

SITE REMEDIATION BEST MANAGEMENT PRACTICES  
SITE ASSESSMENT THROUGH REMEDIAL IMPLEMENTATION  
SUMMARY FOR THE ZONING COMMISSION  
D.C. UNITED SOCCER STADIUM DEVELOPMENT  
WASHINGTON, D.C.

by Haley & Aldrich, Inc.  
McLean, Virginia

for D.C. United  
Washington, D.C.

File No. 128988  
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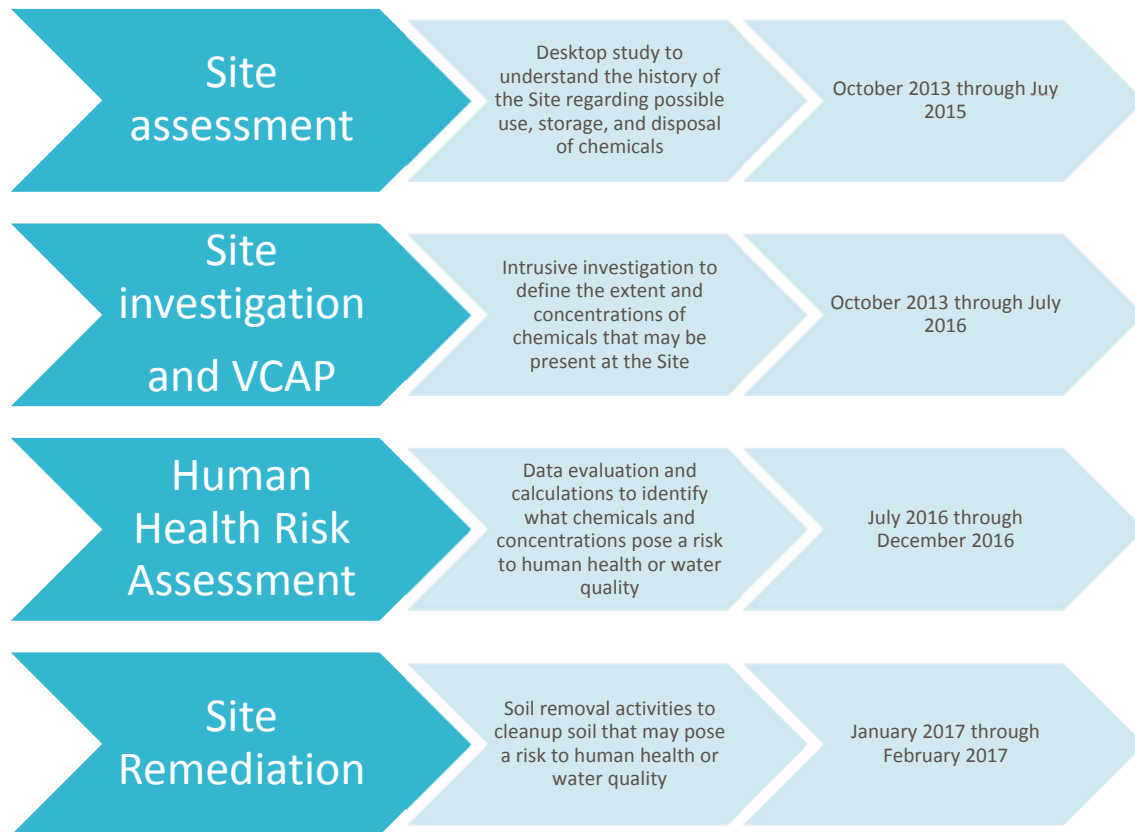
Attention: Troy Scott

Subject: Site Remediation Best Management Practices  
Site Assessment through Remedial Implementation Summary for the Zoning  
Commission  
D.C. United Soccer Stadium Development  
Washington, D.C.

Ladies and Gentlemen:

The proposed D.C. United soccer stadium development includes construction of a stadium and ancillary support facilities in southwest Washington, D.C. (Site). The Site is in an area referred to as Buzzard Point. The Site comprises approximately 13 acres and consists of eight individual parcels bounded by Potomac Avenue, SW and R Street, SW to the north, 2<sup>nd</sup> Street, SW to the west, T Street, SW to the south, and Half Street, SW to the east. To facilitate redevelopment, the Site was divided into two parts: the Stadium Development area and the Ancillary Development area.

The purpose of this letter is to summarize best management practices conducted during the environmental site assessment and remedial implementation program for the Site. These practices, primarily conducted to protect human health, are described below under the following program components:



## Site Assessment and Investigation Activities

The Site was previously used for parking, vehicle fueling and storage, industrial warehouses, salvage operations, and electrical power management (former substation and power generation).

### DUE DILIGENCE ASSESSMENTS

To better understand the subsurface environmental issues at the Site, a Phase I Environmental Site Assessment (ESA) and Limited Phase II Environmental Site Assessment (ESA) was conducted at each of the eight parcels (see attached list of references). A Phase I ESA is a desktop study to review publicly available environmental documentation; a Phase II ESA includes limited subsurface investigations in the areas of potential chemical and petroleum releases and analytical laboratory testing of selected soil and groundwater samples to assess the potential for the identified releases to exist.

Due to reported chemical concentrations in soil and near surface perched water and documented chemical releases, the Site was enrolled in the Voluntary Cleanup Program (VCP) with the District Department of Energy & Environment (DOEE) on 28 July 2015.

