



UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION III

STATEMENT OF BASIS

SIMS METAL MANAGEMENT  
SUFFOLK, VIRGINIA

EPA ID NO. VAD980918221

Prepared by  
Office of Remediation  
Land and Chemicals Division

June 2013

## **Table of Contents**

Section 1: Introduction.....	<b>1</b>
Section 2: Facility Background.....	<b>2</b>
2.1 Facility Description and History .....	<b>2</b>
2.2 Environmental Setting .....	<b>2</b>
Section 3: Summary of Environmental Investigation .....	<b>3</b>
Section 4: Summary of Facility Risks .....	<b>11</b>
Section 5: Corrective Action Objectives.....	<b>11</b>
Section 6: Proposed Remedy .....	<b>12</b>
Section 7: Evaluation of Proposed Remedy .....	<b>14</b>
Section 8: Financial Assurance .....	<b>16</b>
Section 9: Public Participation.....	<b>17</b>
Section 10: Index to Administrative Record .....	<b>18</b>

## **Figures**

- Figure 1 – Site Location Map
- Figure 2 – Local Area Map
- Figure 3 – Historical Site Map
- Figure 4 – Current Site Map

## **Attachments**

- Attachment A - Long-Term Groundwater Monitoring Plan

## List of Commonly Used Acronyms

AOC	Area of Concern
AR	Administrative Record
AST	Aboveground Storage Tank
CCA	Chromated Copper Arsenate
COC	Constituent of Concern
DIPE	Di-Isopropyl Ether
EI	Environmental Indicator
EPA	Environmental Protection Agency
FDRTC	Final Decision and Response to Comments
FLA	Facility Lead Agreement
GES	Groundwater & Environmental Services, Inc.
HASP	Health and Safety Plan
HSWA	Hazardous and Solid Waste Amendments
HWMU	Hazardous Waste Management Unit
ICs	Institutional Controls
IWD	Investigation Derived Waste
MCL	Maximum Contaminant Level
MTBE	Methyl Tertiary Butyl Ether
ONE	ONE Environmental Group, LLC
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Poly Chlorinated Biphenyls
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RSL	Regional Screening Level
SB	Statement of Basis
SL	Screening Level
SMM	Sims Metal Management
SSL	Soil Screening Level
SVOC	Semi-Volatile Organic Compound
SWDA	Solid Waste Disposal Act
SWMU	Solid Waste Management Unit
TPH-DRO	Total Petroleum Hydrocarbons – Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocarbons – Gasoline Range Organics
UECA	Uniform Environmental Covenant Act
UST	Underground Storage Tank
VADEQ	Virginia Department of Environmental Quality
VHWMR	Virginia Hazardous Waste Management Regulations
VOC	Volatile Organic Compound
VSWMR	Virginia Solid Waste Management Regulations

## **Section 1: Introduction**

---

The U.S. Environmental Protection Agency, Region 3 (EPA) has prepared this Statement of Basis (SB) under the Corrective Action Program to solicit public comment on its proposed remedy for the Sims Metal Management (SMM) facility located at 1177 Hosier Road, Suffolk, Virginia 23434 (Facility or Site).

The Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act (SWDA), 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 hazardous constituents that have occurred at their property.

This SB highlights key information relied upon by EPA in selecting its proposed remedy for the Site which consists of monitored natural attenuation and land- and groundwater-use restrictions to be implemented through Institutional Controls. A detailed description of EPA's proposed remedy for the Site may be found in Section 6. For additional information, please refer to the Administrative Record (AR) for the Facility, which contains all documents, including data and quality assurance information, on which EPA's proposed remedy is based. The Index to the AR may be found in Section 10 of this SB. See Section 9, Public Participation, for information on how you may review the documents contained in the AR and submit any comments you may have concerning EPA's proposed remedy for the Facility.

## Section 2: Facility Background

---

### 2.1 Facility Description and History

The Facility is located at 1177 Hosier Road in Suffolk, Virginia and is two miles south of the City of Suffolk. The Site is approximately 10-acres in size and was subdivided from a 110-acre parcel in early 2006 and is zoned as M-2 (heavy industrial). The Site is bordered to the north by farmland, to the east by Hosier Road (Route 604), to the south by a 109-acre parcel consisting of farmland and wooded areas, and to the west by an easement for Virginia Electric Power Company (VEPCO). The Suffolk Municipal Airport abuts the 109-acre parcel to the southwest, and the closed Suffolk City Landfill, a former Superfund Site with arsenic and chromium contamination, is located approximately 0.75 miles to the southeast. A Site Location Map and a Local Area Map depicting surrounding properties are attached to this SB as **Figures 1 and 2**, respectively.

The first industrial use of the Site was by Old Dominion Wood Preservers which operated from January 1984 up to June 1990. Old Dominion treated wood with a chromated copper arsenate (CCA) solution and/or with a fire retardant solution of ammonium phosphate. Environmental Reclamation Systems, Inc., Sierra (dba Virginia Soils Reclamation, Inc.) (hereinafter referred to as "Sierra") acquired the Site in 1993 and received and biologically treated petroleum contaminated soils until the mid-1990s. A rubber shredding operation, Coastal Scapes, leased a portion of the site in the mid-1990s to manufacture dyed rubber mulch from chipped tires. SMM purchased the Site in March 2006 for the receipt, storage, handling and shipping of recyclable ferrous and nonferrous metals. Site operations began in 2007 and include the draining and flattening of scrap automobiles. Once flattened, the scrap automobiles are shipped off-site to other SMM locations for further processing into recyclable metal. **Figure 3** provides a current Site Map of SMMs operations.

### 2.2 Environmental Setting

The Site is situated within the Atlantic Coastal Plain Physiographic Province. The soils are characterized as Quaternary and Upper Tertiary Deposits, undivided, described as formations of Miocene, Pliocene and Pleistocene ages and unnamed Holocene sediments that are approximately 280 feet deep. The Quaternary and Upper Tertiary Deposits are underlain by Lower Tertiary Deposits consisting of predominantly glauconitic sand and silt of Oligocene, Eocene and Paleocene ages to an approximate depth of 340 feet. The reported depth to bedrock in the Suffolk, Virginia area is 1,800 feet.

The Suffolk area is underlain by light to medium gray and light to dark, yellowish, reddish brown sand, silt and clay. Well logs of municipal wells located in the vicinity of Suffolk indicate that area soils consist of clays ranging in depth from 8 to 20 feet, sands ranging in depth from 10 to 40 feet, and marl ranging in depth from 40 to 340 feet. Reported depths to groundwater in wells located in the Suffolk area range from 6 feet to 21 feet below ground surface (bgs). Groundwater flow direction beneath the Site is to the north/northwest.

### Section 3: Summary of Environmental Investigation

---

The Site was owned and operated by Old Dominion, a wood treating facility, from 1984 to 1990. The Facility treated wood using a solution of copper, chromium, and arsenic (aka CCA) for insect control and/or with a fire retardant solution of ammonium phosphate. Wastes generated from the CCA wood treating process were determined to be a hazardous waste for the characteristic of toxicity, EPA Hazardous Waste Code D004 (arsenic) and EPA Hazardous Waste Code D007 (chromium). **Figure 4** provides a historical Site Map of operations conducted by Old Dominion.

In the early 1990's, the Virginia Department of Environmental Quality (VADEQ) identified three (3) Hazardous Waste Management Units (HWMUs) at the Site resulting from Old Dominion's improper management of hazardous waste generated from its wood treating operations. The former HWMUs were subject to closure in accordance with the Virginia Hazardous Waste Management Regulations (VHWMR) and the Virginia Solid Waste Management Regulations (VSWMR). A description of each HWMU is provided below.

