CONSTRUCTION COMPLETION REPORT
Lakeview Amphitheater Project
Geddes, County of Onondaga, New York

Prepared for:

Onondaga County

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CERTIFICATION

This Construction Completion Report (CCR) describes the construction of the Lakeview Amphitheater including the vapor intrusion (VI) mitigation system and soil covers placed in the Amphitheater area in accordance with the December 2, 2014 Record of Decision (ROD) Operable Unit 1 of the Solvay Wastebeds 1-8 Subsite of the Onondaga Lake Superfund Site Town of Geddes, Onondaga County, New York (ROD, NYSDEC and EPA, 2014).

Certifications that the implementations of the construction activities were completed in substantial conformance with the DER-approved Remedial Work Plan, were executed by two separate NYS registered professional engineers. The Interim Construction Completion Report submitted by Gilbane in August of 2015 included certification by Fisher Associates, P.E., L.S., L.A., D.P.C (enclosed as Appendix T of the CCR) that affirmed the cover placement was performed in accordance with the applicable work plans. Post construction remediation of the storm water system was certified in September 2018 by D&B Engineers and Architects, P.C. (and is included as Appendix S of the CCR).

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LIST OF ACRONYMS

Acronym	Definition
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
BO	Box Office
BOH	Back of House
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
CHASP	Community Health and Safety Plan
CM	Construction Manager
CFR	Code of Federal Regulations
CQA	Construction Quality Assurance
CY	Cubic Yards
DEC	Department of Environmental Conservation
DOSH	Division of Safety and Health
EC	Engineering Control
EOR	Engineer of Record
EPA	Environmental Protection Agency
EPA ID	EPA Superfund Site Identification Number
FOH	Front of House
GSP	Gilbane's (Onondaga Lake Amphitheater) Safety Program
HVAC	Heating, Ventilating and Air Conditioning Systems
IC	Institutional Control
IRM	Interim Remedial Measure
MEP	Mechanical, Electrical, and Plumbing
MG	Milligrams
MP	Management Plan
MW	Monitoring Well
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Federal Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PEL	Permissible Exposure Level
PM	Project Manager
PM10	Particulate Matter Less Than 10 Microns
PPM	Parts per Million
PSP	Project Safety Plan
RAOs	Remedial Action Objectives
ROD	Record of Decision
SCOs	Soil Cleanup Objectives
SHSO	Site Health and Safety Officer
SMP	Soil Management Plan
SSHP	Site Safety and Health Plan
SWPP	Stormwater Pollution Prevention
TVOCs	Total VOCs
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

FINAL CONSTRUCTION COMPLETION REPORT (CCR)

1.0 BACKGROUND AND SITE DESCRIPTION

Gilbane Building Company (Gilbane) of Syracuse, New York entered into a contract on November 12, 2014 with the County of Onondaga, New York for the construction of an outdoor event center (Lakeview Amphitheater or Amphitheater) on county-owned land on the western shore of Onondaga Lake, in the Town of Geddes. This Construction Completion Report (CCR) describes the construction of the Lakeview Amphitheater including the vapor intrusion (VI) mitigation system and soil covers placed in the Amphitheater area in accordance with the December 2, 2014 Record of Decision (ROD) Operable Unit 1 of the Solvay Wastebeds 1-8 Subsite of the Onondaga Lake Superfund Site Town of Geddes, Onondaga County, New York (ROD, NYSDEC and EPA, 2014). For this document "Site" references the area of the Amphitheater and associated structures only.

In addition to the contract executed with Onondaga County, Gilbane entered into a three-party contract agreement with Onondaga County and Honeywell International, Inc. (Honeywell). The three party contract is specific to implement the NYSDEC-Approved Remedial Action Plan for Wastebeds 1-8 for environmental remediation work performed in connection with the Lakeview Amphitheater in accordance with the 2014 ROD.

An electronic copy of this CCR with all supporting documentation is included as Appendix A.

On August 31, 2015 NYSDEC approved an Amphitheater Interim Construction Completion Letter dated August 28, 2015 (See Appendix F) Based on this letter, the Amphitheater Project Area was deemed suitable for its intended use as described in the County's October 6, 2014 change of use notification.

The Amphitheater Site is located in the town of Geddes, NY on Lakeview Point on the western shore of Onondaga Lake. The Site is located in the County of Onondaga, New York and is identified as a portion of the Tax Map Numbers 029.-01-01.0. The Site is situated on an approximately 40-acre area bounded by Onondaga Lake to the north, and east, and the NYS Fair Orange Parking Lot to the south). The boundaries of the Site are presented in Appendix B.

The Lakeview Amphitheater Project (the Project) is constructed on the Wastebed 1-8 Site, a unique formation in that it consists primarily of manmade land that was constructed in the early 1900's by the Solvay Process Company as a repository for wastes generated as a result of the production of soda ash. The waste material, known as Solvay Process Waste, is a chalky material consisting mainly of calcium carbonate with gypsum, sodium chloride, and calcium chloride. The Wastebeds themselves were formed as a series of lagoons into which Solvay Process Waste was pumped as liquid slurry from approximately 1916 to 1943. The slurry was decanted over time forming the upper strata beneath the Project site. The depth of this material across the Wastebed 1-8 Site ranges typically between 60 and 70 feet and is underlain by native soil material. The western portion of the Wastebed 1-8 Subsite also includes a former steel mill landfill, which sits atop the Solvay Waste and was capped and closed in 1989.

Contaminants of concern identified in the soil and groundwater within the Wastebeds 1-8 Site and present at the Amphitheater Site include heavy metals, volatile organic compounds (VOCs), and semi-volatile organic compounds. Specific contaminants include: benzene, toluene, ethylbenzene, and xylene (BTEX) compounds; polycyclic aromatic hydrocarbons (PAH's); inorganics (arsenic, barium, chromium, mercury, and nickel); and, pesticides.

Onondaga Lake was designated as a Superfund site (EPA ID: NYD986913580) in December, 1994. The Onondaga Lake Superfund site includes the Onondaga Lake Bottom Subsite and a number of other subsites, which are defined as any site that is situated on Onondaga Lake's shores or tributaries, that has contributed contamination to, or threatens to contribute contamination to, Onondaga Lake. The Wastebed 1-8 Site is one of the subsites. The Wastebed 1-8 Site is also listed on the New York State Registry of Inactive Hazardous Waste Sites as a State Superfund Class 2 site (NYS Registry: 734081). Specifically, the Amphitheater Project site is located predominately within the areas known as Wastebeds 5 and 6; however the entrance promenade also traverses a portion of Wastebeds 1 through 4. Wastebed 5 also contains the Crucible Landfill which is a former steel mill solid waste fill site which covers an area of approximately 20 acres on Wastebed 5. These wastes included slag, construction and refractory debris, boiler house ashes, coolant swarves, mill scale, treatment plant sludge, waste caustic solids, acid pickling sludges and air pollution dust. This landfill was closed and is capped with an engineered cover system which includes a 60 mil HDPE liner and a fabric/soil composite cover.

The environmental conditions observed at the Site are related to historical industrial activities which occurred there as well as former and current land uses, as referenced in the report entitled, "Revised

Remedial Investigation (RI) Wastebeds 1-8 Site, Geddes, NY, August 2014", prepared on behalf of Honeywell by O'Brien and Gere Engineers (O'Brien & Gere, 2014).

Located in Syracuse, New York, the Onondaga County Lakeview Amphitheater (Lakeview Amphitheater) is an outdoor performance and event complex capable of servicing over 17,500 patrons. Included in addition to the back-of-house, stage-house, pavilion, and loading dock are three outer buildings (two restroom facilities and a box office). Associated infrastructure included access roadways and site utilities (power, water, sanitary sewer, drainage, and data/communications).

2.0 SUMMARY OF SITE REMEDY

2.1 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI conducted by Honeywell (O'Brien & Gere, 2014) the following Remedial Action Objectives (RAOs) were identified for the Wastebeds 1-8 Site. The RAOs were established for OU1 and defined in the 2014 ROD.