## **VOLUNTARY CLEANUP ACTION PLAN (CAP) AND APPROVAL**

- As part of the VCP, a “Cleanup Action Plan” (CAP) was prepared and submitted to the DOEE on 2 August 2015 for review and comment by the public. A “Revised Cleanup Action Plan” that incorporated the comments was submitted to DOEE on 30 September 2015 for final approval.
- The purpose of the CAP was to:
  - Summarize and document investigation activities and analytical evaluations conducted at the Site,
  - Describe the recommended cleanup action and rationale for remediating the soil, and
  - Identify the potential need to mitigate potential vapor migration concerns during redevelopment.
- The CAP also describes procedures for:
  - Soil screening and sampling activities during demolition and construction activities (pavement removal, grading, utility installation) to ensure that new/previously unknown chemically-impacted soil is identified and evaluated;
  - Soil sample collection, analysis and evaluation;
  - Evaluation of soil data to assess whether additional remediation is warranted;
  - Managing new/unknown underground storage tanks; and
  - Equipment decontamination activities;
  - Waste sampling, profiling and disposal.
- The DOEE approved the CAP on 1 October 2015.

## **Human Health Risk and Water Quality Assessments**

The CAP required that a Human Health Risk Assessment and Water Protection Level Evaluation be performed to assess whether the chemical concentrations in Site soil and groundwater warranted remediation to protect both existing and future occupants of the Site and near the Site, groundwater, and nearby surface water bodies.

## **CONDUCT HUMAN HEALTH RISK ASSESSMENT AND WATER PROTECTION EVALUATION**

- A Human Health Risk Assessment and Water Protection Level Evaluation (HHRA/WPLE) (Revision #2, dated 22 December 2016) was prepared for the Site in accordance with the approved work plan and the District of Columbia Risk-based Corrective Action Technical Guidance, and responses to comment provided by the DOEE and their environmental consultant.
- The HHRA/WPLE was approved by the DOEE on 29 December 2016.
- The HHRA represents the industry’s best practices.

## Site Remediation

Various approvals with DOEE were required and protection measures were implemented prior to commencing with the on-Site remediation activities. These activities were conducted to ensure that the proposed on-Site activities did not result in additional environmental concerns at and adjacent to the Site.

### REMEDIAL PLANNING

The DOEE approval letter of the CAP included conditions that must be met prior to implementation; therefore, a response to the CAP Approval Letter was prepared to submit the requested information:

- Identification of the person(s) monitoring the soil;
- Status of construction permits and permit to discharge excavation-derived water;
- Contractor(s) health and safety plans (protecting workers during remediation and construction activities);
- Soil and Sediment Erosion Control Plan;
- Dust and Odor Control Plan (DOCP; for public protection; details of the plan are provided in the section below);
- Field screening of soils;
- Clean import fill criteria;
- Procedures to handle contamination from an underground storage tank (if encountered);
- Preparation of a Cleanup Action Plan Completion Report (post remediation and construction activities);
- Soil disposal requirements;
- Post-remediation soil confirmation sampling; and
- Schedule for remediation and construction activities.

A Traffic Plan (for public protection) was also prepared and approved.

### DUST AND ODOR CONTROL PLAN

- A DOCP was prepared for the Site (Haley & Aldrich, Inc., dated 15 November 2016) to ensure fugitive dust and diesel emissions generated by the Site remediation and construction activities are being controlled to protect human health and related Site activities meet associated D.C. rules and regulations.
- The DOCP includes perimeter air monitoring requirements, action levels, odor monitoring, responses, dust suppression/control measures, and corrective actions.
- The DOCP represents the industry's best practices for dust and odor control.

### Perimeter Air Monitoring

- Four air monitoring stations are located along the perimeter of the Site (northwestern, eastern, southern and west Site boundaries as shown on the attached Figure 1). The prevailing wind direction is recorded daily prior to activities to identify which stations are considered up- and down-wind for that day (and checked regularly throughout the day).
- A conservative action level of 0.1 mg/m<sup>3</sup> is the PM10 (particulates equal to and less than 10 microns) action level at the perimeter of the Site and will not be exceeded over 15 consecutive minutes.
  - This action level is 10 times lower than the acceptable concentration during subsequent construction-related activities.
  - This action level is less than the NAAQS 24-hour average PM10 standard.
  - Imposing a 15-minute response time provides a level of safety for meeting the 24-hour average PM10 thresholds.
  - This action level serves as an early warning system which will allow the project team to react to any issues and correct them well before they become a potential human health concern.
- Continuous monitoring of PM10 along the Site perimeter will be conducted during the time the on-Site remediation and construction activities are occurring to assess whether fugitive dust may be migrating off-Site from on-Site activities.
- Fugitive dust monitoring and mitigation actions are implemented as described in the following table.

Action Level	Response
Downwind PM10 concentration is 100 µg/m <sup>3</sup> (0.1 mg/m <sup>3</sup> ) greater than the upwind PM10 concentration (rolling 15-minute average) or persistent visible fugitive dust is leaving the Site due to on-Site activities	Contact Site superintendent or designee, and implement dust suppression/control measures (described in the Corrective Actions section below).
Stop Work Limit	Response
If dust suppression/control measures are not reducing downwind PM10 concentrations to less than 100 µg/m <sup>3</sup> (0.1 mg/m <sup>3</sup> ) greater than the upwind PM10 concentration (rolling 15-minute average) with suppression/control measures in place or persistent visible fugitive dust is leaving the Site due to on-Site activities	Contact Site superintendent or designee, stop work activities that are generating excessive fugitive dust, review suppression/control measures, and modify work activities and/or dust suppression/control measures, as deemed necessary (described in the Corrective Actions section below).
Sampling Period	Daily Sampling Duration
Rolling 15-minute average PM10 concentration	During work hours, 8 – 10 hours/day

Should dust suppression/control measures be initiated based on the air monitoring results, work can resume once dust suppression/control measures are successful in:

- Reducing the downwind PM10 concentration to less than 0.1 mg/m<sup>3</sup> above the upwind concentration for 15 minutes, and
- Preventing persistent visible dust from migrating beyond the Site.

