

SECTION 02101 - DEMOLITION AND ENVIRONMENTAL MANAGEMENT OF IMPACTED MEDIA

PART 1 - GENERAL

1.1 SITE HISTORY

The site has been used to house the former City Department of Public Works (DPW), Bureau of Water, Street Lighting, and Parking Meters for over one hundred years. The primary long term operations that have led to the current sub-surface environmental issues at the site include, vehicle fueling operations, automotive repair and maintenance, and painting of both vehicles and utility parts.

Site history, supported by previous investigations and the recent environmental investigations, indicates that releases of petroleum products, chlorinated solvents and limited areas of elevated metals have occurred at several locations across the site. Some of these impacted areas are in contact with building slabs and foundations that will be removed. Impacted soil and/or groundwater will require separation from the demolition material at the time of removal.

In addition, the original Erie Canal crossed the parcel in a north-south direction. The old canal bed was located close to the west property line. When the Canal was relocated around the City in the 1920's the City of Rochester deepened the canal bed and constructed a trolley (subway) system. The canal bed has since been filled. In addition, the site has been re-worked and filled at various times. This fill material consists of layers of slag, coal, cinders and ash.

This section is intended to identify procedures to manage and dispose of demolition material that is in contact with impacted media.

1.2 RELATED WORK SPECIFIED ELSEWHERE

LEEDS Requirement: Section 01352 for credit MR 2.1 and MR 2.2

Construction Waste Management: Section 01524

Site Preparation: Section 02100

Clearing and Grubbing: Section 02102

Building Demolition: Section 02103

Excavation Grading and Earthwork: Section 02200

Pipe and Structure Backfill: Section 02221

Soil Compaction: Section 02250

Erosion Control: Section 02270

Demolition-Related Sub-Grade Structures: Contract Drawing C1.2D

1.3 DEFINITIONS

- A. City DEQ Project Manager(s) refers to City of Rochester Division of Environmental Quality's (DEQ) designated Project Manager(s).
- B. CM indicates the Owner's Construction Manager.
- C. Demolition Materials indicates any large foundations, wood, railroad ties, metal scrap, plastic, drainage piping, refuse, or other miscellaneous solid waste in contact with site soils.
- D. Environmental Consultant refers to the Owner's Environmental Consultant who will be retained directly by the City of Rochester Division of Environmental Quality (City DEQ) to be responsible for environmental cleanup activities during the demolition.
- E. Hazardous indicates materials which are hazardous by any characteristic including Corrosivity, Toxicity, and Ignitability, as defined in 40 CFR 262, and/or materials which contain polychlorinated biphenyls (PCBs) at concentrations greater than 50 parts per million (ppm) as defined in 40 CFR Part 761.
- F. Non-Hazardous indicates materials which are not hazardous by any characteristic as defined in 40 CFR 262.
- G. Impacted Fill indicates fill materials that contain any discernable portion of slag, coal, cinders and/or ash.
- H. Impacted Groundwater indicates groundwater impacted by contaminants including, but not limited to, petroleum products, chlorinated solvents, and/or elevated metals.
- I. Impacted Media includes Impacted Fill, Impacted Solid Waste, Impacted Soil, and Impacted Groundwater as defined above.
- J. Impacted Soil indicates soil or fill materials impacted by contaminants including, but not limited to, petroleum products, chlorinated solvents, and/or elevated metals.
- K. Impacted Solid Waste indicates hazardous and non-hazardous waste, including but not limited to soil, sediments, sludge, liquids, and groundwater, impacted by contaminants including, but not limited to, petroleum products, chlorinated solvents, and/or elevated metals, in addition to demolition material (e.g., concrete, steel, plastic, etc.) which has been impacted by any of the above.
- L. M/P Sub-Grade structures indicates mechanical/plumbing-related (M/P) sub-grade structures including, but not limited to, hydraulic lifts, floor drains and associated piping, oil/water separators, pits, and waste-water disposal structures.
- M. Orphan refers to M/P sub-grade structures or Underground Storage Tanks (USTs) which are out of use and whose presence and/or location is uncertain and therefore are not shown on the plans.
- N. I&D Facility indicates any facility that treats, stores, or disposes of any wastes.

- O. Waste Characterization testing indicates certified laboratory analytical testing done on any waste material for the purpose of acceptance at a T&D Facility. Analytical parameters are determined on a case by case basis in conjunction with the T&D Facility.
- P. Waste Profile indicates the regulatory paperwork completed by a waste generator for the purpose of acceptance at a T&D Facility.

1.4 SUBMITTALS

- A. The Contractor shall submit a Site-Specific Health and Safety Plan. This plan will require review and approval by the Environmental Consultant prior to the start of any work.
- B. The Contractor shall submit certificates of completion of 40-hour HAZWOPER training for all employees to be engaged in sub-surface work at the Site.
- C. The Contractor shall submit a list of all proposed T&D facilities. This list will require review and approval by the CM, the City DEQ Project Manager, and the Environmental Consultant. No material may be shipped off-site prior to T&D Facility approval.
- D. The Contractor shall provide completed waste profiles to the DEQ Project Manager and the Environmental Consultant for review and approval prior to shipment of any materials.
- E. The Contractor shall provide a copy of the Monroe County Pure Waters Division Industrial Wastewater Discharge Permit prior to discharge of any water to any sewers.
- F. The Contractor shall provide a copy of any required UST Removal permit issued by the City of Rochester and approved by the City of Rochester Fire Marshall.
- G. Contractor shall submit documentation as required to meet LEED requirements and Approved Construction Waste Management Plan.
- H. Contractor shall submit material data and technical specifications for all materials specified in Part 2 of this Section.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. The Contractor shall provide all necessary material and equipment as to manage hazardous and non-hazardous waste, including but not limited to soil, sediments, sludge, liquids, groundwater, and demolition material (e.g., concrete, steel, plastic, etc.), to the satisfaction of the Environmental Consultant, and the City DEQ Project Manager.
- B. The Contractor shall provide high-pressure sprayers for decontamination activities.
- C. Water: Potable water shall comply with all applicable NYSDOH regulations. Permission is required from the Rochester Water Bureau to use water from fire hydrants. Hydrant use requires the use of a meter and backflow preventer. The Contractor shall obtain hydrant use permits and pay all fees and deposits.
- D. The Contractor shall provide all material and equipment necessary to implement the dust and

Volatile Organic Compound (VOC) suppression system, to the satisfaction of the Environmental Consultant, and the City DEQ Project Manager.

- E. The Contractor shall provide reinforced 6-mil reinforced polyethylene sheeting that meets all requirements of ANSI Specification D2103.
- F. The Contractor shall provide new DOT approved 55-gallon drums for liquids containerization. The drums should be of material compatible with their contents.
- G. The Contractor shall provide foam vapor suppressants to implement the Major Vapor Emission Plan, to the satisfaction of the Environmental Consultant and the City DEQ Project Manager.