- Prevent, ingestion/direct contact with soil/fill material/Solvay waste in surface and subsurface soil above levels that would result in unacceptable human exposure;
- Prevent or minimize inhalation of or exposure to contaminants volatilizing from contaminated soil/fill material/Solvay waste that would result in unacceptable human exposure. In the event that buildings are constructed, mitigate impacts to public health resulting from soil vapor intrusion into those buildings, as may be warranted;
- Prevent or minimize, adverse ecological impacts to biota from ingestion/direct contact with soil/fill material/Solvay waste causing toxicity or impacts from bioaccumulation through the terrestrial food chain;
- Prevent or minimize the further migration of contaminants that would result in groundwater, sediment, or surface water contamination.

Gilbane adhered to the Soil Cleanup Objectives (SCOs) that were established in the Record of Decision (for OU1 of the Solvay Wastebeds 1-8 Subsite) that describes the SCOs for the subsite (see Appendix C). As an overview, SCOs are contaminant-specific remedial action objectives for soil based on a site's current,

intended, or reasonably anticipated future use. SCOs are specific to land use categories, including sites where no restrictions would be placed on use (unrestricted), as well as for sites where land use restrictions or engineering controls may limit possible exposures (commercial and industrial). SCOs were developed for these three land use categories, as well as two additional categories - residential and restricted residential.

2.2 DESCRIPTION OF SELECTED REMEDY

In accordance with NYSDEC and EPA in consultation with the New York State Department of Health (NYSDOH), the selected remedy for the Wastebeds 1-8 Site (2014 ROD) consists of a cover system that would be protective for current and/or reasonably anticipated future land uses (e.g., active and passive recreational uses). In general, the remedy consists of a two-foot thick soil cover over areas where active recreation is planned or where appropriate to protect ecological resources; and, a one-foot thick soil cover where passive recreation is planned. Other areas of the Site, such as in heavily wooded or steeply sloped areas would be covered with a vegetation enhancement layer to promote growth of vegetation.

The 2014 ROD and additional information regarding the Onondaga Lake Superfund site may be found at http://www.dec.ny.gov/chemical/37588.html and/or at http://semspub.epa.gov/src/collection/02/SC31936.

2.3 AMPHITHEATER CONSTRUCTION OBJECTIVES

Design and construction of the surface features (amphitheater, buildings, sidewalks, cover systems, retention basins, etc.) and subsurface features (VI mitigation system, piling, etc.) of the Amphitheater Project were coordinated with the technical staff of Honeywell and the regulators (New York State Department of Environmental Conservation [NYSDEC] and Onondaga County) to ensure they were implemented in conjunction with both the existing Interim Remedial Measure (IRM) and Operable Unit (OU) 1 Site remedies. (IRM and OU1 Site Remedies may be found on http://www.dec.ny.gov/chemical/37558.html). The RAOs outlined in Section 2.1 of this CCR were part of the design and construction objectives as they pertain to the Amphitheater Site.

3.0. SUMMARY OF AMPHITHEATER CONSTRUCTION

This CCR describes the construction of the Lakeview Amphitheater and presents Engineering Certification of the construction performed in compliance with the 2014 ROD (NYSDEC and EPA , 2014).

Associated infrastructure includes access roads/driveways and site utilities (power, water, sewer, electric, data communication and natural gas). Building design features included the installation of a Soil Vapor Mitigation System to protect the buildings from potential soil vapor intrusion (SVI). See Section 4.11 in this CCR and Appendix D that address the potential for SVI issues consistent with the requirements of the 2014 ROD have been included in the construction (see Section 2.2 of this CCR.)

A cover system has been placed over the Site to prevent exposure to remaining contamination in soil/fill. This cover system is comprised of a minimum of one (1) foot of clean soil/fill, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. The appropriate thickness is a function of the characteristics and use of each area. See Appendix E Site Cover Plan and Appendix K Soil Cover Placement. A total of approximately 130,000 CY of clean fill were brought onto the Site for the cover system. In accordance with the Wastebeds 1-8 OU1 ROD, vegetated covers will be placed by Honeywell on other areas of the Site.

3.1 DESCRIPTION OF AMPHITHEATER CONSTRUCTION

The Amphitheater construction was completed in multiple phases described in Section 4.4 of this CCR.

All construction work and associated activities were completed in accordance with the work plans approved by Onondaga County. Work Plans approved by NYSDEC for this work are listed in Section 4.1.1 of this document. Major components of the construction included:

- Clearing and grubbing
- Excavation of soil fill material (see note below)
- Building temporary access roads

- Relocation of Honeywell's Force Main
- Installation of Bio-Retention Basins
- Construction of the sub-structure
- Installation of a Vapor Mitigation System
- Construction of the Amphitheater
- Construction of the Front of House (FOH) and Back of House (BOH)
- Grading and backfilling
- Cover placement
- Site restoration

Note: Wastebeds 1-8 was used historically as a settling basin for Solvay waste, an inert material consisting largely of calcium carbonate, calcium silicate, and magnesium hydroxide. Additional wastes that were periodically co-disposed (from approximately 1916 to 1943) during settling basin operations include former Allied Chemical Main Plant byproducts including benzene, toluene, ethyl benzene, and xylenes (BTEX); naphthalene and other polycyclic aromatic hydrocarbons (PAHs); and phenol. The term "soil/fill material" throughout this document refers to Solvay waste, other Allied wastes as described above, fill materials (e.g., gravel) that have been placed at the Site, and soil that has formed above the Solvay waste.

Although the Crucible Landfill is outside the proposed Limits of Work (except for monitoring points [e.g., wells, inclinometers] and portions of the surface water drainage system), the design and construction of the Amphitheater Project took into account the conditions described in the 1986 Crucible Landfill Closure Plan and Post Closure Plan.

Routine coordination meetings were held with the Honeywell Remediation team and NYSDEC to coordinate all phases of work and to document construction quality for the affected elements of the Site remedies (IRM and OU1 Site).

3.2 CONSTRUCTION CONTRACTS

Gilbane was ultimately responsible for completing construction of the Amphitheater Project in accordance with their 2014 contract with Onondaga County and Honeywell, and in accordance with the Wastebeds 1-

8 OU1 2014 ROD. The following subsections describe the roles and responsibilities of the other entities involved in the Amphitheater Project.

3.2.1 Regulatory Agency

The NYSDEC was the lead agency for the review and approval of remedial activities associated with the Amphitheater Project in accordance with the 2014 ROD. Mr. Tracy Smith was the Project Manager for NYSDEC. During construction, Mr. Smith attended progress meetings with the Gilbane Project team and conducted site visits. The construction team coordinated the design and field modifications with the NYSDEC. Agency approval correspondences are provided in Appendix F NYSDEC Approval Letters.

3.2.2 Design-Build Construction Contractors

Gilbane was the contractor selected by the County of Onondaga to carry out the design and construction activities for the Amphitheater Project. Gilbane provided full-time construction management and oversight of project activities. Some of these responsibilities included: management of construction sub-contractors; documentation of daily work activities; reviews of subcontractor submittals; providing engineering support for design and field changes; administration of quality assurance oversight; implementation of all Site safety plans; testing through laboratories; and coordinating reviews of submittals for the Amphitheater Project; coordination with the NYSDEC and other regulatory agencies; and, conducting Project meetings.

C&S Engineers, Inc. (C&S) provided on-site representation for the construction activities on behalf of Onondaga County and acted as the liaison with government agencies. Gilbane coordinated regularly with C&S personnel including Charles Brooks, Robert Duclos, and Robert Palladine.

3.2.3 Other Parties

Honeywell was simultaneously conducting remedial activities for the Onondaga Lake Superfund Site and the Wastebeds 1-8 Site. Gilbane coordinated closely with Honeywell's PM Stephen Miller and his staff to ensure that all construction activities associated with the Amphitheater Project were conducted in accordance with the 2014 ROD. Safety was of particular concern with sub-contractors for both Gilbane and Honeywell working in such close proximity.

4.0 CONSTRUCTION ACTIVITIES PERFORMED

Remedial construction activities completed at the Site were conducted in accordance with the NYSDEC approved work plans. Construction of the Amphitheater Site was completed in accordance with the 2014 ROD and per the approved Work Plans. The following subsections describe the remediation-related construction work performed to complete the Amphitheater Project.

4.1 GOVERNING DOCUMENTS

Construction was completed under the approved work plans presented in the following sub-sections 4.1.1 through 4.1.6. Agency-approved correspondence regarding these documents is provided in Appendix F.