**Odors**

- In the event that an odor complaint is received, it will immediately be reported to Mr. Kokeb Tarekegn of DOEE (202.535.1771; [kokeb.tarekegn@dc.gov](mailto:kokeb.tarekegn@dc.gov)) and the Site air monitoring professional will immediately assess Site conditions and attempt to identify the probable cause or causes of the odor.
- The threshold for odors is based on the detection of odors from emissions associated with Site activities and the presence of odors at nuisance levels off-Site (indicated by odor complaints from Site personnel, the public and/or DOEE investigations).
- The table below lists the threshold along with information on what constitutes an exceedance of the odor threshold and possible subsequent response actions.

Action Level	Averaging Time	Frequency of Exceedance Triggering Action	Defined Exceedance	Detection Limit	Actions to be taken by Air Monitoring Professional
Reported Odor	Any	Odors of sufficient frequency, duration, intensity and odor characteristic (e.g. offensiveness to be a nuisance off-Site)	Detection of nuisance odors off-Site	Public, Agency or Site personnel complaints	<ol style="list-style-type: none"> <li>1. Log the complaint or detection of odors.</li> <li>2. Investigate the complaint to determine the source, extent and severity of the odor.</li> <li>3. Implement corrective actions if necessary.</li> <li>4. If the odor problem is not resolved quickly then consider whether to:               <ol style="list-style-type: none"> <li>a. cease activity associated with odor generation, on at least a temporary basis; and/or</li> <li>b. place additional intermediate controls to reduce odorous emissions to ambient air.</li> </ol> </li> </ol>

### Corrective Actions

- Based upon perimeter PM10 monitoring data, visual observation of dust leaving the Site, and assessment of odor complaints, the need for dust suppression procedures or other mitigative measures will be determined by the Site air monitoring professional.
- The ground disturbance activities will include the dust suppression methods as described below to reduce the potential for generation of fugitive dust and nuisance odors.
- If, after implementation of dust suppression techniques described below or other mitigative measures, downwind PM10 concentrations are more than 0.1 mg/m<sup>3</sup> greater than upwind PM10 concentration, persistent visible fugitive dust is leaving the Site, or nuisance odors persist, work will be suspended until appropriate corrective measures are identified and implemented to remedy the situation and the Site superintendent will be notified.
- Some of the dust suppression/control measures that will be used on the project include but are not limited to the following:
  - Utilization of a water truck to wet down the soil onsite and knock down the dust;
  - Utilization of water from hose to spray down the area in which the work is occurring;
  - Utilization of a sweeper truck or bobcat sweeper to clean the roadways on-Site so that the trucks do not kick up any dust on the interior haul roads;
  - A silt fence has been constructed along the Site perimeter;
  - Utilizing laborers with brooms, shovels, etc. to clean any problem areas on the roadways; and
  - Cover stockpiles in the evenings to reduce potential wind erosion when on-Site activities are not being conducted.
  - Dust control measures are being conducted during each work day, such that the action levels are not exceeded due to on-Site remediation and construction activities.
  - The Site is secured to prohibit access by unauthorized personal and conducting unauthorized activities.

### DOCP Documentation

Records collected and data reports generated during the air monitoring activities include:

- Recorded PM10 measurements from the perimeter meters;
- Daily field reports; and
- Biweekly air monitoring memoranda.

To keep the neighboring communities informed, the biweekly air monitoring memoranda will be posted at a readily accessible location in the community and on a bulletin board immediately adjacent to the Site. We report measurements of fugitive dust at the DCU site boundary from the measurements we are taking from our perimeter monitors to assess fugitive dust concentrations associated with our site operations.

The DOEE approved the DOCP on 8 December 2016.



## CAP AND REMEDIATION IMPLEMENTATION

The CAP Appendices A through E describe procedures on how the CAP and remediation activities will be implemented.

### Excavation and Soil Sampling

- There are 35 known areas that are impacted and require remediation.
- Remediation will be performed by excavating out the impacted soil.
- Excavation of impacted soil will be conducted using a combination of a backhoe and front end loader to remove impacted soils.
- Excavation limits will be to the extent as directed by the environmental professional monitoring the excavation and based on visual impacts identified in the field and evaluation of the soil sample results collected at and in proximity to the limits of the excavations.
- During excavation activities, soils will be visually screened. If stained, discolored or odorous soils are encountered, the limit of the excavation will be extended to remove these soils prior to collecting confirmation samples.
- Confirmation soil samples will be collected and analyzed for the chemical constituents requiring remediation.

### Soil and Water Management

- Excavated materials will be temporarily placed on and covered with plastic sheeting. Covering stockpiles with plastic sheeting protects the material from being disturbed by wind and prevents it from becoming air-borne and going off-Site.
- Decontamination water will be sampled and disposed off-Site. It will be temporarily stored on-Site in tanks, tested and then properly disposed.
- Fluid that may be encountered in subsurface structures and utilities will be removed and disposed off-Site.
- Perched water encountered during excavation activities will be discharged to the storm drain system (pending a discharge permit from DOEE).
- Perched water encountered during a remediation excavation that may be impacted will be removed, temporarily stored on-Site in tanks, tested and then and properly disposed off-Site

### Backfilling of Excavations

- Excavations will be backfilled with fill imported from off-Site sources that are approved by DOEE.
- This work will proceed once the stockpiled soil is profiled, and confirmation testing has been completed on the bottom and sides of each location to verify the removal of impacted soil above the soil remediation goals.

