



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III**

**STATEMENT OF BASIS**

**DOT PARCEL  
SOUTHEAST FEDERAL CENTER  
WASHINGTON, D.C.**

**February 2005**

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## Contents

	<b>Page</b>
<b>List of Attachments</b>	ii
<b>I. Introduction</b>	1
<b>II. Proposed Remedy</b>	1
<b>III. Facility Background</b>	2
<b>IV. Previous Environmental Investigations at the 55-acre SEFC</b>	3
<b>V. Summary of the RCRA Facility Investigation at the DOT Parcel</b>	4
A. Description of DOT Parcel Areas of Interest	4
B. Summary of DOT Parcel RFI Sampling Activities	6
C. Ecological Assessment and Investigation	7
<b>VI. Interim Measures</b>	8
<b>VII. Summary of DOT Parcel Risks</b>	10
<b>VIII. Scope of Corrective Action at the DOT Parcel</b>	11
<b>IX. Public Participation</b>	11
<b>Signature</b>	12

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## **List of Attachments**

1. Figure 1 - Site Location Map
2. Figure 2 - DOT Parcel detail
3. Evaluation of EPA's Proposed Remedy
4. Documents Used for Statement of Basis

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## **I. Introduction**

This Statement of Basis (SB): (1) describes and summarizes information gathered during the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at the U.S. Department of Transportation (DOT) Parcel located in Washington, D.C. (explained more fully in Section III below), (2) describes the Interim Measures (IMs) conducted on the DOT parcel and (3) presents the U.S. Environmental Protection Agency's (EPA) proposed final remedy for the DOT Parcel. The RFI and IMs were conducted pursuant to an Administrative Order on Consent (AOC), entered into by EPA and the General Services Administration on August 2, 1999 (Docket Number RCRA-III-019AM), pursuant to Section 3013 of the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (RCRA), 42 U.S.C. Section 6934(h). In accordance with the AOC, GSA completed the tasks described in the EPA-approved RFI Work Plan and then implemented the EPA-approved IM Work Plan.

The purpose of the RFI was to fully determine the nature and extent of any releases of hazardous waste and/or hazardous constituents at the DOT Parcel. The RFI showed that polychlorinated biphenyls (PCBs) and the gasoline constituents benzene, toluene, ethylbenzene and xylenes (BTEX) were the contaminants of concern on the property. Based on the IMs that have been implemented on the DOT Parcel, EPA proposes that no further action is necessary for soil remediation, and ground water IMs will continue according to the revised Long-Term Monitoring Plan. The IMs are described more fully in this document.

To gain a more comprehensive understanding of the RCRA activities that have been conducted at the DOT Parcel, EPA encourages the public to review the RFI Work Plan, the RFI Final Report, the Interim Measures Work Plan, the Interim Measures Implementation Report, and other documents, which are found in the Administrative Record for this matter. The Administrative Record is maintained at the Southeast Branch Library, located at 403 7<sup>th</sup> St., SE at D St., SE, Washington, D.C. 20003. A copy of the Administrative Record is also available at the EPA Region III offices, located at 1650 Arch Street, Philadelphia, PA 19103.

EPA is issuing this SB consistent with the public participation provisions of RCRA. EPA will make a final remedy decision after information submitted during a public comment period has been considered. EPA may modify the proposed alternative or select other alternatives based on new information and/or public comments. Therefore, the public is encouraged to review and comment on the proposed decision presented in this document and/or any additional options not previously identified and/or studied. The public may participate in the remedy selection process by reviewing the documents contained in the Administrative Record and submitting written comments to EPA during the public comment period. The procedures for public participation can be found in Section IX of this document.

## **II. Proposed Remedy**

For soil, EPA is proposing no further action because contaminated soil was removed during the IMs and any contaminated soil remaining meets levels deemed protective of human health by EPA. On-going groundwater treatment and monitoring will address the on-site benzene, toluene, ethylbenzene, and xylene (BTEX) contamination originating from the upgradient former Shell service station property. Oxygen Release Compound (ORC<sup>®</sup>) was added to the contaminated groundwater to enhance natural biodegradation of BTEX. Groundwater monitoring will continue in

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accordance with the Long-Term Monitoring Plan, and EPA will evaluate the effectiveness of this IM annually. Public water is provided by the local utility, District of Columbia Water and Sewer Authority (WASA), and ground water is not used in this area. However, to provide additional protection, institutional controls to prohibit use of ground water for drinking water purposes from the DOT Parcel will include a property deed with a notice of use restriction.

### **III. Facility Background**

A new headquarters building for the DOT is being constructed on an 11-acre parcel (the DOT Parcel), located within the larger Southeast Federal Center (SEFC) property. The DOT Parcel is outlined in red on Figure 2. The DOT Parcel is bordered by M Street, S.E., to the north, by Fourth Street S.E. to the east, by Tingey Street to the south, and by the line of New Jersey Avenue to the west. The developer, JBG/SEFC Associates, LLC, is developing the DOT Parcel as an agent for GSA. GSA will transfer the DOT Parcel to JBG/SEFC Associates, LLC once all remedial activities and IMs are completed for soil, and are underway for groundwater, and EPA issues a final Remedy Decision Document for the DOT Parcel.

The Southeast Federal Center (SEFC) is a 55-acre property in Southeast Washington, D.C. The property is owned by the U.S. Government and controlled by the General Services Administration, National Capital Region (GSA-NCR). The SEFC is located along the northern bank of the Anacostia River (Figure 1). The SEFC property was formerly a complex of weapons production factories and workshops that were part of a larger facility known as the Washington Navy Yard. The SEFC is bounded on the south by the Anacostia River and on the west by the WASA Main Sewage Pumping Station and by First Street, S.E. The property is bounded to the north by M Street, S.E., and on the east by the Washington Navy Yard.

The AOC specifies that the SEFC be investigated in accordance with Section 3013 of the RCRA. Criteria for conducting IMs at the SEFC are described in Section VI-B, Paragraphs 33 through 37 and Attachment C of the AOC. EPA Region III approved GSA-NCR's approach of conducting an RFI for the DOT parcel that is separate from the RFI for the rest of the SEFC (January 25, 2002 letter). Once the DOT Parcel is transferred, the remaining portion of the SEFC will continue in the RFI process in accordance with the AOC. The DOT Parcel RFI soil and groundwater quality investigations were conducted in 2002, and the final RFI Report for the DOT Parcel was submitted to EPA in March 2004, and accepted in December 2004.

