SUPERFUND PRELIMINARY SITE CLOSE-OUT REPORT
Peter Cooper Landfill Superfund Site
Cattaraugus County
Gowanda, New York

I. INTRODUCTION

The United States Environmental Protection Agency (EPA) has determined that construction activities at the Peter Cooper Landfill Superfund site (the Site) have been completed in accordance with the *Close-Out Procedures for National Priorities List Sites (OSWER Directive 9320.2-09A-P).*

Based upon field observations associated with EPA's and New York State Department of Environmental Conservation's (NYSDEC's) construction oversight and the September 9, 2010 final inspection of the Site by EPA and NYSDEC, EPA has determined that the potentially responsible parties (PRPs) have constructed the remedy (leachate collection system and capping) in accordance with the September 2005 Record of Decision (ROD) and the approved remedial design as modified by as-built documentation. EPA has also determined that no further response actions other than maintenance of the cap and cover, operation & maintenance of the leachate collection system, and long-term groundwater monitoring are necessary. The PRPs have initiated the activities necessary to achieve performance standards and site completion. Human exposures and contaminated groundwater releases are under control.

II. SUMMARY OF SITE CONDITIONS

Site Location and Description

The Peter Cooper Landfill Superfund Site is located off Palmer Street, in the Village of Gowanda, Cattaraugus County, New York (see Figure 1). As shown in Figure 2, the Site consists of an inactive landfill and land associated with the former animal glue and adhesives manufacturing plant. The Site is bordered to the north by Cattaraugus Creek; to the south by Palmer Street; to the west by a former hydroelectric dam and wetland area; and to the east by residential properties. The former Peter Cooper Corporation (PCC) office, laboratory, manufacturing plant water reservoir, and employee parking lot are located south of Palmer Street on an approximately 20-acre parcel. This parcel is currently owned by a private entity and is not part of the National Priorities List (NPL) Site.

For purposes of the Remedial Investigation and Feasibility Study (RI/FS), the Site was divided into two sections. The Inactive Landfill Area (ILA) is situated on the western side of the Site and covers approximately 15.6 acres. The subarea within ILA that contains waste fill is referred to as the Elevated Fill Subarea, and is approximately 5 acres in size and is located in the northwest corner of the Site. The western edge of the Elevated Fill Subarea is located on property owned by New York State Electric and Gas (NYSEG). The Former Manufacturing Plant Area (FMPA) Area is located on the eastern side of the Site and measures 10.4 acres.

Regionally, the Village of Gowanda is located both in Erie County and Cattaraugus County and is separated by Cattaraugus Creek. In Erie County, the Village of Gowanda is included in the Town of Collins. The Town of Collins is bordered by the Seneca Nation of Indians Cattaraugus Reservation to the west. In Cattaraugus County, the Village of Gowanda is located in the Town of Persia. Although the groundwater in the area is classified as a potable water supply by the NYSDEC, residents obtain their water from public water supplies that are monitored to ensure they meet appropriate federal and state regulations.

Background

The Site was previously used to manufacture animal glue and industrial adhesives. PCC and/or its predecessors, Eastern Tanners Glue Company, manufactured animal glue at the Site from 1904 to 1972. When the animal glue product line was terminated, PCC continued to produce synthetic industrial adhesives until the plant closed in 1985. The wastes from PCC's glue production were disposed of on the Elevated Fill Subarea. Between 1925 and October 1970, PCC used the northwest portion of the property to pile sludge remaining after the animal glue manufacturing process. These wastes, known as "cookhouse sludge" because of a cooking cycle that occurred just prior to extraction of the glue, are derived from animal hides, some of which were chrome-tanned hides, obtained from tanneries. The waste material has been shown to contain elevated levels of chromium, arsenic, zinc, and several organic compounds. Based on observations of the landfill sludge material made during the RI, the cook house sludge appears to be mixed with cinders, ash, and construction and demolition debris.

