/m^3. In January 2005, following implementation of the SVE trench system, reductions were observed in concentrations of TCE in the indoor air with levels ranging from non-detect to a maximum of 51.6 µg/m^3 in an unoccupied space in the southwest corner of the former manufacturing building. The site property was sold in 2008, and the former manufacturing building is currently used as mini-storage, with an office area that is likely occupied during normal business hours. In 2008, three additional rounds of indoor air testing were performed in the newly occupied office area. The indoor air samples collected in June, July, and August 2008 contained TCE at concentrations of 21.5 µg/m^3, 18.27 µg/m^3, and 9.62 µg/m^3, respectively. Additional indoor air sampling will be conducted during the 2018/2019 heating season.

On-Site Office Building - In August 2003, TCE levels measured in the indoor air of the on-site office building ranged from 96.7 to 167 µg/m^3. As a result, a SSDS was installed as an IRM in the on-site office building in March 2004. During the following heating season in January 2005, noticeable reductions in TCE levels were observed in the indoor air of the on-site office building, with concentrations ranging from non-detect to 0.81 µg/m^3. The on-site SSDS is inspected on an annual basis to verify proper operation; therefore, no additional indoor air samples have been collected in the on-site office building since 2005.

Off-Site Locations - SSDSs have been installed in 17 off-site locations beginning in 2006 to address off-site sub-slab soil vapor and indoor air impacts. Offers were made to conduct soil vapor intrusion (SVI) investigations at 43 off-site properties and sampling has been performed at 22 properties. The remaining 21 property owners either declined or did not respond to the request for sampling. Based on a comparison of data from the 22 buildings to the decision matrices provided in the NYSDOH's Guidance for Evaluating Soil Vapor Intrusion in the State of New York, no further action was ultimately recommended at 10 properties and vapor mitigation was recommended at 12 properties; SSDSs have been installed at each of the 12 properties. Actions were taken to install SSDSs in five additional buildings not sampled for soil vapor intrusion, but based on sampling results of nearby buildings where mitigation was recommended. Further monitoring is not currently required at any of the off-site properties.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the soil or groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. A sub-slab depressurization system has been installed in the office building and a soil vapor extraction system has been installed adjacent to the former manufacturing building in the vicinity of the main office and former metal finish area to prevent the indoor air quality from being affected by contamination in soil vapor beneath the building. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment. Sub-slab depressurization systems have been installed in 17 off-site buildings to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the buildings. The investigation of soil vapor intrusion is on-going at off-site structures with actions being taken as necessary to address exposures.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

No Further Action with Continued Operation of Remedial Measures and Site Management

Based on the site investigations and the IRMs that have been implemented and continue to operate at the site, the Department is proposing No Further Action as the remedy for the site. This No Further Action remedy includes continued operation of the SSDS, SVE trench system and AS/SVE system, and the implementation of ICs/ECs as the proposed remedy for the site. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

1. Green Remediation

Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials; and
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. Site Cover

A site cover will be required to allow for commercial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. The site cover may include paved surfaces, parking areas, sidewalks or a soil cover. Where a soil cover is used it will be a minimum of one foot of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative cover. Soil cover material, including any fill material

brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). In areas where building foundations or building slabs preclude contact with the soil, the requirements for a site cover will be deferred until such time that they are removed.

3. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will include the following:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
- allow the use and development of the controlled property for commercial use OR industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department-approved Site Management Plan.

4. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in-place and effective:

   Institutional Controls: The Environmental Easement discussed in Item 3 above.
   Engineering Controls: The site cover discussed in Item 2 above; and the on-site SSDS, SVE trench and AS/SVE systems, and off-site SSDSs discussed in Section 6.2 above.