PART 3 – EXECUTION

3.1 COORDINATION WITH THE ENVIRONMENTAL CONSULTANT

- A. The Environmental Consultant will be on-site continuously during phases of the project when building slabs, foundations, utilities and/or M/P sub-grade structures that are located in areas of known or likely contamination are scheduled to be removed. The Environmental Consultant will be on-site on a part time basis during phases of the project when foundations, utilities and/or M/P sub-grade structures that are located outside areas of known or likely contamination are scheduled to be removed. The Contractor shall notify the Environmental Consultant in accordance with Part 3.1.
- B. Notification to the Environmental Consultant
 - 1. The Environmental Consultant shall be notified when the following types of work will take place:
 - Removal of foundations
 - Removal of M/P Sub-grade Structures or USTs
 - Removal of existing sub-grade Utilities
 - Installation of sub-grade Utilities
 - All other excavation work
 - 2. Based on previous site characterization data, the Environmental Consultant may direct the Contractor to perform work without the Environmental Consultant present. In this case, the Contractor shall notify the Environmental Consultant and immediately stop work if any of the following conditions are encountered:
 - Material requiring classification (i.e. any suspect material which may or may not be Impacted Fill, Impacted Media or Impacted Demolition Material)
 - Any evidence of petroleum or other contamination including odors, sheen on water, dark staining, etc.
- C. The Contractor shall notify the Environmental Consultant at least 2 working days prior to conducting work requiring the presence of the Environmental Consultant on site as defined above.
- D. The Contractor shall allow and provide access to the work at all times for the Environmental Consultant to complete testing and observations.

- E. The Contractor shall follow the directions of the Environmental Consultant regarding classification, reuse, recycling, salvage, or stockpile for off-site disposal of impacted or potentially impacted sub-surface materials. No sub-grade structures, pavements, slabs, demolition materials or other materials in contact with on-site soils shall be removed from the site without the written approval of the CM, the Environmental Consultant, and the City DEQ Project Manager.
- F. During the work, if conditions are encountered which require the presence of the Environmental Consultant; the Contractor shall notify the Environmental Consultant and immediately stop work requiring the Environmental Consultant's presence until the Environmental Consultant is on-site. The Owner is not responsible for costs resulting from any subsequent delays if 2 working days notification was not given.

3.2 DEMOLITION PROCEDURES

- A. The cumulative test results from the soil samples taken as part of numerous subsurface investigations are considered sufficient for this project. No additional sampling and testing is anticipated prior to the start of the work.

Note: Environmental data, including boring and test pit logs from environmental characterization activities previously completed in the vicinity of the Project Area are available in numerous reports, which may be reviewed by appointment with Ms. Vicki Brawn at the City of Rochester's Department of Environmental Services Division of Environmental Quality office located at City Hall, Room 300B, (585) 428-6294.

- B. Demolition material including any wood, railroad ties, metal scrap, large foundations, drainage piping, or other miscellaneous solid waste, which is determined by the Environmental Consultant to be physically unacceptable for re-use shall be separately stockpiled for off site disposal. The Contractor will only be responsible for disposal of clean/non-impacted materials. Disposal by the Contractor shall be as follows:
1. Non-contaminated demolition material excluding concrete and brick shall be transported to a non Part 360 permitted construction and demolition debris (C&D) disposal site, with prior written approval from the City DEQ Project Manager, the Environmental Consultant, and the CM.
 2. Concrete and brick shall be recycled on site in accordance with Sections 02103 and 02102 of this specification.
 3. Impacted demolition material that can be cleaned as described in 3.2 C below, to the satisfaction of the Environmental Consultant and in accordance with New York State Department of Environmental Conservation (NYSDEC) Spill Technology and Remediation Series (STARS) Memo #1, shall be taken to a C&D disposal facility or recycled following cleaning, as deemed appropriate by the Environmental Consultant.
 4. Any non-contaminated metal scrap shall be taken to a recycling facility.
- C. The Contractor shall stage the following materials for disposal by others under a separate contract:
1. Any demolition materials which are physically unacceptable for re-use, or which exhibit

evidence of impairment, and cannot be cleaned.

2. The Contractor shall not transport or dispose off-site any environmentally impacted media, solid waste, or demolition material.
- D. Cleaning of Impacted Demolition Material shall be by physical methods such as scraping, shaking, brushing, etc. Should the Contractor utilize methods which generate liquid waste streams, the Contractor is responsible for proper disposal of said wastestream..
 - E. The Contractor shall not transport or dispose of any soil or sub grade fill materials generated from the site without express written permission from the CM, the Environmental Consultant, and the City DEQ Project Manager.
 - F. The Soils Management Plan (SMP) (refer to Section 3.3) will aid in minimizing the health, safety, and environmental issues associated with the excavation and relocations of these materials.
 - G. Particulate and VOC ambient air monitoring and the availability of dust and VOC suppression measures are required by the NYSDEC during construction activities that disturb Impacted Fill, Impacted Solid Waste, Impacted Soil, or Impacted Groundwater. The Environmental Consultant shall perform the particulate and VOC ambient air monitoring during activities that affect the sub surface. The Environmental Consultant will provide air monitoring data to the Contractor at the Contractor's request, and whenever predetermined levels are exceeded. It is anticipated that the majority of the excavation work can be performed in Level D personal protective equipment. The Contractor shall provide 40-Hour OSHA-trained workers for those activities which have the potential to encounter hazardous substances or hazardous waste, including all sub-surface activities.

3.3 SOIL MANAGEMENT PLAN

- A. The Contractor shall implement the following Soil Management Plan (SMP).
- B. Classification of Solid Waste and Impacted Media
 1. Areas of Impacted Media are present throughout the Project Area. It should be noted there is a potential for unknown areas of Impacted Media in the project area that may be encountered during demolition.
 2. The Environmental Consultant shall classify areas of impacted media as they are exposed by the Contractor's demolition/excavation activities. Impacted media shall be screened by the Environmental Consultant in the excavator bucket or as practicable, as it is encountered by the Contractor. The Environmental Consultant will classify the materials into the categories described in the following table:

Class of Material	Physical Description	Screening Parameter	Management/ Re-use of Material
Class 1	Soil, fill materials, and visually identifiable non-contaminated solid waste (e.g. brick, concrete, rock) and Soil or Fill containing ash, slag or cinders.	No Discernable Odor;PID Readings < 10 ppm; No Staining	Crushing and processing to facilitate re-use. Use on site for non structural fill or grading in areas where buildings will not be sited (with geotechnical approval); Used to cover bermed regulated solid waste
Class 2	Soil and Fills with petroleum impacts	Petroleum Odor; Staining PID Readings Greater than 10 ppm. May contain limited free phase petroleum liquids	Staging on-site for future off site disposal by others under separate contract..
Class 3	Solid waste physically unacceptable for re-use (e.g. lumber, refuse, metal scrap, large foundations, ash, drainage piping, municipal waste)	May contain evidence of Impairment.	Staging on-site for future off site disposal by others under separate contract.
Class 4	Significantly impacted soils either solid waste impacted with significant free phase petroleum or possibly solid waste impacted by other constituents of concern.	Strong petroleum or other odor; Significant presence of free phase liquids; PID readings of 1000 ppm or greater; Laboratory analysis required for characterization.	Staging on-site for future off site disposal by others under separate contract.

- Notes: 1. Soils that are encountered at the site that demonstrate evidence of impairment will be screened with a PID. Soils that exhibit a PID reading of less than 10 ppm will be considered clean Class I material.
2. The Contractor shall not transport or dispose off-site any environmentally impacted media, solid waste, or demolition material.

