

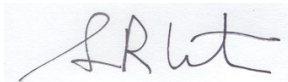
**INTERIM REMEDIAL MEASURES WORK PLAN  
FOR  
RESTORATION OF SITE COVER SYSTEM**

June 12, 2026

673 Livonia Avenue  
Brooklyn, New York  
NYSDEC Site #224352

Prepared For:  
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c/o REDA Group Ltd.  
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Forest Hills, NY 11375

Prepared By:  
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**Mary Szustak**  
Project Manager

## CERTIFICATION STATEMENT

I, Sean R. Carter, P.E., certify that I am currently a NYS Professional Engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measures Work Plan for the 673 Livonia Avenue LLC Site located at 673 Livonia Avenue, Brooklyn, New York was prepared in accordance with all applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10).

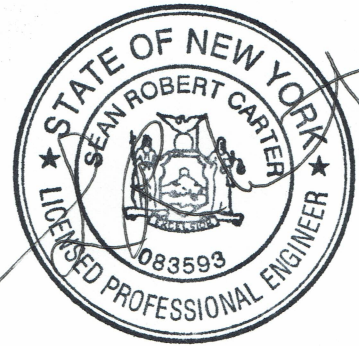


Sean R. Carter, P.E. #083593  
Matrix Environmental Engineers, PLLC

6.12.26

Date

SEAL



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## 1.0 INTRODUCTION

This Interim Remedial Measures Work Plan (IRMWP) has been prepared by Matrix Environmental Engineers, PLLC on behalf of 673 Livonia Ave LLC for Site #224352 located at 673 Livonia Avenue, Borough of Brooklyn, Kings County, New York (Site). Site characterization and remedial activities have been completed at the Site by B&B Engineers & Geologists of New York, P.C. for the previous owner Elderserve Health, Inc.

Site is under a New York State Department of Environmental Conservation (NYSDEC) Order on Consent and Administrative Settlement (Consent Order) Index No. R2-20251027-242. The goals in the Consent Order are to complete the remedial program at the Site, implement the approved Operation, Maintenance, and Monitoring Plan (OM&M Plan) and complete any additional remedial actions required by the NYSDEC. This includes submittal of an IRMWP to restore the Site cover system in the northeastern corner of the Site.

### 1.1 Site Description and Use

The Site is located at 673 Livonia Avenue in the East New York section in Brooklyn, New York and is identified as Block 3808 and Lot 1 on the New York City Tax Map. It is situated on an approximately 10,000 square-foot area bounded by Livonia Avenue (including an elevated subway line) to the south, Vermont Street to the west, and properties to the north and east. The Site is currently vacant and contains an approximately 8,300 square-foot warehouse building with an approximately 1,700 square-foot paved driveway on the northern side. The existing building at the Site is of one-story, flat-roof, slab on grade construction. The Site location is shown on **Figure 1**.

The adjoining property to the north contains a multi-family walk-up residential building. Properties to the east are duplexes with an alley between the adjoining property buildings and the 673 Livonia Avenue property. The property to the south across Livonia Avenue contains a five floor, 76-unit housing development. The properties across Vermont Avenue to the west are duplexes with one property that is a mixed residential and commercial building with a retail store on the first floor and residential units above. The New Grace Education Center is located across Livonia Avenue and approximately 250 ft to the southwest of the Site.

### 1.2 Site History

A Phase I Environmental Site Assessment<sup>1</sup> (ESA) was completed at the Site in June 2021. The ESA identified the Site as vacant land between 1887 and 1950, with the present building constructed between 1954 and 1966. A city directory lists the Site as “Rutland Knitting Mills” in 1960. From 1966 through 2007, Sanborn maps identify the building as “Textile Processing”, but the city directories list the Site as “Rutland Knitting Mills” (1960- 1970), “Arlin Cleaners” (1970-1973), “Arlin Finishers” (1973-1985), and “Fleetwood Cabinet” (1985-2017). The Phase I ESA identified records of two 225-gallon fuel oil aboveground storage tanks (ASTs) in the building and a 2,500-gallon #2 heating oil underground storage tank (UST) that was closed prior to 1991 at the Site. The Site was owned by ASH NYC prior to ElderServe purchasing the Site in September 2021.

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<sup>1</sup> *ASTM 1527-13 Phase I Environmental Site Assessment prepared for ElderServe Health for the Site Located at 673 Livonia Ave, Brooklyn, NY 11207*. Prepared by Omega Environmental Services, June 16, 2021.

### 1.3 Remedial Activities

Remedial activities completed at the Site were conducted in accordance with the NYSDEC approved IRMWP<sup>2</sup> dated February 2022 and IRMWP Addendum<sup>3</sup> dated April 2023 for the Site. This included the installation of a combined soil vapor extraction (SVE) and sub-slab depressurization (SSD) system in 2023, designed to control exposure by mitigating risk to human health from hazardous vapor intrusion as well as by actively removing volatile organic compounds (VOCs) remaining in soil. Other contaminants present in soil are currently contained in place by the building and paved driveway at the Site.

## 2.0 RESTORATION OF SITE COVER SYSTEM

This section describes the procedures for installing an asphalt cover over an area at the Site currently not covered by the Site building or impervious surface. The purpose of the asphalt cover is to provide a durable surface cap to prevent exposure to underlying materials. The proposed asphalt cover area measures approximately 16 feet long by 18 inches wide and is located at the northeastern corner of the parcel, at the end of the existing concrete driveway.

### 2.1 Scope of Work

The scope of work includes the following activities:

1. Preparation of the existing ground surface
2. Placement of a demarcation layer
3. Placement and compaction of structural subbase material
4. Installation of asphalt pavement to match surrounding grade
5. Restoration of the surrounding area

The total area to be covered is approximately 24 square feet (16 ft x 1.5 ft) and is depicted in **Figure 2**.

### 2.2 Governing Documents

#### 2.2.1 Site Specific Health and Safety Plan

All remedial work performed under this IRMWP will be conducted in compliance with governmental requirements, including Site and worker safety requirements mandated by Federal Occupational Safety and Health Administration (OSHA). A Health and Safety Plan (HASP) prepared by Rock Enviro will be followed throughout the course of the project.

#### 2.2.2 Community Air Monitoring Program

The intent of the Community Air Monitoring Program (CAMP) is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses) from

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<sup>2</sup> *Interim Remedial Action Measures Work Plan, ElderServe Health, Inc., 673 Livonia Avenue, Brooklyn, NY.*

Prepared by B&B Engineers & Geologists of New York, P.C., February, 2022.