4.1.1 Final Work Plans

- *Site Work Plan (SWP) Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane, April 2015)
- *Community Air Monitoring Plan (CAMP), Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane January, 2015a)
- *Community Health and Safety Plan (CHSP), Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane January, 2015b)
- *Site Cover Plan,* (Fisher Associates, P.E., L.S., L.A., D.P.C., Revised: August 2015)
- *Soil Management Plan (SMP), Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane, February, 2015)
- *Stormwater Pollution Prevention Plan (SWPPP Rev. 5)(QPK Design, LLP, 2015)*
- *Vapor Mitigation Work Plan, Onondaga County Lakeview Amphitheater Project, Version 4* (Benchmark Environmental Engineering & Science, PLLC, June 30, 2015)
- *Pile Installation Work Plan*, (Gilbane, March 2, 2015)
- *Revised Storm Water Collection and Conveyance System Work Plan,* (D&B Engineers and Architects, P.C., October 19, 2017

Additionally, the *Monitoring Well Summary Report, Lakeview Amphitheater Project, Geddes, Onondaga County, New York* (Gilbane, Revised: August 2016) is included as an Appendix and was referenced to address modifications to existing monitoring wells (onsite).

4.1.2 Site Specific Project Safety Plans

- The 2015 SSHP is project-specific developed to: address safety and health-related hazards anticipated to be encountered during project activities; and, establish mandatory safety practices and procedures for the Project. The SSHP and Gilbane's Onondaga Lake Amphitheater Safety Program (GSP) were developed in accordance with the Code of Federal Regulations (CFR) Title 29, Part 1926, Safety and Health Regulations for Construction; 29 CFR 1910.120, Hazardous Waste Operations (as general guidance); New York's Division of Safety and Health (DOSH); other applicable regulations; and, good industrial hygiene and safety practice. In addition, all subcontractors prepared and submitted their own PSPs to further define their specific tasks. See Appendix G;
- The 2015 CHASP was developed to address potential community health and safety issues related to the Amphitheater construction activities. The primary goal of this plan was the health and safety of members of the public. (See Appendix H);
- The 2015 CAMP was developed to describe air monitoring during ground intrusive construction activities for the Amphitheater Project. (See Appendix I).

All construction activities performed for this Project were in full compliance with governmental requirements, including site and worker safety requirements mandated by the Federal Occupational Safety and Health Administration (OSHA). The SSHP was complied with for all construction and invasive work performed at the Site.

4.1.3 Soil Management Plan (SMP)

Management of soil and other materials was governed by the requirements described in Appendix J. Soil Management Plan (SMP). The SMP describes procedures for handling, staging, transporting, and disposing of impacted material during ground intrusive Amphitheater construction project activities. Controls that were applied to these efforts to assure effective, nuisance free performance in compliance with all applicable Federal, State and local laws and regulations included:

- All personnel working on-site complied with OSHA training requirements in accordance with 29 CFR 1910.120 and were familiar with the Gilbane 2014 HASP;
- Maintenance of spoils pile by applying posi-shield for dust control, as necessary;

- Observing excavated material for any physical qualities (staining, change in substance, odors etc.) that might indicate potential contamination;
    - Notifying the County if any such material (described above) was found;
    - Halting of all excavations until a determination was made as to whether or not the material was hazardous;
    - Sampling and testing for characterization of suspect material as appropriate. *Note:* No material with physical characteristics indicating contamination was identified during excavation activities at the Site.
- Proper handling materials to prevent cross-contamination of clean materials;
- Minimizing tracking of contaminants to uncontaminated areas;
- Minimizing generation of dust on the Site;
- Meeting the soil and backfill requirement in 6NYCRR Part 375-6.7(d) for all materials used for final cover in remedial areas;
- Removing water that accumulated within active excavation areas to assist in dewatering soil and to facilitate implementation of the soil excavation;
- Decontaminating equipment.

4.1.4 Site Cover Plan

The Site Cover Plan details the procedures followed for importing soil to the Site during each of the four phases of construction. The soil (as well as vegetative material) was used to construct the soil covers in remedial areas designated in the December 2014 Record of Decision (ROD). The soil was also used as excavation backfill. All soil used on the Amphitheater project consisted of imported material which met the requirements for soil covers and backfill in 6 NYCRR Part 375-6.7(d). The material met the SCOs for the appropriate resources that are to be protected. The material will promote the growth and sustainability of the vegetative covers being established. See Appendix B and Appendix E.

Soil core sampling was conducted intermittently following placement of the cover system in coordination with NYSDEC. Core samples were collected from depths of either 12 or 24 inches below ground surface from various locations within the Amphitheater Site in the presence of NYSDEC and C&S Companies. The intent of the core sampling was to physically verify the depth of cover over the native material. See Appendix K.

4.1.5 Soil Vapor Mitigation Work Plan

The Soil Vapor Mitigation Work Plan was completed following a review of the Honeywell 2014 RI and conceptual and final design plans for the Amphitheater. Benchmark Environmental Engineering Science (Benchmark) prepared the Revision 4 Soil Vapor Intrusion Mitigation Evaluation and their approach to mitigate potential soil vapor intrusion (SVI). Consistent with the approved Vapor Mitigation Work Plan (dated June 25, 2015 and approved by NYSDEC on June 30, 2015), a passive SVI system was installed consisting of a vapor barrier to protect the buildings from potential SVI. The system was installed beneath the BOH and FOH building area, in the restrooms, the Box Office and open air pavilion. Heating, ventilating, and air conditioning (HVAC) equipment have been sized to provide, and are operating in, a positive pressure condition inside of the Amphitheater building as an additional mitigation measure. See Appendix D Soil Vapor Mitigation Work Plan for construction details (work performed in accordance with Appendix D). Post mitigation air sampling will be conducted during the upcoming fall and winter heating season to verify the initial sampling results and determine whether any additional actions might be necessary to address exposures to SVI as appropriate. Results and recommendations of post mitigation air sampling will be submitted to NYSDEC and NYSDOH. Reference the Interim Site Management Plan prepared by C&S Engineers, dated April 2016 for further post occupancy requirements.

4.1.6 Stormwater Pollution Prevention Plan (SWPPP)

The erosion and sediment controls for all construction activities were governed by the requirements presented in the *New York Standards and Specifications for Erosion and Sediment Control* (Blue Book 2005); *The New York State Stormwater Management Design Manual*, August 2010 or current release; and the Amphitheater Project site-specific SWPPP approved by NYSDEC in 2015.

The stormwater management facilities described in the SWPPP and implemented at the Site include vegetated swales to convey and treat surface runoff, bio-retention areas and other filtering practices that include subsurface collection pipes and impermeable liners to minimize stormwater infiltration. The overall stormwater design collects runoff through stabilized outfalls into Onondaga Lake and Nine Mile Creek. A portion of runoff will flow to low areas within the Site itself and infiltrate into the subsurface.

4.1.7 Community Air Monitoring Plan (CAMP) Monitoring Results

The objective of this Community Air Monitoring Plan (CAMP) was to protect the public during the ground intrusive construction activities for the Amphitheater Project. Perimeter air monitoring evaluated potential

air quality impacts from construction activities at the Site for VOCs, odors, and dust. The air monitoring program described in this Section was designed using the NYSDOH Generic Community Air Monitoring Plan (CAMP) guidance. See Appendix I.

Exceedences of the VOC and particulate action levels were reported during construction through email and text message alerts. In the event there was an alert the construction manager would respond to the alert to determine a corrective action. Between February 2nd and April 25th the site ran a total of five (5) monitoring stations due to the amount of site work that was taking place; one (1) Upwind, three (3) Downwind, and one (1) Work Area. Between April 25th and the completion of the project the air monitoring stations were reduced to a single Upwind and a single Downwind (per CAMP) unit as site work decreased and in turn decreased the potential for airborne contaminants and particulates. Air monitoring was conducted along and within the work site perimeter boundary line. Air monitors were located at the beginning of each work day based on the predicted predominant wind direction for the day. Daily monitoring locations were recorded on Station Location Maps found in Appendix I). Air monitoring locations were moved during the day if the predominant wind direction shifted into a new quadrant or if the work area changed. Site wind conditions were monitored each day by a portable on-site weather station. During construction activities particulate and VOC levels were recorded on the air monitors and monitored in real time through a remote monitoring system and cloud technology.