In June 1971, the New York State Supreme Court (8th J.D. Cattaraugus County) ordered PCC to remove all or part of the waste pile and terminate discharges into Cattaraugus Creek. In response, in early 1972, PCC reportedly removed approximately 38,600 tons of waste pile material and transferred it to a separate site, now known as the Peter Cooper Corporation (Markhams) NPL site, located in Markhams, New York. Between 1972 and 1975, the remaining waste pile at the Site was graded, covered with a 6-inch clay barrier layer and 18-30 inches of barrier protection soil, and vegetated with grass. Stone rip-rap and concrete blocks were placed along the bank of Cattaraugus Creek to protect the fill material from scouring or falling into the Creek.

In July 1976, the assets of original PCC, including the manufacturing plant and property located in Gowanda, were purchased by Rousselot Gelatin Corporation and its parent, Rousselot, S.A., of France. Rousselot Gelatin was renamed Peter Cooper Corporation and this newly-formed PCC sold the Site to JimCar Development, Inc. in April 1988. The property was subsequently transferred to the Gowanda Area Redevelopment Corporation (GARC) in 2009. Excluding the portion of the Site owned by NYSEG, the remainder of the property is presently owned by GARC.

NYSDEC conducted preliminary site investigations in 1981 and 1983 and identified the presence of arsenic, chromium and zinc in soil and sediment samples. As a result of these investigations, NYSDEC oversaw PCC's conduct of an RI/FS for the Site. PCC hired O'Brien and Gere Engineers, Inc. (OBG) to perform the RI/FS. The OBG investigation was limited to the ILA. Activities

performed during the RI included collection of soil, surface water, sediments, and waste material, seep and groundwater samples. Samples were analyzed for total halogenated organics and total volatile organics, as well as priority pollutant metals. Analytical results indicated the presence of arsenic, chromium, and zinc in soil and sediment samples. Surface water and groundwater inorganic analyses were not detected with the exception of low levels of chromium in groundwater.

The FS Report was submitted to NYSDEC in March 1991 and included recommendations for containment of source materials, leachate collection, access restriction through the building of a fence and deed restrictions. However, because the waste at the Site did not meet the statutory definition in effect in 1991 in New York State for an inactive hazardous waste disposal site, NYSDEC removed the Site from its Registry of Inactive Hazardous Waste Sites and a remedy was not selected. As a consequence of this designation, NYSDEC could not use State resources to implement a remedial program. NYSDEC and the Village of Gowanda reportedly requested that the EPA evaluate the Site for the NPL.

In 1996, the EPA Superfund Technical and Assessment Response Team (START) collected and analyzed soil, groundwater, surface water, and sediment samples from the Site. Results confirmed contamination, including the presence of arsenic, chromium and other hazardous substances from the Site. During the Site assessments, EPA personnel observed that the existing retaining wall was subject to severe erosion. It was determined that the retaining wall and rip-rap had to be repaired or upgraded to prevent the continued erosion of landfill materials into Cattaraugus Creek.

On October 24, 1996, EPA and NYSEG entered into an Administrative Order on Consent (AOC). Pursuant to the AOC, NYSEG installed approximately 150 feet of rip-rap revetment along the south bank of the Cattaraugus Creek and adjacent to the landfill to prevent further erosion of materials from the landfill into the Creek.

In 1998, EPA prepared a Hazard Ranking System Model score for the Site and added it to the NPL on April 6, 1998. EPA subsequently notified several potentially responsible parties of their possible involvement in the Site investigation and remediation, and proceeded to develop a RI/FS Work Plan for the Site. The Revised Final RI/FS Work Plan was issued by EPA on June 15, 1999. Representatives of certain PRPs subsequently met with EPA and volunteered to prepare a modified RI/FS Work Plan addressing only the ILA of the Site. The Final RI/FS work plan for the ILA was submitted to EPA in March 2000.

EPA's negotiations with the PRPs for their conduct of the RI/FS were unsuccessful. In April 2000, EPA issued a Unilateral Administrative Order (UAO) CERCLA-02-2000-2014 to fourteen PRPs directing that they complete the RI/FS for the entire Site, including the ILA and the FMPA. The UAO became effective May 1, 2000. The RI/FS was performed by Benchmark Environmental Engineering and Science, PLLC and Geomatrix Consultants, Inc, consultants for the PRPs, subject to EPA oversight. The RI field activities were performed from August 2000 to April 2001, and the final RI was submitted to EPA in November 2003.