- HWMU 1 – Waste Pile No. 1  
The former Waste Pile No. 1 (HWMU 1) covered an area of 10 feet by 10 feet and consisted of D004/D007 hazardous waste. The waste pile was located along the west central edge of Building No. 1, also referred to as the Western Metal Building. Building No. 1 is located near the western boundary of the Site constructed on a concrete slab with a concrete retaining wall and covered by a metal structure. According to historical files, wood was treated using CCA in this building, and the treated lumber was allowed to drip onto the large covered concrete pad (i.e., drip pad). At the time VADEQ identified HWMU 1, limited cracking was observed in the drip pad which was coated with an epoxy coating. In addition, the waste pile reportedly extended approximately 3 feet off the concrete pad on to the soil, west of Building No. 1.
- HWMU 2 – Wood Treating Tank Area  
The former Wood Treating Tank Area (HWMU 2) was located adjacent to Building No. 1 along the southwest edge and covered an area of approximately 20 feet by 30 feet. Old Dominion ceased operation in June 1990, and subsequently left the wood treating chemicals and sludges on-site for over two years. Consequently, the Wood Treating Tank Area which consisted of above-ground storage tanks (ASTs) was designated a HWMU by VADEQ and subject to closure under the VHWMR. Old Dominion performed initial closure activities in HWMU 2 in September 1992. The chemicals and sludges (D004/D007 hazardous waste) were removed from the ASTs and placed in nine (9) 55-gallon drums that were staged in an area at the southeast corner of Building No. 1.
- HWMU 3 – Container Storage Area  
The former Container Storage Area (HWMU 3) covered an area approximately 20 feet by

20 feet in size and was located inside the southeast corner of Building No. 1. As previously mentioned in the description for HWMU 2, (9) 55-gallon drums of D004/D007 hazardous waste were generated from Old Dominion's initial closure of HWMU 2 in 1992. The nine (9) 55-gallon drums were stored on-site in the former Container Storage Area for over a year. Consequently, VADEQ designated the former Container Storage Area a HWMU subject to closure under the VHWMR.

In March 1994, Sierra Recycling entered into a Consent Order with VADEQ and accepted responsibility for the RCRA closure of the three (3) HWMUs. The Consent Order required preparation and approval of a Closure Plan. The Closure Plan was approved by VADEQ on September 27, 1995, and was subsequently modified on February 4, 1998. In accordance with the Closure Plan, samples were collected from each of the three (3) HWMUs and analyzed for arsenic, chromium and lead. A review of the sampling locations and analytical data submitted as part of the "Sierra Recycling HWMU Closure, Final Closure Report, Volume 1 of 4" that was revised on September 13, 1998, shows that elevated concentrations of arsenic, chromium and lead were detected in the concrete drip pad and underlying subsurface soils, in addition to adjacent, exterior surface and subsurface soils at each of the three (3) HWMUs.

The Final Closure Report, dated August 16, 2004 and prepared by Stokes Environmental Associates, LTD., documented the closure activities completed for each HWMU. Closure activities included a risk-based closure assessment, removal of Waste Pile No. 1, off-site disposal of containers stored in the Container Storage Area, and excavation of soils in the vicinity of the Wood Treating Tank Area. On August 26, 2004, VADEQ conducted a closure inspection to determine whether the Facility complied with all applicable items included in the Closure Plan. Based on the closure plan, Professional Engineer's Certification submitted to VADEQ on September 10, 2004, and the VADEQ site inspection, the State considered the Facility closed in accordance with 9 VAC 20-80-360E.5. The three HWMUs were found to be clean closed by VADEQ under RCRA on November 12, 2004.

SMM purchased the Site in early 2006 and entered into EPA's Region 3 Facility Lead Program in August 2006 to meet its obligations under the RCRA Corrective Action Program.

#### **A. Phase I RCRA Facility Investigation (RFI)**

In accordance with the August 24, 2006 Facility Lead Agreement (FLA) between EPA and SMM, Groundwater & Environmental Services, Inc. (GES) submitted a Phase I RCRA Facility Investigation Work Plan (RFI Work Plan) to EPA in December 2006 on behalf of SMM. The specific objectives of the RFI Work Plan included the following:

- Provide a summary of historical Site land use and Site characterization data concerning past and current Site conditions, including data collected by GES in 2004 and 2005 as part of due diligence on behalf of SMM prior to the purchase of the Site in March 2006;

- Perform a preliminary assessment of the extent and sources of any releases of hazardous waste constituents from the Site; and,
- Develop conclusions from the 2004-2005 due diligence activities.

SMM used the information gathered during preliminary GES data collection activities to identify potential Areas of Concern (AOCs) and performed an extensive environmental characterization and assessment of the Site in May 2005. The Site Assessment focused on the collection of biased samples in and around the various AOCs and included the collection of sediment, soil, and groundwater samples.

AOCs identified and included as part of the investigation consisted of the following:

- Stormwater collection/conveyance points
- Former treated lumber storage area
- Former treated soil storage area
- Former wood treatment process areas including:
  - Aboveground Storage Tanks (ASTs)
  - Covered process buildings including the former Wood Treatment Shed, Former Kiln Building, and the Western Metal Building
  - Former HWMUs including Waste Pile No. 1, the Container Storage Area, and the Wood Treatment Tank Area.
- Former soil bioremediation process areas include:
  - ASTs
  - Covered process buildings including the former leachate recovery tanks and storage tanks, the Western Metal Building, and the Eastern Metal Building
- Septic Drain Field(s)
- Former maintenance areas

Taking into consideration the multiple operations conducted at the Site and the variety of chemicals utilized, a comprehensive analytical list was developed for the soil and groundwater investigation including: heavy metals known as RCRA 8 metals, total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) and diesel range organics (DRO), poly chlorinated biphenyls (PCBs) volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

The data collected from the 2005 Site Assessment is included in the 2006 Phase I RFI Work Plan (Section 4.0 and in the Tables and Attachments). Based on the findings of the May 2005 Site Assessment, the December 2006 Phase I RFI concluded that the primary constituents of concern (COCs) for the Site are arsenic, chromium and lead (associated with Old Dominion's operations) and TPH (associated with Sierra's operations). As more fully described in Section A.1. below, these constituents were detected in soil, sediment, and groundwater above EPA Region 3 Risk Based Concentrations (RBCs) for residential use; however, only one sample location (sediment sample S-3) exceeded the relevant industrial risk-based screening criteria.



## 1. Phase I RFI Investigation Results – Soil & Sediment

As part of the 2005 Site Assessment conducted by GES on behalf of SMM, soil samples were collected from 13 soil borings, and six sediment samples were collected from areas where surface water was observed to collect around the Site (i.e., stormwater collection/conveyance system). See below the soil and sediment sample data from the Site Assessment which were screened against the October 2006 EPA Region 3 RBCs for residential soil and industrial soil (designated as soil screening levels (SSLs)).

- a. *Soil* – No detections were reported above the screening criteria for VOCs, SVOCs, and PCBs in Facility soils. No detections of TPH-GRO were reported; however, multiple detections of TPH-DRO were reported ranging from 13 milligrams per kilogram (mg/kg) to 150 mg/kg. Soil samples W-1, W-3, W-3, W-7, SB-6, and SB-12 reported exceedances of arsenic and chromium above the screening criteria; however, none of the soil samples exceeded any of the Region 3 RBCs for industrial soils.

Arsenic was detected above the residential SSL (0.43 mg/kg) in soil samples W-1 (0.80 mg/kg), W-3 (1.00 mg/kg), SB-6 (1.50 mg/kg), and SB-12 (1.60 mg/kg). Soil samples collected from W-1 and W-3 were sampled to delineate impacts associated with the stormwater conveyance system. Soil sample SB-6 was collected to delineate impacts associated with the wood and soil processing operations. Soil sample SB-12 was collected in the former lumber storage area located at the southern half of the Site.

Chromium was detected above the residential SSL (23.46 mg/kg) in soil samples W-2 (25 mg/kg), W-7 (26 mg/kg), and SB-6 (24 mg/kg). The soil sample collected at W-2 was collected to delineate impacts associated with the former covered storage area. Soil sample W-7 was collected within the reputed septic field located south of the former locker room/storage shed. Soil sample SB-6 was collected to delineate impacts associated with the wood and soil processing operations.