4.1.7.1 VOC Monitoring

VOC Monitoring was done using MiniRae 3000's that were calibrated on a daily basis using an Isobutylene (C4H8) 100 PPM calibration gas. The bullets below detail the three (3) levels of alert and the response taken to each alert.

- Investigation Level - If the downwind TVOC level was 2 ppm above the upwind (background) level for a 15-minute period, then the emission sources were investigated and evaluated.
- Control Level - If the downwind TVOC level was 3 ppm above the background level for a 15-minute period, controls or countermeasures were employed on the operation activity(ies) causing the concentration increase. Controls/countermeasures included modifications to work activities. Work continued with controls/countermeasures provided that downwind VOC levels did not exceed 3 ppm above the background level.
- Work Perimeter Limit - If the downwind TVOC level exceeds 5 ppm above the background level for the 15-minute period, work activities were temporarily halted or restricted and monitoring

continued. If the TVOC level readily decreased (per instantaneous readings) below 5 ppm (above background), work activities resumed with continued monitoring. If the downwind TVOC level persisted in excess of 5 ppm (above background), work activities continued to be halted, the source of vapors identified, controls/countermeasures taken to abate emissions, and monitoring continued.

4.1.7.2 Particulate Monitoring

Particulate (dust) monitoring involves particulates less than 10 Microns (PM10). The particulate monitoring was done using Dust Trak II Aerosol Monitor that was calibrated daily. The bullets below detail the two (2) levels of alert and the response taken to each.

- Control Level - If the downwind PM10 level was 100 µg/m3above the upwind level for a 15-minute period or if airborne dust was observed leaving the site perimeter, then additional dust suppression techniques were employed. Work continued with dust suppression techniques provided that downwind PM10 levels did not exceed 150 µg/m3 above the upwind level and provided that no visible dust was migrating from the work area.
- Work Perimeter Limit - If, after implementation of dust suppression techniques, downwind PM10 levels were greater than 150 µg/m3 above the upwind level, work was stopped and a re-evaluation of activities initiated. Work resumed provided that dust suppression measures and other controls were successful in reducing the downwind PM10 concentration to within 150 µg/m3 of the upwind level and in preventing visible off-site dust migration.

4.1.7.3 Odors

Historical surface and subsurface soil sampling in the project area identified the presence of volatile organic compounds (VOCs) including Benzene, Toluene, Ethylbenzene and Xylene (BTEX), polycyclic aromatic hydrocarbons (PAH's); Inorganics; and pesticides. Further, hydrogen sulfide (H2S) may be present in the marl layer that is present at various depths across the site. As a result, ground-intrusive excavation associated with construction activities had the potential to release volatile air emissions and odors.

4.1.8 Monitoring Well Summary Report

The objective of this report is to document Monitoring Wells identified and abandoned (i.e. for decommissioning) or modified. The methodology selected for decommissioning, the implementation

procedures, and documentation process for the proper abandonment were in accordance with NYSDEC guidelines.

The scope of activities that were performed under the Modification Report includes the following:

- decommissioning selected Monitoring Wells using the grout-in-place methodology;
- completing applicable site restoration activities; and
- properly documenting the decommissioning effort.

The overall objective of the decommissioning effort was to remove any potential for adverse environmental effects due to unprotected, neglected, and/or improperly abandoned Monitoring Wells.

See Appendix P Monitoring Well Summary Report.

4.2 REMEDIAL PROGRAM ELEMENTS

4.2.1 Roles and Responsibilities

Roles and responsibilities of the team members include:

- **NYSDEC**: The NYSDEC performed oversight of the remedial components of the amphitheater construction. . The NYSDEC PM was the point of contact for questions and concerns related to the remedial components of the amphitheater construction.
- **Gilbane**: Gilbane was responsible for ensuring that construction was completed in accordance with the Contract Documents and approved Final Design. Gilbane interfaced directly with NYSDEC and Onondaga County staff as necessary.

  The Gilbane Construction Manager (CM) was responsible for completing of the construction work. The CM communicated directly with the PM for project needs and monitored on-site construction activities.

The Gilbane full-time, on-site Site Health and Safety Officer (SHSO) was responsible for implementation of the Site Safety and Health Plan including the Community Health and Safety Plan and to ensure that all work was performed in compliance with the SSHP and applicable regulations. The SHSO also implemented the air monitoring program and reported data, performed routine safety inspections, and reported and investigated near misses or incidents.

Gilbane and consultants (including architects and engineers) provided engineering support as needed and reviewed construction submittals that required engineering interpretation.

The Gilbane Construction Quality Assurance (CQA) staff was on-site during the construction. Their responsibilities included making daily field observations to ensure that the construction, installation, materials, workmanship and QC performed by the subcontractors were conducted in accordance with the approved design drawings and specifications and preparing reports.

The CQA Manager was also responsible for conducting CQA testing (or working with an independent testing subcontractor). The Gilbane CM and CQA Manager were on-site during the construction and made daily field observations and prepared reports.

4.2.2 Construction Contractor

Gilbane was the Construction Contractor selected by the County of Onondaga to perform the construction of the Amphitheater. Project personnel for Gilbane included:

- Mark Astheimer (Project Executive, Gilbane)
- Matthew Simone (Project Manager, Gilbane)
- Charles Reinhardt (General Superintendent, Gilbane)
- Thomas Gallagher (Design Team Manager, Westlake, Reed, Leskosky [WRL])
- Matt Gerstung (SSHO, Gilbane)

4.2.3 Onondaga County Oversight

C&S Companies occupied an on-site office and provided project oversight on behalf of Onondaga County. In addition C&S performed stormwater inspections and prepared reports as described in the SWPPP**.** The

following subsections identify Gilbane's subcontractors and consultants who performed the design construction.

4.2.4 Consultants

The consultants listed below provided support and completed activities under subcontract to Gilbane for the project.

- **Westlake, Reed, Leskosky (WRL) -** completed the architectural design activities and provided technical oversight for the Pavilion and Stage House and mechanical, electrical, and plumbing (MEP) for all structures.
- **QPK Design (QPK) -** completed architectural design activities along with **John P. Stopen Engineering LLP** (EOR) including the BOH, restrooms and Box Office (BO) and structural concrete in all buildings. QPK (registered landscape architect) completed landscape architecture design, site grading, and drafted the Stormwater Pollution Prevention Plan (SWPP).
- **Fisher Associates**, P.E, L.S, L.A, D.P.C of Rochester New York - completed activities including providing the mechanical site utility design and was the EOR for the Site Cover Plan.
- **John P. Stopen Engineering, LLP-** completed geotechnical and foundation activities (evaluated and recommended project foundation systems); designed all concrete and structural foundations and slabs.
- **Benchmark Environmental Engineering Science, LLC (Benchmark)** - prepared the Soil Vapor Mitigation System Report.