### Decontamination

- Equipment will be decontaminated between sample locations to prevent cross-contamination.
- Trucks leaving the Site will travel over a decontamination pad where the vehicle will be swept/washed down to remove contaminants and ensure that no loose material is trucked off-Site.

## WASTE SAMPLING, PROFILING AND OFF-SITE DISPOSAL

### Waste Profiling

- A Proposed Waste Profiling & Disposal (WPD) memorandum has been prepared for the Site that outlines the waste profiling and disposal plan for the wastes generated at the Site during remediation and construction.
- The WPD memo describes the proposed disposal facilities, their accepted criteria and the plan for the disposition of waste generated during remediation and construction at the Site.
- Disposal facilities include: Soil Safe, Max Environmental, RECO, Bevard, Bayshore Soil Management LLC, and Water Depot.
- The WPD memo was submitted to the DOEE (Haley & Aldrich, 12 January 2017) and was approved by DOEE on 13 January 2016.
- The WPD represents the industry's best practices.

### Waste Hauling

All trucking will be conducted per the traffic permit which was approved by DDOT on 17 December 2016. The trucks will not pass through the residential neighborhoods either on the way to the Site or on the way to the disposal facility per the attached portion of the plan (Appendix B). The approved plan will also allow for the trucks to queue up on the project site and not in public space to minimize the traffic impact.

These trucks, once on-Site will comply with the excavation permit issued by the District of Columbia on 15 September 2016. This plan was designed with construction entrances on the interior of the Site as well as the entrance to public space. This plan will allow for each truck to travel over two construction entrances to remove any mud or debris from the tires prior to entering the public roadways.

In addition, all trucks hauling waste will be required to travel over a decontamination pad prior to exiting the site where the truck will be cleaned to ensure that there is no loose waste material. Any water utilized to clean the trucks will be captured at the decontamination pad and pumped to the storage tank for testing and proper disposal.

All trucks utilized for the hauling of waste materials will be required to meet the Federal Highway requirements for the type of waste that is being hauled on the project. The waste with lower levels of contamination will be hauled utilizing trucks similar to the truck detailed below.



Trucks with higher levels of contamination will be per the photo below.



These trucks and the associated disposal of the material will be tracked utilizing a waste manifest form which will track the material as it leaves the Site and travels to the proper disposal facility. Each truck will have a manifest associated with the material leaving the Site which will be signed by the authorized representative as the truck leaves the Site. The authorized material hauler will then be required to sign the manifest and finally the disposal facility will sign the manifest upon the receipt of the material. Once the material has been properly disposed of a fully executed manifest will be provided as proof of disposal.

This process will ensure that all material is properly handled and tracked from excavation through final disposal of the material. This approach is an industry best practice.

## Reporting

The following reporting is being conducted and distributed as described below.

Deliverable	Frequency	Distribution
Daily Field Reports	Weekly	DC United Remediation and Construction Team
Air Monitoring Memo	Biweekly	DC United Remediation and Construction Team Onsite Bulletin Board Neighborhood Recreation Center Bulletin Board DC United
Progress Report	Monthly	DC United Remediation and Construction Team DOEE
Completion Report	At end of project	DC United Remediation and Construction Team DOEE

## Closing

Please do not hesitate to call if you have any questions or comments.

Sincerely yours,  
HALEY & ALDRICH, INC.



Beth Breitenbach, P.G.  
Senior Project Manager



David A. Schoenwolf, P.E.  
Principal Consultant | Senior Vice President

### Attachments:

- Figure 1 – Perimeter Air Monitoring Stations
- Appendix A – TSI Dusttrak II Model 8530 Specification Sheet
- Appendix B – Truck Routes