- b. *Sediment* – No detections were reported above the screening criteria for VOCs, SVOCs, and PCBs for sediment samples S-1 through S-6. A single detection of TPH-DRO (15 mg/kg) was reported for sample S-5. Sediment samples S-1, S-3, and S-4 had detections of arsenic and chromium above the residential screening criteria.

Arsenic was reported above the EPA Region 3 RBC for residential use in sediment samples S-1 (1.30 mg/kg) and S-4 (0.70 mg/kg). Sediment sample S-3 was the only sample that exhibited a detection of arsenic (17.0 mg/kg) above the EPA Region 3 RBC for industrial use (1.91 mg/kg). Each of these samples were collected along the stormwater conveyance system at the Site.

A single chromium exceedance at S-3 (45 mg/kg) was reported above the EPA Region 3 RBC for residential use (23.46 mg/kg).

## **2. Phase I RFI Investigation Results – Groundwater**

SMM installed 13 new two-inch groundwater monitoring wells (W-1 through W-4 and W-6 through W-14) as part of the 2005 Site Assessment to assess potential impacts to shallow groundwater at the Site. Groundwater samples were collected from each of the newly installed monitoring wells, in addition to two existing monitoring wells, MW-4 (also referenced as W-5) and MW-6. The groundwater sample data were screened against Drinking Water Standards, known as Maximum Contaminant Levels (MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141, or the October 2006 EPA Region 3 Risk-Based Concentration (RBCs) for tap water (designated as Screening Levels (SLs) for tap water) for chemicals for which there are no applicable MCLs.

The liquid levels data collected during the 2005 Site Assessment were utilized to develop a groundwater contour map for the Site. Based on the groundwater elevation data, it appears that a hydraulic ridge is located through the center of the Site, running southeast to northwest. Groundwater flow is perpendicular to this ridge in each direction, flowing northeast and southwest.

Arsenic, chromium and lead were detected above the screening criteria in groundwater. There were no detections of VOCs, SVOCs, TPH-GRO, TPH-DRO, or PCBs above the screening criteria.

Arsenic was detected above the applicable MCL of 0.01 milligrams per Liter (mg/L) at W-3 (0.04 mg/L), W-9 (0.04 mg/L), and W-11 (0.02 mg/L). Well W-3 is located in a low-lying area in the northwestern corner of the Site, topographically downgradient from a former storage area. Wells W-9 and W-11 were installed to delineate potential impacts resultant from the former wood treatment operations. Well W-9 is located hydraulically downgradient from the Western Metal Building and the Wood Treatment Tank Area, and W-11 is located central to the former Wood Dryer/Kiln Shed.

Chromium was detected above the applicable MCL of 0.10 mg/L at W-11 (0.13 mg/L).

A single detection of lead above the action level of 0.015 mg/L was detected at W-11 (0.06 mg/L).

## **B. Groundwater Monitoring**

### **1. March 2010 Groundwater Monitoring Report**

The EPA-approved December 2006 Phase I RFI Report recommended the collection of an additional round of groundwater samples to determine an appropriate course of

action for the Site. In correspondence dated January 22, 2009, EPA requested SMM to follow through with the recommendation and conduct a round of confirmation sampling for the proposed wells. The results of the confirmation sampling conducted in July 2009 are presented in an EPA-approved *March 2010 Groundwater Monitoring Report* prepared by GES on behalf of SMM.

The three monitoring wells recommended for confirmation sampling included W-3, W-9 and W-11. However, W-3 could not be located and W-9 had sustained damage to the PVC casing. SMM installed new monitoring wells W-3R and W-9R to replace the existing wells W-3 and W-9. Groundwater samples were collected from the newly installed monitoring wells W-3R and W-9R and from existing monitoring well W-11. W-3R and W-9R were sampled for arsenic and W-11 was sampled for arsenic, chromium and lead. The groundwater sample results were screened against the then current MCLs or, if a MCL was unavailable, EPA Region 3 Regional Screening Levels (RSLs) for tap water.

Arsenic was not detected above the reporting limit of 0.01 mg/L in W-3R.

Arsenic was detected at a concentration of 0.122 mg/L in W-9R, above the MCL of 0.010 mg/L.

Arsenic, chromium and lead were detected in monitoring well W-11 at concentrations above their respective MCLs. Arsenic was detected at a concentration of 0.015 mg/L above its MCL of 0.010 mg/L; chromium was detected at a concentration of 0.200 mg/L above its MCL of 0.100 mg/L; and, lead was detected at a concentration of 0.069 mg/L above its MCL of 0.015 mg/L.

As part of the field activities conducted during the July 2009 groundwater sampling event, samples were collected from the purge water (investigation derived waste (IDW)) for waste characterization purposes. The analytical data for the IDW (included as Attachment C to the *March 2010 Groundwater Monitoring Report*) showed the detection of petroleum-related constituents: ethylbenzene (5.2 µg/L), m,p-xylenes (3.5 µg/L), o-xylene (2.0 µg/L), total xylenes (5.5 µg/L), methyl tertiary butyl ether (MTBE)(823 µg/L), and di-isopropyl ether (DIPE)(7.4 µg/L).

## **2. February 2011 Groundwater Monitoring Report**

Per EPA's request, SMM conducted additional groundwater monitoring activities in December 2010 to evaluate if petroleum-related constituents detected previously in the IDW generated during the July 2009 groundwater monitoring event are present in the groundwater at the Site. The findings of the December 2010 groundwater monitoring are presented in an EPA-approved February 2011 Groundwater Monitoring Report.

Groundwater samples were collected from monitoring wells W-3R, W-9R and W-11 and analyzed for VOCs (acetone, benzene, ethylbenzene, xylenes, MTBE, DIPE) and metals (arsenic, chromium, lead). The groundwater sampling results were screened against the MCLs, or if a MCL was unavailable, against the November 2010 EPA Region 3 RSLs for tap water.

Arsenic was the only COC detected in W-3R. It had a concentration of 0.0106 mg/L, slightly above its MCL of 0.010 mg/L. The concentration of arsenic detected in December 2010 was lower than the initial arsenic concentration (0.04 mg/L,) detected in W-3 in 2005.

Arsenic (0.1863 mg/L) and benzene (455 µg/L) were detected in W-9R at concentrations above their MCLs of 0.010 mg/L and 5 µg/L, respectively. MTBE (1,230 µg/L) was detected above its RSL for tap water (12 µg/L). Ethylbenzene was also detected in W-9R (40.4 µg/L) below its MCL (700 µg/L). The arsenic concentration detected in W-9R in December 2010 increased slightly compared to the concentration (0.122 µg/L) detected in July 2009.

Well W-11 did not exhibit any detection of COCs above the laboratory reporting limit.

Because of the lack of petroleum impacts observed in sampling data prior to 2005, EPA has concluded that the petroleum detections in W-9R are related to operations conducted by SMM. The December 2010 sampling results indicate that the petroleum-related constituents detected in groundwater beneath the Site are the result of a minor spill or release of petroleum subsequent to 2005. SMM implemented new containment measures and spill prevention practices in September 2010, designed to reduce the risk of spills and/or releases from its operations.

### **3. January 2012 Groundwater Monitoring Report – September 2011 Sampling Event**

SMM conducted additional groundwater monitoring activities in September 2011 to determine whether petroleum-related constituents detected in December 2010 in well W-9R continued to be present in the groundwater at the Site after the implementation of new containment measures and spill prevention practices within the Car Processing Building. The findings of the September 2011 groundwater sampling event are documented in an EPA-approved *January 2012 Groundwater Monitoring Report*.

As part of the September 2011 groundwater investigation activities, SMM replaced monitoring well W-9R due to a potential compromise in structural integrity, and monitoring well W-10 due to a failure to locate this well. The replacement wells W-9R2 and W-10R were constructed in approximately the same locations as former

monitoring wells W-9R and W-10. Groundwater samples were collected from monitoring wells W-1, W-3R, W-6, W-9R2, W-10R, and W-11 and analyzed for VOCs and the metals arsenic, chromium and lead.