3. After the Environmental Consultant classifies Impacted Media, the Owner's Geotechnical Engineer will classify the materials according to structural capability and suitability of the impacted material for reuse as backfill.
4. Impacted Fill can be visually characterized by the presence of slag waste, cinders or ash. Impacted Fill is generally present at depths immediately below the pavement/sub-base layer.
5. Impacted Soil, Sediments, Liquids, and Impacted Groundwater may be recognized by petroleum or chemical odors, visual gray to black staining of soil, sheen on surface water, and measurements of VOCs on a total Photo-Ionization Detector (PID) meter. The volatilization of contaminants present in Impacted Media may represent a worker health and safety concern for construction workers at the Site. The Community Air Monitoring Plan described in Section 3.5, details methods and procedures that the Environmental Consultant will use to monitor for VOCs.
6. If questions arise during identification of Impacted Media, the Environmental Consultant in conjunction with the Owner's Geotechnical Engineer, shall make the final determination for the classification on how the spoils generated during the construction activities at the project location will be managed.

7. Upon disturbance of Impacted Media, the Contractor shall follow the procedures outlined in the following sections, as well as the Contractor's approved Site-Specific Health and Safety Plan.

C. On-Site Management of Impacted Fill

1. Impacted Fill shall be screened by the Environmental Consultant to determine its Material Classification according to the table in 3.2-B-2 above. Impacted Fill shall be screened by the Environmental Consultant in the excavator bucket or as practicable, as it is encountered by the Contractor. Impacted Fill that is classified as petroleum contaminated and requiring off-site disposal shall be stockpiled and staged on and covered with one layer of reinforced 6-mil thick polyethylene sheeting at the end of each work day. Staging area details are provided at the end of this Section. The Contractor shall secure the sheeting and maintain such stockpiles' integrity to the satisfaction of the Environmental Consultant. Stockpiling locations shall be approved by the Environmental Consultant and in accordance with the SMP.
2. Non-hazardous Impacted Fill that does not contain petroleum that is excavated during the work shall not be removed from the site. This Impacted Fill shall be relocated, evaluated, and if acceptable to the Owner's Geotechnical Engineer, used as approved on-site backfill.
3. Impacted Fill determined by the Owner's Geotechnical Engineer as unsuitable for backfill shall be segregated and stockpiled on site.
4. At the end of each day the Contractor shall cover stockpiled materials with reinforced 6-mil polyethylene sheeting to minimize transport of particulates by wind or rain. The Contractor shall ensure that cover remains in place. All Impacted Fill material reused as fill on-site shall ultimately be covered with a minimum 12-inch layer of clean soil, fill materials, visually identifiable non-contaminated solid waste (e.g. brick, concrete, rock), or topsoil; or directly capped with an impervious surface (e.g., asphalt pavement, concrete pavers, etc.).
5. No Impacted Fill shall be placed in excavations below the water table. Depth to water varies across the site from 4 to 33 feet below ground surface.
6. Impacted Fill shall not be removed from the Site by the Contractor.

D. On Site Management of Impacted Soil and Impacted Groundwater

1. All sub-grade structures shall be inspected by the Environmental Consultant to determine suitability for reuse, recycling, or disposal.
2. Demolition items that are in contact with and contaminated by Impacted Soil when removed/excavated during the work shall be decontaminated by the Contractor in accordance with NYSDEC STARS Guidance Memo #1, and the Impacted Soil shall be left at its source at the discretion of the Environmental Consultant. If Impacted Soil is encountered in small quantities (i.e. within a single test pit) and excavated at the direction of the Environmental Consultant, it shall be staged on and covered with one layer of reinforced 6-mil thick polyethylene sheeting and secured for inclusion with the Environmental Contract. The Contractor will not be required to excavate quantities greater than 15 in-place cubic yards. Impacted Soil attached to building foundations or underground piping shall be removed and left at its source.

3. The Environmental Consultant shall be the sole judge of whether demolition materials are impacted, and whether they have been adequately decontaminated. The decision of the Environmental Consultant shall be binding on the Contractor. The Contractor is not required to perform soil excavation to remove the source of contamination, except as described above.
4. Impacted demolition materials which cannot be decontaminated shall be stockpiled separately from demolition materials considered free of impacted media in areas approved by the Environmental Consultant. Impacted Demolition materials shall be staged on and covered with one layer of reinforced 6-mil thick polyethylene sheeting at the end of each work day. The Contractor shall secure sheeting and maintain such stockpiles' integrity to the satisfaction of the Environmental Consultant. The Environmental Consultant shall determine demolition materials unable to be segregated from Impacted Soil.
5. Demolition items such as USTs or M/P sub-grade structures may contain sludges, non-aqueous liquids, or contaminated water. Sludges, non-aqueous liquids, or contaminated water shall be removed from the subsurface structure prior to excavation and the sludges or liquids shall be containerized by the Contractor, characterized by the Environmental Consultant, and staged on-site pending off-site disposal by others under separate contract. The subsurface structures shall then be decontaminated in accordance with NYSDEC STARS Guidance Memo #1 by the Contractor, and the sludges or liquids containerized, characterized, and staged on-site pending off-site disposal by others under separate contract. Waste characterization will be done by the Environmental Consultant.
6. If the Environmental Consultant determines that Impacted Groundwater at the project location is required to be pumped to advance demolition activities, the Contractor shall pump the Impacted Groundwater into a holding tank and staged on-site pending discharge or off-site disposal by others under separate contract. The Environmental Consultant shall perform all characterization testing. If the water is determined by characterization testing to be suitable for discharge to the sewer, the Contractor shall be responsible for obtaining all applicable permits, including a Monroe County Pure Waters Division Industrial Wastewater Discharge permit.
7. The Contractor shall not discharge or remove any impacted wastewater from the Site without obtaining express written permission from the CM, the Environmental Consultant, and the City DEQ Project Manager.

E. On-Site Borrow Pit

1. Contractor shall excavate, salvage, and stockpile material from the on-site borrow pit as shown on Specification Drawing C1.1D for use by the Owner's Specialized Environmental Contractor.
2. The Contractor shall excavate only to within 2 feet of the saturated zone as agreed upon by the CM and the Environmental Consultant.
3. Prior to work, the Contractor shall complete a test pit for the Owner to complete soil testing.
4. Excavation of the Borrow Pit shall be sequenced to minimize the potential for surface runoff into the excavation and the need for dewatering.

5. Contractor shall install proper erosion control measures prior to start of excavation.
6. No material shall be placed back in the borrow pit.

F. Construction of Temporary Vehicle and Equipment Decontamination Pad:

1. The Contractor shall construct a temporary decontamination pad that will be used to decontaminate the earthwork related equipment in a location determined in the field and agreed upon by the Contractor and the Environmental Consultant.
2. The decontamination pad shall be constructed of two layers of 6-mil reinforced polyethylene sheeting, with a sump, for the purposes of collecting wash water. Wash water will be stored in 55-gallon drums or storage tanks. Accumulated sediments shall be legally disposed of in accordance with all applicable regulations at a location approved by the Environmental Consultant and the City DEQ Project Manager.
3. The Contractor shall be responsible for all costs relating to legally disposing of the decontamination pad materials, wastewater and sediments at a facility approved by the Environmental Consultant and the City DEQ Project Manager. All permits and waste disposal manifests shall be submitted to the City DEQ Project Manager and the Environmental Consultant for review and signature prior to shipment. All permits, waste disposal manifest, and receipts associated with decontamination pad materials disposal shall be submitted to the City DEQ Project Manager and the Environmental Consultant.
4. The Contractor shall provide potable water and high-pressure sprayers for decontamination activities.