In an EPA letter dated August 16, 2002, to GSA, EPA Region III agreed that soil and groundwater remediation of the DOT Parcel could be conducted in accordance with the IM provisions of the AOC. An IM Work Plan was submitted to the EPA on August 4, 2003. EPA conditionally approved the IM Work Plan in a letter dated October 2, 2003. The IMs were conducted in 2004, and the IM Implementation Report was submitted to EPA in November 2004.

The DOT Headquarters Building will occupy approximately 8 acres of the 11-acre DOT Parcel. The building will have two towers: a nine-story west tower on the west side of 3<sup>rd</sup> Street and an eight-story east tower on the east side of 3<sup>rd</sup> Street. The total building area will be approximately 2 million square feet. The two towers will be connected by an underground concourse that passes under Third Street, and there are two levels of underground parking. The construction of the underground parking portion of the building is complete.

Before 1800, water covered most of the land that now comprises the SEFC. The area was designated the Washington Navy Yard and shipbuilding activities began in the early 1800s. The Navy Yard contained wharfs, warehouses, and refineries. Later, ordnance research laboratories were added. By 1919, the Navy Yard had doubled in size, and activities shifted from shipbuilding to gun mechanisms and ordnance manufacturing and repair. The Navy Yard buildings ranged from small

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warehouses to large foundries. A railroad system transected the site for the transport of bulk and refined materials. By 1962, ordnance production and manufacture had ended when missiles and electronic equipment made it obsolete. In 1963, the Department of the Navy transferred the western portion of Navy Yard to the GSA to develop the SEFC for housing a variety of government facilities, including light industrial operations, laboratories, warehouses, and administrative offices.

Former Navy Yard buildings within the DOT Parcel included factories and workshops for weapons production and ranged from 1,000 to 300,000 square feet in size. Specific activities conducted in these buildings included gun barrel manufacturing (Building 153), metal stock storage (Building 205), and supply storage (Building 216). Some of the buildings were converted to office space. Many of the buildings have been cleaned and demolished as part of the site redevelopment. The only building remaining on the DOT Parcel, Building 170, was an electrical substation, but is currently vacant.

#### **IV. Previous Environmental Investigations at the 55-acre SEFC**

Phase I Investigation (1989 and 1990): On behalf of GSA, Apex Environmental conducted a Phase I Environmental Site Assessment for GSA of the entire 55-acre SEFC. The investigation consisted of a records review; personal interviews; site inspections; limited soil, water and sediment sampling; and laboratory analyses for one or more suites of chemicals including metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and pesticides. The Phase I results were published in June 1990.

Preliminary Assessment (1991): On behalf of GSA, Apex Environmental conducted a Preliminary Assessment of the entire SEFC in 1991. The Preliminary Assessment score indicated that, in Apex's opinion, no further remedial action would be required at the SEFC under Superfund regulations.

Phase II Investigation (1991): On behalf of GSA, Kaselaan & D'Angelo Associates, Inc. (K&D) conducted a Phase II investigation of the entire SEFC, including the DOT Parcel, in 1991. K&D collected samples of subsurface soils, groundwater, river sediment, building chip and wipe samples, and sediment and liquid from building sumps and pits. K&D collected a total of 209 biased and grid systematic samples. Soil and groundwater samples were analyzed for one or more suites of chemicals including metals, VOCs, SVOCs, PCBs and pesticides. K&D installed eight groundwater monitoring wells, and identified the presence of chemicals in groundwater south of the former Shell station at 212 M Street as an area of concern. The Phase II Subsurface Investigation Report was published in June 1991.

Phase II Investigation (1996): On behalf of GSA, Woodward-Clyde Federal Services' (WCFS) Phase II investigation included 131 soil borings, 41 hydraulic push borings and 13 groundwater monitoring wells. Soil and groundwater samples were analyzed for one or more suites of chemicals including metals, VOCs, SVOCs, and PCBs. The investigation was designed to address soil and groundwater management during building and site infrastructure construction planned at the time. The Phase II Environmental Site Assessment Update Report was published in April 1996. Based on the data collected in the WCFS Phase II investigation and previous investigations, contaminated soil was removed from Building 170, two other buildings that have been demolished, and two other areas in 1999. These soil removal IMs are described in the Description of Current Conditions/Interim Measures Site Stabilization (DCC/IMSS) report and are summarized in Section VI of this Statement of Basis.

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Shrinkage Pit Investigation (2003): A deep pit known as the shrinkage pit was located at the west end of former Building 153. The shrinkage pit was used in the production and repair of gun barrels. Between October 2002 and January 2003, URS Group completed ten soil borings of various depths within the boundaries of the shrinkage pit, and collected nine soil samples from depths between 20 feet and 82.5 feet below ground surface. Soil samples were analyzed for metals, VOCs, SVOCs, and PCBs. The results were reported in the Former Gun Barrel Shrinkage Pit Investigation Report in August 2003.

## **V. Summary of the RCRA Facility Investigation at the DOT Parcel**

The purpose of the RFI was to fully determine the nature and extent of any releases of hazardous waste and/or hazardous constituents at the DOT Parcel. Areas of interest identified by previous investigations were completely delineated and additional areas of interest were identified and delineated.

### **A. Description of DOT Parcel Areas of Interest**

This section details the areas of interest identified on the DOT Parcel during soil and groundwater investigations. Several areas were addressed by the IMs conducted during 1999 and 2000 and documented in the DCC/IMSS report. Additional IMs were conducted in 2004 in accordance with the IM Work Plan. These IMs are described in Section VI.

Building 170: Building 170, also known as the Electric Sub-Station, was constructed in 1919. Building 170 contains approximately 7,200 square feet of floor space. This building most recently was used to store drained transformers and drums of PCB-containing transformer fluid prior to off-site disposal. The transformers and drums were placed inside secondary containment during storage. The building contained two sumps and an electrical feeder pit. Acid-filled batteries were stored in the battery storage room. The concrete floor slab, soil beneath the floor slab, and floor, wall and roof surfaces were tested for PCBs. Soil and surface wipe sample data collected from Building 170 indicated the presence of PCBs on and below surfaces of the building.