Concurrent with completion of RI activities, the Village of Gowanda in association with the University at Buffalo Center for Integrated Waste Management developed a Reuse Assessment and Concept Plan for the Site that concluded that the "highest and best use" of the property would be as a multi-use recreational facility. The Reuse Assessment and Concept Plan, funded in part by the EPA through its Superfund Redevelopment Initiative, envisions a publicly available Site incorporating elements such as a walking/biking trail, fishing access, outdoor picnic areas, and other related recreational features.

The FS was substantially completed by the PRPs in July 2004, and was finalized in June 2005. Remedial Action Objectives (RAOs) were developed in the FS, taking into consideration potential unacceptable human health risks identified in the RI, as well as applicable, relevant and appropriate requirements (ARARs) potentially governing closure of the Elevated Fill Subarea. The following RAOs were established for the Site:

- Reduce or eliminate any direct contact threat associated with the contaminated soils/fill;
- Minimize or eliminate contaminant migration from contaminated soils to the groundwater; and
- Minimize or eliminate contaminant migration from groundwater to Cattaraugus Creek.

Based on the RAOs, the media and areas of potential concern for which several remedial alternatives were developed and evaluated included:

- Seeps/groundwater emanating from the Elevated Fill Subarea (to address aesthetic issues and potential localized surface water quality impacts by ammonia).
- Soil/fill and landfill gas within the Elevated Fill Subarea (in terms of potential closure options to satisfy ARARs).
- Arsenic-impacted soil/fill in the vicinity of RI sample location LFSS-6 and SB-2 (to address future construction worker risks).
- Chlorinated volatile organic compound (VOC)-impacted soil/fill in the vicinity of RI sample location MWFP-3 (to address future construction worker risks).
- Site groundwater (to address future risks associated with use of groundwater for potable purposes).

Based upon the results of the RI/FS, the Proposed Plan, and a Public Meeting; a Record of Decision was signed on September 30, 2006. Specifically, the ROD called for:

- Excavating the three hot spot areas and consolidating them within the Elevated Fill Subarea, followed by capping the 5-acre Elevated Fill Subarea of the inactive landfill area with a low permeability, equivalent design barrier cap, consistent with the requirements of 6 NYCRR Part 360, including seeding with a mixture to foster natural habitat;

- Post-excavation confirmatory soil sampling;
- Backfilling of excavated areas with clean fill;
- Collecting the leachate seeps, pretreating the leachate as necessary, then discharging the leachate to the Public Owned Treatment Works (POTW) collection system for further treatment and discharge. As a contingency, if treatment of the leachate seep at the POTW is not available, the leachate would be treated and discharged to Cattaraugus Creek. Since the installation of the cap and groundwater diversion system (described below) should reduce leachate generation, the volume of seep leachate requiring treatment is anticipated to be reduced or nearly eliminated over time;
- Installing a groundwater diversion system to limit groundwater migration through the Elevated Fill Subarea. However, should additional data collected during the remedial design phase of the project support the conclusion that installation of a diversion wall will result in a minimal increase in the collection of contaminants by the leachate collection system, the diversion wall would not be installed;
- Installing a passive gas venting system for proper venting of the 5-acre Elevated Fill Subarea of the inactive landfill area;
- Stabilizing the banks of the Cattaraugus Creek;
- Performing long-term operation and maintenance including inspections and repairs of the landfill cap, gas venting, and leachate systems;
- Performing air monitoring, surface water and groundwater quality monitoring; and
- Evaluating Site conditions at least once every five years to determine if the remedy remains protective.

This remedy also includes institutional controls such as restrictive covenants and environmental easements for limiting future use of the Site and the groundwater to ensure that the implemented remedial measures will not be disturbed and that the Site will not be used for purposes incompatible with the completed remedial action. The institutional controls will include a Site Management Plan to ensure appropriate handling of subsurface soils during redevelopment. In addition, an annual certification that the engineering and institutional controls remain in place and are effective for the protection of public health and the environment is required.