Arsenic (0.027 mg/L) was detected in well W-1 above its MCL of 0.01 mg/L.

Benzene (200 micrograms per Liter ( $\mu\text{g/L}$ )), ethylbenzene (23  $\mu\text{g/L}$ ) and MTBE (680  $\mu\text{g/L}$ ) were detected in W-9R2, with benzene and MTBE at concentrations above their respective MCLs. However, the concentrations of the petroleum-related COCs detected in well W-9R2 in September 2011 were approximately 50% less than the detections in well W-9R in December 2010, a time period of nine months. Arsenic (0.20 mg/L) was also detected at a concentration above its MCL of 0.010 mg/L in well W-9R2, a slight increase from the concentration detected in December 2010 (0.1863 mg/L). The increase of arsenic detected in well W-9R2 is attributable to the increased solubility of arsenic in the vicinity of well W-9R2 due to the localized presence of petroleum impacts in groundwater.

Lead was detected in well W-11 at a concentration of 0.018 mg/L, slightly above its MCL of 0.015 mg/L.

There were no exceedances of MCLs or RSLs in downgradient wells W-3R and W-6.

#### **4. December 2012 Groundwater Monitoring Report – August 2012 Sampling Event**

The objective of the groundwater monitoring activities completed in August 2012 was to confirm the decreasing concentrations of petroleum-related constituents in the groundwater quality trends established between 2010 and 2011. The findings of the August 2012 groundwater sampling event are documented in an EPA-approved December 2012 *Groundwater Monitoring Report*.

As part of the August 2012 groundwater investigation activities, SMM replaced monitoring well W-11 due to a potential compromise in structural integrity. The replacement well W-11R was constructed in approximately the same location as former well W-11. Groundwater samples were collected from monitoring wells W-1, W-3R, W-6, W-9R2, W-10R, and W-11R and analyzed for VOCs and the metals arsenic, chromium and lead.

Arsenic was detected at a concentration of 0.046 mg/L in well W-1, above its MCL of 0.01 mg/L. The concentration of arsenic detected in well W-1 in August 2012 showed a slight increase from the concentration detected in September 2011 (0.027 mg/L).

Arsenic was detected in well W-9R2 at a concentration of 0.49 mg/L, above its MCL of 0.010 mg/L. The trend associated with arsenic in W-9R2 has consistently shown an increase in the concentration of arsenic since 2005 (0.04 mg/L) in former well W-9. The increase in the arsenic concentration in the groundwater in the vicinity of well W-9R2 is attributable to the localized presence of petroleum-related contaminants increasing the solubility of arsenic in the soil and the dissolved oxygen (DO) levels in W-9R2 are indicative of anaerobic conditions. As the petroleum-related constituents continue to attenuate and aerobic conditions return, it is anticipated that the localized arsenic levels in the vicinity of W-9R2 will begin to decrease.

Benzene (74 µg/L), ethylbenzene (5.3 µg/L) and MTBE (300 µg/L) were detected in well W-9R2 at significantly lower concentrations than those detected in December 2010 and September 2011. The continual reduction of petroleum-related constituents detected in well W-9R2 indicates that the source for these constituents has been eliminated and the petroleum-related constituents are attenuating naturally.

There were no exceedances of MCLs or RSLs in wells W-3R, W-6, W-10R, and W-11R.

## **Section 4: Summary of Facility Risks**

---

EPA has determined that soils and groundwater at the Site do not pose a threat to human health or the environment under the current and anticipated future use scenarios. EPA sets national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. EPA has determined that the Facility met the goals of the indicators on September 1, 2010.

## **Section 5: Corrective Action Objectives**

---

### **5.1 Soil**

EPA's Corrective Action Objective for Facility soils is to control exposure to the hazardous constituents remaining in soils by requiring the compliance with and maintenance of land use restrictions at the Facility.

### **5.2 Groundwater**

EPA's Corrective Action Objectives for Facility groundwater are to restore the groundwater to drinking water standards, and until such time as drinking water standards are achieved, to control exposure to the hazardous constituents remaining in the groundwater through engineering and/or institutional controls.

## **Section 6: Proposed Remedy**

---

The proposed remedy for the Facility consists of land- and groundwater-use restrictions to be implemented through institutional controls and the continued implementation of a groundwater monitoring program until groundwater clean-up standards are met through monitored natural attenuation. The goal of the proposed remedy is to ensure the overall protection of human health and the environment.

### **6.1 Soils**

The proposed remedy for Facility soils consists of land-use restrictions to be implemented through institutional controls (See Section 6.3), restricting the Site to non-residential uses. EPA has determined that EPA Region 3's direct-contact RSLs for Industrial Soils are protective of human health and the environment for contaminants at this Facility, provided that the Facility is not used for residential purposes. Based on the available information, there are currently no unacceptable risks to human health and the environment via the soil or vapor intrusion pathways for the present and anticipated future industrial use of the Facility property.

### **6.2 Groundwater**

EPA's proposed remedy for groundwater at the Facility is Monitored Natural Attenuation (MNA) with Institutional Controls (ICs). Natural attenuation refers to a system where a variety of physical, chemical, or biological processes act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. As decomposition of the contaminants takes place, compounds called "breakdown products" are produced. Ultimately, the breakdown products are also decomposed resulting in compounds which are not a threat to human health or the environment. MNA simply refers to the act of collecting samples to "monitor" the natural attenuation process. The monitoring at the Facility will be conducted in accordance with the EPA-approved Long-Term Groundwater Monitoring Plan as incorporated by reference and included as **Attachment A** to this SB.

Because contaminants will remain in the groundwater at the Facility above MCLs, EPA's proposed remedy also includes groundwater use restrictions to be implemented through enforceable ICs (See Section 6.3).

### **6.3 Institutional Controls**

ICs are non-engineered instruments such as administrative and legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of the decision by restricting land or resource use. Under this proposed remedy, some contaminants remain in the soil and groundwater at the Facility above levels appropriate for residential uses. Because some contaminants remain in the soil and groundwater at the Facility at levels which exceed residential use, EPA's proposed decision requires compliance with and maintenance of land and groundwater use restrictions.

EPA proposes to implement the land and groundwater use restrictions necessary to prevent human exposure to contaminants at the Facility through enforceable ICs such as orders and/or an

Environmental Covenant pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, §§10.1-1238 - 10.1-1250 of the Code of Virginia, (UECA) and UECA's implementing regulations, 9VAC15-90-10-60. If an Environmental Covenant is to be the institutional control mechanism, it will be recorded in the chain of title for the Facility property. The use of groundwater as a drinking water source is also regulated by the Virginia Department of Health which issues drinking water permits for wells and does not allow the use of contaminated groundwater as a drinking water source. In addition, the continuation of the existing groundwater monitoring program until groundwater clean-up standards are met will be enforceable through an enforceable instrument such as an order or an Environmental Covenant. If EPA determines that additional institutional controls or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include an order or Environmental Covenant.

The ICs shall include, but may not be limited to, the following land and groundwater use restrictions:

1. Groundwater at the Facility shall not be used for any purpose other than the monitoring activities required by VADEQ and/or EPA, unless it is demonstrated to EPA, in consultation with VADEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy and EPA, in consultation with VADEQ, provides prior written approval for such use;
2. The Facility property shall not be used for residential, agricultural or recreational purposes unless it is demonstrated to EPA, in consultation with VADEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy, and EPA, in consultation with VADEQ, provides prior written approval for such use;
3. All earth moving activities including excavation, drilling and construction activities that would result in direct exposure to soil, in the areas at the Facility where any contaminants remain in soils above EPA's Screening levels for non-residential use shall be prohibited unless it is demonstrated to EPA, in consultation with VADEQ, that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy, and EPA, in consultation with VADEQ, provides prior written approval for such use;
4. The Facility property will not be used in a way that will adversely affect or interfere with the integrity and protectiveness of the final remedy;
5. No new wells will be installed on Facility property unless it is demonstrated to EPA, in consultation with VADEQ, that such wells are necessary to implement the final remedy and EPA provides prior written approval to install such wells.
6. The Facility owner shall allow EPA, VADEQ, and/or their authorized agents and



representatives, access to the Site to inspect and evaluate the continued effectiveness of the final remedy and, if necessary, to conduct additional remediation to ensure the protection of the public health and safety and the environment based upon the final remedy to be selected by EPA in the Final Decision and Response to Comments (FDRTC).