G. Services Provided by the City DEQ

The City DEQ shall retain an Environmental Consultant to perform the following work:

1. Classify impacted media as they are exposed by the Contractor's demolition/excavation activities.
2. Monitor Impacted Fill and soils during excavation and determine clean soil media from impacted media.
3. Conduct particulate monitoring of ambient air quality at the perimeter of the project location, and provide guidance to the Contractor regarding the need for implementation of dust suppression measures.
4. Conduct VOC monitoring of ambient air at the work area and the perimeter of the project location, and provide guidance to the Contractor regarding the need for implementation of VOC suppression measures.
5. Conduct sampling and waste characterization.
6. Review waste profiles and shipping papers.
7. Determine the necessity for dewatering of excavations.

8. Communicate with and obtain written approvals from the City DEQ Project Manager.
9. Create and distribute a list of Emergency Contacts to be notified under the provisions of the CAMP detailed in section 3.5.

H. Services Provided by the Contractor

The Contractor shall provide all labor, equipment, and materials necessary to perform the following work items as specified in this Section, including:

1. Coordination of utilities clearance.
2. Segregation of impacted media from demolition materials.
3. Dewatering of excavation as deemed necessary by the Environmental Consultant.
4. Implementation of dust and VOC suppression measures as determined by the Environmental Consultant.
5. Loading, containerizing, and transportation of impacted media (including oil and sludge) from the excavation area to an on-site staging area.
6. The Contractor shall not remove impacted media from the project.
7. The Contractor shall be responsible for providing all necessary and legally required training for its workers, including but not limited to OSHA 40-hour HAZWOPER training and respirator fit testing.

3.4 MISCELLANEOUS ITEMS

A. Decommissioning of Groundwater Wells

1. Prior to demolition, the Contractor shall decommission ten (10) shallow overburden groundwater monitoring wells. These wells include MW-CRSB4, MW-CRSB5, MW-CRSB7, MW-CRSB9, MW-CRSB12, MW-CRSB17, MW-LBSB19, MW-1 (Day), MW-2 (Day), and MW-3 (Day). These wells are depicted on Drawing C1.1D. Any additional shallow overburden groundwater monitoring wells encountered which are not listed above shall also be decommissioned in coordination with the Environmental Consultant. The monitoring wells shall be decommissioned in accordance with NYSDEC Decommissioning Procedures, which generally include the following items;

- Remove the protective casings and concrete surface seal.
- Insert steel rods through the PVC well casing and break the bottom of the well out.
- Attempt to raise the PVC well casing using available equipment and confirm the bottom is broken out with the steel rods.
- Pump a cement bentonite grout into the PVC casing from bottom to the top through a tremie pipe.
- Pull the PVC casing upward, while pumping additional grout into the PVC casing.
- After the PVC casing is removed from the ground allow the grout to settle for minimum of 24-hours. Backfill the remaining boring to surrounding grade with on-site

soils.

NOTE: The majority of the wells to be decommissioned contain road boxes that are nominally flush with pre construction ground surface. The Contractor shall decommission the wells prior to any earthwork, as they can be easily covered with debris and become difficult to locate.

2. All recoverable well construction materials such as PVC screens and risers, bailers, etc. shall be containerized in 55-gallon drums or staged on 6-mil polyethylene sheeting upon decommissioning by the Contractor. However, the protective casing and concrete (i.e. road box), PVC screens and risers, bailers are not required to be containerized, unless visually impacted.
3. The Contractor shall dispose off-site of all well materials that are not visually impacted. Work shall be completed in accordance with the approved Construction Waste Management Plan.

B. Removal of Impacted Orphan Underground Tanks, and M/P Sub-Grade Structures

1. During demolition activities there is a potential to encounter orphan Underground Storage Tanks (USTs), or M/P sub-grade structures that contain impacted media. If encountered, these items shall require specific management and disposal requirements outlined in this Section.

Note: In order to remove USTs within the limits of the City of Rochester, the Contractor must be permitted by the City and approved by the City of Rochester Fire Marshall.

2. If orphan UST(s) or M/P sub-grade structures are encountered by the Contractor, work shall stop immediately in the vicinity of the UST or structure and the Environmental Consultant must be immediately notified. The Environmental Consultant will assess the condition of the UST(s) or structure, where practicable. The Environmental Consultant shall then immediately notify the CM and the City DEQ Project Manager of the UST(s) or structure. The Environmental Consultant shall determine when it is practicable to resume demolition work in the vicinity of the UST(s) or structure.
3. The Contractor shall immediately notify the Environmental Consultant upon any known environmental release from and/or encountered but not limited to an UST, or M/P sub-grade structure. The Environmental Consultant shall notify the CM and the City DEQ Project Manager of any known release. The City DEQ Project Manager shall make the determination of any spill reporting requirements per any local, state, or federal agency laws and regulations.
4. During removal/decommissioning of the UST or M/P sub-grade structures the Environmental Consultant shall evaluate the soils adjacent to each structure. If it is determined that negative impacts to site soils have occurred, then the Contractor shall conduct a preliminary test pitting assessment of any area of environmental concern as directed by the Environmental Consultant in order to provide an area from which subsurface soil, solid waste, and fill materials can be readily observed and sampled by the Environmental Consultant. In addition, test pitting will provide a practical method to determine if subsurface structures may interfere with planned corrective action and site redevelopment activities. It should be assumed that approximately 40 test pits will be

required, approximately 3-ft by 3-ft, to depths of approximately 3-feet below the bottom of the structure. Following excavation, test pits must be backfilled to match the surrounding grade and in accordance with all backfill and compaction requirements specified in Sections 02221 and 02250 of these Specifications.

5. The Environmental Consultant shall visually assess the subsurface structures, associated soil, and any solid waste from the test pits, and will monitor the air from the soil in the test pit excavations for volatile organic compounds using a PID. The information gathered from the visual assessment and PID readings will be used to determine locations to collect soil samples for characterization.
6. The Environmental Consultant shall be responsible for all testing and characterization of Impacted Media and demolition materials described in this Section.
7. Orphan USTs must be removed in accordance with 6 NYCRR Part 613.9 (b), closure of tanks permanently out of service. The Contractor shall be responsible for the costs associated with UST removal and for obtaining any applicable tank removal permits in accordance with any local, state, or federal agency. Any impacted media (not including the contents of the tank) encountered during the tank removal process shall be left at its source as practicable for future removal by the Owner's Specialized Environmental Contractor.
8. After the tank is removed the Contractor shall backfill the tank excavation with material approved by the Environmental Consultant and the CM.
9. Hydraulic lifts may contain oil. Any oil within the lift shall be properly containerized, labeled, and staged on-site pending off-site disposal by others under separate contract. The Environmental Consultant shall make the determination when the impacted media is sufficiently removed from the demolition materials. The Contractor shall not remove any waste oil from the project location.
10. Oil/water separators, and piping may contain oil, impacted media, and/or impacted sludge and should be segregated from the demolition materials. These materials shall be properly containerized, characterized by the Environmental Consultant, labeled, and staged on-site pending off-site disposal by others under separate contract. The Environmental Consultant shall make the determination if the impacted media is sufficiently removed from the demolition material. The Contractor shall not remove any materials from the project location.
11. Payment for removal of orphan USTs and/or orphan M/P Sub-Grade structures and containerization of their contents shall be on a unit price basis, according to tank size, agreed upon by the Owner and the Contractor prior to UST removal.