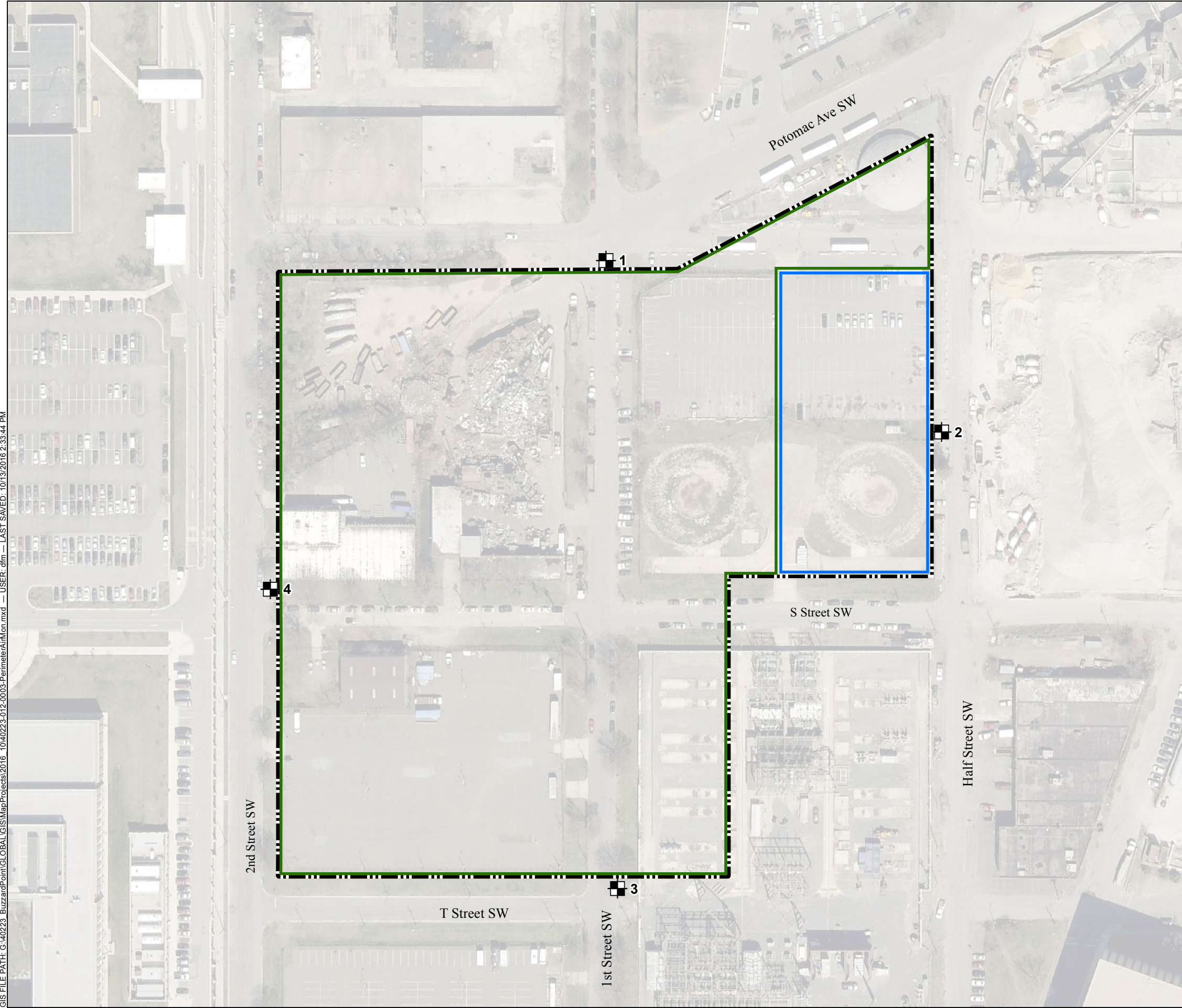
## References





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9. Haley & Aldrich, Inc., 2014c. Report on ASTM Phase I Environmental Site Assessment and Limited Phase II Subsurface Sampling, Potomac Avenue & 1<sup>st</sup> Street SW, Washington, DC. 9 September.
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16. Haley & Aldrich, Inc., 2015g. Phase II Soil Investigation Report, Voluntary Cleanup Program, Potomac Electric Power Company Parcels at Buzzard Point, Square 0661, Lots 0804, 0805, and Square 0665, Lot 0024, Washington, D.C. 31 July.
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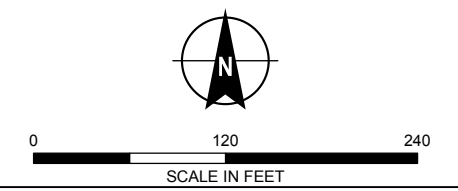


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- LEGEND**
-  PERIMETER AIR MONITORING LOCATION
  -  ANCILLARY DEVELOPMENT BOUNDARY
  -  STADIUM DEVELOPMENT BOUNDARY
  -  SITE BOUNDARY

- NOTES:**
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
  2. BASE IMAGE BASED ON PICOMETRY DATED; APRIL 2015.



**HALEY ALDRICH** BUZZARD POINT DC UNITED SOCCER STADIUM  
STADIUM DEVELOPMENT AREA  
WASHINGTON D.C.

**PERIMETER AIR MONITORING STATIONS**

JANUARY 2017

**FIGURE 1**

**APPENDIX A**

**TSI DUSTTRAK II MODEL 8530 SPECIFICATION SHEET**



# DUSTTRAK™ II AEROSOL MONITORS MODELS 8530, 8530EP AND 8532

DESKTOP OR HANDHELD  
UNITS FOR ANY ENVIRONMENT,  
ANY APPLICATION



DustTrak™ II Aerosol Monitors are battery-operated, data-logging, light-scattering laser photometers that give you real-time aerosol mass readings. They use a sheath air system that isolates the aerosol in the optics chamber to keep the optics clean for improved reliability and low maintenance. From desktop and desktop with external pump models to a handheld model, the DustTrak II offers a suitable solution for harsh industrial workplaces, construction and environmental sites and other outdoor applications, as well as clean office settings. The DustTrak II monitors measure aerosol contaminants such as dust, smoke, fumes and mists.

## Features and Benefits

### All Models

- + Real-time mass concentration readings and data-logging allow for data analysis during and after sampling
- + Measure aerosol concentrations corresponding to PM1, PM2.5, Respirable, and PM10 size fractions, using a variety of inlet conditioners
- + Easy-to-use graphical user interface with color touch-screen for effortless operation

### Handheld Model (8532)

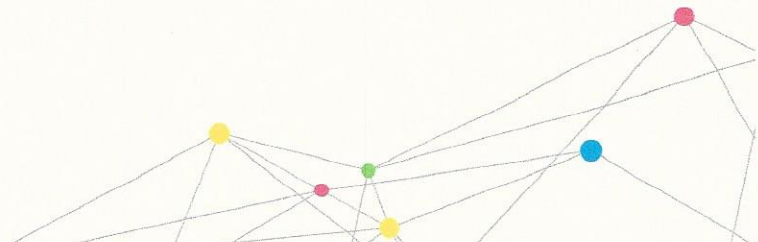
- + Long life internal pump for continuous sampling
- + Single-point data collection for walk through surveys
- + Lightweight design with ergonomic handle for portable applications