Building 216: Building 216, also known as the Supply House, was constructed in 1944. Before demolition of the building in 1997-1998, the building was used as a vehicle maintenance and motor pool area. There was an underground storage tank (UST No. 4) located at the northeast corner of Building 216. Another tank (UST No.5) was thought to be located near UST No. 4, however a records search and excavation during the Phase I work did not uncover it. UST No. 6 was located at the south end of Building 216. Sampling indicated that PCB-contaminated sediments were present in the sump pit in Building 216.

Building 232: Former Building 232 was also known as the Metal Stores. The building construction was a steel frame with steel siding on a concrete slab foundation. Before demolition in 1999, the southern half of Building 232 was used as an electrical shop. The northern half had been renovated to store drums of PCB-containing transformer oil removed from federal buildings throughout Washington, D.C. Concrete sampling indicated that PCB-contaminated concrete was present in the northern half of Building 232.

Shrinkage Pit: Gun barrels and breaches were machined, treated and repaired in Former Building 153, known as Gun Shop 2. A shrinkage pit was located at the west end of the Gun Shop. The

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shrinkage pit was used to heat iron gun barrels so they would expand. Then steel liners were inserted into the gun barrels, and the barrel and liner were cooled with water to form an intact gun barrel assembly. The shrinkage pit was approximately 40 feet by 75 feet, and approximately 100 feet deep. Based on the investigation, the material inside the shrinkage pit contained detectable levels of PCBs and PAHs.

Area F1: A rail spur was formerly located in Area F, approximately 100 feet west of Building 170. One soil sample collected in this area contained a Total Petroleum Hydrocarbon concentration (2,100 mg/kg) greater than the applicable District of Columbia criterion.

Area G: Investigations in the southeast portion of the DOT Parcel (within the footprint of Former Building 153) revealed the presence of PCBs and petroleum hydrocarbons in soil samples. One shallow soil sample contained a PCB concentration of 5 milligrams per kilogram (mg/kg). This area was designated as Area G1. One deep soil sample contained a TPH concentration of 2,090 mg/kg. This area was designated as Area G2.

Monitoring wells were installed in Area G2 to evaluate any groundwater impacts. The groundwater samples collected from these wells did not contain chemical concentrations greater than the applicable screening criteria. Phase-separated hydrocarbons were observed in one well. The hydrocarbons were removed by placing absorbent materials in the well. By September 2003, the amount of phase-separated hydrocarbons in the well had been reduced to a trace amount that could not be measured with an oil-water interface probe.

Areas G1 and G2 are within the DOT Building footprint, and were excavated to a depth of at least 20 feet during the building construction. Therefore, all affected soil and any remaining phase-separated hydrocarbons have been removed from these areas.

Contaminated Groundwater: There was an off-site release from underground storage tanks at the former Shell gasoline station located across the street from the DOT parcel on the northwest corner of M Street and 3<sup>rd</sup> Street, S.E. at 212 M Street, S.E. (DC Leaking Underground Storage Tank Case 93-085). In August 1990, six 5,000-gallon underground storage tanks and one 550-gallon waste oil tank were removed from the Shell property. In 1991, Shell removed approximately 1,400 tons of petroleum hydrocarbon-containing soils from the former underground storage tank pits. A soil vapor extraction remediation system operated from February 1995 until September 1998. Groundwater samples collected from monitoring wells at the gas station, between 212 M Street and the DOT Parcel, and on the DOT Parcel have consistently contained benzene, toluene, ethylbenzene and xylene (BTEX) concentrations greater than drinking water criteria.

The former Shell station was first identified as the potential source of BTEX contamination on the DOT Parcel in the 1991 Phase II investigation report. The distribution of benzene and ethylbenzene in groundwater at the former gas station and the DOT parcel indicates that affected groundwater has migrated from the former Shell station southwards onto the DOT parcel. The direction of migration is also consistent with the historical (1995) groundwater flow direction information.

Because of the residual contamination at the former gas station and under M Street, groundwater containing BTEX will continue to flow onto the DOT Parcel. To reduce the BTEX concentrations present, GSA is injecting Oxygen Release Compound (ORC<sup>®</sup>) into the subsurface along M Street. The ORC<sup>®</sup> will increase the level of dissolved oxygen in the groundwater and, thus, enhance the growth of naturally occurring bacteria that can degrade BTEX and other petroleum constituents.

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## B. Summary of DOT Parcel RFI Sampling Activities

The soil and groundwater investigations conducted during the RFI are described in detail in the RFI Workplan and the RFI Report. The investigation activities were conducted in accordance with the instructions and procedures described in the Field Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan.

Three soil borings were advanced to a depth of 80 feet below the ground surface (BGS) and soil was sampled at 10-foot intervals. The three soil borings were completed as 4-inch diameter deep-zone groundwater monitoring wells. Two shallow-zone (total depth at 40 feet BGS) groundwater monitoring wells were installed next to two of the deep-zone groundwater monitoring wells. Well pair BC-SB/MW01 and BC-MW02 was placed in the vicinity of the former gun barrel shrinkage pit. Well pair BC-SB/MW05 and BC-MW06 was placed in the vicinity of sample location HP4 where trichloroethene (TCE) was detected in the deep-zone groundwater. Deep zone monitoring well BC-SB/MW07 was placed in the vicinity of sample location HP14 where TCE was detected in the deep-zone groundwater. One soil boring was installed at the east-end of the former bridge crane runway north of former Building 153. The boring was advanced to a depth of 40 feet BGS and soil was sampled at 10-foot intervals. This soil boring was completed as a shallow-zone groundwater monitoring well (BC-SB/MW08). To investigate PCBs in sediments, three soil borings were advanced to a depth of 3 feet BGS and one soil sample was collected from the one to three feet BGS interval (BC-SB09, BC-SB10, and BC-SB11). In addition, six sediment samples were collected from storm drain catchment structures to investigate the magnitude and source area of the PCBs detected in storm drain catchment structures.