C. DISPOSAL AND PERMIT RECORDS

1. The City DEQ Project Manager(s) shall approve proposed T&D facilities and Waste Transporters prior to use. STILL REQUIRED?
2. Removal or disposal of any site materials or items shall be approved in advance by the City DEQ Project Manager and the Environmental Consultant, including submission of completed Waste Profiles and Waste Manifests for signature by the City DEQ Project Manager(s). STILL REQUIRED?
3. Copies of all waste disposal manifests, and receipts shall be submitted to the City DEQ Project Manager and the Environmental Consultant by the Contractor within 2 calendar days upon removal from the project location.
4. All permits obtained by the Contractor associated with the removal of UST(s) shall be immediately submitted to the City DEQ Project Manager and Environmental Consultant.

D. SPECIFIC WORK TASKS, INFORMATION, AND REQUIREMENTS

1. The Contractor shall attend a meeting with the CM, the Environmental Consultant and the City DEQ Project Manager to discuss Impacted Media management concerns. The Contractor shall coordinate the meeting.
2. The Contractor shall coordinate the planned staging of Impacted Media with the Environmental Consultant. Specific areas shall be designated for the staging of each type of impacted media so as to allow for a smooth work flow and minimize exposure routes to the public and the environment.
3. During the demolition activities that involve subsurface intrusive work, the Contractor shall notify the Environmental Consultant. The Environmental Consultant shall visually characterize and assess the impacted media. The Contractor shall rely on the judgment of the Environmental Consultant and manage the impacted media accordingly.
4. Impacted media or demolition materials which cannot be decontaminated according to NYSDEC STARS Guidance Memo #1 shall not be removed from the project location.
5. The Environmental Consultant shall conduct environmental testing during the project to assess potential hazards and impacts both within and at the perimeter of the work area. These hazards and impacts include respiratory hazards during excavation, soil classification, and generation and off-site transmission of fugitive particulate and VOC emissions. Based on the guidelines established in the Soil Management Plan, the Environmental Consultant shall have the authority to stop work if measured levels exceed guidelines outlined in the Community Air Monitoring Plan.
6. The Contractor is solely responsible for the means, methods, techniques, sequences and procedures for all activities under the direct control of Contractor.

7. The Contractor shall perform all work under this contract in accordance with all local, state and federal laws, regulations, and requirements including but not limited to Monroe County Pure Waters Agency, New York State Department of Environmental Conservation, United States Environmental Protection Agency, United States Department of Transportation, and Occupational Safety and Health Administration.
8. The Environmental Consultant shall have the right to stop or shut down contract activities based on the Contractor's failure to perform or respond in accordance with the Section.

3.5 COMMUNITY AIR MONITORING PLAN

- A. This Community Air Monitoring Plan (CAMP) addresses potential particulate and VOC air quality issues that may arise during demolition activities outlined in the Contract Documents.
- B. The Environmental Consultant shall be responsible to implement the sampling and recording requirements outlined in the CAMP.
- C. The construction tasks included under this CAMP include any activities that have the potential to disturb impacted media including but not limited to site preparation, utility excavations, removal of subsurface structures, removal of foundations and floor slabs, solid waste transport and site grading. Particulate and VOC air monitoring will not be required during activities that do not contact the impacted media or disturb the sub surface at the project location. This CAMP details real-time monitoring activities to be carried out during the construction activities, to minimize the potential for neighborhood exposure to airborne hazards resulting from particulate (dust) or VOC emissions during the intrusive construction work.
- D. This CAMP addresses the methods that will be implemented to monitor particulate levels at the perimeter of and within the work area. In the event elevated particulate levels or VOCs are encountered, this CAMP identifies the steps that shall be taken by the Contractor to rectify the elevated levels.
- E. The Environmental Consultant will make the final determination regarding implementation of the Minor and Major Vapor Emission Plans detailed below. The decision of the Environmental Consultant shall be binding on the Contractor.
- F. Methodology
 1. The construction activities at the Site will consist of primarily earthwork as it relates to demolition, site preparation, utility excavations, solid waste transport and site grading. The following programs will be implemented to monitor and, if necessary, control the potential migration of fugitive dust from the site.
- G. Perimeter Monitoring
 1. Each day of fieldwork during activities that have the potential to disturb impacted media, a wind sock or flag provided by the Contractor will be used to monitor wind direction in the work areas (excavation, soil staging, and soil grading areas). Based upon daily wind conditions the Environmental Consultant shall identify three temporary monitoring points, at the perimeter of the Site or work area, one up and two down wind of the work areas.

2. Real time particulate monitoring shall be performed by the Environmental Consultant utilizing DustTrak™ Model 8520 aerosol monitors or equivalent. Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. When there are sufficiently wet site conditions, such as during or immediately after precipitation, particulate monitoring may be temporarily suspended.
3. VOC monitoring will be performed with a Photoionization Detector (PID) equipped with a 10.6 eV lamp, and/or a flame-ionization detector (FID) or equivalent. VOC concentrations will be monitored continuously at the upwind and downwind perimeter monitoring stations during all ground intrusive activities.
4. Each day, prior to the commencement of the intrusive earthwork work, the Environmental Consultant shall measure and record background concentrations of particulate as 5 minute averages at the identified upwind and downwind locations with the typical construction equipment engines and any other gas/diesel engines operating on Site. In the event that wind conditions change in the course of the day, monitoring locations will be adjusted to the new conditions.
5. Throughout the day, measurements will be recorded at intervals specified above. The recorded 5 minute averages will be used to determine the difference in value between upwind and downwind particulate and VOC concentrations. Work shall be temporarily halted and engineering controls, detailed in this document shall be implemented if the difference between the upwind and downwind particulate ambient air measurements exceed $100 \mu\text{g}/\text{m}^3$, or downwind VOC ambient air readings exceed upwind readings by 5 parts per million (ppm). It should be noted that downwind VOC readings will be adjusted for engine exhaust. If work is required to be temporarily halted, the Contractor shall implement dust suppression methods or other means to control fugitive dust and VOCs emissions.

H. Dust Suppression

1. If the monitoring at the Site Perimeter, as described in this document, indicates an upwind/downwind difference in fugitive particulate emissions greater than $100 \mu\text{g}/\text{m}^3$, the Contractor shall implement dust control measures as directed by the Environmental Consultant that may include the following methods:
 - Apply water on haul roads.
 - Wetting equipment and excavation faces.
 - Restricting vehicle speeds to 10 mph.
 - Hauling material in properly tarped containers.
 - Spraying water in buckets during excavation and dumping.
 - Reducing excavation size and/or number of excavations.
2. The Contractor shall have an onsite designated water truck or other dust suppression system. The Contractor shall obtain any necessary permits for hydrant usage, etc.