<sup>3</sup> *Interim Remedial Action Measures Work Plan Addendum, ElderServe Health, Inc., 673 Livonia Avenue, Brooklyn, NY.* Prepared by B&B Engineers & Geologists of New York, P.C., April, 2023.

potential airborne contaminant releases as a direct result of investigative and remedial work activities. Additionally, the CAMP is designed to confirm that work activities do not spread contamination off-site through the air. This CAMP will be implemented during all ground intrusive activities that disturb soils at the Site. The CAMP was developed in accordance with NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation") by Arsdale Enviro, LLC and is included as **Appendix A**.

### **2.3 Cover System Description**

An asphalt cover system will be installed following the completion of soil removal and placement of structural backfill. The purpose of the cover system is to provide a physical barrier to prevent direct contact with underlying materials and to limit infiltration, consistent with the cover system objectives described in the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (DER-10).

The cover system will consist of the following components:

**1. Prepared Subgrade**

Following removal of approximately 9 inches of soil/fill, the excavation will be compacted to create a stable subgrade. Geotextile fabric will be placed as a demarcation layer.

**2. Aggregate Base Layer**

A compacted aggregate base layer (e.g., NYSDOT Item 304 crushed stone) approximately 4 to 6 inches thick will be placed to provide structural support for the asphalt surface.

**3. Asphalt Surface Layer**

A hot mix asphalt (HMA) surface layer approximately 2 to 3 inches thick will be installed over the prepared base and compacted using a plate compactor or equivalent equipment.

The asphalt will be graded to match the elevation of the surrounding surface and will provide a continuous, durable pavement surface across the approximately 16-foot by 18-inch area.

The installed asphalt pavement will function as a hardscape cover consistent with DER-10 guidance for cover systems used to eliminate potential exposure to subsurface materials. Upon completion, the cover will provide a stable surface that minimizes erosion, infiltration, and disturbance of underlying soils.

### **2.4 Site Preparation**

Prior to asphalt placement, the work area will be prepared as follows:

- Debris, or unsuitable material will be removed from the installation area. Currently, metal fence posts are located within the proposed cover installation area. The posts and any concrete, if present, will be removed for off site disposal as scrap metal and/or construction debris.

### **2.5 Excavation and Material Handling**

Prior to installation of the asphalt cover, approximately 9 inches of existing soil/fill material will be removed from the proposed asphalt installation area measuring approximately 16 feet in length by 18 inches in width. Excavation will be conducted using hand tools or small mechanical equipment as appropriate to minimize disturbance to the surrounding area. The total anticipated excavation volume

is approximately 18 cubic feet (approximately 0.66 cubic yards). All excavated material will be visually inspected for evidence of contamination such as staining, odors, or debris and field screened for VOCs using a photoionization detector (PID). Excavated material will be immediately placed into DOT-rated 55-gallon steel drums staged within the work area until profiled to a permitted disposal facility and transported off site for disposal.

During ground intrusive activities, CAMP monitoring will be completed in accordance with the CAMP included in **Appendix A**.

## **2.6 Imported Backfill Requirements**

Following excavation, imported backfill material will be placed to restore the subgrade prior to asphalt placement. Imported material will comply with DER-10 requirements for backfill and cover material. Imported fill material will:

- Originate from a known, documented source
- Include clean structural fill or aggregate meeting NYSDOT specifications.

A Request to Import Form will be filed with the Department prior to import to the Site. Documentation regarding the source of imported material will be maintained in accordance with DER-10 requirements. A blank Request to Import Form is included in **Appendix B**.

## **2.7 Asphalt Installation**

Asphalt pavement will be installed as follows:

- Hot mix asphalt (HMA) meeting NYSDOT specifications will be obtained from a commercial source..
- Asphalt will be placed to a thickness of approximately 2 to 3 inches.
- The asphalt will be compacted using a plate compactor or hand tamper.
- The finished surface will be graded to match the surrounding pavement elevation to ensure proper drainage and eliminate trip hazards.

## **2.8 Site Restoration**

Upon completion of asphalt placement:

- The work area will be cleaned.
- Adjacent surfaces will be restored as necessary.
- The asphalt will be allowed to cool and cure before reopening the area for normal use.
- The area between the existing concrete and newly placed asphalt will be sealed with Sikaflex®-411 Hybrid Self-leveling Sealant. A Safety Data Sheet (SDS) is provided in **Appendix C**.

### 3.0 WASTE HANDLING

#### 3.1 Waste Handling

Soil/fill generated during site preparation will be placed into DOT-rated 55-gallon steel drums staged within the work area. All excavated material will be managed in accordance with applicable regulatory requirements. Drums will be:

- Maintained in good condition and kept closed
- Properly labeled
- Stored upright on a stable surface
- Managed in a manner that prevents releases to the surrounding environment
- Soil/fill will be sampled for waste characterization requirements for a permitted disposal facility.
- A Contained-In determination will be applied for in support of the drum disposal.

#### 3.2 Transportation and Disposal

Excavated soil/fill material will be transported by a licensed waste hauler for disposal at a facility permitted to accept such material under **6 NYCRR Part 360 solid waste management regulations**. Disposal will occur at a **permitted solid waste management facility** authorized to accept soil or construction and demolition debris, as applicable. Transportation and disposal activities will be documented through:

- Waste manifests or bills of lading
- Disposal facility weight tickets or receipts

All documentation will be maintained in the project file and will be provided to NYSDEC upon receipt.

### 4.0 INSPECTION AND MAINTENANCE OF COVER

The installed asphalt cover will be periodically inspected, at a minimum frequency of once annually, to verify that it remains intact and continues to function as a barrier preventing exposure to underlying materials, consistent with the cover system performance objectives outlined in DER-10. Inspections will include visual evaluation of the asphalt surface for:

- Cracking
- Settlement or depressions
- Surface deterioration
- Evidence of disturbance or damage

If deficiencies are identified that could compromise the integrity of the cover, appropriate repairs such as **patching, sealing, or replacement of damaged asphalt** will be completed in a timely manner. Inspection observations and any maintenance activities will be documented and maintained in project records and will be provided to NYSDEC in a Periodic Review Report (PRR) once the frequency of reporting is determined.