### Desktop Models (8530 and 8530EP)

- + Energy-efficient, long lasting external pump for continuous, unattended, 24/7, outdoor monitoring applications (Model 8530EP only)
- + Long life internal pump for shorter work-shift or IAQ sampling applications (Model 8530)
- + Gravimetric reference sampling capability for custom reference calibrations
- + Automatic zeroing (with optional zero module) to minimize the effect of zero drift
- + STEL alarm setpoint for tracking 15-minute average mass concentrations
- + Environmental protected and tamper-proof secure (with an optional environmental enclosure)
- + Inlet sample conditioning (with optional heated inlet sample conditioner) to reduce the effect of humidity on photometric mass measurements (for use with an environmental enclosure)
- + Cloud Data Management System as hosted by Netronix™



UNDERSTANDING, ACCELERATED





### Desktop Models: Ideal for Long-Term Surveys and Remote Monitoring Applications

The DustTrak II is offered as a standard desktop (Model 8530), as well as a desktop with external pump (Model 8530EP.) Both models have manual and programmable data logging functions, making them ideal for unattended applications. The standard desktop model is most suitable for indoor, continuous monitoring, while the desktop with external pump is designed for 24/7 unattended, remote monitoring outdoors.

The DustTrak II desktop models come with USB (device and host), Ethernet, and analog and alarm outputs allowing remote access to data. User adjustable alarm setpoints for instantaneous or 15-minute short-term excursion limit (STEL) are also available on desktop models. The alarm output with user-defined setpoint alerts you when upset or changing conditions occur.

The DustTrak II desktop monitors have several unique features:

- + Measure aerosols in high concentrations up to 400 mg/m<sup>3</sup>.
- + External pump (Model 8530EP) with low power consumption for continuous, unattended monitoring in remote outdoor locations.
- + Gravimetric sampling capability using a 37-mm filter cassette which can be inserted in-line with the aerosol stream allowing you to perform an integral gravimetric analysis for custom reference calibrations.
- + Zeros automatically using the external zeroing module. This optional accessory is used when sampling over extended periods of time. By zeroing the monitor during sampling, the effect of zero drift is minimized.
- + STEL alarm feature for tracking 15-minute average mass concentrations when alarm setpoint has been reached for applications like monitoring fugitive emissions at hazardous waste sites.
- + Provide for environmental protection and tamper-proof security using an environmental enclosure. This optional accessory encloses the instrument within a waterproof, lockable, custom-designed case.
- + Condition the sample air stream before entering the instrument optics using a heated inlet sample conditioner (designed for use with an environmental enclosure.) This optional accessory is used in humid environments. By conditioning the sample, the humidity and water vapor are minimized, reducing elevated measurements.

### Handheld Models: Perfect for Walk-Through Surveys and Single-Point Data Collection Applications

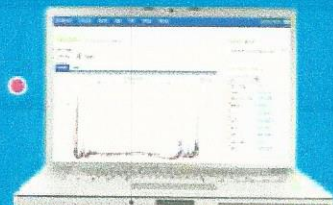
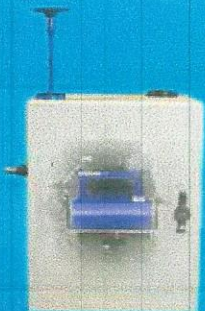
The DustTrak II Handheld Model 8532 is lightweight and portable. It is perfect for industrial hygiene surveys, point source location monitoring, indoor air quality investigations, engineering control evaluations/validation, and for baseline trending and screening. Like the desktop models, it has manual and programmable data logging functions. In addition, the handheld model also has a single-point data logging capability. Single-point data collection is used for walk-through industrial hygiene surveys and indoor air quality investigations.

Applications	Desktop	Handheld
Aerosol research studies	+	+
Baseline trending and screening	+	+
Engineering control evaluations		+
Engineering studies		+
Epidemiology studies	+	+
Indoor air quality investigations	+	+
Industrial/occupational hygiene surveys	+	+
Point source monitoring		+
Outdoor environmental monitoring	+	
Process monitoring	+	+
Remote monitoring	+	
<b>Battery Performance</b>		
Models 8530 and 8530EP (Typical) 6600 mAh Li-Ion Battery Pack (P/N 801680)	1 Battery	2 Batteries
Battery runtime (hours)	Up to 6	Up to 12
Charge time* (hours) in DustTrak	4	8
Charge time* (hours) in external battery charger (P/N 801685)	4	8

Model 8532 (Typical) 3600 mAh Li-Ion Battery Pack (P/N 801681)	Battery
Battery runtime (hours)	Up to 6
Charge time* (hours) in DustTrak	4
Charge time* (hours) in external battery charger (P/N 801686)	4

\* Of a fully depleted battery

Cloud Data Management System for 24/7 remote dust monitoring





## DustTrak II Aerosol Monitor Features

### All Models

- + Li-Ion rechargeable batteries
- + Internal and external battery charging capabilities
- + Outlet port for isokinetic sampling applications
- + User serviceable sheath flow and pump filters
- + Logged test pause and restart feature
- + Logged test programming
  - + Color touch screen—either manual mode or program mode
  - + TrakPro™ Data Analysis Software via a PC
- + User adjustable custom calibration settings
- + Instantaneous alarm settings with visual and audible warnings
- + Real-time graph display
- + View statistical information during and after sampling
- + On-screen instrument status indicators:  
FLOW, LASER and FILTER
- + Filter service indicator for user preventative maintenance

### Desktop Models (8530 and 8530EP)

- + Long life external pump (8530EP)
- + Internal pump (8530)
- + Hot swappable batteries
- + Gravimetric reference sample capability
- + STEL alarm setpoint

### Optional Accessories

- + Auto zeroing module
- + Protective environmental enclosure (8535 and 8537)
- + Heated inlet sample conditioner (for use with an environmental enclosure)
- + Cloud Data Management System as hosted by Netronix™

### Handheld Model (8532)

- + Long life internal pump
- + Single-point data collection for walk through surveys

## Easy to Program and Operate

The graphical user interface with color touch-screen puts everything at your fingertips. The easy-to-read display shows real-time mass concentration and graphical data, as well as other statistical information along with instrument pump, laser and flow status, and much more. Perform quick walk-through surveys or program the instrument's advanced logging modes for long-term sampling investigations. Program start times, total sampling times, logging intervals, alarm setpoints and many other parameters. You can even set up the instrument for continuous unattended operation.