Following issuance of the ROD, the Village of Gowanda and the PRPs entered into discussions concerning the Village's redevelopment goals. An agreement was reached and GARC took ownership of the Site and agreed to perform certain post-remedial operation, maintenance and monitoring activities in exchange for provision of specific non-remedial construction activities and

funding by the PRPs to facilitate park redevelopment. Non-remedial construction activities that were slated to be performed by the PRPs, concurrent with remedial activities, are listed below.

- Removal of up to 1,000 tons of non-hazardous construction and demolition (C&D) debris from the Former Manufacturing Plant Area of the Site with disposal of the materials beneath the Elevated Fill Subarea cover (in a manner to prevent settlement) or off-site at a permitted disposal facility.

- Construction of a clean utility corridor (i.e., waterline) to facilitate utility service to a future multi-use building, pavilion, or other park development.

- Elevated Fill Subarea cover system grading and contouring to facilitate site development plans. This will involve creating a benched area along the creek side of the landfill that may provide a level area for future construction of a bike or walking path.

In accordance with the ROD, a diversion wall assessment was completed by the PRPs to show that installation of an upgradient groundwater diversion wall around the Elevated Fill Subarea would not materially change the effectiveness of the planned remedial measures. The assessment initially involved hydrogeologic modeling to show that the potential loading of landfill constituents to Cattaraugus Creek via the combined effects of leaching and groundwater migration would be adequately addressed by the planned seep collection system and that the collection system would result in conformance with NY State Surface Water quality criteria irrespective of an upgradient groundwater diversion system The modeling also illustrated that the volume of leachate collected from the seeps would not be materially reduced by an upgradient diversion wall, and as such, the diversion wall provided no additional human health, environmental or economic benefit. The PRPs subsequently performed supplemental hydrogeologic testing (involving a pump test for the saturated overburden and upper weathered bedrock) to confirm key hydraulic conductivity assumptions employed in the modeling, as well as a sensitivity analysis to show that the results of the modeling remained valid across a wide range of hydraulic conductivity values. EPA and NYSDEC concurred with the findings and removed the diversion wall requirement from the scope of work which was incorporated into the Consent Decree. In the absence of the groundwater diversion wall, the natural mechanisms of dispersion and dilution in combination with the seep/groundwater collection system would be relied upon to reduce the residual contaminated groundwater throughout the Site and no further groundwater remediation or containment actions are anticipated.

In fall 2008, EPA concluded Consent Decree negotiations with the PRPs related to the performance of the design and implementation of the remedy called for in the ROD. On February 12, 2009, the Consent Decree was entered in United States District Court. On March 15, 2009, Benchmark was approved as the supervising contractor to conduct the remedial design and construction work at the Site.

In accordance with the requirements of the Consent Decree the PRPs prepared a Remedial Design (RD) Work Plan that presented a description of the remedial work that would be performed to satisfy the requirements of the Scope of Work. The RD Work Plan outlined the following remedial

construction measures: mobilization; site preparation; hotspot excavation; groundwater/seep collection; and cover system construction (barrier layer material placement and compaction, topsoil and seeding, and passive gas venting).

In order to take advantage of the 2009 construction season and to facilitate coordination among the multiple interested parties, there was a need to fast-track implementation of the remedy. Therefore, the approved RD Work Plan and design plans and specifications were implemented under a design-build contract for Site remediation. Accordingly, the RD Work Plan identified: materials to be employed for major remedial components; construction requirements; quality control requirements; and measures to protect workers, the surrounding community, and the environment during the remedial work.

Remedial Construction Activities

Zoladz Construction Company, Inc. was approved as the subcontractor for the Remedial Action (RA). Conditional approval to start site preparation and hotspot removal was given to the PRPs in July 2009. Zoladz mobilized to the Site on July 28, 2009. A field trailer with temporary power and lighting was installed at the Site as per the project specifications. A project sign was erected with the name of the site and pertinent contact information.