Soil samples from borings BC-SB/MW01, BC-SB/MW05, BC-SB/MW07, and BC-SB/MW08 were analyzed for the Appendix IX to 40 CFR 264 list of Volatiles plus Methyl tert-butyl ether (AP IX VCs), Appendix IX Inorganics-excluding cyanide and sulfide (AP IX INs), Appendix IX Semivolatiles (AP IX SVCs), and Appendix IX Organophosphorous Pesticides-Aroclors only (AP IX OPs). Soil samples from borings BC-SB09, BC-SB10, and BC-SB11, and the six sediment samples were analyzed for AP IX OPs. Groundwater from all six monitoring wells was sampled and analyzed for AP IX VCs, AP IX INs, and AP IX SVCs.

Building 216 Investigation: Soil borings and groundwater monitoring wells were placed within each of the four groups of vehicle lift pits known to have existed when Building 216 was used as a vehicle maintenance facility. Eight soil borings were advanced to a depth of 25 feet BGS and soil was sampled at the 5, 15, and 25-foot intervals. The borings penetrated the fill and underlying terrace sands and terminated at the top of a wedge of terrace clay beneath this portion of the SEFC. Four of the soil borings were completed as 4-inch diameter groundwater monitoring wells. Soil samples were analyzed for AP IX VCs, AP IX SVCs, and AP IX INs. Groundwater from the four monitoring wells was sampled and analyzed for AP IX VCs, AP IX INs, and AP IX SVCs.

Area F1 Investigation: In Area F1, one soil boring was advanced to a depth of 25 feet BGS and soil was sampled at the 5, 15, and 25-foot intervals. The boring penetrated the fill and underlying terrace sand and terminated at the top of a wedge of terrace clay beneath this portion of the SEFC. The soil boring was completed as a 4-inch diameter groundwater monitoring well. Soil samples were analyzed for AP IX VCs, AP IX SVCs, and AP IX INs. Groundwater from the monitoring well was sampled and analyzed for AP IX VCs, AP IX INs, and AP IX SVCs.

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Area G Investigation: Two soil borings were advanced to a depth of 10 feet BGS and soil was sampled at the 5 and 10-foot intervals (G1-SB01 and G1-SB02). The depth of these two soil borings penetrated the clean backfill placed in Area G1 and into the underlying historic fill. A third soil boring was advanced to a depth of 25 feet BGS and soil was sampled at 5-foot intervals (G2-SB/MW03). The boring penetrated the historic fill and underlying the terrace sand and terminated at the top of a wedge of terrace clay beneath this portion of the SEFC. The soil boring was completed as a 4-inch diameter groundwater monitoring well. Soil samples from G1-SB01 and G1-SB02 were analyzed for AP IX SVCs and AP IX OPs. Soil samples from G2-SB/MW03 were analyzed for AP IX SVCs and AP IX VCs. Groundwater from the monitoring well was sampled and analyzed for AP IX VCs, AP IX INs, and AP IX SVCs.

A 1-foot thick layer of phase-separated hydrocarbon (PSH) was discovered in the newly installed monitoring well G2-SB/MW03 during groundwater sampling in January 2002. Additional investigation was conducted to determine the actual thickness and the extent of impact of the PSH. The investigation included a PSH bail down test and an investigation of the subsurface conditions in the vicinity of well G2-SB/MW03 using a Geonics Ltd. EM-61 (EM-61) high-resolution ground conductivity detector. Laboratory analysis was performed on a sample of the PSH to estimate its composition.

Three additional 25-foot deep monitoring wells (G2-SB/MW04, G2-SB/MW05, and G2-SB/MW06) were installed in order to assess the extent of the PSH and petroleum constituent impact to soil and groundwater. Soil samples collected from these wells during drilling were analyzed for AP IX VC and AP IX SVCs. Groundwater from these wells was also tested for AP IX IC, AP IX VC, and AP IX SVC.

Groundwater Investigation: One-half of all new and existing shallow-zone wells and one-half of the new and existing deep-zone wells were hydraulically tested using the slug test technique. The objective of conducting slug tests was to estimate the hydraulic conductivity of the various water-bearing zones beneath the site. In addition, one 48-hour aquifer pump test (24-hours of pumping and 24-hours of recovery) of the shallow ground water zone was conducted. The aquifer pump test was conducted to refine hydraulic conductivity estimates determined from slug tests and provide information on the degree of hydraulic connectivity between the observed shallow and deep-zones of ground water at the SEFC.

The DOT Parcel wells installed during the RFI and the previously installed wells on the DOT Parcel were sampled twice at the beginning of 2002. Groundwater samples were collected from ten wells in January-February 2002. Groundwater samples were collected from 13 wells in March-April 2002. All monitoring wells were sampled and analyzed for AP IX INs, AP IX VCs, and AP IX SVCs.

### **C. Ecological Assessment**

An ecological habitat assessment conducted at the DOT Parcel confirmed the absence of habitat suitable for sustaining a viable foraging and breeding wildlife population. Based on the completion of the ecological habitat assessment checklist, the DOT Parcel does not provide habitat suitable for sustaining a viable foraging and breeding wildlife community, and does not present an unacceptable potential risk to wildlife that may use the urban habitat and the landscaped areas on the DOT Parcel. EPA approved the ecological habitat assessment on July 2, 2004.

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## VI. Interim Measures

Between September 1999 and March 2000, GSA conducted interim measures in the following five areas of the DOT Parcel:

- Building 170 – Removed PCB-contaminated concrete and soil.
- Building 232 – Removed PCB-contaminated concrete and soil.
- Building 216 - Removed PCB-contaminated soil from sump pit
- Area F1 – Removed petroleum-contaminated soil
- Area G- Removed PCB-contaminated soil (Area G1) and petroleum-contaminated soil (Area G-2).

These interim measures are documented in the Description of Current Conditions and Summary of Interim Measures/Site Stabilization, SEFC, Washington, DC, published in April 2001.