In addition, any Environmental Covenant or order will require the Facility owner to continue the groundwater monitoring program already in place.

## **Section 7: Evaluation of Proposed Remedy**

---

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

<b>Threshold Criteria</b>	<b>Evaluation</b>
1) Protective of Human Health and the Environment	<p>With respect to soils, contaminated soil is below the surface and contained within Facility property. To prevent or control the exposure to impacted soil where contamination above residential screening levels remains in place, EPA has proposed land-use restrictions in order to minimize the potential for human exposure to that contamination.</p> <p>With respect to groundwater, while contaminants remain in the shallow groundwater beneath the Facility at concentrations above MCLs, the contaminants are contained in the aquifer and do not migrate beyond the areas on the Facility property. The results of the 2010, 2011, and 2012 groundwater monitoring events show that the groundwater plume has stabilized (not migrating), and concentrations of COCs are either stable or declining over time. Groundwater is not used on the Facility for drinking water, and no downgradient users of off-site groundwater are known to exist. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met. The implementation of groundwater-use restrictions will prevent the use of impacted groundwater at the Site.</p>

<p>2) Achieve Media Cleanup Objectives</p>	<p>EPA's proposed remedy meets the appropriate cleanup objectives based on assumptions regarding current and reasonably anticipated land and groundwater use(s). The anticipated future land use for the Site is industrial. The Facility has achieved EPA's non-residential RSLs for industrial soils. The groundwater plume appears to be stable (not migrating), and COCs above MCLs are either stable or declining over time. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met. The Facility meets EPA risk guidelines for human health and the environment.</p>
<p>3) Remediating the Source of Releases</p>	<p>In all proposed decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment. There are no remaining large, discrete sources of waste from which constituents would be released to the environment. Groundwater is not used for potable purposes at the Facility or at neighboring properties. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met. The Virginia Department of Health issues drinking water permits for wells and does not allow use of contaminated groundwater as a drinking water source. Therefore, EPA has determined that this criterion has been met.</p>

Balancing Criteria	Evaluation
<p>4) Long-term effectiveness</p>	<p>The proposed remedy will remain protective of human health and the environment over time by controlling exposure to the hazardous constituents remaining in soils and groundwater. EPA's proposed decision requires the compliance with and maintenance of land- and groundwater-use restrictions at the Facility and the continuation of a groundwater monitoring program already in place until groundwater clean-up standards are met.</p>

5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The reduction of toxicity, mobility and volume of hazardous constituents at the Facility has already been achieved, as demonstrated by the data of the groundwater monitoring showing that the plume appears to be stable (not migrating), and concentrations of COCs are either stable or declining over time. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met.
6) Short-term effectiveness	EPA's proposed remedy does not involve any activities, such as construction or excavation, which would pose short-term risks to workers, residents, and the environment.
7) Implementability	EPA's proposed decision is readily implementable. EPA proposes to implement the land and groundwater use restrictions through an enforceable IC such as an order or an Environmental Covenant, pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, Sections 10.1-1238-10.1-1250 of the Code of Virginia. EPA proposes to continue the groundwater monitoring through an enforceable mechanism such as an environmental covenant or order. Environmental Covenants are readily implemented. In addition, EPA does not anticipate any regulatory constraints in issuing orders.
8) Cost	EPA's proposed remedy is cost effective. The costs associated with the continuation of groundwater monitoring and recording an environmental covenant in the chain of title to the Facility property are minimal.
9) Community Acceptance	EPA will evaluate community acceptance of the proposed remedy during the public comment period and it will be described in the Final Decision and Response to Comments.
10) State/Support Agency Acceptance	VADEQ has reviewed and concurred with the proposed remedy for the Facility.

## Section 8: Financial Assurance

---

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed remedy at the Facility. The costs to obtain orders or environmental covenants are minimal. Also, given that EPA's proposed remedy does not require any further engineering actions to remediate soil, groundwater or indoor air contamination at this time and given that the costs of implementing institutional controls and the continuation of groundwater monitoring at the Facility will be minimal, EPA is proposing that no financial assurance be required.

## Section 9: Public Participation

---

Before EPA makes a final decision on its proposed remedy for the Facility, the public may participate in the decision selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The Index to the AR may be found in Section 10 of this SB. The AR contains all information considered by EPA in reaching this proposed decision. It is available for public review during normal business hours at:

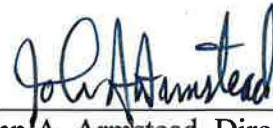
U.S. EPA Region III  
1650 Arch Street  
Philadelphia, PA 19103  
Contact: Jeanna R. Henry  
Phone: (215) 814-2820  
Fax: (215) 814-3113  
Email: [henry.jeannar@epa.gov](mailto:henry.jeannar@epa.gov)

Interested parties are encouraged to review the AR and comment on EPA's proposed remedy. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to Ms. Jeanna Henry. EPA will hold a public meeting to discuss this proposed remedy upon request. Requests for a public meeting should be made to Ms. Jeanna Henry.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants a modification to the proposed remedy, EPA will modify the proposed remedy or select other alternatives based on such new information and/or public comments. EPA will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC). All persons who comment on this proposed remedy will receive a copy of the FDRTC. Others may obtain a copy by contacting Jeanna Henry at the address listed above.

Date: \_\_\_\_\_

6.4.13



\_\_\_\_\_  
John A. Armstead, Director  
Land and Chemicals Division  
US EPA, Region III

## Section 10: Index to Administrative Record

---

1. *Groundwater Monitoring Report – August 2012 Sampling Event for Sims Metal Management*, prepared by ONE Environmental Group, LLC, December 6, 2012.
2. E-mail dated 7/2/2012 from Rusty Field, ONE Environmental Group, LLC, to Jeanna Henry, USEPA, Project Manager, regarding monitoring well W-11 abandonment and replacement scope of work to install new well W-11R.
3. *Groundwater Sampling & Analysis Plan – Revision 01 for Sims Metal Management*, prepared by ONE Environmental Group, LLC, June 20, 2012.
4. *Groundwater Monitoring Report – September 2011 Sampling Event for Sims Metal Management*, prepared by ONE Environmental Group, LLC, January 2012.
5. *Groundwater Sampling and Analysis Plan – Revision 01 for Sims Metal Management*, prepared by ONE Environmental Group, LLC, July 21, 2011.
6. E-mail dated 7/8/2011 from Jeanna Henry, USEPA, Project Manager, to Rusty Field, ONE Environmental Group, LLC, regarding draft Sampling & Analysis Plan submitted on July 5, 2011.
7. *Groundwater Monitoring Report for Sims Metal Management*, prepared by Groundwater & Environmental Services, Inc., February 28, 2011.
8. *Groundwater Monitoring Workplan (Revised)*, Correspondence from Groundwater & Environmental Services, Inc. to Ms. Jeanna Henry, USEPA, Project Manager, November 30, 2010.
9. *Groundwater Monitoring Workplan*, Correspondence from Groundwater & Environmental Services, Inc. to Ms. Jeanna Henry, USEPA, Project Manager, November 17, 2010.
10. *Groundwater Monitoring Report for Sims Metal Management*, prepared by Groundwater & Environmental Services, Inc., March 2010.
11. *Phase I RCRA Facility Investigation Work Plan for Sims Hugo Neu*, prepared by Groundwater & Environmental Services, Inc., December 2006.
12. Closure Verification for Hazardous Waste Management Units, Correspondence from Commonwealth of Virginia, Department of Environmental Quality to Sierra Recycling, Inc., November 12, 2004.