Site preparation began on July 28, 2009 and was completed on August 5, 2009. Small trees, shrubs, brush, and stumps within the clearing limits were removed to facilitate construction and post-closure maintenance work. Clearing and grubbing in and around the area of the elevated fill area was performed with a hydro ax. The staged trees, stumps, and brush were ground into mulch. The mulch was hauled off-site in dump trailers for off-site processing at a permitted facility.

The Storm Water Management and Erosion Control Plan (appended to the RD Work Plan) was employed during all clearing and earthwork activities. Silt fence was installed along the perimeter of the Site on August 4, 2009, prior to intrusive activities.

Removal of non-hazardous construction and demolition debris from the Former Manufacturing Plant Area began on August 6, 2009 and was completed on September 29, 2009. Approximately 300 tons of C&D wood debris was hauled off-site for disposal to Waste Management Chaffee Landfill. The remaining debris, comprising primarily of brick, concrete and other non-degradable C&D materials was placed in the Elevated Fill Subarea. The debris was placed in 1-foot thick or less lifts, and compacted with a padfoot roller.

Hotspot Removal

Excavation of three areas of contaminated soil/fill from subareas LFSS-6, SB-2 and MW-FS-3 began on August 24th, 2009 and was competed on August 25th, 2009. Soil excavated from the impacted areas was hauled to the Elevated Fill Subarea for placement and compaction prior to placing the soil cover system. NYSDEC personnel were on-site to observe the subarea excavations. Confirmatory sampling of the excavation sidewalls and bottom indicated arsenic and volatile organic compounds concentrations were below the site cleanup goals.

Subarea LFSS-6

Impacted-arsenic contaminated soil/fill excavated from Subarea LFSS-6 comprised approximately 146 cubic yards. The average depth of the excavation was approximately 2 feet deep. A total of five confirmatory verification soil samples (four sidewalls, one bottom) were collected and analyzed for total arsenic via EPA Method SW-846. Results of the verification sampling indicated arsenic concentrations ranged from 20 milligrams per kilogram (mg/kg) to 75 mg/kg which were below the cleanup goal for arsenic of 120 mg/kg.

Subarea SB-2

Impacted arsenic-contaminated soil/fill excavated from subarea SB-2 was approximately 25 cubic yards. The average depth was approximately 2 feet deep. A total of five confirmatory verification soil samples (four sidewalls, one bottom) were collected and analyzed for total arsenic by EPA Method SW-846. Results of the verification sampling indicated arsenic concentrations ranged from 9 mg/kg to 86 mg/kg which were below the cleanup goal for arsenic of 120 mg/kg.

Subarea MW-FS-3

Impacted VOC-contaminated soil/fill excavated from subarea MW-FS-3 was approximately 196 cubic yards. The average depth was approximately 4.5 feet deep. A photoionization detector (PID) was used to screen the excavation sidewalls prior to confirmatory sample collection. All PID readings were below background. A total of five confirmatory verification soil samples (four sidewalls, one bottom) were collected and analyzed for EPA Target Compound List (TCL) volatile organic compounds in accordance with EPA SW-846 Methodology. Results of the verification sampling indicated VOCs below their respective cleanup goals. The final approval of the RD plan and specifications was given to the PRPs on October 15, 2009, for the implementation of the seep collection system and the landfill cap.

Seep Collection System

Although the ROD called for construction of a seep collection system, in reality, groundwater will also be collected. Construction of the seep/groundwater collection system began in October 2009, and was substantially complete in December 2009. The collection system includes:the creek bank re-grading and bedrock channel excavation; pump station installation; pretreatment building construction; force main piping;and sanitary sewer tie-in. The seep/groundwater collection system was placed into full-time operation in May 2010, with Operation and Maintenance duties transferred to GARC. A description of the seep/groundwater collection system components and construction is presented below:

Creek Bank Preparation and Grading

The preparation of the creek bank began with the removal of concrete debris along the base of the elevated fill area. Prior to intrusive work a silt curtain was placed at the waters edge surrounding the creek bank improvement area for erosion control purposes. An excavator was used to remove

concrete debris from creek bank. Large concrete boulders were crushed into smaller pieces using an excavator with a hydraulic mounted breaker/buster. The broken concrete was used as a road base for heavy equipment access along the elevated fill area. Excess concrete debris was placed in the Elevated Fill Subarea for use a subgrade material. Following removal of the concrete debris, vegetative growth was cleared along the creek bank. The bank slope was then graded with dozers and excavators to achieve an approximate grade not steeper than 25%. Excess soil/fill generated from the bank regrading was placed in the Elevated Fill Subarea for disposal beneath the cover soils. Following grading of the creek bank, two channels were excavated into the weathered bedrock along the edge of the creek bed at the toe of slope of the Elevated Fill Subarea. The outermost channel was excavated to serve as an anchor trench for bank stabilization. The outermost channel was excavated to an average dimension of approximately 5 feet wide and 3 feet deep (to accommodate large size rip-rap).

The second channel was excavated for the seep/groundwater collection system (perforated piping & bedding stone). The channel was excavated to an average width of approximately 3 feet, and an average depth of approximately 2 feet, with a slight slope towards the pump/lift station. Excavated weathered bedrock from both channels was placed in the Elevated Fill Subarea for disposal beneath the cover system. The total length of the two channels was approximately 400 linear feet each.

Materials and Installation

Following the creek bank re-grading and channel excavation, the creek bank was lined with geosynthetic materials. The geosynthetic materials were installed by Chenango Contracting, Inc. (Chenango), a subcontractor to Zoladz Construction. Installation began with the placement of a geotextile "rub sheet" over the bedrock outer wall of the seep/groundwater collection trench. The rub sheet was placed as a protective barrier between the weathered shale rock edges, and the geomembrane liner. Following placement of the rub sheet, the contractor began deployment of textured 40-mil linear low density polyethylene (LLDPE) geomembrane liner within the seep/groundwater collection trench. The geomembrane liner was installed in accordance with procedures outlined in the construction quality assurance project plan (CQAPP). Following deployment and installation of the geomembrane liner, Zoladz bedded the collection trench with a 6-inch layer of washed #2 size stone. The collection trench was then fitted with a six-inch diameter perforated high density polyethylene (HDPE) pipe. At each end of the perforated piping, a 6-inch diameter HDPE cleanout riser pipe was installed. The seep/groundwater collection trench was then backfilled with washed #2 stone. Following installation of the perforated piping, Chenango began deployment and placement of the geocomposite drainage layer. The geocomposite was placed across the creek bank/elevated fill area subgrade slope to collect side slope seepage. The geocomposite drainage layer began at the top of the elevated fill area slope, approximately 770 feet above mean sea level (FMSL), and ran across and into the top of the seep collection trench. The geocomposite was then covered with a textured 40-mil LLDPE geomembrane liner. The geomembrane was installed in accordance with procedures outlined in the CQAPP. A second geocomposite layer was placed over the 40-mil LLDPE geomembrane liner, to protect the liner from puncture or damage. The second geocomposite layer was deployed and placed in the same manner as the first geocomposite layer. A 6-inch layer of #2 size bedding stone was placed over the second geocomposite layer to facilitate the placement of rip-rap stone.

Large rip-rap stone was placed over the 6-inch bedding stone layer. Void spaces between the large rip-rap were backfilled with medium and small size rip-rap stone. All geosynthetic layers at the top of the elevated fill area slope were seated in a 24-inch wide x 18-inch deep anchor trench. The trench was backfilled and compacted with a low permeability clay soil.

Pump Station

A prefabricated Fiberglass Reinforced Plastic (FRP) pump station was installed as part of the seep/groundwater collection system. Solid HDPE Conveyance piping from the seep/groundwater collection trench to the pump station was installed and encased in concrete fill. A 6-inch perforated pipe was installed above the concrete fill and connected to the solid conveyance piping for collection of groundwater seeps above the concrete fill and weathered bedrock. The remainder of the pump station excavation was backfilled and compacted with on-site soil material.