During 2004, GSA completed the following additional IMs:

- Building 170 - Removed additional PCB-contaminated soil
- Area G - Removal of contaminated soil from north of Building 167
- Removal of contaminated soil within DOT Building footprint
- Injection of ORC<sup>®</sup> along the property boundary
- Placement of ORC<sup>®</sup> at building subgrade
- Installation of building waterproofing system

These IMs are documented in the IM Implementation Report. Each area is discussed in more detail in the next section.

Building 170: In March 2000, a GSA contractor removed the PCB-contaminated concrete floor slab, PCB-contaminated soil under the floor slab, and the battery room floor and walls. A GSA contractor also decontaminated floor, wall and ceiling surfaces until wipe sample concentrations were less than 100 ug PCBs per 100 square centimeters.

The cleanup criterion for PCBs for the March 2000 soil removal at Building 170 was 1 mg/kg total PCBs. The more stringent EPA Region III residential risk-based concentration (RBC) of 0.32 mg/kg Aroclor 1260 was used as the soil cleanup criterion in this area. Additional soil was excavated from the location of samples containing more than 0.32 mg/kg Aroclor 1260. Approximately 263 tons of PCB-contaminated soil was removed from Building 170 in April and May 2004 and hauled to an off-site disposal facility. In October 2004, 61 tons of PCB contaminated soil was removed from the west end of Building 170, and hauled to an off-site disposal facility.

Building 216: UST No. 4, located at the northeast corner of Building 216, was removed in 1995. After removal of the tank, evidence of a petroleum release was observed within the excavation. The tank removal contractor removed petroleum-contaminated soil down to a concrete pad located several feet below the bottom of the UST. GSA filed a Closure Notification Form and UST Closure Report with the District of Columbia Department of Health. The PCB-contaminated sediment in the Building 216 sump pit, as described above, was removed during building demolition and hauled to off-site disposal facilities.

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The Phase I investigation listed UST No. 5 at the northeast of Building 216. Excavation in this area did not uncover any USTs, and soil samples collected in the location did not contain petroleum hydrocarbons. In 1997, UST No. 6, a 2,000 gallon waste oil tank located at the south end of Building 216, was removed. Evidence of petroleum release was observed in the excavation and the petroleum contaminated soil was removed. Confirmation samples verified contaminant removal, and Closure Notification and UST Closure Report were filed with the D.C. Department of Health.

Building 232: PCB-contaminated concrete and underlying PCB-contaminated soil were removed from Building 232 during the building demolition in 1999. PCB-contaminated soil under the slab was also removed in 1999 and hauled to an off-site disposal facility. Verification sampling in the excavation showed that the contamination was removed. All remaining soil under the footprint of Building 232 was removed during the DOT Building excavation.

Shrinkage Pit: The shrinkage pit is located within the footprint of the new DOT Building. A portion of the shrinkage pit and its contents were removed during building construction. The walls and all material inside the shrinkage pit were removed to a depth of about 41 feet below ground surface and hauled to off-site disposal facilities. A reinforced concrete cap (6-foot-thick) was then installed over the shrinkage pit. Reinforcing dowels were embedded into the reinforced 30-inch thick concrete walls that remained in pit. This effectively entombed the remainder of the shrinkage pit under the DOT building.

Area F1: In October 1999, about 450 tons of petroleum-contaminated soil were removed from Area F and hauled to off-site disposal facilities.

Area G: In October 1999, the PCB- and petroleum-contaminated soil in Area G was excavated and hauled to off-site disposal facilities. In Area G-1, a 60-foot diameter, 4-foot deep area of soil was to be removed. In Area G-2, a 60-foot diameter, 18-foot deep area was to be excavated. The actual soil removal varied slightly due to subsurface obstructions. A total of 665.6 tons of soil were removed from Area G1 and a total of 3,221 tons of soil were removed from Area G2 and hauled to an off-site disposal facility. Verification samples contained PCB and TPH concentrations greater than the applicable screening criteria being used at the time. However, any remaining contamination was excavated during building construction.

Areas G1 and G2 are within the DOT Building footprint. Areas G1 and G2 were excavated to a depth of at least 20 feet below original grade, during building construction. Any phase-separated hydrocarbons in Areas G1 and G2 were removed during excavation for the building. Sampling conducted during the IMs identified an additional area of PCB-contaminated soil south of Area G2, between the DOT Building Excavation and Building 167. A total of 511 tons of PCB-contaminated soil were removed from this area and hauled to an off-site disposal facility during building construction.

Contaminated Groundwater: Because of the residual contamination at 212 M Street and under M Street, groundwater containing BTEX concentrations greater than drinking water levels will continue to flow onto the DOT Parcel. To reduce the BTEX levels in groundwater, ORC® was injected along M Street to provide oxygen for naturally occurring microorganisms that will degrade BTEX and other petroleum constituents. The IM groundwater investigation confirmed that anaerobic conditions are present in the saturated zone along M Street, and that ORC® injection is an appropriate measure for groundwater remediation.

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To address the BTEX contamination in soil and groundwater directly under the DOT Building, ORC<sup>®</sup> was also placed in three parallel trenches in the base of the excavation. The release of oxygen from the ORC<sup>®</sup> will maintain aerobic conditions under the building slab and promote degradation of BTEX remaining in this area.

As discussed in Section VII, the seepage of contaminated groundwater into the DOT Building is one potential exposure pathway that could expose people to the BTEX in groundwater. The foundation design includes waterproofing of the mat foundation and perimeter walls to prevent seepage of water into the parking garage. A high-density polyethylene (HDPE) self-adhering sheet membrane waterproofing is being used as waterproofing for the building slab and the exterior walls near and below the saturated zone. Additional HDPE components are being installed above the saturated zone to prevent petroleum-containing vapors from entering the building. This waterproofing system will provide a continuous below-ground HDPE barrier to contaminant migration into the building. ORC<sup>®</sup> will treat BTEX in the groundwater migrating to the DOT Parcel, and will be monitored according to the revised Long-Term Monitoring Plan.