3. If, after implementation of dust suppression techniques, downwind particulate levels are greater than 150 $\mu\text{g}/\text{m}^3$ 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 particulate concentration to within 150 $\mu\text{g}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

I. Minor Vapor Emission Plan

1. If any single Work Area Perimeter ambient air reading of total VOC exceeds 5 ppm above background, as a 5 minute average, work activities must be temporarily halted and monitoring continued. If the total VOC level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
2. Work activities may continue if total organic vapors in the ambient air are between 5 ppm and 25 ppm over background within the Work Area, provided that the organic vapor levels measured at the Work Area Perimeter remain below 5 ppm over background. If sustained PID readings of between 1.0 ppm and 25 ppm are recorded in the breathing zone within the work area then a benzene specific colorimetric tube will be utilized to determine the level of benzene within the breathing zone. If it is determined, via the colorimetric tube, that benzene in the breathing zone is less than 1.0 ppm by volume then work may continue in Level D. If it is determined that the benzene level in the breathing zone is greater than 1.0 ppm by volume then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing a $\frac{1}{2}$ face respirator with organic vapor cartridges for an 8-hour duration.
3. All work activities shall be halted if VOC measurements in the ambient air remain above 5 ppm at the Work Area Perimeter and the Major Vapor Emission Response Plan detailed in Section J below will be implemented immediately if organic vapor levels in the ambient air exceed 5 ppm, as a 5 minute average, over background at the Site Perimeter.
4. If VOC concentrations are encountered within the Work Area at concentrations above 25 ppm, but remain below 5 ppm at the Work Area Perimeter, approved personnel may re-enter the work areas wearing a $\frac{1}{2}$ face respirator with organic vapor cartridges for an 8-hour duration when VOC concentrations average between 25-50 ppm. Organic vapor cartridges are to be changed after each 8-hours of use. If PID readings are sustained, in the work area, at levels above 50 ppm for a 5 minute average, work shall be stopped immediately until safe levels of VOCs are encountered.

J. Major Vapor Emission Plan

1. Engineering controls to abate the VOC emissions source shall immediately be put into effect by the Contractor if total organic vapor levels in the ambient air exceed 5 ppm above background at the Site Perimeter or at the Work Area Perimeter. The implementation of these engineering controls shall be directed by the Environmental Consultant and may include:
 - Vapor suppression utilizing foam vapor suppressants, polyethylene sheeting, or water.
 - Backfilling of excavations.
 - Covering emission sources with stockpiled materials.

2. Following the implementation of the engineering controls detailed in 1. above, work activities may resume with continued monitoring provided that the total organic vapor levels 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.
3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down.
4. If the measures taken to abate the emission source are ineffective and the total organic vapor readings continue at 5 ppm or above background for more than 15 minutes 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, then the following actions shall be placed into effect by the Environmental Consultant:
 - Occupants of neighboring residential and commercial buildings shall be advised to stay inside their respective structure and to close all windows.
 - All personnel listed in the Emergency Contacts section of the HASP for this project will be contacted.
 - The Site Safety Supervisor shall immediately contact the local authorities and advise them of the circumstances.
 - Continuous air monitoring shall be conducted at the Site Perimeter and 1 minute average measurements will be recorded every 15 minutes. Air monitoring may be halted or modified by the Site Safety Supervisor when two successive measurements are below 5 ppm.
5. If readings remain elevated above 5 ppm over background 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, for a period of 30 minutes the Site Safety Officer shall request that local authorities evacuate the occupants of any affected neighboring buildings.
6. Payment for implementation of the Contractor actions required by the Major Vapor Emissions Plan shall be on a unit price basis agreed upon by the Owner and the Contractor.

K. Record Keeping and Quality Control

1. Each day, prior to the commencement of the intrusive earthwork work the particulate and organic vapor monitoring equipment will be calibrated and recorded on a daily log sheet per instrument manufacturer's specifications by the Environmental Consultant. The PID will be calibrated with isobutylene gas at a concentration of 100 ppm.
2. Perimeter and Work Area air monitoring readings and/or datalogs will be recorded on a daily log sheet including the location, date and time, and instrument reading. All 15-minute readings will be recorded and be available for State (DEC and DOI) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

3. If there are particulate and organic vapor measurements that are above the threshold outlined in this CAMP, corrective action measures, if applicable, will be recorded for each occurrence.

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END OF SECTION 02101

INSERT FIGURE 1

SECTION 02101 - ENVIRONMENTAL MANAGEMENT OF IMPACTED MEDIA

PART 1 -- GENERAL

1.1 WORK INCLUDED IN THIS SECTION

- A. Compliance with of the Soils Management Plan (SMP)
- B. Compliance with Procedures for Orphan Underground Tanks, and Orphan M/P Sub-Grade Structures
- C. Compliance with the Community Air Monitoring Plan (CAMP)

1.2 RELATED WORK SPECIFIED ELSEWHERE

LEEDS Requirement: Section 01352 for credit MR 2.1 and MR 2.2

Construction Waste Management: Section 01524

Excavation Grading and Earthwork: Section 02200

Pipe and Structure Backfill: Section 02221

Soil Compaction: Section 02250

Erosion Control: Section 02270

1.3 DEFINITIONS

- A. City DEQ Project Manager(s) refers to City of Rochester Division of Environmental Quality's (DEQ) designated Project Manager(s).
- B. CM indicates the Owner's Construction Manager.
- C. Non-Hazardous indicates materials which are not hazardous by any characteristic including Corrosivity, Toxicity, and Ignitability, as defined in 40 CFR 262, and/or materials which contain polychlorinated biphenyls (PCBs) at concentrations less than 50 parts per million (ppm) as defined in 40 CFR Part 761.
- D. Impacted Fill indicates fill materials that contain any discernable portion of slag, coal, cinders and/or ash.
- E. Impacted Groundwater indicates groundwater impacted by contaminants including, but not limited to, petroleum products, chlorinated solvents, and/or elevated metals.
- F. Impacted Media includes Impacted Fill, Impacted Solid Waste, Impacted Soil, and Impacted Groundwater as defined below.
- G. Impacted Soil indicates soil or fill materials impacted by contaminants including, but not limited to, petroleum products, chlorinated solvents, and/or elevated metals.

- H. Impacted Solid Waste indicates hazardous and non-hazardous waste, including but not limited to soil, sediments, sludge, liquids, and groundwater, impacted by contaminants including, but not limited to, petroleum products, chlorinated solvents, and/or elevated metals.
- I. M/P Sub-Grade structures indicates mechanical/plumbing-related (M/P) sub-grade structures including, but not limited to, hydraulic lifts, floor drains and associated piping, oil/water separators, pits, and waste-water disposal structures.
- J. Orphan refers to M/P sub-grade structures or Underground Storage Tanks (USTs) which are out of use and whose presence and/or location is unknown and therefore are not shown on the plans.

1.4 SUBMITTALS

- A. The Contractor shall submit a Site-Specific Health and Safety Plan. This plan will require review and approval by the CM prior to the start of any work.
- B. The Contractor shall provide a copy of the Monroe County Pure Waters Division Industrial Wastewater Discharge Permit prior to discharge of any water to any sewers.
- C. Contractor shall submit documentation as required to meet LEED requirements and Approved Construction Waste Management Plan.
- D. Contractor shall submit material data and technical specifications for all materials specified in Part 2 of this Section.

1.5 SITE HISTORY

The site has been used to house the former City of Rochester Department of Public Works (DPW), Bureau of Water, Street Lighting, and Parking Meters for over one hundred years. The primary long term operations that have led to the current sub-surface environmental issues at the site include, vehicle fueling operations, automotive repair and maintenance, and painting of both vehicles and utility parts.