The pump station was equipped with two submersible duplex pump (Liberty Pumps LEH-100 Series) and adjustable level controls to maintain a seep/groundwater elevation of approximately 753-756 FMSL (below the top of bedrock). The pumps and level controls were installed in January 2010 and placed into full-time operation in April 2010.

Precast Building

A precast concrete building was constructed near the Palmer and Broadway Streets site entrance. The 8-foot x 8-foot building was installed by Lakelands Concrete Products. The building houses:the electrical service, starters and control panel for the pump station pumps (which operate in alternating mode); schedule 80 polyvinyl chloride (PVC) discharge piping with sample ports; chemical pre-treatment equipment; a George Fisher Signet flow transmitter with a digital indicator; and a portable safety shower/eyewash station.

Force Main Piping

Pump station discharges are conveyed to the pretreatment building via a 2-inch diameter HDPE main. The force main piping was installed below grade along the western edge of the Elevated Fill Subarea. The force main was fabricated with vertical cleanouts placed approximately every 100 feet along the pipe trench. The force main piping penetrates the precast concrete building floor, and transitions to schedule 80 PVC piping. Total length of the force main piping is approximately 476 linear feet. A second 2-inch force main was installed alongside the first force main for future use, if needed (e.g., in the event the primary force main needs to be taken off line for maintenance or repair). The spare force main is stubbed into the pretreatment building and pump station. All pipe welds were made using Butt Fusion Welds in accordance with manufacturer's instructions. Prior to burying the force main piping, leakage testing was performed through a pressurized air test as per the construction technical specifications. No leaks were detected based on the pressure testing.

Sanitary Sewer Tie-In

Discharge from the force main piping transitions to Schedule 80 PVC piping within the precast building. A 6-inch diameter schedule 80 PVC pipe penetrates the building floor and turns vertically 90 degrees towards the sanitary sewer manhole located along Palmer Street. Approximately 100 linear feet of 6-inch diameter schedule 80 PVC piping were installed on October 30, 2009.

Pretreatment

Seep/groundwater is chemically treated to decrease hydrogen sulfide content prior to discharge to the sanitary sewer. Pretreatment involves the chemical injection of a chemical oxidant (50% hydrogen peroxide) into the seep/groundwater force main. Pretreatment equipment installed within the precast building includes a Pulsatron brand electronic chemical metering pump with a minimum 0.009 LPH (liters per hour) pumping rate, and a 120-gallon double containment polyethylene holding tank for hydrogen peroxide storage. Pretreatment of the seep/groundwater began in May 2010. Pending sulfide analysis in untreated seeps/groundwater, the pretreatment process may be discontinued or only necessary on a seasonal basis.

Waste/Fill Grading

Waste/fill grading within the Elevated Fill Subarea began on August 3, 2009 with grading and recompaction of the waste/fill to conform to the proposed subgrade contouring. Contoured waste/fill was placed with a dozer, and compacted using padfoot and smooth drum rollers. Soil/fill material excavated and hauled from the Hotspot Subareas were also placed and compacted to conform to the proposed subgrade contours. A representative composite sample of the Hotspot Subarea was collected and submitted to 3rd Rock, LLC for Modified Proctor testing (ASTM D1557-91) to determine the maximum dry density (108 pcf) and optimum moisture (16.7%). 3rd Rock Testing, LLC performed the in-place density measurements of the landfill subgrade (where recompacted) using a nuclear densitometer; all results were >90% of the modified proctor maximum density as specified in the CQAPP. The re-graded Elevated Fill Subarea has a footprint of approximately 5 acres. All grading equipment, excavators, compaction equipment, and off-road trucks in contact with waste/fill materials were decontaminated before leaving the Site or being used for work on cover soils, in accordance with the Contract Documents.

Landfill Cap Construction

The final cap includes all the construction components in the approved Remedial Design Report. The final landfill cap meets the grading requirements of 6 NYCCR Part 360-2.13(q)2(ii) that requires that the barrier component of the cap have a slope of no less than 4 percent to promote positive drainage and no more than 33 percent to minimize erosion.