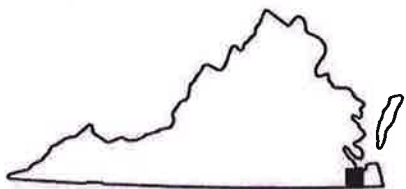
13. *Final Closure Report for Sierra Recycling Facility*, prepared by Stokes Environmental Associates, LTD., August 16, 2004.
14. *Statistical Analysis and Risk-Based Closure Assessment, Sierra Recycling Facility*, Stokes Environmental Associates, LTD, December 16, 1998.
15. *Sierra Recycling HWMU Closure, Final Closure Report*, Sierra Recycling Inc., September 13, 1998.
16. *Site Characterization Report for Former Old Dominion Wood Preservers*, prepared by Davis Engineering Associates, P.C., July 16, 1993

# Figures

---





SOURCE: USGS 7.5 MINUTE SERIES  
 TOPOGRAPHIC QUADRANGLE 1977  
 SUFFOLK, VIRGINIA  
 CONTOUR INTERVAL = 5'

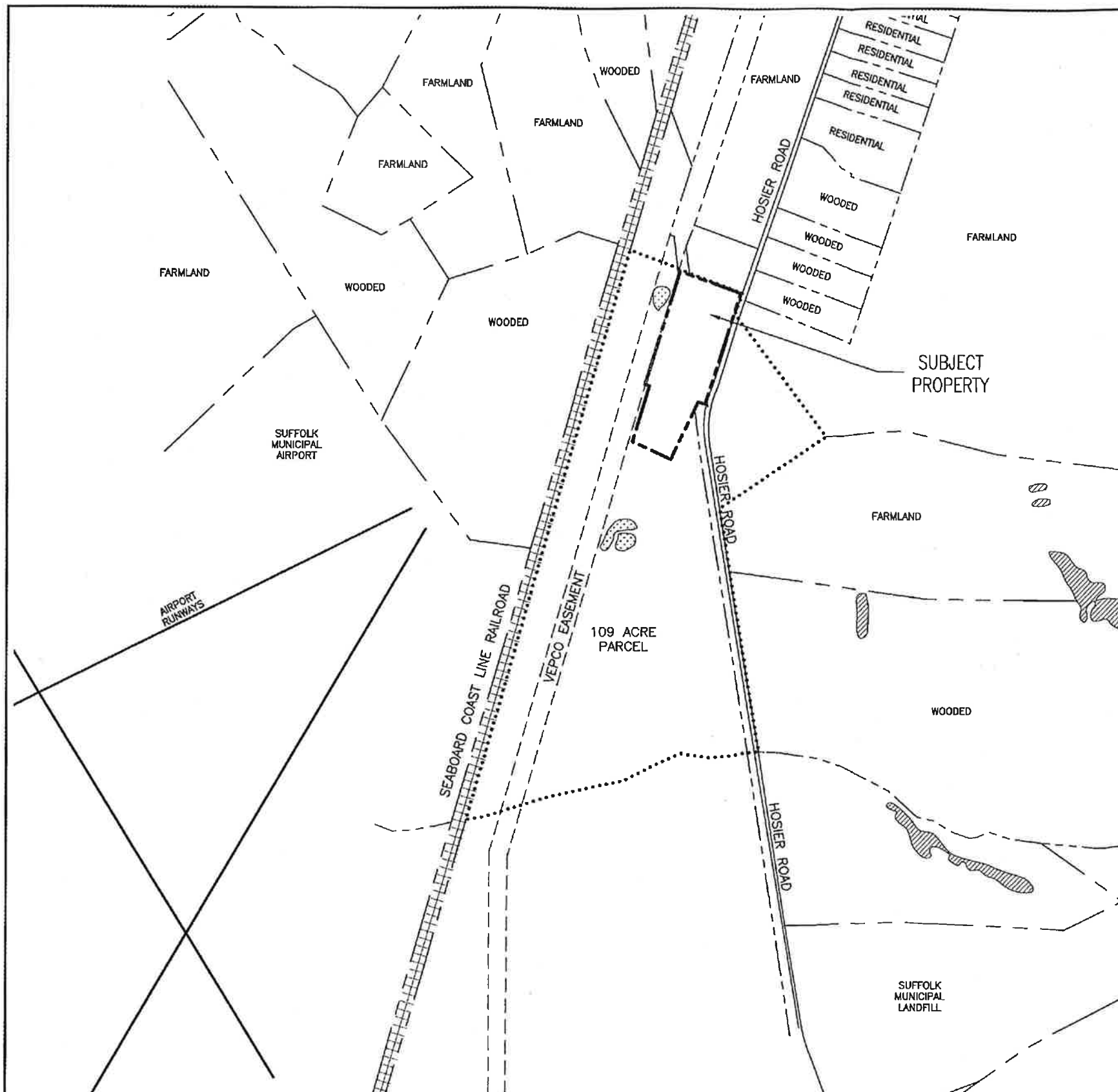


QUADRANGLE LOCATION

LAT. 036° 41' 58.42" N  
 LONG. 076° 34' 59.93" W  
 (APPROXIMATE SITE COORDINATES)

DRAFTED BY: W.A.W. (N.J.)	<b>SITE LOCATION MAP</b>		
CHECKED BY: K.G.			
REVIEWED BY: M.S.B.	Groundwater & Environmental Services, Inc. 23 SOUTH 13TH STREET, SUITE 201, RICHMOND, VA 23219		
NORTH 	SCALE IN FEET 	DATE 11-17-06	FIGURE 1