This site is located in an old portion of the City of Rochester that has been developed and redeveloped. The original Erie Canal crossed the parcel in a north-south direction. The old canal bed was located close to the west property line. When the Canal was relocated around the City in the 1920's the City of Rochester deepened the canal bed and constructed a trolley (subway) system. The canal bed has since been filled. In addition, the site has been re-worked and filled at various times. This is Impacted Fill material, consisting of reworked soil with layers of slag, coal, cinders and ash.

Note: Boring and test pit logs from environmental characterization activities previously completed in the vicinity of the Project Area are available in the numerous reports, which may be reviewed at the City of Rochester's Department of Environmental Services office located at City Hall, Room 300B.

As part of the development of the site into a new Water Bureau complex portions of the proposed new structures are designed to be founded on spread footings. The building area preparation work will consist of removing the in-place fill material and backfilling with structurally compacted and tested material in order to facilitate sound buildable surfaces.

The Impacted Fill is considered by the NYSDEC to be solid waste that cannot be treated as Construction and Demolition solid waste, due to the nature of its origin as a solid waste derived from an industrial source. The NYSDEC will not approve of the disposal of this material at Construction and Demolition debris landfills. The NYSDEC allows for materials containing slag, coal, cinders, railroad ballast and ash to be relocated to other areas within the same site in accordance with 6 NYCRR Part 360-1.7(b)(9).

Particulate air monitoring and dust suppression are recommended by the NYSDEC during construction activities that disturb Impacted Fill. The CM will perform the particulate air monitoring.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Water: Potable water shall comply with all applicable NYSDOH regulations. Permission is required from the Rochester Water Bureau to use water from fire hydrants. Hydrant use requires the use of a meter and backflow preventer. The Contractor shall obtain hydrant use permits and pay all fees and deposits.
- B. The Contractor shall provide all material and equipment necessary to implement dust suppression, to the satisfaction of the CM, and the City DEQ Project Manager.
- C. The Contractor shall provide reinforced 6-mil reinforced polyethylene sheeting that meets all requirements of ANSI Specification D2103.

PART 3 – EXECUTION

3.1 SOIL MANAGEMENT PLAN

- A. The Contractor shall implement the Soil Management Plan (SMP) ~~that will be developed for the site.~~
 - 1. The SMP is intended to provide guidance in the management of soil and fill materials that will be disturbed during the development of the site.
 - 2. The City of Rochester intends to manage the excavated non-hazardous soil and fill material on Site. This plan follows the intent 6 NYCRR Part 360-1.7(b) (9) that allows for fill materials to be placed into other similarly filled areas within a contiguous property.
 - 3. The SMP and the environmentally related construction methods associated with it will be detailed to the construction manager and contractors working on the project at a pre-construction meeting. The CM will be responsible to direct the implementation of the SMP during all phases of earthwork construction and site grading activities.

B. Location and Identification of Impacted Fill

Impacted Fill is generally present at depths immediately below the pavement/sub-base layer. Impacted Fill can be visually identified by the presence of slag waste, cinders or ash. If questions arise during identification of Impacted Fill, the CM and/or the project geotechnical engineer will make the final determination.

Upon disturbance of Impacted Fill, the contractor should follow the procedures outlined in the following sections, and their company's health and safety plan.

C. On-Site Management of Impacted Fill

1. Soils that contain Impacted Fill that are excavated during the work shall not be removed from the site. These impacted soils may be relocated and used as fill where embankment is required, as indicated on drawings C1.4 and C1.6 of the Contract Drawings. Stockpiling for later use will be allowed on-site at locations designated on the Contract Drawings and in accordance with the approved SMP.
2. At the end of each day stockpiled materials shall be covered with water resistant membrane to minimize transport of particulates by wind or rain. All Impacted Fill disposed of on-site shall be covered with a minimum 12-inch layer of clean material or topsoil, or directly capped with an impervious surface (e.g., asphalt pavement, concrete pavers, etc.).

D. Management of Impacted Soil and Impacted Solid Waste

1. During excavation activities there is a potential to encounter Impacted Soil. Impacted Soil may be identified by petroleum or chemical odors, dark stained soil, or free product in the excavation.
2. If Impacted Soil is encountered by the Contractor, work shall stop immediately in the vicinity of the excavation and the CM must be immediately notified. The CM shall then immediately notify the City DEQ Project Manager of the Impacted Soil. The CM shall determine when it is practicable to resume work in the vicinity of the excavation where Impacted Soil is present. If necessary, the Owner may retain a specialized Environmental Contractor to remove Impacted Soil.
3. The Contractor shall not remove Impacted Soil or Impacted Solid Waste that is excavated during the work from the site. These impacted materials may be relocated when so directed by the CM and staged temporarily as indicated on drawing C1.6 of the Contract Drawings.
4. At the end of each day stockpiled materials shall be covered with water resistant membrane to minimize transport of particulates by wind or rain.
5. The Owner shall be responsible for all testing and characterization of Impacted Media described in this Section.
6. After Impacted Soil is removed, the Contractor shall backfill the excavation with material approved by the CM.

E. Specific Work Tasks, Information and Requirements

1. The Contractor shall coordinate the planned staging of clean and impacted media with the CM. Specific areas are designated on drawing C1.6 for the staging of each type of material so as to allow for a smooth workflow, and minimize exposure routes to the public and the environment.

2. During the excavation activities the CM will visually characterize representative buckets of soil and designate excavated material as either clean, Impacted Fill, or Impacted Soil.
3. The CM, or other Representative of the City, will conduct environmental testing during the project to assess potential hazards and impacts both within and at the perimeter of the work area. These hazards and impacts include respiratory hazards during excavation, soil classification, and generation and off-site transmission of dust. Based on the guidelines established in this specification, the CM shall have the authority to stop work if measured levels exceed guidelines outlined in the Community Air Monitoring Plan.
4. The Owner reserves the right to stop contract activities based on the Contractor's failure to perform or respond in accordance with the provisions of the specification and the direction of the CM.

NOTE: No impacted media shall be removed from the Site without written permission from the City of Rochester, Department of Environmental Services, Division of Environmental Quality.

F. Services Provided by the Owner

The Owner's CM or his designate shall perform the following work:

1. Classify impacted media as they are exposed by the Contractor's excavation activities.
2. Monitor Impacted Fill and soils during excavation and determine clean soil media from impacted media.
3. Implement the provisions of the Community Air Monitoring Plan (CAMP) detailed below.
4. Conduct sampling and waste characterization if necessary.
5. Review waste profiles and shipping papers if necessary.
6. Determine the necessity for dewatering of excavations.
7. Communicate with and obtain written approvals from the City DEQ Project Manager.
8. Create and distribute a list of Emergency Contacts to be notified under the provisions of the CAMP detailed in section 3.3.