## TrakPro™ Software Makes Monitoring Easier than Ever

TrakPro™ Data Analysis Software allows you to set up and program directly from a PC. It even features the ability for remote programming and data acquisition from your PC via wireless communication options or over an Ethernet network. As always, you can print graphs, raw data tables, and statistical and comprehensive reports for record keeping purposes.



Desktop Monitor with  
External Pump, Model 8530EP



# SPECIFICATIONS

## DUSTTRAK™ II AEROSOL MONITORS MODELS 8530, 8530EP AND 8532

### Sensor Type

90° light scattering

### Particle Size Range

0.1 to 10 µm

### Aerosol Concentration Range

8530 Desktop	0.001 to 400 mg/m <sup>3</sup>
8530EP Desktop with External Pump	0.001 to 400 mg/m <sup>3</sup>
8532 Handheld	0.001 to 150 mg/m <sup>3</sup>

### Resolution

±0.1% of reading or 0.001 mg/m<sup>3</sup>, whichever is greater

### Zero Stability

±0.002 mg/m<sup>3</sup> per 24 hours at 10 sec time constant

### Flow Rate

3.0 L/min set at factory, 1.40 to 3.0 L/min, user adjustable

### Flow Accuracy

±5% of factory set point, internal flow controlled

### Temperature Coefficient

+0.001 mg/m<sup>3</sup> per °C

### Operational Temp

32 to 120°F (0 to 50°C)

### Storage Temp

-4 to 140°F (-20 to 60°C)

### Operational Humidity

0 to 95% RH, non-condensing

### Time Constant

User adjustable, 1 to 60 seconds

### Data Logging

5 MB of on-board memory (>60,000 data points)  
45 days at 1 minute logging interval

### Log Interval

User adjustable, 1 second to 1 hour

### Physical Size (H x W x D)

Handheld	4.9 x 4.8 x 12.5 in. (12.5 x 12.1 x 31.6 cm)
Desktop	5.3 x 8.5 x 8.8 in. (13.5 x 21.6 x 22.4 cm)
External Pump	4.0 x 7.0 x 3.5 in. (10.0 x 18.0 x 9.0 cm)

### Weight

Handheld	2.9 lb (1.3 kg), 3.3 lb (1.5 kg) with battery
Desktop	3.5 lb (1.6 kg), 4.5 lb (2.0 kg)-1 battery, 5.5 lb (2.5 kg)-2 batteries
External Pump	3.0 lb (1.4 kg)

### Communications

8530

USB (host and device) and Ethernet. Stored data accessible using flash memory drive

8530EP

USB (host and device) and Ethernet. Stored data accessible using flash memory drive plus, cable assembly for external pump

8532

USB (Hose and device). Stored data accessible using flash memory drive

### Power-AC

Switching AC power adapter with universal line cord included, 115-240 VAC

### Analog Out

8530/8530EP

User selectable output, 0 to 5 V or 4 to 20 mA. User selectable scaling range

### Alarm Out

8530/8530EP

Relay or audible buzzer  
Relay  
Non-latching MOSFET switch  
+ User selectable set point  
+ -5% deadband  
+ Connector 4-pin, Mini-DIN connectors  
Audible buzzer

8532

### Screen

8530  
8532

5.7 in. VGA color touchscreen  
3.5 in. VGA color touchscreen

### Gravimetric Sampling

8530/8530EP

Removable 37 mm cartridge (user supplied)

### CE Rating

Immunity  
Emissions

EN61236-1:2006  
EN61236-1:2006

Specifications are subject to change without notice.