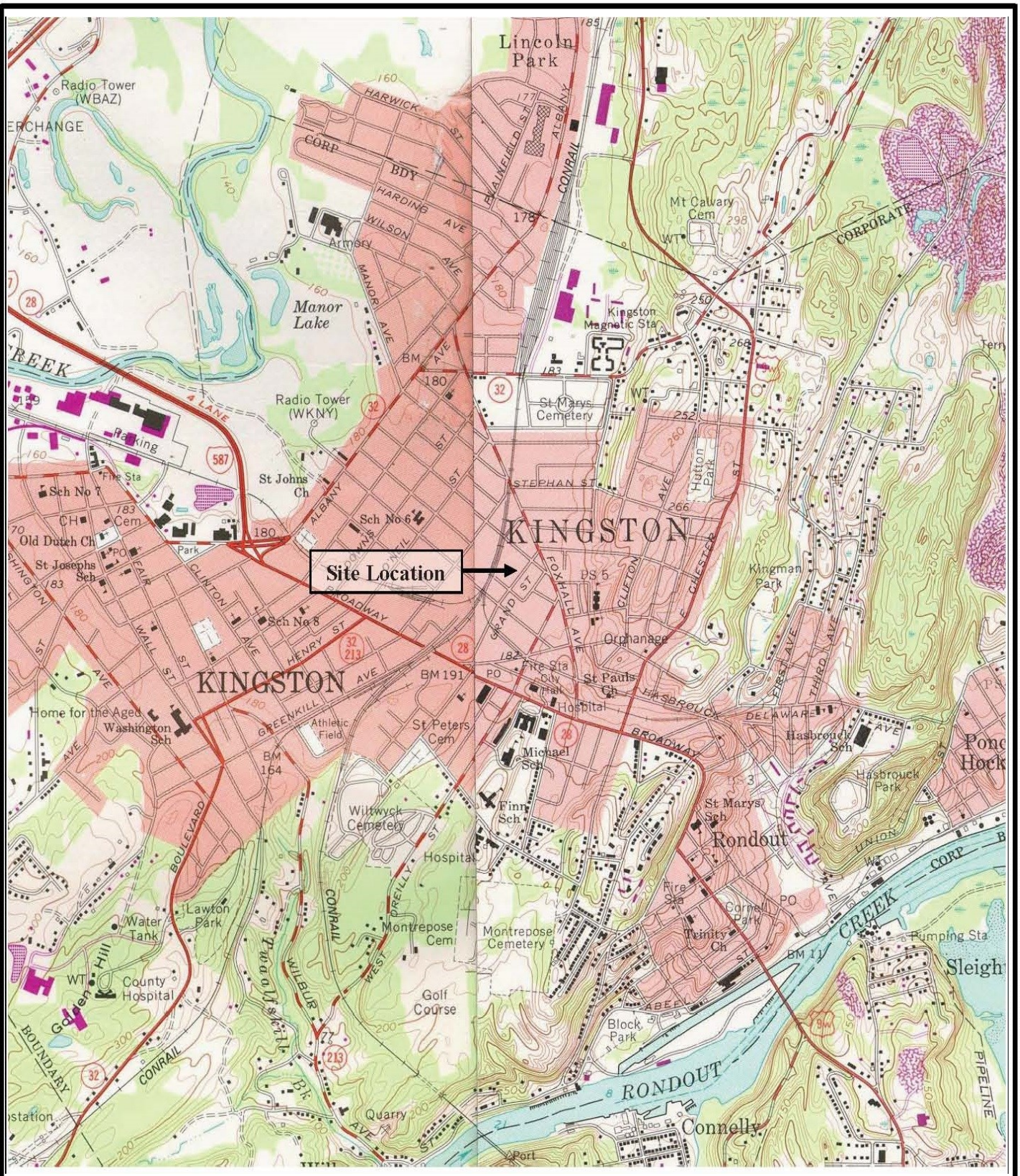
   This plan includes, but may not be limited to the following:

   - o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - o a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment. This includes the areas beneath former manufacturing building and the house that is utilized for commercial office space where little or no investigation has been performed;
   - o descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;

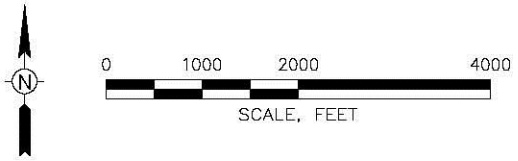
- a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on-site in the future and for off-site buildings (including those that have previously declined testing), as sampling indicates a need, including a provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- should owners at properties where sub-slab depressurizations systems have been previously declined request to have systems installed in the future, the Department, in consultation with the NYSDOH, shall determine whether soil vapor intrusion mitigation is still recommended. If necessary, additional sampling might be completed and appropriate actions to address exposures related to soil vapor intrusion will be implemented;
- a provision that should a building foundation or building slab on the site be removed in the future, a cover system consistent with that described in Item 2 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to the following:
   - monitoring of groundwater, indoor air and soil vapor, and soil vapor extraction system air to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the Department;
   - monitoring for vapor intrusion for any buildings, as may be required by the Institutional and Engineering Control Plan discussed above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to the following:
   - procedures for operating and maintaining the remedy (on-site SSDS, SVE trench and AS/SVE systems, and off-site SSDSs);
   - compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
   - maintaining site access controls and Department notification; and
   - providing the Department access to the site and O&M records.



REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE
KINGSTON EAST, NEW YORK
PHOTOREVISED 1980 SCALE 1:24,000



WSP USA
5 Sullivan Street
Cazenovia, New York 13035
(315) 655-3900

FIGURE 1

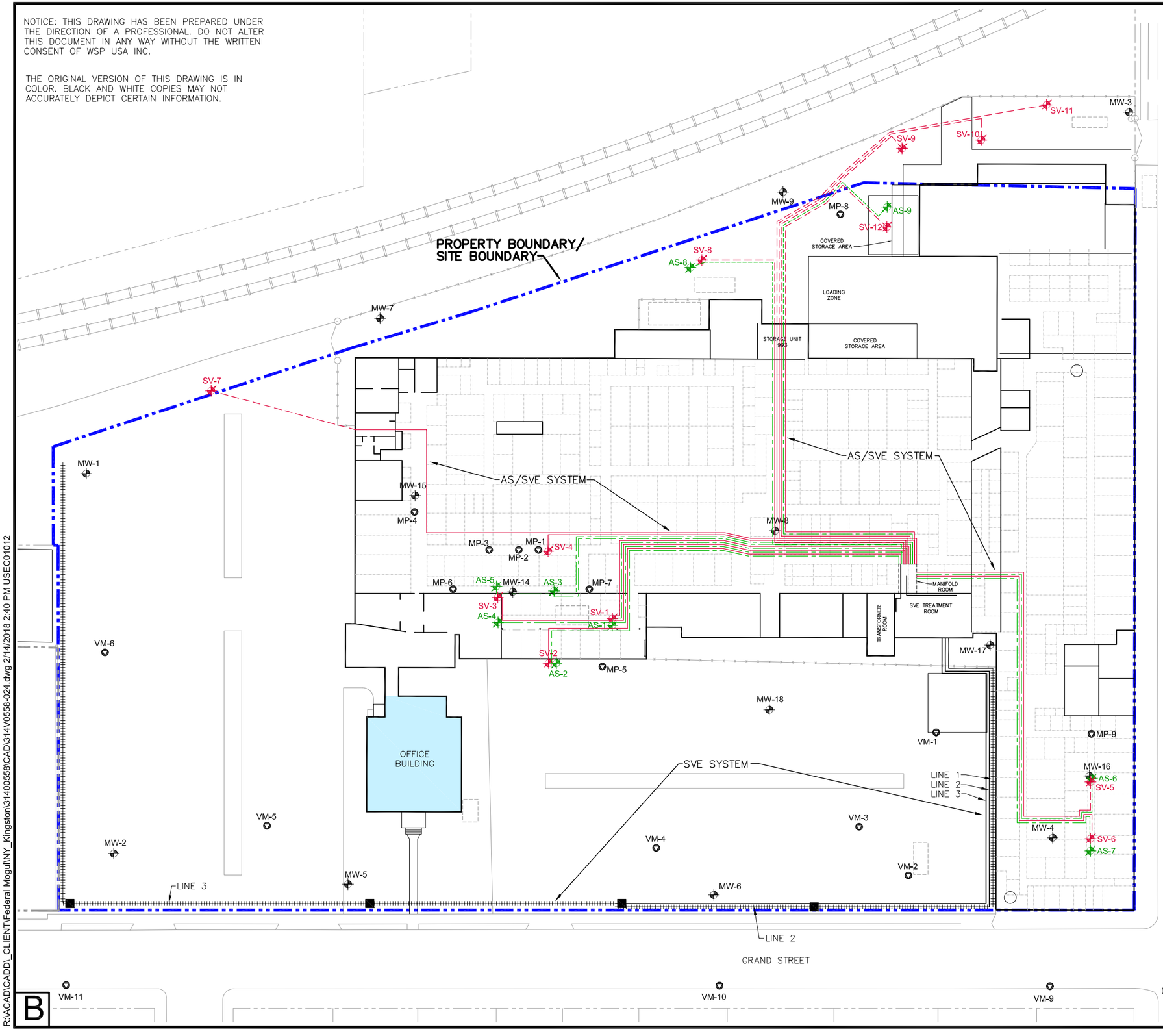
SITE LOCATION MAP

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK

PREPARED FOR

FEDERAL MOGUL CORPORATION
SOUTHFIELD, MICHIGAN

DWG Name:
Checked:
Approved:
Drawn By:
A



LEGEND

- PROPERTY BOUNDARY/SITE BOUNDARY
- MONITORING WELL
- SUBSLAB DEPRESSURIZATION SYSTEM

AS/SVE SYSTEM COMPONENTS:

- MP-1 VACUUM MONITORING LOCATION
- AIR SPARGING WELL
- SVE WELL
- 1.5"ø AS PIPING (HUNG IN BUILDING INTERIOR)
- 4"ø SVE PIPING (HUNG IN BUILDING INTERIOR)
- 1.5"ø AS PIPING (BURIED)
- 4"ø SVE PIPING (BURIED)

SVE SYSTEM COMPONENTS:

- VM-1 VAPOR AND VACUUM MONITORING LOCATION
- 6"ø EXTRACTION SCREEN
- 6"ø EXTRACTION CONVEYANCE PIPING
- VALVE BOX

NOTES:

1. SELF STORAGE UNIT LOCATIONS ARE APPROXIMATE.
2. SVE SYSTEM INSTALLED IN FEBRUARY 2004.
3. SUBSLAB DEPRESSURIZATION SYSTEM INSTALLED IN MARCH 2004.
4. AS/SVE SYSTEM INSTALLED IN APRIL 2014.

Drawn By: EGC
Checked:
Approved: RES 1/30/2018
DWG Name: 314V0558-024

FORMER HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL LLC

Figure 2
INTERIM REMEDIAL MEASURES

WSP USA Inc.
5 SULLIVAN STREET
CAZENOVIA, NY 13035
TEL: +1 315.655.3900

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