## **5.0 PROJECT DOCUMENTATION**

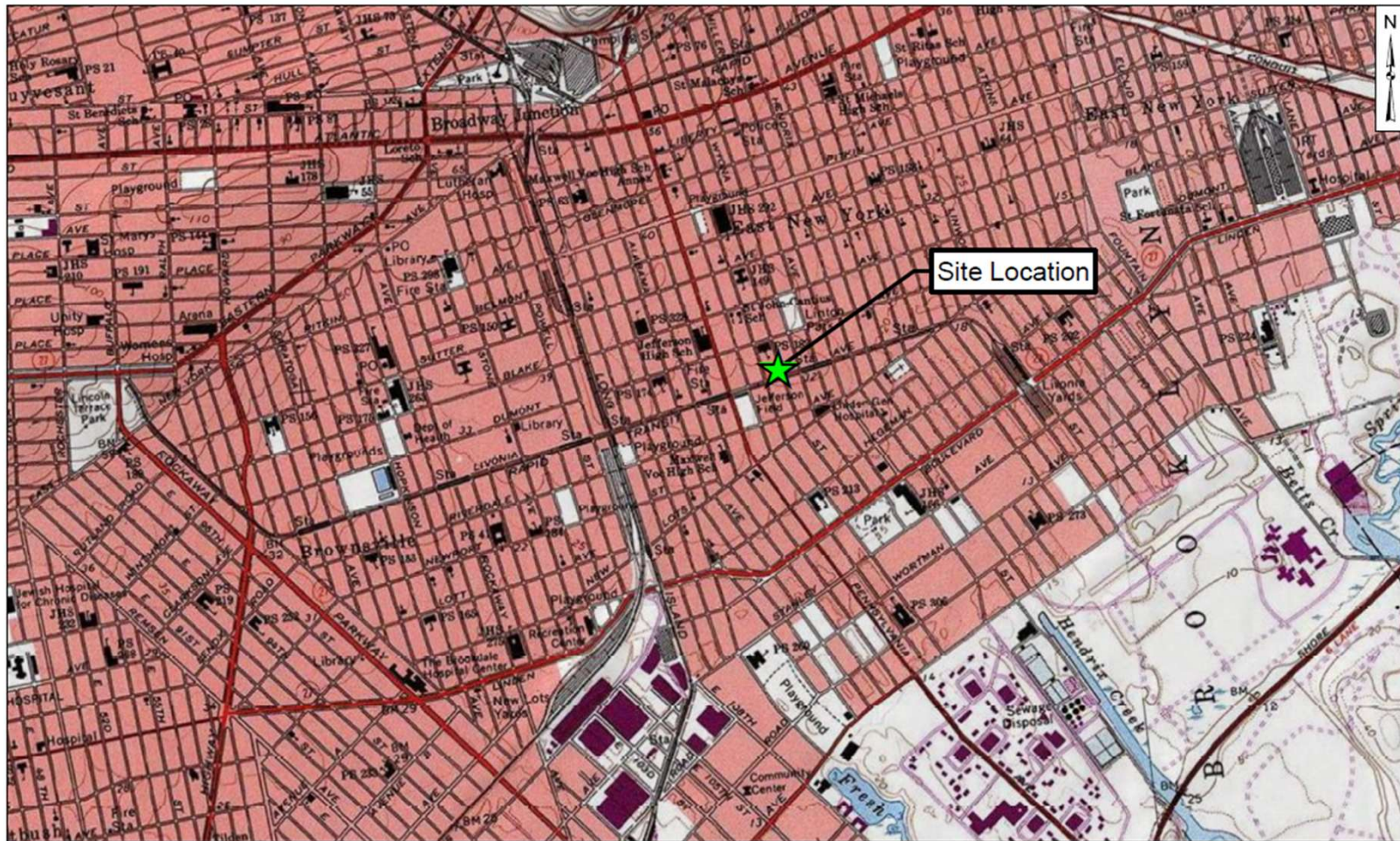
Project documentation including all associated laboratory analytical reports, waste profiles and approvals, waste manifests, Request to Import forms with associated supporting documentation such as gradations reports, weight tickets from the approved source providing the structural subbase material and HMA, and photographs documenting the work area before, during, and after installation will be submitted in a timely manner after completion of the IRM in the form of a Construction Completion Report (CCR). A description of any deviations from the approved IRMWP and Engineer certified as-built drawings of the final cover system will also be provided. In addition to summarizing work performed on the cover system, the CCR will also provide an as-built drawing of the SVES installed in September 2025 and summarize the installation and remedial actions undertaken. The SVES details and work summary will be verified from existing draft reports, previously approved IRMWPs, and field inspection as this work was not performed under the current certifying Engineer.

Daily reports will be submitted to the NYSDEC Project Manager by noon the next business day detailing work completed the previous day. The reports will include all work activities, any samples collected, any and all imports and exports to and from the site, site photographs taken that day, and CAMP data, including exceedances.

## **6.0 PROJECT SCHEDULE**

It is anticipated that work associated with this IRMWP will be completed over 5 working days in August 2026. Following completion of the cover system IRM, a CCR documenting work activities will be submitted to the Department in 120 days. The work associated with this IRMWP can be scheduled within 30 days of approval of NYSDEC.

## FIGURES



**RE**  
ROCK ENVIRO

673 LIVONIA AVENUE, BROOKLYN, NY  
FIGURE 1 – SITE LOCATION MAP  
MARCH 2026



**APPENDIX A**

**Community Air Monitoring Plan**

## COMMUNITY AIR MONITORING PLAN

673 Livonia Avenue  
Bronx, NY 11207  
Site #224352



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### FIGURES

Figure 1 – Site Location Map

Figure 2 – Site Plan and Work Area

### APPENDIX

Appendix 1A – NYSDOH Generic Community Air Monitoring Plan

Appendix 1B – NYSDEC DER-10 Fugitive Dust and Particulate Monitoring

Appendix 2 - CAMP Action Level Reporting (Field Form)

## 1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared by Rock Enviro LLC (Rock) and reviewed by reviewed by Matrix Environmental Engineers PLLC (Matrix), on behalf of 673 Livonia Ave, LLC, to support the implementation of the remedial action associated with installing an asphalt cover over an area at the Site currently not covered by the Site building or impervious surface. A Site Location Map is provided as **Figure 1** and a Site Plan showing the proposed work area is provided in **Figure 2**.