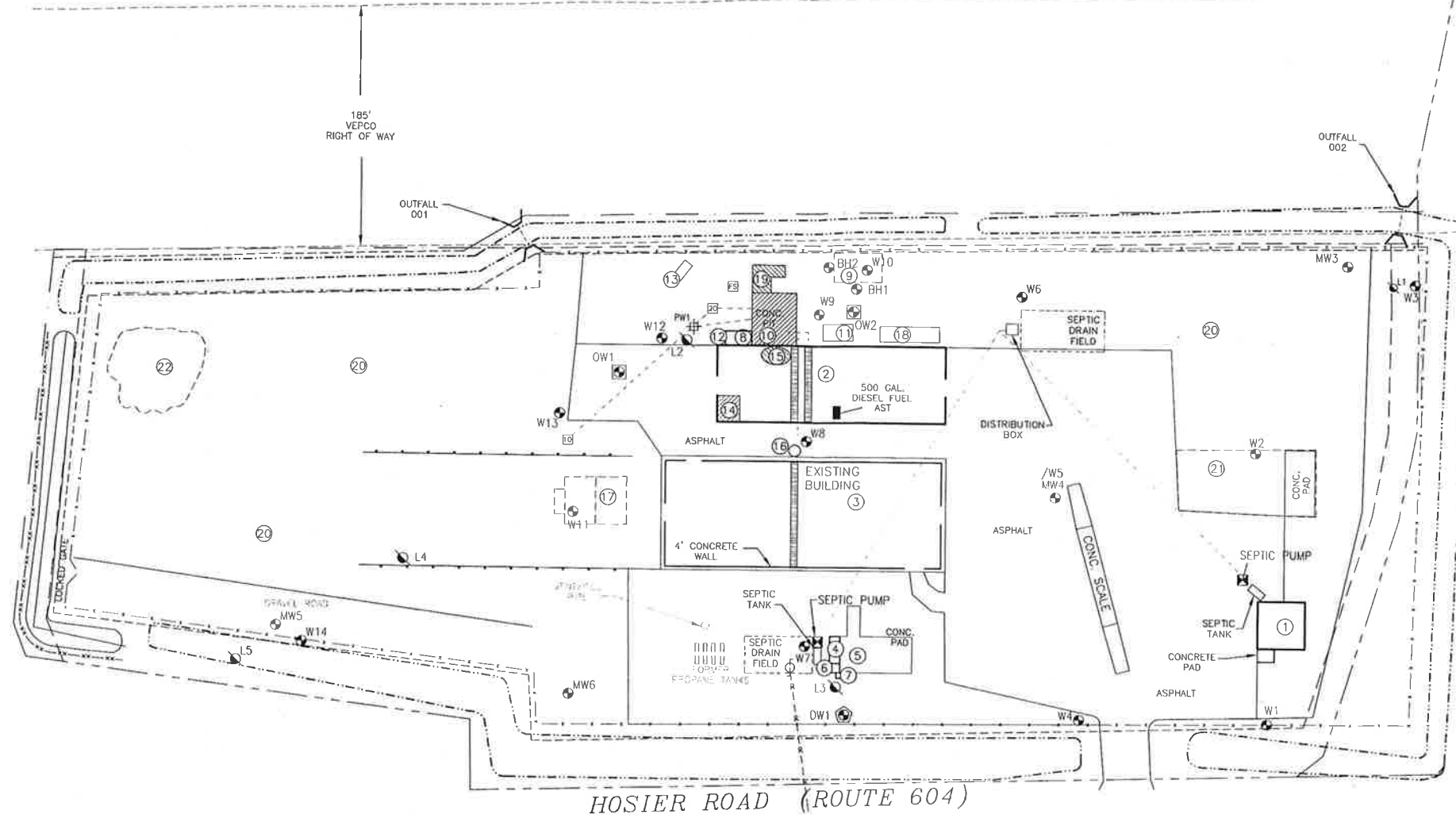




**LEGEND**

- PROPERTY BOUNDARY
- ..... 109 ACRE PARCEL
- SUBJECT PROPERTY (SITE)
- +++++ RAILROAD TRACKS
- /// SURFACE WATER BODIES
- ☼ WETLAND AREAS
- - - - - VEPKO UTILITY EASEMENT

DRAFTED BY: W.A.W. (N.J.)	<b>LOCAL AREA MAP</b>	
CHECKED BY: K.G.	<b>SIMS HUGO NEU 1177 HOSIER ROAD SUFFOLK, VIRGINIA</b>	
REVIEWED BY: M.S.B.	Groundwater & Environmental Services, Inc. 23 SOUTH 13TH STREET, SUITE 201, RICHMOND, VA 23219	
NORTH 	SCALE IN FEET 	DATE 12-12-06
		FIGURE 2



HOSIER ROAD (ROUTE 604)

**LEGEND**

- UTILITY POLE
- METAL RAIL
- - - EARTH BERM
- - - FENCE/APPROXIMATE PROPERTY BOUNDARY
- - - APPROXIMATE PARCEL BOUNDARY
- - - DITCH
- - - VEPCO EASEMENT BOUNDARY
- - - UNDERGROUND PIPING
- ▬ TRENCH DRAIN WITH 6" GRATING
- MONITORING WELL NOT LOCATED
- DRINKING WATER SUPPLY WELL
- FORMER PROCESS WATER SUPPLY WELL
- LYSIMETER NOT LOCATED
- OBSERVATION WELL NOT LOCATED
- FORMER 10K & 20K GALLON WATER TANK
- FORMER FIBERGLASS STORAGE TANK

- HAZARDOUS WASTE MANAGEMENT UNITS (HWMUs)
- HISTORICAL EXCEEDENCE OF EPA RBC FOR TAP WATER
- MONITORING WELL LOCATION INSTALLED MAY 2005

**BLDG # ACTIVITIES ASSOCIATED WITH BUILDINGS**

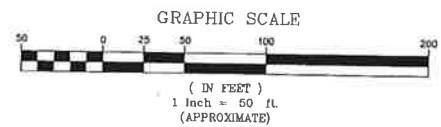
- ① METAL FRAME OFFICE BUILDING SINGLE STORY ELEVATED
- ② 1-STORY BLDG BUILDING (ELECTRICAL)
- ③ PUMP HOUSE
- ④ FORMER BOILER SHED
- ⑤ FORMER BOILER AST
- ⑥ SMALL (<1,000 gal.) AST

**BLDG # ACTIVITIES ASSOCIATED WITH OLD DOMINION WOOD PRESERVERS**

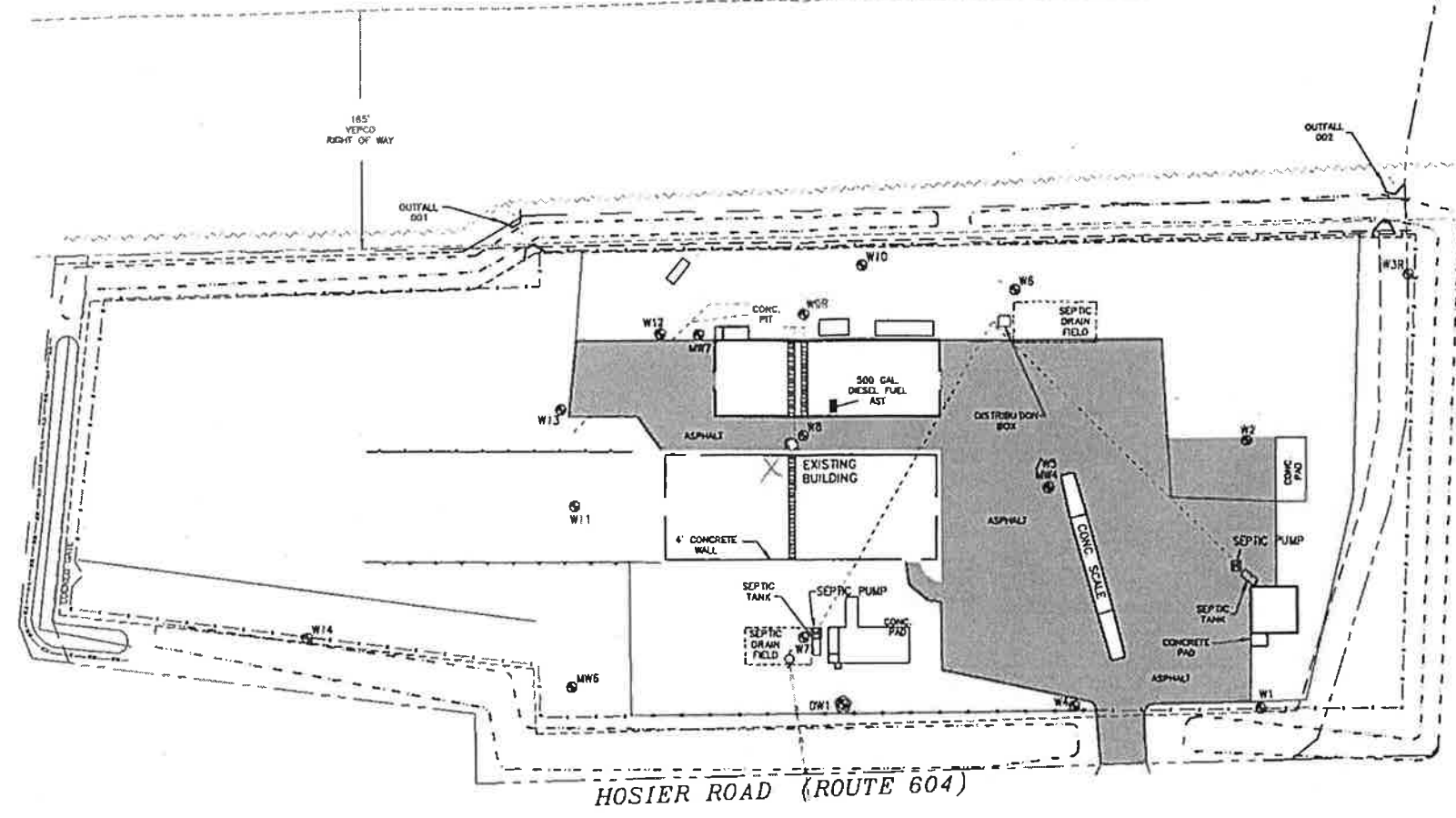
- ⑦ METAL WAREHOUSE BUILDING-FORMER WOOD TREATMENT AREA
- ⑧ CONCRETE PAD-FORMER EMPLOYEE LOCKER ROOM & STORAGE SHED
- ⑨ FORMER MAINTENANCE SHED
- ⑩ HWMU-FORMER WOOD TREATMENT/MICROBE GENERATOR SHED
- ⑪ FORMER LEACHATE RECOVERY SHED/TANK
- ⑫ FORMER WOOD KILN/DRYER SHED
- ⑬ HWMU-FORMER WOOD TREATMENT AREA
- ⑭ FORMER LUMBER STORAGE
- ⑮ FORMER COVERED STORAGE AREA