4.2.5 Subcontractors

Key subcontractors as they pertain to the scopes of work associated with the Construction Completion Report are as follows:

- Spectrum Analytical - Performed analyses of the imported fill material
- Northeast Contractors Inc. – Earthwork (Prime Earthwork Contractor)
- WD Malone Trucking & Excavating, Inc.- Earthwork
- Maxim Construction Services – Earthwork
- Ricelli Trucking – Material Import
- LeChase Construction Services – Concrete

- Murnane Building Contractors - Concrete
- H.F. Darling – Piles Installation

4.2.6 Contact Information

The following contact information is for the pertinent firms (and individuals) associated with the Amphitheater's construction and overall remediation of the area in entirety:

Governing Agencies

Organization:	New York State Department of Environmental Conservation (NYSDEC)
Contact:	Tracy A. Smith, Project Manager
Address:	625 Broadway, 12th Floor, Albany, NY 12233
Telephone:	(518) 402-9676

Organization:	United States Environmental Protection Agency (EPA)
Contact:	Robert Nunes
Address:	290 Broadway, 20th Floor, New York, NY 10007-1866
Telephone:	(212) 637-4254

Regulatory Agency

Organization:	New York State Department of Health
Contact:	Mark Sergott, Project Manager
Address:	Corning Tower, Room 1787 Albany, NY 12237
Telephone:	(518) 402-7860

Owner

Organization:	Onondaga County
Contact:	Travis Glazier, Director, Onondaga County Office of the Environment
Address:	John Mulroy Civic Center, 14th Fl., 421 Montgomery St., Syracuse, NY 13202
Telephone:	(315) 435-2647

Remediation Contract

Organization:	Honeywell
Contact:	Stephen Miller, Design & Construction Manager
Address:	301 Plainfield Road, Suite 330, Syracuse, NY 13212
Telephone:	(315) 552-9749

Owner's Representative

Organization:	C&S Engineers, Inc.
Contact:	Chuck Brooks, Project Manager
Address:	499 Col. Eileen Blvd., Syracuse, NY, 13212
Telephone:	(315) 455-2000

Design Build Contractor

Organization:	Gilbane Building Company
Contact:	J. Mark Astheimer, Project Executive
Address:	333 West Washington Street, Suite 620, Syracuse, NY 13202
Telephone:	(518) 472-4817

Earthwork Contractor

Organization:	Northeast Contractors Inc.
Contact:	Harry M. Sergentanis, Executive Vice President
Address:	100 Moody Street, Ludlow, MA 01056
Telephone:	(413) 589-7201

Architect of Record

Organization:	Westlake Reed Leskosky, LTD
Contact:	Tom Gallagher, Principal
Address:	1422 Euclid Avenue, Suite 300, Cleveland, OH 44115
Telephone:	(216) 522-1350

Landscape Architect:

Organization:	QPK Design
Contact:	David Harding, Partner
Address:	450 South Salina Street, Room 500, Syracuse, NY 13201
Telephone:	(315) 474-7806

Geotechnical Engineer:

Organization:	John P. Stopen Engineering, LLP
Contact:	James P. Stewart, Partner, Geotechnical Engineer
Address:	450 S Salina St, Suite 400, Syracuse, NY 13201
Telephone:	(315) 472-5238

Utilities Engineer:

Organization:	Fisher Associates, P.E, L.S, L.A, D.P.C
Contact:	Joseph Dorety, Environmental Project Manager
Address:	135 Calkins Road, Suite A, Rochester, NY 14623
Telephone:	(585) 334-1310

Soil Vapor Consultant:

Organization:	Benchmark Environmental Engineering Science, LLC
Contact:	Thomas Forbes, Principal Engineer
Address:	2558 Hamburg Turnpike, Suite 300, Buffalo, NY 14218
Telephone:	(716) 856-0599

4.2.7 Site Preparation

Site preparation began on January 15, 2015 with the initial mobilization to the Site and substantially completed on August 24, 2015. Fencing, erosion and sedimentation controls, and other site preparation related activities are discussed in Section 4.4.1 of this CCR.

- Utility marker layout – All existing utility locations were provided to Gilbane by Honeywell and the NY Utility Dig Number. Gilbane marked the locations. Tracing of potential underground utilities was also performed as necessary prior to excavation or earthwork;

- Pre-construction meeting with NYSDEC – In January of 2015, planning meetings were attended by Gilbane and Onondaga County prior to beginning on-site work. A pre-construction meeting was held with NYSDEC, C&S Companies, and contractors in January 2015. Gilbane continued to hold various pre-construction and kick-off meetings with contractors, trades and the owner through April 2015;
- Documentation of agency approvals required by the Construction Contract and 2014 ROD is included in Appendix F;
- All State Environmental Quality Review Act (SEQR) requirements and all substantive compliance requirements for attainment of applicable natural resource or other permits were conducted by C&S prior to construction of the Amphitheater Project.

4.2.8 General Site Controls

- Site Security – Gilbane and its subcontractors coordinated locking of site trailers and perimeter gates daily and during non-working hours;
- Site Access – Access to the Site was limited to the entrance for construction. At no time were contractor personnel or vehicles allowed to obstruct traffic or entry driveways. Each contractor provided flag person (s) when receiving deliveries only;
- Job Site Record Keeping – Gilbane maintained records of personnel present at the site on a record sign-in sheet. Visitors to the Site were required to sign in in Gilbane's field office trailer;
- Erosion and Sedimentation Controls – Gilbane and C&S performed inspections of the erosion and sediment control features per the approved SWPPP and ensured repairs were made when needed;
- Tree Clearing – Tree clearing was performed in areas of development prior to construction. Clearing activities involved the removal of trunk and base from earth and mulched and disposed of in accordance with the appropriate Soil Management Plan (Appendix J).
- Equipment Decontamination and Residual Waste Management – Subcontractors coordinated with Gilbane to complete decontamination of equipment prior to leaving the Site as well as the removal of waste material for off-site disposal;
- Soil Screening Results- Gilbane performed analytical conformance testing of imported soil materials prior to delivery to the Site (See Appendix P)
- Stockpile Methods – Subcontractors performed stockpile management in accordance with the SMP.

4.2.9 Nuisance Controls

- Dust control was conducted during excavation and backfilling activities using a water truck;
- Subcontractors coordinated with Gilbane to complete decontamination of equipment including trucks and equipment prior to leaving the Site;
- Signage directed traffic entering and leaving the Site to appropriate roads for the safety of workers and visitors to the Site;
- Noise mitigation measures included the distance of noise receptors from the construction activities and limiting the hours for pile driving to daytime work hours;
- Good housekeeping was practiced at all times by Gilbane and all subcontractors in order to keep the Site free of construction debris and trash. Dumpsters were located on Site for disposal of construction debris and trash;
- The NYSDEC project manager or C&S responded to complaints received regarding construction activities at the Site.

4.2.10 CAMP Results

Air monitoring was conducted throughout the project in accordance with the CAMP. Copies of the CAMP Reports are provided in Appendix I.

VOCs - VOC monitoring consisted of continuous real-time air monitoring of total VOCs (TVOCs) upwind and downwind of the work site during daily activities. The action level triggering a response and investigation for VOCs was 2.00 ppm for a period of 15 minutes or longer. On March 20, 2015, a VOC exceedance was investigated and evaluated at a station near the north boundary line of the lakeshore when the downwind TVOC level exceeded the upwind (background) level of approximately 0.0 for a 15-minute period at 2.0 ppm. The exceedance was caused by faulty equipment that was replaced. ***Note:*** This was the only VOC exceedance recorded during the construction activities. ***Note:*** At no point during the construction activities were VOC's ever detected at a level requiring a response (See Appendix I).

DUST(Particulates) - Dust monitoring consisted of continuous real-time air monitoring of particulate matter less than 10 microns (PM10) upwind and downwind of the work site during daily activities including intrusive and soil handling activities. Dust monitoring work perimeter limits were based on guidance contained in the NYSDOH Generic CAMP. See Section 4.1.7 in this CCR and Appendix I. Table 1 presents the dust exceedences recorded during the Project.

Table 1 Air Monitoring Exceedences for Particulates (Dust)

DUST	RECORDED LEVEL Time/ *Mg/M^3	ACTION LEVEL	SUSPECTED CAUSE
07-28-2015	15:13 for one minute/4.54	0.150 over up-wind	**Unknown
07-16-2015	10:52 – 11:06 / average 0.296	0.150 over up-wind	Truck traffic on the haul road
06-30-2015	9:53/0.214	0.150 over up-wind	Weather: wet conditions, high humidity; remained in exceedance until 10:30 when the equipment was cleaned and dried.
04-01-2015	17:55/2.21	0.150 over up-wind	**Unknown

Notes:

***Mg/M^3** - Milligrams (less than 10 Microns) per cubic meter

****Unknown** - For unknown reasons (e.g. a bird landing on the monitoring mast or someone lighting a cigarette near the station) an exceedance resulted and was recorded for a single minute. This would skew the data for that 15 minute average. These unknown, one-minute exceedences are not considered pertinent to the overall results.

4.2.11 Reporting and Documentation

All communication was processed in a vertical organization. Daily Reports prepared by Gilbane included reports as necessary from trade contractors and were assembled by the Superintendent. Reporting was done electronically and reviewed by the Project Executive. In addition to the daily reports prepared by Gilbane, C&S Companies prepared daily reports acting as the Owner's Program Manager. C&S' reports were provided to the County for use and review.