This CAMP fulfills the routine monitoring requirements provided in *Superfund Remedial Design and Remedial Action Guidance* Office of Solid Waste and Emergency Response Directive 93550-4a [United States Environmental Protection Agency (EPA) 1986], as well as the more specific requirements set forth in the New York State Department of Environmental Conservation (NYSDEC) document entitled Division of Environmental Remediation *Technical Guidance for Site Investigation and Remediation* (DER-10) issued on May 3, 2010 (NYSDEC 2010). Appendix 1A of DER-10 (included as Appendix 1A) provides general guidance and protocols for the preparation and implementation of a CAMP. Appendix 1B of DER-10 (included as Appendix 1B) supplements the contents of Appendix 1A of DER-10 and provides additional requirements for fugitive dust/particulate monitoring.

This CAMP identifies the required air monitoring to protect the community during the implementation of the selected remedy as described below:

### 1.1 CAMP OBJECTIVES

The overall objective of the CAMP is to establish requirements for protection measures for downwind receptors from potential airborne releases of constituents of concern during intrusive and/or potential dust generating remedial construction activities. As summarized in the Site Characterization Report, prepared by Geosyntec Consultants, dated February 2022, laboratory analysis indicates that constituents of concern at the Site include polychlorinated biphenyls (PCBs), metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). This CAMP identifies potential air emissions, and describes air monitoring procedures, the monitoring schedule, data collection, and reporting requirements for the remedial action to be completed by the Contractor.

The Engineer will implement this CAMP and will provide all labor, materials, and equipment necessary to implement the monitoring program specified in this CAMP, as well as any required contractor worker

documentation and monitoring described in the Environmental Health and Safety Plan prepared for the implementation of the project.

## **1.2 REVISIONS TO THE CAMP**

Any changes to the scope or procedures in this CAMP will be formally documented as a revision to this document. A revision number will be indicated on the front page of any revised document and will serve as a historical record of any and all revisions made to the document. For changes requiring immediate resolution during the implementation of this CAMP, approval will be secured from EPA and their representative and, if applicable, the Responsible Parties.

## **1.3 POTENTIAL AIR EMISSIONS RELATED TO REMEDIAL ACTIVITIES**

Intrusive construction activities have the potential to generate localized impacts to air quality. Construction components that are considered intrusive for the purposes of this CAMP and that have the potential to generate air emissions are anticipated to include, but may not be limited to the following:

- Excavation at the Site;
- Material handling and storage [e.g., manipulation of excavated materials to render them suitable for off-site treatment/disposal, stockpiling of materials, loading of materials for transport to the off-site treatment and/or disposal facility(ies), etc.];
- Backfilling/restoring remediated and other disturbed areas; and
- Other ancillary intrusive activities, such as utility location during Site preparation and Site restoration (potential for particulate emissions only).

## **1.4 VAPOR/DUST/ODOR EMISSIONS AND CONTROL MEASURES**

Air emissions control and fugitive dust suppression measures will be implemented concurrently with the activities identified above (as needed) to limit the potential for organic vapor, dust, and odor emissions from the Site. Such control measures are anticipated to include the following:

- Applying a potable water spray to suppress dust originating from excavation and in-barge mixing;
- Applying a foam or Biosolve® spray that uses encapsulation and chemical masking to suppress vapors/odors originating from the excavation, excavator bucket, or staging areas;
- Minimizing the number and size of excavation areas open at one time; and

- Covering the excavation and materials in the staging area(s) using ultraviolet resistant polyethylene sheeting.

Supplies for these vapor, dust, and odor control measures will be mobilized to the Site by the Contractor at the beginning of the project and will be maintained on-site in sufficient supply throughout the work. Control measures will be implemented as necessary based on visual or olfactory observations, and the results of community air monitoring for organic vapors (including VOCs), and particulate matter less than 10 microns in diameter (PM10) as described in Section 2.0. Control measures are specified in Technical Specification 01 57 19 – Temporary Environmental Controls.

## **1.5 SPECIAL INSTRUCTIONS FOR WORK WITHIN 20 FEET OF POTENTIALLY EXPOSED INDIVIDUALS OR STRUCTURES**

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for volatile organic compounds (VOCs) and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor / dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 part per million, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with the New York State Department of Health prior to commencement of the work.

If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 micrograms per cubic meter (mcg/m<sup>3</sup>), work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m<sup>3</sup> or less at the monitoring point.

Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

## **2.0 AIR MONITORING PROCEDURES**

Real-time community air monitoring for VOCs, particulates, and odors will be performed at representative locations, upwind and downwind, at the Site during construction activities. In addition, during work hours, hourly or more frequent monitoring for Site-related odors at the perimeter of the work area will be performed. Additional information regarding representative monitoring locations, equipment, and action levels is presented below.

### **2.1 SELECTION OF MONITORING LOCATIONS**

Upwind and downwind monitoring station locations for VOCs and PM10 will be determined daily based on data from an on-site meteorological monitoring station (predominant wind direction) and the nature and location of the anticipated construction activities. Initially, published information from Windfinder.com (a website that provides wind and weather statistics), will be used to predict the prevailing and predominant wind direction during the year for the Site. During the construction activities, a meteorological station will be used to establish real-time wind direction and facilitate any changes required during the daily monitoring. An upwind location (station "UPW") for both VOCs and PM10 will be confirmed at the start of each workday, based upon the use of the meteorological station and the location of the proposed construction activities. A downwind location (station "DWN 1") (based upon prevalent wind direction) for both VOCs and PM10 will also be selected. Another downwind monitoring location (regardless of wind direction) will be used to monitor for both VOCs and PM10 at the closest sensitive receptor (i.e., nearest occupied building [NOB]), determined at the date of construction.

If wind directions shift radically during the workday and for an extended period such that the upwind direction and downwind locations no longer fall within acceptable guidelines (+/-60 degrees compass change from the original wind direction), the monitoring stations will be relocated so that the upwind and downwind locations are maintained. Any changes will be documented in the CAMP reports.

If multiple work zones are present at the same time, additional upwind and downwind monitoring stations will be established, in coordination with EPA, their representatives, and the Responsible Parties.

## **2.2 VOC MONITORING**

VOCs will be monitored continuously during the intrusive and/or potential dust-generating remedial construction activities with instrumentation equipped with electronic data-logging capabilities. Because real-time monitors are not available for PCBs, metals, or SVOCs, the real-time VOC monitors will serve as surrogate indicators for emissions (if any) of PCBs, metals, and SVOCs during the construction work.