## **VII. Summary of DOT Parcel Risks**

A human health risk assessment was conducted to estimate risks to people potentially exposed to chemicals remaining in soil and groundwater at the DOT parcel after the IMs were completed. The assessment evaluates potential risks for cancer and non-cancer endpoints. The risk assessment was conducted for chemicals of concern identified during the RFI and the IMs. The assessment evaluates the current use of the DOT parcel (a commercial office building) and potential future uses of the property (both residential and commercial). The potential for people to be exposed to surface and deep soil, and groundwater were identified based on current and future use scenarios. The non-cancer risks were compared to a Hazard Index of 1. The cancer risk was compared to the benchmark range of 1 in 10<sup>-4</sup> to 1 in 10<sup>-6</sup>.

Under current conditions, the potential cancer risks to workers, their dependents, visitors, and outside workers in and around the new DOT building are within the range considered acceptable by EPA (dependents were assumed to attend an on-site day care center, if developed on the DOT property). The non-cancer risks are also below the threshold Hazard Index considered acceptable by EPA. Therefore no additional action is required at this time to protect the occupants of the DOT Building, dependents in an on-site day care center, construction workers, or visitors to the DOT parcel. The building has been constructed with HDPE sheet waterproofing that will prevent seepage of contaminated groundwater and vapors into the building. This will prevent people from being exposed to any residual chemicals present in the groundwater, after treatment.

Some of the groundwater underlying the DOT Parcel does not meet drinking water standards. No unacceptable risks are posed to current occupants of the DOT facility because no drinking water wells are located on the property and DC WASA provides potable water service to the DOT Parcel and all surrounding areas. The risk assessment confirmed that there would be unacceptable risks associated with future use of groundwater beneath the DOT parcel as a potable water source.

The risk assessment indicates that potential future cancer and non-cancer risks associated with potential migration of vapors from contaminated groundwater also exceed EPA guidelines. The risk assessment conservatively assumed that future residential or office structures would be constructed on-site with no waterproofing or vapor barriers. However, waterproofing and vapor barriers are in place in the DOT building currently constructed on the site.

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The risk assessment showed that future residential use of the DOT Parcel would warrant additional remediation activities, primarily due to the presence of benzene and other constituents at concentrations greater than drinking water MCLs in the groundwater migrating onto the DOT Parcel from the Shell station located across M Street. The groundwater remediation IM implemented at the DOT Parcel will continue to mitigate the risks associated with the contaminated groundwater. Additional groundwater monitoring and treatment will be conducted in accordance with the revised Long Term Groundwater Treatment and Monitoring Plan. GSA will implement the Plan until the BTEX concentrations are less than applicable MCLs.

### **VIII. Scope of Corrective Action at the DOT Parcel**

The Interim Measures conducted by GSA addressed the contamination in soils at the DOT Parcel. Therefore, EPA proposes no further action for soils. For groundwater treatment and monitoring, EPA proposes that adherence to the revised Long Term Groundwater Treatment and Monitoring Plan will address the BTEX contamination flowing onto the DOT Parcel from the former Shell service station property. The proposed remedy for the parcel was evaluated using EPA's nine criteria for remedy evaluation, and is included as attachment 3.

### **IX. Public Participation**

Public participation activities have been implemented in accordance with the EPA-approved Community Relations Plan for the Interim Measures for the DOT Parcel. A repository of SEFC and DOT project documents, including this Statement of Basis, is available for review at the:

Southeast Branch Library  
403 7<sup>th</sup> St., S.E. at D St., S.E.  
Washington, D.C. 20003  
Telephone: 202-698-3377  
Hours: M, W, F, Sat., 9:30 am - 5:30 pm, T, Th., 1:00 - 9:00 pm  
[www.dclibrary.org/branches/soe](http://www.dclibrary.org/branches/soe)

EPA will place an announcement in the Washington Times to notify the public of EPA's proposed remedy at the DOT Parcel. Copies of this Statement of Basis will be mailed to anyone who requests a copy. EPA is requesting input from the public on the EPA's proposed remedy. The public comment period will last thirty (30) days beginning February 22, 2005 and ending March 24, 2005. Comments on, or questions regarding EPA's proposed decision may be submitted to:

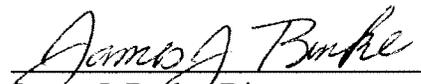
US EPA - III  
Waste and Chemicals Management Division (3WC23)  
1650 Arch Street  
Philadelphia, PA 19103-2029  
Att'n: Barbara Smith, Proj. Mgr.

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If there is significant public comment, EPA will hold a public meeting after the comment period ends. After evaluating the public's comments, EPA will prepare a Final Decision Document and Response to Comments which identifies the selected remedy. This Final Decision Document and Response to Comments will be made available to the public. If, on the basis of such comments or other relevant information, significant changes are proposed to be made to EPA's determination that no further action is necessary, EPA may seek additional public comments.

2/22/05

Date

  
James J. Burke

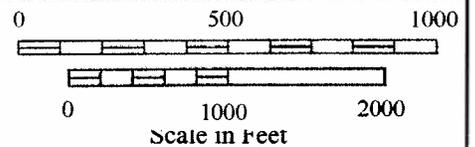
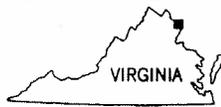
James J. Burke, Director