G. Services Provided by the Contractor

The Contractor shall provide all labor, equipment, and materials necessary to perform the following work items as specified in this Section, including:

1. Coordination of utilities clearance.

2. Segregation of impacted media from clean materials.
3. Dewatering of excavations as directed by the CM.
4. Implementation of dust suppression measures as determined by the CM.
5. Loading, containerizing, and transportation of impacted media from the excavation area to an on-site staging area.
6. The Contractor shall not remove impacted media from the project.
7. The Contractor shall be responsible for providing all necessary and legally required training for its workers

3.2 MISCELLANEOUS ITEMS

A. Procedures for Orphan Underground Tanks, and Orphan M/P Sub-Grade Structures

1. During excavation activities there is a potential to encounter orphan Underground Storage Tanks (USTs), or orphan M/P sub-grade structures that contain impacted media. If encountered, these items shall require specific actions outlined in this Section.
2. If orphan UST(s) or M/P sub-grade structures are encountered by the Contractor, work shall stop immediately in the vicinity of the UST or structure and the CM must be immediately notified. The CM shall then immediately notify the City DEQ Project Manager of the UST(s) or structure. The CM shall determine when it is practicable to resume work in the vicinity of the UST(s) or structure. The Owner will retain a specialized Environmental Contractor to decommission and remove any USTs or M/P sub-grade structures encountered.
3. The Contractor shall immediately notify the CM upon any known environmental release from and/or encountered but not limited to an UST, or M/P sub-grade structure. The CM shall notify the City DEQ Project Manager of any known release. The City DEQ Project Manager shall make the determination of any spill reporting requirements per any local, state, or federal agency laws and regulations.
4. The Owner shall be responsible for all testing and characterization of Impacted Media described in this Section.
5. After a UST or M/P sub-grade structure is removed the Contractor shall backfill the tank excavation with material approved by the CM.

C. DISPOSAL AND PERMIT RECORDS

1. Removal or disposal of any site materials or items shall be approved in advance by the City DEQ Project Manager and the CM, including submission of completed Waste Profiles and Waste Manifests for signature by the City DEQ Project Manager.

2. Copies of all waste disposal manifests, and receipts shall be submitted to the City DEQ Project Manager and the CM by the Contractor within 2 calendar days upon removal from the project location.

D. SPECIFIC WORK TASKS, INFORMATION, AND REQUIREMENTS

1. The Contractor shall attend a meeting with the CM and the City DEQ Project Manager to discuss Impacted Media management concerns. The Contractor shall coordinate the meeting.
2. The Contractor shall coordinate the planned staging of Impacted Media with the CM. Specific areas shall be designated for the staging of each type of impacted media so as to allow for a smooth work flow and minimize exposure routes to the public and the environment.
3. During activities that involve subsurface intrusive work, the Contractor shall notify the CM. The CM shall visually characterize and assess impacted media if present. The Contractor shall rely on the judgment of the CM and manage the impacted media accordingly.
4. The CM shall conduct environmental testing during the project to assess potential hazards and impacts both within and at the perimeter of the work area. These hazards and impacts include respiratory hazards during excavation, soil classification, and generation and off-site transmission of fugitive particulate emissions. Based on the guidelines established in this specification, the CM shall have the authority to stop work if measured levels exceed guidelines outlined in the Community Air Monitoring Plan.
5. The Contractor is solely responsible for the means, methods, techniques, sequences and procedures for all activities under the direct control of Contractor.
6. The Contractor shall perform all work under this contract in accordance with all local, state and federal laws, regulations, and requirements including but not limited to Monroe County Pure Waters Agency, New York State Department of Environmental Conservation, United States Environmental Protection Agency, United States Department of Transportation, and Occupational Safety and Health Administration.
7. The CM shall have the right to stop or shut down contract activities based on the Contractor's failure to perform or respond in accordance with the Section.

3.3 COMMUNITY AIR MONITORING PLAN

- A. This Community Air Monitoring Plan (CAMP) addresses potential particulate air quality issues that may arise during construction activities outlined in the Contract Documents.
- B. The CM shall be responsible to implement the sampling and recording requirements outlined in the CAMP.

- C. The construction tasks included under this CAMP include any activities that have the potential to disturb impacted media including but not limited to site preparation, foundation and utility excavations, solid waste transport and site grading. Particulate air monitoring will not be required during activities that do not contact impacted media or disturb the sub surface at the project location. This CAMP details real-time monitoring activities to be carried out during specified construction activities, to minimize the potential for neighborhood exposure to airborne hazards resulting from particulate (dust) emissions during intrusive construction work.
- D. This CAMP addresses the methods that will be implemented to monitor particulate levels at the perimeter of the work area. In the event elevated particulate levels are encountered, this CAMP identifies the steps that shall be taken by the Contractor to rectify the elevated levels.
- E. The CM will make the final determination regarding implementation of the dust suppression procedures detailed below.
- F. Methodology
1. The construction activities at the Site will consist of primarily earthwork as it relates to site preparation, foundation and utility excavations, solid waste transport and site grading. The following programs will be implemented to monitor and, if necessary, control the potential migration of fugitive dust from the site.
- G. Perimeter Monitoring
1. Each day of fieldwork during activities that have the potential to disturb impacted media, a wind sock or flag provided by the Contractor will be used to monitor wind direction in the work areas (excavation, soil staging, and soil grading areas). Based upon daily wind conditions the CM shall identify three temporary monitoring points, at the perimeter of the Site or work area, one up and two down wind of the work areas.
 2. Real time particulate monitoring will be performed by the CM utilizing DustTrak™ Model 8520 aerosol monitors or equivalent. Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the site at the temporary particulate monitoring stations. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. When there are sufficiently wet site conditions, such as during or immediately after precipitation, particulate monitoring may be temporarily suspended.
 3. Each day, prior to the commencement of the intrusive earthwork work, the CM will measure and record background concentrations of particulate as 5 minute averages at the identified upwind and downwind locations with the typical construction equipment engines and any other gas/diesel engines operating on Site. In the event that wind conditions change in the course of the day, monitoring locations will be adjusted to the new conditions.

4. Throughout the day, or for the duration of work that disturbs impacted media, measurements will be recorded at approximate 120 minute intervals. The recorded 5 minute averages will be used to determine the difference in value between upwind and downwind particulate concentrations. Work shall be temporarily halted and engineering controls, detailed in this document shall be implemented if the difference between the upwind and downwind particulate ambient air measurements exceeds $100 \mu\text{g}/\text{m}^3$. If work is required to be temporarily halted, the Contractor shall implement dust suppression methods.

H. Dust Suppression

1. If the monitoring at the Site Perimeter, as described in this document, indicates an upwind/downwind difference in fugitive particulate emissions greater than $100 \mu\text{g}/\text{m}^3$, the Contractor shall implement dust control measures as directed by the CM that may include the following methods:
 - Apply water on haul roads.
 - Wetting equipment and excavation faces.
 - Restricting vehicle speeds to 10 mph.
 - Hauling material in properly tarped containers.
 - Spraying water in buckets during excavation and dumping.
 - Reducing excavation size and/or number of excavations.
2. The Contractor shall have an onsite designated water truck or other dust suppression system. The Contractor shall obtain any necessary permits for hydrant usage, etc.
3. If, after implementation of dust suppression techniques, downwind particulate levels are greater than $150 \mu\text{g}/\text{m}^3$ 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 particulate concentration to within $150 \mu\text{g}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

I. Record Keeping and Quality Control

1. Each day, prior to the commencement of the intrusive earthwork work the particulate monitoring equipment will be calibrated and recorded on a daily log sheet per instrument manufacturer's specifications by the CM.
2. Perimeter air monitoring readings and/or datalogs will be recorded on a daily log sheet including the location, date and time, and instrument reading. All 15-minute readings will be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.
3. If there are particulate measurements that are above the threshold outlined in this CAMP, corrective action measures, if applicable, will be recorded for each occurrence.

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END OF SECTION 02101

ENVIRONMENTAL MANAGEMENT OF IMPACTED MEDIA

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