A real-time VOC monitor (RAE MultiRae 3000 or equivalent) equipped with a Photoionization Detector (PID) will be used for monitoring. All 15-minute average concentrations, as well as any instantaneous readings taken to facilitate activity decisions, will be recorded, stored on-site and summarized in weekly CAMP reports to EPA, their representatives, and the Responsible Parties.

## **2.3 TOTAL PARTICULATES MONITORING**

Total particulates will also be monitored continuously during intrusive and/or potential dust-generating remedial construction activities using instrumentation equipped with electronic data-logging capabilities. The particulate monitoring equipment will also be equipped with an audible alarm to indicate exceedances of the action levels identified below in Section 2.5. A TSI DustTrak II 8530 (or equivalent) will be used to conduct the real-time PM10 monitoring during the remedial construction activities. All 15-minute average concentrations, as well as any instantaneous readings taken to facilitate activity decisions, will be recorded, stored on-site, and summarized in weekly CAMP reports to EPA, their representatives, and the Responsible Parties. Fugitive dust migration will be visually assessed during all work activities, and reasonable dust suppression techniques will be used during any remedial construction activities that may generate fugitive dust.

## **2.4 PERIODIC MONITORING FOR ODORS**

During work hours, hourly or more frequent walks around the perimeter of the work area will be performed to qualitatively monitor for the presence and intensity of Site-related odors. Perimeter checks will be performed more frequently, as necessary, depending on the nature and location of work being performed. If odors are noted at the perimeter of the work area, work will continue and odor, vapor, and dust controls will be employed to abate emissions. Additionally, construction techniques will be evaluated and modified, if necessary and appropriate, and more frequent checks of the perimeter of the work area will be performed. If odors persist at the perimeter of the work area at an unacceptable intensity, work will be stopped while activities are re-evaluated. The source or cause of the odors will be identified and additional odor, vapor, and dust controls will be employed. Work will resume provided that the controls are successful in mitigating the intensity of odors at the perimeter of the work area.

## 2.5 ACTION LEVELS

The action levels provided below are to be used to initiate corrective actions, if necessary, based upon the real-time monitoring. If the action levels are exceeded at the perimeter locations for VOCs or PM10, work will be suspended and engineering controls will be implemented to bring concentrations back down to acceptable levels. Each piece of monitoring equipment will have alarm capabilities (audible and/or visual) to indicate exceedances of the action levels specified below. All readings will be recorded and available for EPA's, their representatives', and the Responsible Parties' review.

### 2.5.1 ACTION LEVELS FOR ORGANIC VAPORS

If the ambient air concentration of total VOCs at the downwind perimeter of the work area, Exclusion Zone, or opposite the nearest occupied building exceeds 5 parts per million (ppm) above the background (upwind) concentration for the 15-minute average, work activities will be temporarily halted while monitoring continues. If the total VOC concentration readily decreases (through observation of instantaneous readings) below 5 ppm above the background (upwind) concentration, work activities will resume with continued monitoring.

If the ambient air concentration of total VOCs at the downwind perimeter of the work area, Exclusion Zone, or opposite the nearest occupied building persists at levels in excess of 5 ppm but less than 25 ppm above the background (upwind) concentration: (1) work activities will be halted; (2) the source of the elevated total VOC concentration will be identified; (3) corrective actions will be implemented to reduce or abate the emissions; and (4) air monitoring will be continued. Once these activities have been implemented, work activities will resume provided the following two (2) conditions are met:

- The 15-minute average VOC concentrations remain below 5 ppm above background (upwind); and
- The total VOC concentration 200 feet downwind of the work area/Exclusion Zone or half the distance to the nearest potential receptor or residential/commercial structure (whichever is less but in no case less than 20 feet) is below 5 ppm over the background (upwind) concentration for the 15-minute average.

If the ambient air concentration of total VOCs at the downwind perimeter of the work area, Exclusion Zone, or opposite the nearest occupied building exceeds 25 ppm above the background (upwind) concentration, work activities will stop, and corrective actions will be implemented to reduce or abate the emissions.

When work shutdown occurs, as directed by the Environmental Monitor, Contractor's on-site manager, or by the Engineer, corrective actions will be implemented to ensure that vapor emission does not impact the nearest occupied structure at levels exceeding the action levels specified herein. If following work shutdown, or as the result of an emergency, VOC concentrations persist above 5 ppm above background (upwind) 200 feet downwind (or half the distance to the nearest occupied structure), then air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20-foot zone).

### **2.5.2 ACTION LEVELS FOR PM10**

If the ambient air concentration of PM10 at the downwind perimeter of the work area, Exclusion Zone, or nearest occupied building exceeds 100 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) above the background (upwind) concentration, or if airborne dust is observed leaving the work area, dust suppression techniques will be employed. Work will continue with dust suppression techniques provided the downwind PM10 concentration does not exceed 150  $\mu\text{g}/\text{m}^3$  above the background (upwind) concentration. If, after implementation of dust suppression techniques, the downwind PM10 concentration is greater than 150  $\mu\text{g}/\text{m}^3$  above the background (upwind) concentration, work will be stopped while activities are re-evaluated. Work will resume provided the dust suppression techniques and other controls are successful in: (1) reducing the downwind PM10 concentration to less than 150  $\mu\text{g}/\text{m}^3$  above the background (upwind) concentration; and (2) preventing visible dust from leaving the work area.

## **2.6 METEOROLOGICAL MONITORING**

Meteorological monitoring will be conducted continuously using a portable meteorological monitoring system equipped with electronic data-logging capabilities. The meteorological monitoring system will be installed in a prominent location to provide representative observations of the local meteorological conditions. Security and accessibility to the meteorological monitoring system will also be considered during the selection of the meteorological monitoring system location. At a minimum, the meteorological monitoring system will monitor wind speed, wind direction, relative humidity, and ambient temperature. A digital meteorological monitoring system will be used to collect the meteorological data.

## **2.7 INSTRUMENT CALIBRATION**

Calibration of the VOC, PM10, and meteorological monitoring instrumentation will be conducted in accordance with each of the equipment manufacturer's calibration and quality assurance requirements. The

VOC and PM10 monitoring equipment will be calibrated or zeroed, respectively, daily (at a minimum), and such calibrations will be recorded in the field logbook.

### **3.0 MONITORING SCHEDULE AND DATA COLLECTION REPORTING**

The following identifies the monitoring schedule and data collection/reporting requirements.