Any issues noted in the field that pertained to or had an impact to the sitework was reported to NYSDEC as per the approved work plans.

The Owner retained C&S Companies to provide the SWPPP inspections that were distributed to Gilbane, Onondaga County, NYSDEC, and any additionally affiliated organizations.

All daily construction reports are included in Appendix N, SWPPP Inspection Reports are included in Appendix L.

4.3 QUALITY CONSTRUCTION / QUALITY CONTROL REQUIREMENTS

4.3.1 Overview of Quality Control Performed

The project specific Quality Plan, prepared by Gilbane, was developed for the express purpose of assisting all participants with taking positive steps to promote quality in all aspects of the Project. The Quality Plan ensured conformance to the requirements for the Project.

The Plan presents proactive quality control (QC) processes to help prevent project delays and solve conflicts for: inspections, design documentation and solutions, shop drawings and submittals, and coordinated drawings. Field QC activities included requirements for Project QC meetings for pre-construction and pre-installation reviews.

Inspections outlined in the Plan and conducted included: first delivery of material and equipment; equipment arrival and setting in place; benchmark inspections prior to the start of construction; follow-up benchmarks to ensure the work was in conformance with the approved benchmark; in-wall and above ceiling acceptance; pre-finish; and, start-up. Once conditions were met for system acceptance, a final inspection and acceptance was conducted. Upon final acceptance of a Trade Contractor's work, the goal was to have each Contract closed within two months of the Owner's acceptance of the Work.

A third party inspection agency (CME Associates) was retained by the Owner and managed by the Owner's Representatives (C&S Companies). CME Associates provided specific contract mandated inspections (e.g. compaction testing, concrete sampling, etc.). All compaction was performed under the inspection of the third party inspection agency. Proof rolling was performed at each lift. All results of the compaction (or any inspection) were provided to the Designer of Record for review, acceptance, or to be corrected (addressed) by the contractors.

Following construction and in Spring of 2016, Solvay waste was visible at select outfalls (i.e. outfalls 3, 3A, and 4), prompting the necessity to proactively investigate (e.g., camera) each of the outfalls to determine the appropriate corrective action. Other pipes leading to outfalls (i.e. 1) required repair. In April

2016 the stormwater utilities were scoped via remote camera by Subsurface Utility Imaging, LLC (included herein as Appendix S). As a result of the inspection, corrective measures were implemented by the contractor to ensure compliance with the applicable contract documents. Remediation and repair were performed, including excavation and replacement of pipes as well as sleeves were inserted to ensure infiltration did not occur in the future. Following the inspection, a post remediation scope investigation was performed and is included documenting the repairs. Appendix S is organized to include the post-corrective action camera investigation, the preexisting conditions camera investigations, a letter detailing the plan for corrective action. The post camera investigation details the final repairs (as witnessed by C&S Engineers). Appendix S also includes the final work plan and as-built information of the repairs (further detailed below).

Following repairs in 2016, impacts at outfalls were observed in Spring 2017. Gilbane retained D&B Engineers & Architects PC to assess the conditions and develop a work plan that was submitted and reviewed by NYSDEC. Following receipt of comments, a final work plan was approved in October 23, 2017. Remedial work conditionally approved commenced prior to approval (June 2017). Work continued into Fall and Winter 2017 and concluded in May 2018. A final stamped work plan and as-built documentation is included in Appendix S.

The final work plan included action that included, but was not limited to: directional boring and installation of fused HDPE pipe; liner integrity testing and repair and/or replacement; replacement of bioretention media; remediation and restoration of impacted swale and/or outfall locations; grout injection of tributary pipes; installation of a sub slab water level monitor; and installation of new anti-seep collars. Anti-seep collars were installed at varying locations per the contract documents. Collars were installed as to prevent contaminants from migrating adjacent to pipes and/or exiting the cover areas where the pipe penetrates the subsurface. Sizes varied dependent on pipe.

Inspections for quality assurance were performed to ensure the project was constructed to the requirements. Items identified were addressed prior to final acceptance by Onondaga County. With respect to the site cover, inspections were performed intermittently to ensure the appropriate cover placement was installed at the specific areas. Inspections were performed following construction and any areas identified without sufficient cover were addressed.

Additional information is included in Appendix S for the final Work Plan to address the storm water conveyance system and assurance of the installation.

4.4 CONSTRUCTION PHASES

The following sections provide a brief description of the work performed during each of the four (4) Phases of construction at the Site. A detailed description is in the Site Cover Plan. See Appendix Q for a Photo-Log of construction activities. Elements of construction carried through each Phase include:

- **Maintenance of Erosion and Dust Control** - Measures taken to control erosion and dust included covering Solvay Waste/Material Spoils with posi-shield, as necessary; applying water to excavation areas and roads as necessary; installing silt fencing and inlet protection such as straw on the down-slope of disturbed areas. Other erosion control measures were used as necessary at all locations that were disturbed. (See Appendix L).;
- **Excavation of Solvay Waste and Placement in Spoil Pile** - Solvay Waste excavated during construction activities was placed in a pre-determined, Solvay Waste Material spoil pile approved by NYSDEC. As necessary, the Solvay Waste/Material Spoil Pile was covered with posi-shell to eliminate odor and act as an erosion and dust control measure;
- **Placement of Clean Cover (Borrow Material)** - The cover system for the Amphitheater Site was applied over approximately 26 acres of the Wastebeds 1-8 Site including all of the open areas within the Amphitheater Project limits exclusive of those which have already been remediated or capped. The cover material is intended to provide a barrier between the general public and the underlying Solvay waste in accordance with the December 2014 ROD.

  Soil was being imported to the Site during each of the four phases of construction outlined in the Narrative of Performance. The soil (as well as vegetative material) was used to construct the soil covers in remedial areas designated in the December 2014 Record of Decision (ROD). The soil was also used as excavation backfill. The soil consisted of imported material which meets the requirements for soil covers and backfill in 6 NYCRR Part 375-6.7(d). This was to ensure that the material met the SCOs for the appropriate resources that are to be protected and that the material will promote the growth and sustainability of the vegetative covers that need to be established. Sampling and testing was consistent with the requirements of NYSDEC DER-10 Section 5.4 (e) (10). Multiple sources of material were used as clean fill. Analytical data for clean fill brought onto the Site is included as Appendix O.

The placement and thickness of the substrate ranged as much as one foot of gravel to two feet of soil. The appropriate thickness is a function of the characteristics and use of each area. For example, "Active Recreational Use" areas are those with the potential for soil contact such as in the seating areas and include two feet of cover per the approved Cover Work Plan. "Passive Recreational Use" areas are those with limited potential for soil contact such as walking paths and parking lots have one foot of cover per the approved Cover Work Plan. (See the Site Cover Plan Appendix E). In addition, the placement of buildings, pavement and sidewalks serve as adequate cover to prevent potential exposure to any Solvay Waste in those areas.

The analytical results for imported material testing for backfill are provided in Appendix O. See Appendix B for Pre- and Post-Survey Information that documents the thickness of backfill.

- **Protection of Existing Monitoring Wells (MW**s) - MWs located within the footprint of the Project Site were identified using historical well data and existing information. The wells were then marked to help prevent damage during construction activities. In addition, a Decommissioning Plan was implemented detailing the decommissioning of selected MWs, completion of applicable site restoration, and documentation of the decommissioning activities. The Amphitheater Monitoring Well Summary Report and figure of well locations is in Appendix P;
- Grading - Grading was conducted in each phase of construction utilizing the SWPPP maintenance and stabilization guidance.

Elements specific to each of the four (4) construction Phases are outlined below.

4.4.1 Construction Phase 1

Initial activities include site mobilization, sedimentation control measures, earthwork, site utilities, and foundation construction.

4.4.1.1 Construction of Temporary Access Road

The existing Brown Road (haul road) was utilized as a temporary construction access and a new easterly loop road was constructed as an additional temporary construction access road.

4.4.1.2 Construction of Staging Area

The project utilized the existing haul roads and construction access to establish a pad on which to construct the Amphitheater and covered seating through the winter months. Additional staging areas were added as feasible in the Spring of 2015.