Waste and Chemicals Management Division  
US EPA Region III



**Reference**

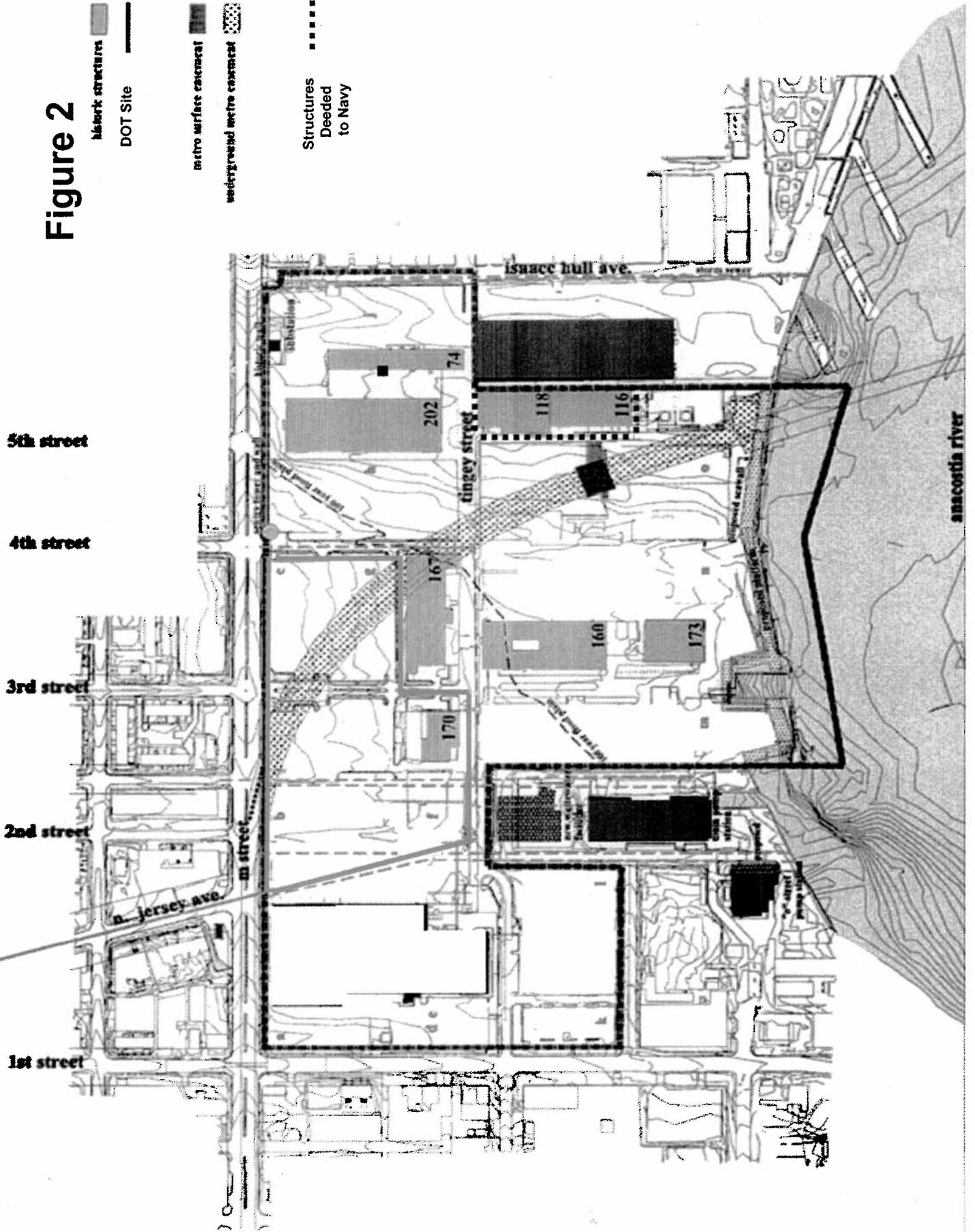
7.5 Minute Series Topographic Quadrangle  
 Alexandria, Virginia – District of Columbia  
 Photorevised 1994 Scale 1:25,000 Metric



**ENVIRONMENTAL STRATEGIES CORPORATION**  
 11911 FREEDOM DRIVE, SUITE 900  
 RESTON, VIRGINIA 20190  
 703-709-6500

**Figure 1**  
**Site Location**  
**Southeast Federal Center – DOT Parcel**  
**Washington, DC**

# Figure 2



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### Attachment 3

#### Evaluation of EPA's Proposed RCRA Remedy Selection DOT Parcel of the SEFC Property, Washington, D.C.

The soil excavation remedy for the DOT Parcel proposed in this Statement of Basis best meets the four threshold criteria (overall protection, attainment of media cleanup objectives, source control, and compliance with waste management standards) for corrective measures and the five remedy selection decision factors or balancing criteria (long-term reliability and effectiveness; reduction in toxicity, mobility or volume; short term effectiveness; implementability; and cost).<sup>3</sup> EPA has reviewed the elements of the preferred corrective measures using these standard, decision factors, and criteria. The following discussion outlines EPA's determination for the remedy proposed at the DOT Parcel.

A. Overall Protection: This overarching standard requires remedies to include those measures that are needed to be protective. The proposed corrective measures meet this standard. The risk assessment was used to define the extent of contamination posing a risk to human health and the environment. Contaminated soils in Areas of Concern exceeding risk-based levels were removed and properly disposed in accordance with RCRA. Contaminated groundwater will be treated until drinking water standards are achieved.

B. Attainment of Media Cleanup Standards: GSA excavated and removed the contaminated soils and disposed of them in off-site landfills in accordance with federal, state and local regulations. Confirmatory soil sampling data show that any contaminants remaining in the soil are at levels below the EPA Region III Risk-based Concentrations, or, in other words, present acceptable risk levels to human health. Groundwater will be treated until drinking water standards are achieved. Currently, groundwater use is prohibited from the DOT Parcel.

C. Controlling Source of Releases: The release of the contaminants in soil and groundwater were the result of previous ordnance research and manufacturing activities and onsite storage activities. GSA is constructing an office building on the DOT Parcel. The BTEX plume is being treated with magnesium oxide to reduce the organic compounds to environmentally safe elements; and the groundwater is currently being pumped and treated to remove its contaminants to levels at or below applicable EPA Drinking Water Maximum Contaminant Levels (MCLs).

D. Complying with Standards for Management of Waste: The proposed corrective measures for the DOT Parcel will comply with regulatory waste management standards set forth in federal, state and local regulations. Management of wastes will be in accordance with all applicable federal, state and local regulations during corrective measures implementation to ensure that the waste is managed in a protective manner. This Statement of Basis contains the applicable standards and approaches that EPA expects each corrective action project to follow.

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E. Long-Term Reliability and Effectiveness: The long-term reliability and effectiveness standard is intended to address protection of human health and the environment over the long term. Source removal and control approaches that remove and/or consolidate remediation wastes in engineered structures or systems that protect against future releases are more reliable, and therefore are preferred over those that offer more temporary, or less reliable controls. The proposed corrective measures meet this criterion because they employ source removal eliminating the contamination. Contaminated soils were excavated and groundwater will be treated until the contaminants are returned to levels at or below applicable MCL concentrations.