#### **3.1 MONITORING SCHEDULE**

Community air monitoring will be conducted prior to initiating remedial construction activities to establish adequate baseline data and until such time that intrusive and/or potential dust generating activities are complete. The frequency of community air monitoring will be relative to the level of Site work activities being conducted and may be adjusted as the work proceeds and in consideration of the monitoring results. Air monitoring for VOCs and dust may be discontinued during periods of heavy precipitation that would otherwise result in unreliable data or damage to monitoring equipment. Meteorological monitoring will be performed continuously during work activities.

#### **3.2 DATA COLLECTION AND REPORTING**

Community air monitoring data will be collected continuously from VOC and PM10 monitors during all intrusive and/or potential dust-generating activities by the electronic data-logging systems, except as discussed above in Section 3.1. The data management software will be set up to continuously monitor instantaneous readings and record average concentrations (calculated for continuous 15-minute increments: i.e., 08:00 to 08:15, 08:15 to 08:30, etc.), including meteorological data. Results of the perimeter/community air monitoring for total organic vapors and particulates (both instantaneous readings and 15- minute average concentrations) will be recorded by the monitoring instruments (data loggers).

The Environmental Monitor will prepare weekly CAMP reports that will include, but not be limited to, the following:

- A brief memorandum summarizing the air monitoring work activities and results for the monitoring period, including an in-text table that presents a “dashboard” view of the organic vapor and particulate concentrations measured at each station during the period. A summary of the qualitative perimeter monitoring for the presence and intensity of Site-related odors will also be included. The memorandum will be supported by two attachments: (1) Attachment A showing air monitoring station daily locations; and (2) Attachment B presenting graphs of the 15-minute time-weighted

average VOC and particulate concentrations recorded at each of the sampling stations (one graph for each station showing the weekly results relative to action levels).

- A “zip” file that contains the raw data files from the individual monitors and meteorological data from the weather station.

The Environmental Monitor will submit weekly CAMP reports (via e-mail) to EPA, EPA’s representative, the Responsible Parties, and the Contractor.

In the event that an exceedance of a community air monitoring action level (for either PM10 or VOCs), the Environmental Monitor will notify EPA and EPA’s representative (via telephone), and the Engineer (in person) as soon as possible (i.e., real time). Within 24 hours of the observed exceedance, the Environmental Monitor will send a follow-up e-mail to EPA, EPA’s representative, the Engineer, the Contractor, and the Responsible Parties summarizing the data, the cause of the exceedance, and any corrective measures implemented (or to be implemented) as a result of the exceedance. The information will also be documented in the weekly CAMP report.

Odor complaints received from the public will be evaluated and verified based on the following:

- Date and time of complaint;
- Location and nature of work activities being performed at the Site;
- Location and nature of non-project-related work activities being performed in the surrounding community; and
- Prevailing wind direction and other local meteorological conditions.

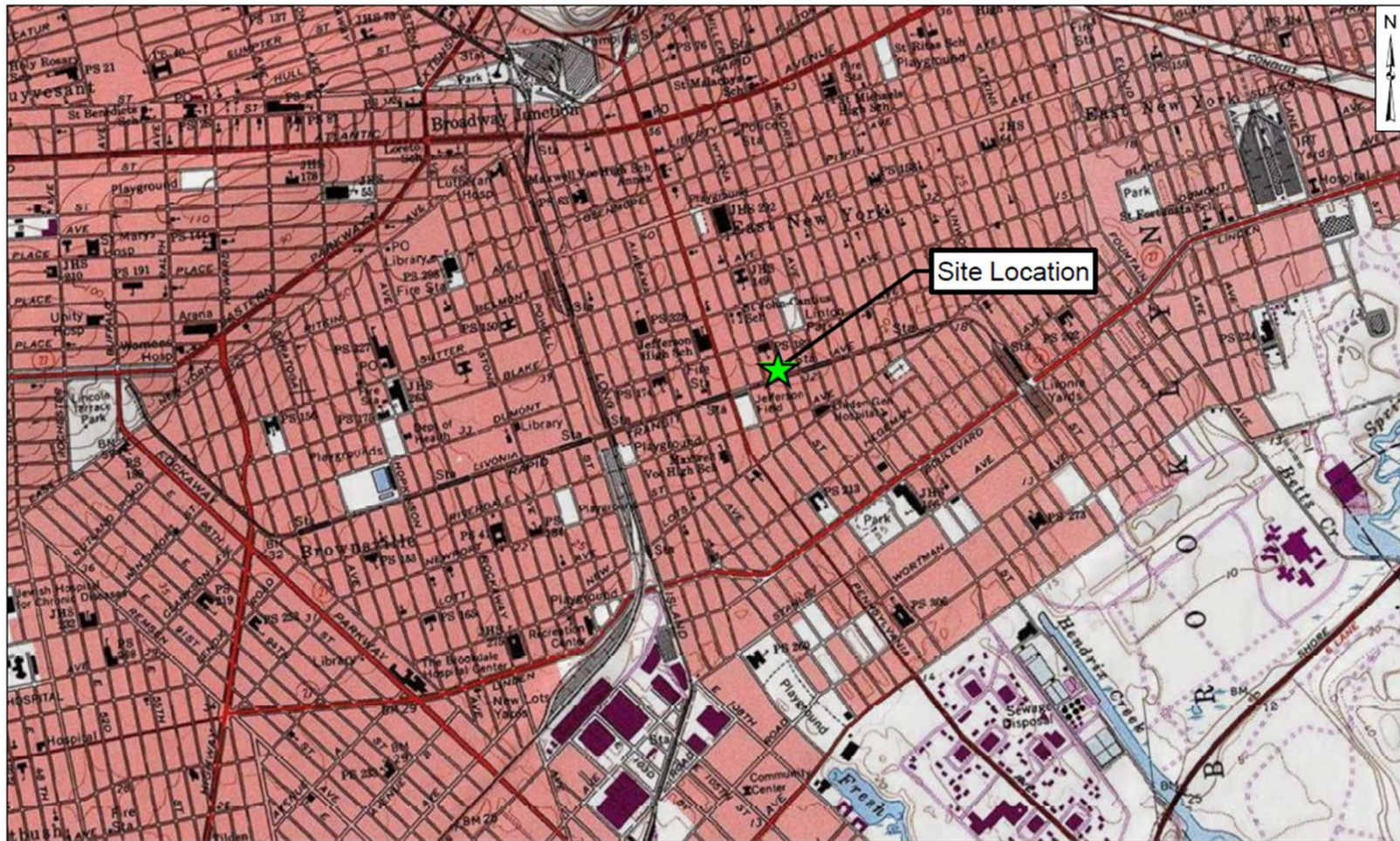
Regardless of the outcome of this evaluation, EPA, EPA’s representative (via telephone), the Engineer (in person), and the Responsible Parties (via telephone) will be notified of all odor complaints within 24 hours. In response to a verified odor complaint, perimeter monitoring will continue and additional odor, vapor, and dust controls will be employed to mitigate Site-related odor emissions. Construction techniques will also be evaluated and modified, if necessary and appropriate.