4.4.1.3 Relocation of Honeywell's Force Main

Honeywell's existing force main, used for groundwater collection operations, was located within the footprint of the Amphitheater Site, specifically through the center of the Pavilion. Gilbane relocated the force main to the outer edge of the Site construction limits on the east side of the project area.

4.4.1.4 Building Foundation and Pier Installation

Activities of the building construction began with steel-H piles with poured grade beams and piers to support the Amphitheater (see Appendix R, Pile Installation Work Plan).

4.4.2 Construction Phase 2

The majority of work conducted during Phase 2 pertained to contouring the subgrade and utility installation.

4.4.2.1 Building of Subgrade

Following pile work all building locations were brought up to sub-grade where foundations and slabs were poured. During this construction phase, the VI mitigation system was installed.

4.4.2.2 Installation of Utilities

Installation of Site utilities were performed through late spring and early summer 2015. Horizontal drilling was conducted under Interstate-690 including fire main/water and force main sanitary sewer systems. Work included: set-up, boring, horizontal drilling, pipe installation, restoration, activation and demobilization. All work performed for the horizontal drilling (including restoration of impacted earth) was performed in accordance with the approved Soil Management Plan (Appendix J). Final locations are detailed in the included built drawings (reference Appendix B).

4.4.3 Construction Phase 3

The majority of work conducted during Phase 3 pertained to contouring the Site Features. This included berms, cuts, fills and placement of cover material.

4.4.3.1 Cut and Fill

Earth cut was performed at locations requiring contour adjustment or relocation of native material to stage locations. Earth fill was performed in accordance with the Site Cover Plan (Appendix E).

4.4.4 Construction Phase 4

The majority of work conducted during Phase 4 pertained to completion of the Amphitheater grading and landscaping.

4.4.4.1 Installation of Bio-Retention Basins

The Stormwater design collects surface runoff and directs it into nine (9) bio-retentions basins installed on the Site. The water is filtered through the basins and released through sub-drainage collector pipes and outlet structures through stabilized outfalls into Onondaga Lake, Nine Mile Creek and to low areas within the Site to infiltrate into the subsurface.

4.4.4.2 Completion of Grading and Installation of Walking Pathways

Grading was completed around all buildings, stormwater management facilities, sidewalks, pavement shoulders. Work included the horizontal boring of I-690 for utilities. All work (reference Contract Document L-002 for area, included within Site Cover Plan, Appendix E), including restoration with respect to the utilities, was completed in accordance with the Site Cover Plan.

4.4.4.3 Fencing

Installation of final fencing (chain-link, wood-split rail and ornamental iron) including gates was completed.

4.4.4.4 Landscape

Landscape work was completed included plants, trees, sod and hydro-seeding.

4.4.4.5 Paving

Paving activities completed for the Site consisted of reinstalling the existing bike path between and on both sides of the Pavilion.

4.4.4.6 Closing Solvay Spoils Pile

A two (2) foot cover was installed over the Solvay Spoils Pile at the end of construction activities. Composition of cover included one foot of brickyard shale and one foot topsoil (reference Site Cover Plan, Appendix E).

4.4.4.7 Imported Fill

During the course of the Project the following material was imported and sampled (see Appendix O for analytical samples and a summary table of sampling information):

Table 2 Import Material Type and Source Location

MATERIAL	SOURCE LOCATION
No. 1 Crushed Stone	Kinsella/Fayetteville
Item 4 Gravel	Malone/Granby
Item 4 Gravel	Saunders/So. Onondaga
Common Fill-Crushed Stone	Riccelli/Brickyard Red. Red Weathered Shale
Structural Fill-Type 4 Gravel	Syracuse Sand and Gravel/Granby
Sand/Cobble Road Base-4"	Syracuse Sand and Gravel/Granby
Type 2 Road Base-1.5" Crusher	Hanson/Jamesville
No. 2 Crushed Stone	Syracuse Sand and Gravel/Granby
No. 1 Crushed Stone	Syracuse Sand and Gravel/Granby
Item 20 Sand	Syracuse Sand and Gravel/Granby
Stone Dust	Hanson/Jamesville

Crusher Run	Saunders/Marcellus
Topsoil	Riccelli/Spano Yard, Geddes
#1 Crushed Stone	Saunders/Marcellus
Norlite	Cohoes, NY

4.4.5 Significant Milestones

The following are significant milestones as it pertains to the development and construction of the Amphitheater Project:

- Human Health Risk Assessment (HHRA) for Wastebeds 1-8 Site Geddes, New York prepared April 2011
- Onondaga Lakeview Amphitheater SEQR Findings Statement Certification on June 11, 2014
- Wastebeds 1-8 Operable Unit 1 Feasibility Study, O'Brien & Gere September 2014
- Onondaga County issues Request for Proposal on September 25, 2014
- Final Environmental Impact Statement (FEIS) drafted October 2014 for the Onondaga Lakeview Amphitheater
- Onondaga County selects Gilbane Building Company for the Design Build Contract on November 06, 2014
- NYSDEC and EPA Record of Decision (ROD) for OU1 issued on December 2, 2014
- Construction Notice to Proceed provided (by Onondaga County) on January 14, 2015
- Construction related activities, following Notice to Proceed
    - SWPPP measures and tree clearing commenced: January 15, 2015
    - Forcemain (Honeywell) area clearing and grubbing completed: February 14, 2015
    - Forcemain (Honeywell) pipe layout and fuse completed: February 27, 2015
    - Rough-grade of Amphitheater commenced: February 16, 2015
    - Amphitheater grading commenced: February 17, 2015
    - Pile driving commenced: March 3, 2015
    - Cathodic rebar installation commenced: April 3, 2015
    - Pile cap and grade beam installation commenced: April 9, 2015
    - Forcemain (Honeywell) piping installation completed: April 20, 2015
    - Sanitary, water, electrical underslab utility installation commenced: April 27, 2015
    - Start-up of Force Main: April 27, 2015
    - Steel erection commenced: May 1, 2015

- Slabs on deck installation commenced: May 22, 2015
- Exterior framing and sheathing commenced: June 1, 2015
- Roofing systems commenced: June 8, 2015
- Lawn seating sod installation commenced: June 10, 2015
- Interior rough-in of systems and finishes commenced: June 15, 2015
- Amphitheater Permanently Energized: July 17, 2015
- Amphitheater Temporarily Conditioned: July 28, 2015
- Established Amphitheater Lawn Seating Area: July 30, 2015
- Elevator Operational: August 10, 2015
- Site Lighting Operational: August 11, 2015
- Solvay Waste Pile capped: August 12, 2015
- Audio/Visual System Operational: August 14, 2015
- Event Space Substantially Complete: August 14, 2015
- Box Office Substantially Complete: August 14, 2015
- Restroom Buildings Substantially Complete: August 17, 2015
- Landscaping Substantially Complete: August 18, 2015
- Back-of-House Mechanical Systems Operational: August 19, 2015
- Project Substantially Complete: August 24, 2015
- Final demobilization of Gilbane following Substantial Completion: October 2015

4.5 CONTAMINATED MATERIALS REMOVAL/DISPOSAL OF WASTES

During this construction project no contaminated material was removed from the Site. The handling of the Solvay Material and disposal of material associated with the construction activities are outlined in this Section.

4.5.1 Excavated Soil

Approximately 85,000 cubic yards (CY) of Solvay Waste was excavated and or moved during the Amphitheater construction project. The handling of the excavation spoils and consolidation of the soil/fill material was performed in accordance the SMP (See Appendix J).

4.5.2 Construction Water Management

Construction water is defined as water collected from excavations. Construction water generated during the Amphitheater Site construction was pumped into frac tanks and held temporarily on-site. During dry conditions, the water was slowly released back onto the ground within the Site area. No construction water was transported off-site during this project.

4.5.3 Construction and Debris (C&D)

Wood, paper, plastic, and metal packing, materials were placed in construction dumpsters located at various locations on the Site and hauled off-site on a regular basis by Riccelli Enterprises. All construction debris leaving the Site was disposed in an approved off-site facility.

4.5.4 On-Site Reuse

Solvay Waste material was re-used in utility trenches as native material as indicated on the Contract Drawings.