F. Reduction of Toxicity, Mobility or Volume of Waste: Reduction of toxicity, mobility, or volume is directly related to the concept of long-term remedies. For this criterion, remedies that employ treatment and/or source removal and containment that are capable of permanently reducing the overall risk posed by the remediation wastes are preferred. The source removal and source controls of the proposed corrective measures allow the remedy to meet this criterion because they reduce the mobility and areal extent of contaminated media. Contaminated groundwater will be cleaned up (reduction in toxicity) to MCLs.

G. Short-Term Effectiveness: The short-term effectiveness standard is intended to address hazards posed during the implementation of interim measures. Short-term effectiveness was designed to take into consideration the impact to site workers and nearby residents during construction. Examples of hazards addressed by this standard include the potential for volatilization of organic contaminants, the spread of contamination through dust generation, and hazardous material spills resulting from waste loading and transport operations. Facility operating plans such as the health and safety plan, contingency plan, emergency preparedness and prevention plan, and spill prevention, control and countermeasures plan ensured that all short-term hazards were addressed such that any interim measure is protective of human health and the environment during short-term remedy implementation.

H. Implementability: The implementability decision factor addresses the regulatory constraints in employing the cleanup approach. Source removal and control are well proven remedial approaches; therefore, no regulatory hurdles are anticipated that would impede implementation of the preferred interim measures.

I. Cost: EPA's overriding mandate under RCRA is protection of human health and the environment. However, EPA believes that relative cost is a relevant and appropriate consideration when selecting among alternatives that achieve the cleanup requirements. EPA's experience with the Superfund program has shown that, in many cases, several different approaches will offer equivalent protection of human health and the environment, but may vary widely in cost. EPA has stated its belief that it is appropriate in these situations to allow cost to be one of the factors influencing the decision for selecting among the alternatives. The proposed corrective measures provide a cost-effective approach for the conditions that exist at the DOT Parcel.

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Summary of Proposed Corrective Measures/Remedial Action: Pursuant to the AOC and consistent with EPA policy discussion provided in the May 1, 1996 Advanced Notice of Proposed Rulemaking (61 FR 19446) (“ANPR”), GSA prepared a streamlined RFI/IM WP detailing the preferred corrective measures and risk-based cleanup goals for remediation of contamination at the DOT Parcel. EPA acknowledges that an evaluation of multiple alternatives is not always necessary, particularly if a desirable remedy can be developed directly from site characterization, application of available engineering technologies, and resolution of regulated unit issues. The GSA remedy proposed to EPA is one such case. Since the proposed remedy was identified on the basis of its ability to protect human health and the environment, and because of the likelihood that it can be implemented efficiently, EPA did not find it necessary to develop alternatives. EPA considered the alternatives in the streamlined RFI/IM Work Plan as the basis for the proposed remedy for the DOT Parcel.

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<sup>3</sup> The criteria used to analyze the proposed remedy are set forth in OSWER guidance document, “Guidance on RCRA Corrective Action Decision Documents” Directive Number 9902.6, February 1991, and the May 1, 1996 ANPR.

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## **Attachment 4**

### **Document List for the Statement of Basis DOT Parcel, Washington DC**

The following documents were used during preparation of the draft Statement of Basis for the DOT Parcel.

Apex Environmental, Phase I Environmental Site Study, Southeast Federal Center Washington, D.C. June 6, 1990.

Apex Environmental, Preliminary Assessment, Southeast Federal Center Washington, D.C. 1991.

Environmental Strategies Corporation. Community Relations Plan, Interim Measures for DOT Parcel, Southeast Federal Center, Washington DC. May 16, 2003.

Environmental Strategies Corporation. Long Term Groundwater Treatment and Monitoring Plan, Interim Measures for DOT Parcel, Southeast Federal Center, Washington DC. July 25, 2003.

Environmental Strategies Corporation. Interim Measures Work Plan, Southeast Federal Center, Washington DC. August 4, 2003.

Environmental Strategies Corporation. October 1, 2003 Letter from Philip Spooner to Steven Richard, General Services Administration. Ecological Habitat Assessment, Interim Measures Work Plan, DOT Parcel, Southeast Federal Center.

Environmental Strategies Consulting, LLC. Interim Measures Implementation Report (Draft), Southeast Federal Center, DOT Parcel, Washington DC. November 19, 2004.

Kaselaan & D'Angelo, Inc. Phase II Subsurface Investigation at the Southeast Federal Center – Washington, D.C. June 1991.

United States Environmental Protection Agency, January 25, 2002 Letter from Vernon Butler to Steven Richard, General Services Administration. Southeast Federal Center, Washington DC, Administrative Order on Consent, RCRA Facility Investigation Work Plan.

United States Environmental Protection Agency, August 16, 2002 Letter from Vernon Butler to Steven Richard, General Services Administration. Southeast Federal Center, Washington DC, Administrative Order on Consent, RCRA Facility Investigation Work Plan, RFI Schedule.

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URS Greiner Woodward Clyde, Storm Water Drain System Cleaning Summary, Southeast Federal Center February, 1999.

URS Group, Inc.. Description of Current Conditions and Summary of Interim Measures/Site Stabilization, Southeast Federal Center, Washington, D.C. April 16, 2001.

URS Group, Inc. RCRA Facility Investigation Work Plan, Southeast Federal Center Washington, D.C. April 16, 2001.

URS Group, Inc. August 13, 2003 Letter from Chris Gerber, P.G. to Steven Richard, General Services Administration. Groundwater Level Measurements, Supplemental Information to RFI Report, Southeast Federal Center, RCRA Facility Investigation (RFI) of the DOT Parcel

URS Group, Inc. Former Gun Barrel Shrinkage Pit Investigation, U.S. Department of Transportation Headquarters Site, Southeast Federal Center, Washington, D.C. August 15, 2003.

URS Group, Inc. RCRA Facility Investigation (Final). U.S. Department of Transportation Headquarters Site Southeast Federal Center Washington, D.C. March 19, 2004.

Woodward-Clyde Federal Services. Phase II Environmental Site Assessment Update Report – Southeast Federal Center, Washington (Special Study Number SP-1). April 1996.