The time and outcome of each perimeter check will be documented in a daily odor monitoring log, specifically noting the presence or absence of Site-related odors and identifying the intensity and general location(s) along the perimeter of the work area where odors (if any) are noted. The time and outcome of any odor complaints from the public will also be documented in the daily odor monitoring log.

## 4.0 REFERENCES

1. EPA. 1986. Superfund Remedial Design and Remedial Action Guidance. Office of Solid Waste and Emergency Response Directive.
2. NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, May 2010.
3. Interim Remedial Measures Work Plan for Restoration of Site Cover System, Matrix, March 30, 2026.

## FIGURES



**RE**  
ROCK ENVIRO

673 LIVONIA AVENUE, BROOKLYN, NY  
FIGURE 1 – SITE LOCATION MAP  
MARCH 2026





Community Air Monitoring Plan  
673 Livonia Avenue, Brooklyn, NY 11207  
Site #224352

## **Appendix 1A**

### **NYSDOH Generic Community Air Monitoring Plan**

## Appendix 1A

### New York State Department of Health Generic Community Air Monitoring Plan

#### Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

#### Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

**Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

**Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

### VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

### Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter ( $\text{mcg}/\text{m}^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed  $150 \text{ mcg}/\text{m}^3$  above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than  $150 \text{ mcg}/\text{m}^3$  above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within  $150 \text{ mcg}/\text{m}^3$  of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009



## **Appendix 1B**

### **NYSDEC DER-10 Fugitive Dust and Particulate Monitoring**

## **Appendix 1B**

### **Fugitive Dust and Particulate Monitoring**

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:
  - (a) Objects to be measured: Dust, mists or aerosols;
  - (b) Measurement Ranges: 0.001 to 400 mg/m<sup>3</sup> (1 to 400,000 :ug/m<sup>3</sup>);
  - (c) Precision (2-sigma) at constant temperature: +/- 10 :g/m<sup>3</sup> for one second averaging; and +/- 1.5 g/m<sup>3</sup> for sixty second averaging;
  - (d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
  - (e) Resolution: 0.1% of reading or 1g/m<sup>3</sup>, whichever is larger;
  - (f) Particle Size Range of Maximum Response: 0.1-10;
  - (g) Total Number of Data Points in Memory: 10,000;
  - (h) Logged Data: Each data point with average concentration, time/date and data point number
  - (i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
  - (j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
  - (k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
  - (l) Operating Temperature: -10 to 50° C (14 to 122° F);
  - (m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.
4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.
5. The action level will be established at 150 ug/m<sup>3</sup> (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m<sup>3</sup>, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m<sup>3</sup> above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m<sup>3</sup> continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM<sub>10</sub> at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- (a) Applying water on haul roads;
- (b) Wetting equipment and excavation faces;
- (c) Spraying water on buckets during excavation and dumping;
- (d) Hauling materials in properly tarped or watertight containers;
- (e) Restricting vehicle speeds to 10 mph;
- (f) Covering excavated areas and material after excavation activity ceases; and
- (g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m<sup>3</sup> action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

## Appendix 2

### CAMP Action Level Reporting (Field Form)



**APPENDIX B**

**Blank Request to Import Form**



**NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**



**Request to Import/Reuse Fill or Soil**

\*This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.\*

**SECTION 1 – SITE BACKGROUND**

Site Name:

Site Number:

The allowable site use is:

Have Ecological Resources been identified?

Is this soil originating from the site?

How many cubic yards of soil will be imported/reused?

If greater than 1000 cubic yards will be imported, enter volume to be imported:

**SECTION 2 – MATERIAL OTHER THAN SOIL**

Is the material to be imported gravel, rock or stone?

Does it contain less than 10%, by weight, material that passes a size 100 sieve?

Is this virgin material from a permitted mine or quarry?

Is this material recycled concrete or brick from a DEC registered processing facility?

**SECTION 3 - SAMPLING**

Provide a brief description of the number and type of samples collected in the space below:

-----  
*Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.*

*If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.*

### SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

---

*Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.*

*If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.*

### SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Name and address of fill source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

--

The information provided on this form is accurate and complete.

---

Signature

---

Date

---

Print Name

---

Firm

## **APPENDIX C**

**Safety Data Sheet Sikaflex®-411 Hybrid Self-leveling Sealant**



## Sikaflex®-411 Hybrid Self-leveling Sealant

Revision Date 05/09/2024

Print Date 05/09/2024

### SECTION 1. IDENTIFICATION

Product name : Sikaflex®-411 Hybrid Self-leveling Sealant

Company name : Sika Corporation  
201 Polito Avenue  
Lyndhurst, NJ 07071  
USA  
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

E-mail address : ehs@sika-corp.com

Emergency telephone : CHEMTREC: 800-424-9300  
INTERNATIONAL: +1-703-527-3887

Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Eye irritation : Category 2A

Carcinogenicity (Inhalation) : Category 1A

Reproductive toxicity : Category 2

#### GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H319 Causes serious eye irritation.  
H350 May cause cancer by inhalation.  
H361 Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.



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P202 Do not handle until all safety precautions have been read and understood.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

### Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

### Storage:

P405 Store locked up.

### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

### Additional Labeling

There are no ingredients with unknown acute toxicity used in a mixture at a concentration  $\geq 1\%$ .

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Mixtures

#### Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
N-[3-(trimethoxysilyl)propyl]butylamine	31024-56-3	Skin Irrit. 2; H315 Eye Dam. 1; H318	$\geq 1 - < 5$
Quartz (SiO <sub>2</sub> ) >5 $\mu$ m	14808-60-7	Carc. 1A; H350 STOT RE 1; H372 STOT SE 3; H335	$\geq 0.1 - < 1$
bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate	52829-07-9	Eye Dam. 1; H318 Repr. 2; H361	$\geq 0.1 - < 1$

Actual concentration is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.  
Consult a physician.  
Show this material safety data sheet to the doctor in attendance.