4.6 DOCUMENTATION SAMPLING

Documentation sampling for potentially contaminated media (soil, water) was not necessary as part of the Amphitheater Construction to prevent exposure to this material. Sampling was performed by Honeywell as part of their RI process for the Wastebeds 1-8 Site. This RI can be found on the internet at http://www.dec.ny.gov/chemical/37588.html.

The following sub-sections present sampling events performed by Gilbane for this Project. Each is discussed in more detail in this CCR or in the associated work plans.

4.6.1 Imported Material Sampling

For details regarding imported material sampling and procedures followed during the construction of the Amphitheater Site see Section 4.4 of this CCR and Appendix O.

4.6.2 Vapor Intrusion Baseline Sampling

Interim soil vapor sampling was performed on August 6 and 7, 2015 as defined in the Soil Vapor Mitigation Plan (See Appendix D). The purpose of this sampling effort was to evaluate whether or not the potential for soil vapor intrusion into the Amphitheater and associated buildings exists. An interim SVI sampling Plan was submitted to NYSDEC August 2015 that summarized the soil vapor sampling event (see Appendix D). During the sampling event three (3) 24 hour samples were collected concurrently: one sub-surface sample beneath the foundation of Room 111 in the BOH; one indoor sample inside of Room 111; and, one outdoor ambient sample near the lawn seating outside of the BOH.

Sampling results were found to be inconclusive. Because of this, the HVAC was run on positive pressure to mitigate any potential exposures during the concert scheduled for September 3, 2015 and sampling will be performed in the future in accordance with the Soil Vapor Mitigation Plan.

4.6.3 Spoils Pile Sampling

Spoils Pile Sampling was performed during April 2015 and July 2015.

Solvay Waste Spoils Piles 1 and 2 were sampled by Gilbane on April 7, 2015. Two soil samples (one from each pile) and a trip blank (methanol/deionized water samples) were collected and analyzed for VOCs, SVOCs, PCBs, Pesticides, metals, and pH. Samples were also tested for general chemistry parameters, ignitability and corosivity in accordance with approved project protocol. Results reported only one target analyte in the soil samples collected that exceeded the (commercial) Soil Cleanup Objectives (SCOs) for the Site; Acetone was reported at 184 micrograms/kilogram (ug/kg) in Waste Pile 2 exceeding the SCO of 50 ug/kg. The pH was reported at 10.0 and 12.2 in Waste Pile 1 and 2 respectively.

Characterization of the Solvay waste staging area (Waste Spoils Piles 1 and 2) was performed by C&S Companies in July 2015 for the construction activities at the Amphitheater. A total of 15 soil samples were collected and analyzed for VOCs, SVOCs, PCBs, Pesticides, metals, and pH. Soil samples ranged in pH from 9.45 to 12.4. Results were compared to the Soil Cleanup Objectives (SCOs) for the Site. The July 2015 samples are included in Appendix M.

See Appendix M for the laboratory reports / analytical data.

4.7 CONTAMINATION REMAINING AT THE SITE

Contamination left at the Site, is hereafter referred to as "remaining contamination," The remaining contamination includes heavy metals, volatile organic compounds, and semi-volatile organic compounds. A Site Management Plan will be prepared by Onondaga County to manage the Amphitheater Site and will remain in effect after all easements are executed in accordance with ECL Article 71, Title 36 including the Environmental Easement. Information associated with remaining contamination at the Site can be obtained by contacting the NYSDEC.

4.8 SOIL COVER SYSTEM

Exposure to remaining contamination in soil/fill at the Site is prevented by a soil cover system placed over the Site in accordance with the 2014 ROD. This cover system is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. See Appendix E Site Cover Plan. Soil cover thickness verification was performed (see Appendix K) following the placement of the soil cover systems. A final site inspection was performed on August 16, 2018 with Onondaga County, Gilbane and NYSDEC representatives following repairs to the stormwater retention basins (see Appendix S). No issues were identified that would preclude finalizing this construction completion report.

Future excavations will be covered under the Interim Site Management Plan (dated April 2016, prepared by C&S Engineers). Vegetated cover systems on the remaining areas of the Site (outside of the amphitheater area) will be placed by Honeywell in accordance with the Wastebeds 1-8 Operable Unit 1 ROD.

4.9 OTHER CONTROLS

- Because remaining contaminated soil exists beneath the Site, Engineering Controls (EC) are required to protect human health and the environment. The County of Onondaga's Interim Site Management Plan (dated April 2016, prepared by C&S Engineers) addresses the maintenance of the vegetated cover systems within the amphitheater footprint in detail. Fencing – Chain-link, wood, and ornamental iron fencing was installed to help limit and control access throughout the Site;

- Vapor Mitigation System -The system consists of a barrier of poly sheeting installed continuously beneath the concrete floor slabs/mud mats. In the FOH and BOH areas, a 30-mil linear low density polyethylene (LLDPE) barrier was employed. In the BO area, Un-heated Restrooms, and Open Air Pavilion a10-mil poly sheeting was employed for these areas;
- Bio Retention Basins - The stormwater design collects surface runoff and directs it into nine (9) bio-retentions basins installed on the Site. The water is filtered through the basins and released through sub-drainage collector pipes and outlet structures through stabilized outfalls into Onondaga Lake, Nine Mile Creek and to low areas within the Site;

Institutional controls such as environmental easements will be placed on the site in accordance with the 2014 ROD and a future NYSDEC approved Site Management Plan(s) to preclude intrusive activities in areas where contamination remains.

5.0 REFERENCES

- EPA and New York State Department of Environmental Conservation (NYSDEC), 2014. R*ecord of Decision (ROD) Operable Unit 1 of the Solvay Wastebeds 1-8 Subsite of the Onondaga Lake Superfund Site Town of Geddes, Onondaga County.*
- NYSDEC and EPA, 2014 Wastebeds 1-8 Operable Unit 1 Record of Decision (December 2, 2014)
- NYSDEC, 2015. *Amphitheater Interim Construction Completion Approval Letter. 28* August.
- NYSDEC, 2010. *DER-10 Technical Guidance for Site Investigation and Remediation.* (May 2010).
- O'Brien and Gere Engineers, 2014. *Revised Remedial Investigation (RI) Wastebeds 1-8 Site, Geddes, NY*. (August 2014).
- Interim Remedial Measure (IRM) and Operable Unit (OU) 1 Site remedies. (IRM and OU1 Site Remedies may be found on http://www.dec.ny.gov/chemical/37558.html)
- *1986, Crucible Landfill Closure Plan and Post Closure Plan. [C&S (1986) Revised Landfill Closure Plan, Volumes 1 and 2.C&S Companies (2001) Transmittal to Ms. Susan Benjamin of the NYSDEC with copies of an August 3, 2000 memorandum titled "Summary of Wetland Subsurface Investigation Analytical Data" Prepared by C&S. C&S, Syracuse, New York.]*
- October 6, *2014 Change of Use Notification, County of Onondaga, David Coburn*
- *Site Work Plan (SWP) Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane, April 2015)

- *Community Air Monitoring Plan (CAMP), Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane January, 2015a)
- *Community Health and Safety Plan (CHSP), Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane January, 2015b)
- *Site Cover Plan*, (Fisher Associates, P.E., L.S., L.A., D.P.C., Revised: August 2015)
- *Soil Management Plan (SMP), Lakeview Amphitheater Project, Geddes, Onondaga County, NY* (Gilbane, February, 2015)
- *Stormwater Pollution Prevention Plan, SWPPP Rev. 5* (QPK Design, LLP, 2015)
- *Vapor Mitigation Work Plan*, Onondaga County Lakeview Amphitheater Project, Version 4 (Benchmark Environmental Engineering & Science, PLLC, June 30, 2015)
- *Pile Installation Work Plan*, (Gilbane, March 2, 2105)
- *Revised Storm Water Collection and Conveyance System Work Plan,* (D&B Engineers and Architects, P.C., October 19, 2017
- *Interim Site Management Plan* (C&S Engineers, April 2016)
- Historic Boring Location Plan B-001 and B-002 (C&S Engineers, dated 09/15/14)
- Exposure Areas & Sampling Locations (O'Brien & Gere, dated May 2014)
- Site Plan Crucible Specialty Metals Landfill Site (S&ME, dated December 4, 2014)