**BLDG # ACTIVITIES ASSOCIATED WITH SIERRA RECYCLING, INC.**

- ⑯ METAL WAREHOUSE BUILDING-FORMER STORAGE BUILDING
- ⑰ METAL WAREHOUSE BUILDING-FORMER SOIL TREATMENT AREA
- ⑱ MINI TRAILER REST ROOM
- ⑲ HWMU-FORMER WOOD TREATMENT/MICROBE GENERATOR SHED
- ⑳ FORMER LEACHATE RECOVERY SHED/TANK
- ㉑ HWMU-FORMER CONTAINER STORAGE AREA
- ㉒ HWMU-FORMER WASTE PILE
- ㉓ LEACHATE RECOVERY TANK (300 GALLON)
- ㉔ FORMER MICROBE GENERATOR TANK
- ㉕ LOCATION OF REMEDIATED AMOCO TANK BOTTOMS



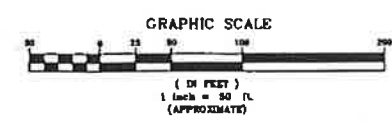
DRAFTED BY: W.A.W. (N.J.)	FORMER SITE MAP - MAY 2005	
CHECKED BY: M.R.	SIMS HUGO NEU 1177 HOSIER ROAD SUFFOLK, VIRGINIA	
REVIEWED BY: M.S.B.	Groundwater & Environmental Services, Inc. 23 SOUTH 13TH STREET, SUITE 201, RICHMOND, VA 23219	
NORTH	DATE 12-13-06	FIGURE 3



HOSIER ROAD (ROUTE 604)

- LEGEND**
- ⊕ UTILITY POLE
  - METAL PILE
  - - - EARTH BORN
  - - - FENCE/ADJACENT PROPERTY BOUNDARY
  - - - APPROXIMATE PARCEL BOUNDARY
  - - - DITCH
  - - - W/POD EASEMENT BOUNDARY
  - - - UNDERGROUND PIPING
  - - - TRENCH DRAIN WITH 4\"/>

⊕ REPLACEMENT MONITORING WELLS



DRAFTED BY: W.A.W. (N.J.)	CURRENT SITE MAP 2009	
CHECKED BY: M.R.	SIMS GROUP SIMS METAL MANAGEMENT 1177 HOSIER ROAD SUFFOLK, VIRGINIA	
REVIEWED BY: M.S.B.	Groundwater & Environmental Services, Inc. 23 SOUTH 13TH STREET, SUITE 201, RICHMOND, VA 23219	
NORTH 	DATE 9-23-09	FIGURE 4

# Attachments

---



January 29, 2013

*Via electronic mail*

Jeanna R. Henry  
Environmental Scientist/Remedial Project Manager  
Office of Pennsylvania Remediation  
U.S. Environmental Protection Agency, Region 3  
1650 Arch Street  
Philadelphia, PA 19103

**Re: Long Term Groundwater Monitoring Plan**

Sims Metal Management  
Suffolk, Virginia Yard  
EPA ID No. VAD083045823

Dear Ms. Henry,

ONE Environmental Group, LLC (ONE) appreciates the opportunity to submit this Long Term Groundwater Monitoring Plan (LTGMP) on behalf of the Sims Metal Management (SMM) facility located in Suffolk, Virginia. This LTGMP was prepared in response to the January 8, 2013 conference call with the United States Environmental Protection Agency (EPA) and SMM. The conference call was initiated to discuss the path forward for the site based upon the results of the August 2012 groundwater investigation and the conclusions provided in the follow-up report titled *Groundwater Monitoring Report – August 2012 Sampling Event* (ONE, December 2012).

The objective of this LTGWMP is to outline an annual groundwater monitoring plan. It is our understanding that this plan will be incorporated into the Statement of Basis that is currently being drafted by EPA.

***Groundwater Monitoring Plan***

Groundwater samples will be collected on an annual basis from wells W9R2, W10R2, W1, and W3R. W9R2 has consistently reported exceedances of the screening standards and W10R, W1 and W3R are located hydraulically downgradient and along the site boundaries. The remaining wells at the site indicated no exceedances of the screening standards in August 2012 and are not strategically located; and therefore, will be abandoned upon in accordance with Virginia standards.

Groundwater sampling will be performed on an annual basis beginning in 2013. Groundwater sampling will be completed until constituents of concern have reached the

screening standards established for the site. The screening standards used historically for this site include the federal Maximum Contaminant Levels (MCLs), or in cases where an MCL does not exist the EPA Region 3 Regional Screening Level (RSL) has been utilized. Once the screening standards have been met for two monitoring cycles, the groundwater monitoring requirement will terminate and the remaining wells will be abandoned in accordance with Virginia standards.

Prior to well sampling, site wells that can be located will be gauged with a water-level probe capable of measuring groundwater levels to the nearest tenth of a foot. Groundwater sampling procedures will follow the EPA guidance document titled *Low Flow (Minimal Drawdown) Groundwater Sampling Procedures, EPA/540/S-95/504* (April 1996) and will be done in accordance with this LTGWMP. Groundwater samples will be collected using a peristaltic pump and dedicated polyethylene tubing. The polyethylene tubing will be replaced between each well, eliminating the need for equipment rinsate samples. Groundwater quality parameters (i.e., temperature, pH, conductivity, dissolved oxygen, and turbidity) will be recorded using a water quality meter and flow-through cell. Groundwater quality parameters will be recorded every three minutes until readings have stabilized, defined as readings within 10% of each other and water is non-turbid. Sampling observations and purge volumes will be recorded within the field notebook, and once all parameters have stabilized a representative sample will be collected. As discussed during the April 4, 2012 conference call with EPA, samples for inorganic analyses will be collected via a field filter (0.45 microns) and discharged directly into laboratory provided bottleware. The remaining samples for organic analyses will be collected directly from the discharge tubing into laboratory provided bottleware.

The samples will be analyzed for the following constituents: benzene, ethylbenzene, methyl tert-butyl ether (MTBE), and arsenic. The annual groundwater samples will be submitted to a Virginia-certified laboratory for analysis of arsenic using EPA Method 6010C; and benzene, ethylbenzene, and MTBE using EPA Method 8260. QA/QC sampling will include a field blank and a blind field duplicate.

All purge water will be containerized in a 55-gallon drum and temporarily staged on site pending off-site disposal. The groundwater data will be used to characterize the purge water and develop a profile for disposal.

### **Reporting**

ONE will submit an annual report to the EPA that will include groundwater analytical results, groundwater contour map, and data tables outlining groundwater elevations and field parameters. The analytical results will be evaluated in relation to the current version of the EPA Region III risk-based screening criteria and previous analytical results. The report will evaluate whether the plume has remained stable or is decreasing. A notice of termination will be included in the report after two consecutive monitoring cycles reflect that all of the monitored constituents are below the screening levels.

Ms. Jeanna Henry  
January 29, 2013  
Page 3 of 3

If you should have any questions or comments pertaining to the LTGWMP, please do not hesitate to contact me at (804) 303-8784.

Sincerely,  
**ONE Environmental Group, LLC**



J. Rusty Field, P.E  
Principal

cc: Bobby Glenn – Sims Metal Management (electronic copy)  
Andrea Wortzel – Hunton & Williams (electronic copy)