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If inhaled	:	Move to fresh air. Consult a physician after significant exposure.
In case of skin contact	:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	irritant effects Excessive lachrymation Causes serious eye irritation. May cause cancer by inhalation. Suspected of damaging fertility or the unborn child.
Notes to physician	:	Treat symptomatically.

---

### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.



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Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

### SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Avoid exceeding the given occupational exposure limits (see section 8).  
Do not get in eyes, on skin, or on clothing.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Store in original container.  
Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Store in accordance with local regulations.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Quartz (SiO <sub>2</sub> ) >5µm	14808-60-7	TWA (Respirable particulate matter)	0.025 mg/m <sup>3</sup>	ACGIH
		TWA (Respirable dust)	0.05 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable)	10 mg/m <sup>3</sup> / %SiO <sub>2</sub> +2	OSHA Z-3
		TWA (respirable)	250 mppcf / %SiO <sub>2</sub> +5	OSHA Z-3
		TWA (respirable dust fraction)	0.1 mg/m <sup>3</sup>	OSHA P0
		TWA (Respirable particulate matter)	0.025 mg/m <sup>3</sup> (Silica)	ACGIH



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		ter)		
		PEL (respirable)	0.05 mg/m <sup>3</sup>	OSHA CARC
		TWA (respirable dust fraction)	0.1 mg/m <sup>3</sup>	OSHA P0
		TWA (Respirable particulate matter)	0.025 mg/m <sup>3</sup>	ACGIH
		TWA (Respirable particulate matter)	0.025 mg/m <sup>3</sup> (Silica)	ACGIH

The above constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**Engineering measures** : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

### Personal protective equipment

**Respiratory protection** : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

**Skin and body protection** : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

**Hygiene measures** : Wash hands before breaks and immediately after handling the product.  
Remove contaminated clothing and protective equipment



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before entering eating areas.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	viscous liquid
Color	:	black
Odor	:	mild
Odor Threshold	:	No data available
pH	:	Not applicable
Melting point/range / Freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	ca. 221 °F / 105 °C (Method: closed cup)
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	0.01 hpa
Relative vapor density	:	No data available
Density	:	ca. 1.40 g/cm <sup>3</sup> (74.7 °F / 23.7 °C)
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available



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Viscosity, kinematic	:	> 20.5 mm <sup>2</sup> /s (104 °F / 40 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Volatile organic compounds (VOC) content	:	13.30 g/l

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	Stable under recommended storage conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	No data available
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Not classified due to lack of data.

#### Components:

##### **N-[3-(trimethoxysilyl)propyl]butylamine:**

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg

#### **Skin corrosion/irritation**

Not classified due to lack of data.

#### **Serious eye damage/eye irritation**

Causes serious eye irritation.

#### **Respiratory or skin sensitization**

##### **Skin sensitization**

Not classified due to lack of data.

##### **Respiratory sensitization**

Not classified due to lack of data.



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### Germ cell mutagenicity

Not classified due to lack of data.

### Carcinogenicity

May cause cancer by inhalation.

<b>IARC</b>	Group 1: Carcinogenic to humans	
	Quartz (SiO <sub>2</sub> ) (Silica dust, crystalline)	14808-60-7
	Group 2B: Possibly carcinogenic to humans	
	Carbon black	1333-86-4
<b>OSHA</b>	OSHA specifically regulated carcinogen	
	Quartz (SiO <sub>2</sub> ) (crystalline silica)	14808-60-7
<b>NTP</b>	Known to be human carcinogen	
	Quartz (SiO <sub>2</sub> ) (Silica, Crystalline (Respirable Size))	14808-60-7

### Reproductive toxicity

Suspected of damaging fertility or the unborn child.

### STOT-single exposure

Not classified due to lack of data.

### STOT-repeated exposure

Not classified due to lack of data.

### Aspiration toxicity

Not classified due to lack of data.

### Further information

#### Product:

Remarks : Carbon black (1333-86-4)  
Animal Toxicity:  
Rat, oral, duration 2 year  
Effect: no tumors  
  
Mouse, oral, duration 2 years  
Effect: no tumors  
Mouse, dermal, duration 18 months  
Effect: no skin tumors  
Rat, inhalation, duration 2 years  
Target organ: lungs  
Effect: inflammation, fibrosis, tumors  
Note: Tumors in the rat lung are considered to be related to the "particle overload phenomenon" rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specif-



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ic. Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions. Mortality studies (human data): A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorahan, 2001 (UK study) found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (DEll, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010). Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington. Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.

**IARC CANCER CLASSIFICATION:** In 2006 IARC re-affirmed its 1995 finding that there is "inadequate evidence" from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is "sufficient evidence" in experimental animal studies for the carcinogenicity of carbon black. IARC's overall evaluation is that carbon black is "possibly carcinogenic to humans" (Group 2B)". This conclusion was based on IARC's guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was "sufficient evidence" that carbon black extracts can cause cancer in animals (Group 2B).

**ICGIH CANCER CLASSIFICATION:** Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

**ASSESSMENT:** Applying the guidelines of self-classification



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under the Globally Harmonized System of Classification and Labeling of Chemicals, carbon black is not classified as a carcinogen. Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon black and other poorly soluble particles. Rats tumors are a result of a secondary non-genotoxic mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity - Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk to carcinogenicity.

Quartz (14808-60-7): This classification is relevant when exposed to Quartz (silicon dioxide) in dust or powder form only, including cured product that is subject to sanding, grinding, cutting, or other surface preparation activities.

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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

#### Components:

**bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate:**

#### Persistence and degradability

No data available

#### Bioaccumulative potential

No data available

#### Mobility in soil

No data available

#### Other adverse effects

#### Product:

Additional ecological information : Do not empty into drains; dispose of this material and its container in a safe way.  
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional



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local authority requirements.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

#### Domestic regulation

##### 49 CFR

Not regulated as a dangerous good

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### SECTION 15. REGULATORY INFORMATION

**TSCA list** : All chemical substances in this product are either listed as active on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

#### CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Carcinogenicity  
Reproductive toxicity  
Serious eye damage or eye irritation

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).



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### California Prop. 65

**⚠ WARNING:** This product can expose you to chemicals including Carbon black, amorphous, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA CARC	:	OSHA Specifically Regulated Chemicals/Carcinogens
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
OSHA CARC / PEL	:	Permissible exposure limit (PEL)
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

### Notes to Reader

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