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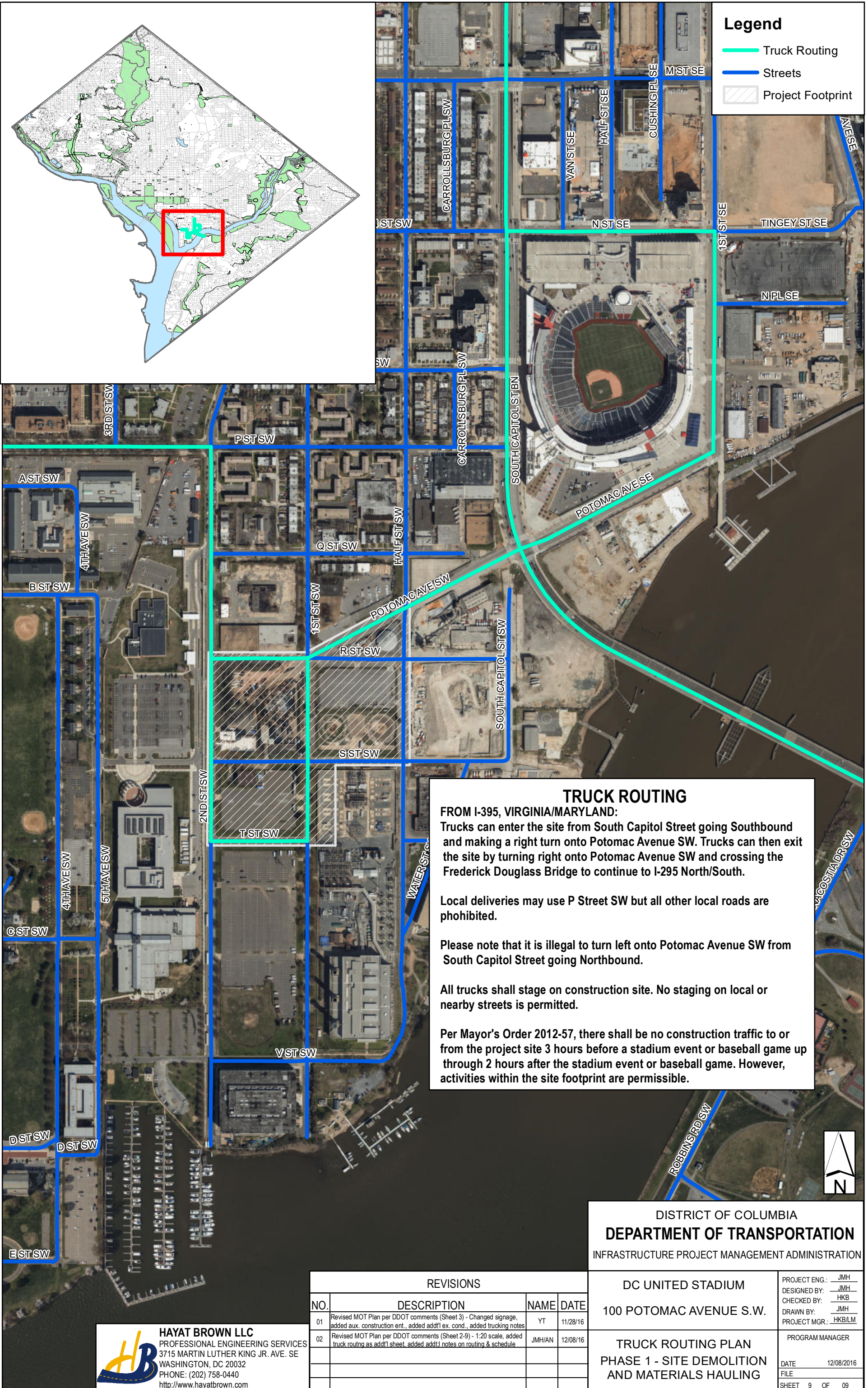
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**APPENDIX B**  
**TRUCK ROUTES**





**Legend**

- Truck Routing
- Streets
- Project Footprint

**TRUCK ROUTING**

**FROM I-395, VIRGINIA/MARYLAND:**  
 Trucks can enter the site from South Capitol Street going Southbound and making a right turn onto Potomac Avenue SW. Trucks can then exit the site by turning right onto Potomac Avenue SW and crossing the Frederick Douglass Bridge to continue to I-295 North/South.

Local deliveries may use P Street SW but all other local roads are prohibited.

Please note that it is illegal to turn left onto Potomac Avenue SW from South Capitol Street going Northbound.

All trucks shall stage on construction site. No staging on local or nearby streets is permitted.

Per Mayor's Order 2012-57, there shall be no construction traffic to or from the project site 3 hours before a stadium event or baseball game up through 2 hours after the stadium event or baseball game. However, activities within the site footprint are permissible.

DISTRICT OF COLUMBIA  
**DEPARTMENT OF TRANSPORTATION**  
 INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION

REVISIONS			
NO.	DESCRIPTION	NAME	DATE
01	Revised MOT Plan per DDOT comments (Sheet 3) - Changed signage, added aux. construction ent., added add'l ex. cond., added trucking notes	YT	11/28/16
02	Revised MOT Plan per DDOT comments (Sheet 2-9) - 1:20 scale, added truck routing as add'l sheet, added add'l notes on routing & schedule	JMH/IAN	12/08/16

DC UNITED STADIUM		PROJECT ENG.: JMH
100 POTOMAC AVENUE S.W.		DESIGNED BY: JMH
TRUCK ROUTING PLAN		CHECKED BY: HKB
PHASE 1 - SITE DEMOLITION		DRAWN BY: JMH
AND MATERIALS HAULING		PROJECT MGR.: HKB/LM
PROGRAM MANAGER		
DATE	12/08/2016	
FILE		
SHEET 9 OF 09		

**HAYAT BROWN LLC**  
 PROFESSIONAL ENGINEERING SERVICES  
 3715 MARTIN LUTHER KING JR. AVE. SE  
 WASHINGTON, DC 20032  
 PHONE: (202) 758-0440  
<http://www.hayatbrown.com>





### Estimated Truck Volume

The project will use various types of trucks through the duration of excavation and construction, which will vary dependent on the work being performed. There will be approximately 10 trucks per day making three or four trips per day to the project during the demolition and rough grading portion of the project through the end of January 2017. This will grow slightly through the decontamination phase of the project to approximately 20 trucks per day also making three or four trips per day through February 2017. Once the deep foundations and concrete start on the project, there will be daily deliveries of reinforcing, formwork, concrete, and miscellaneous supplies to the project consisting of approximately 30 trucks, backfill and gravel and backfill deliveries of approximately an additional 40 trucks per day making four rounds per day through the end of Summer of 2017. There will be daily deliveries of structural steel and precast of approximately 10 trucks each, which will commence in May 2017 and continue through November 2017. Once the major structural deliveries have been completed, there will be daily deliveries of building components such as drywall, metal studs, masonry, and HVAC and electrical components, which should be approximately 30 trucks per day through the end of the construction. These deliveries will be staged on the project site wherever possible to minimize the queuing of vehicles in public space, and if public space queuing is necessary, the Applicant will obtain the necessary permits from the District prior to occupying public space. The trucks will comply with the District's requirements for no idling while waiting.