Cover System

The final cover system was designed to provide long-term minimization of seep formation by limiting the infiltration of surface water during the post-closure period. The final cover system was

constructed to function with minimum maintenance, promote drainage, and minimize erosion. The cover system was designed with a 18-inch thick re-compacted low permeability (less than 1 x 10^{-6} cm/sec) soil barrier layer and 6 inches of topsoil. The cover system was installed from November 2 to November 18, 2010.

Barrier layer

Material evaluation of the barrier layer off-site borrow source was performed in accordance with the Construction Specifications and CQAPP. Samples of the barrier layer soils were collected from a virgin borrow source located in the Town of Springville, NY. Results indicated that the borrow source material met appropriate standards and was acceptable for use at the Site.

Barrier soils placement was conducted from November 2 to November 18, 2009. Barrier layer soils were placed in two, 10-inch loose lifts and compacted to 9-inch lifts with a pad foot roller. Compacted lift thickness was controlled through grade stakes and was verified throughout placement.

In-place density tests were performed on placed barrier soils at a frequency of nine per acre lift as per the CQAPP. In addition, Shelby tube samples were collected through both the first and second 9-inch lifts of barrier soil at a frequency of one per acre. All samples met the maximum recompacted permeability requirement of $\leq 1 \times 10^{-6}$ cm/sec.

Topsoil and Seeding

Placement of topsoil began on July 21, 2010 and was completed on July 30, 2010. The topsoil layer is the uppermost component of the cover system. Its functions are to protect the underlying layer from mechanical damage and (in conjunction with a vegetative cover) to protect against erosion. Prior to topsoil placement, the barrier soils were scarified with a dozer and re-rolled with a smooth drum roller. Topsoil was placed to a minimum depth of 6 inches and was graded smooth to remove ridges and fill in depressions, ruts and low spots. Grade stakes were used to verify the thickness of the topsoil layer.

A conservation seed mixture was used to foster a natural habitat and produce low-lying (1-2 foot) vegetative cover that should not require mowing. All seed was place by the hydro seeding process. The process entailed blending together seed, water, fertilizer, fiber mulch, and lime in a tank and applying through a spraying hose.

Passive Gas Venting

Passive gas venting involved the installation of passive gas venting through the waste/fill to relieve gas buildup beneath the cover system. Passive gas venting wells were installed in accordance with guidelines at a density of approximately one well per acre (five wells). The gas venting wells were constructed of 3-inch diameter Schedule 40 PVC with 180 degree (gooseneck) risers and bird screens. The gas venting wells were installed a minimum of 10 feet into the waste and were screened in a 5-foot long x 2-foot wide annular space. The risers extend 16 feet above the final cover

system to assure adequate dispersion of gases and mitigate potential odor concerns. A galvanized steel protective casing was installed over the gas risers.

Final Inspection

On September 9, 2010, a final inspection was conducted. Based on the results of the inspection, it was determined that the Site construction was complete; the remedy was implemented consistent with the ROD. The pre-final inspection concluded that the PRPs constructed the remedy in accordance with the RD plans and specifications, and no further response (other than maintenance of the cap and cover, and long-term groundwater monitoring) is anticipated.

Institutional Controls

The ROD requires the implementation of institutional controls (ICs). The ICs involve filing of an Environmental Easement to restrict the use of on-site groundwater as a source of potable or process water and to restrict activities on the Site that could compromise the integrity of the cap.

Institutional controls have been put in place at the Site. ICs were implemented by filing the Environmental Easement with the Cattaraugus County Clerks Office on March 30, 2009. PRP counsel has provided EPA with a copy of the filed Environmental Easement.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

RA activities at the Site were undertaken in a manner consistent with the ROD and with the RD plans and specifications, as modified by the as-built documentation. All applicable EPA and NYSDEC quality assurance and quality control (QA/QC) procedures and protocols were incorporated into the RD. All procedures and protocols followed during the RA are documented in the RD reports and the sample analyses were performed at state-certified laboratories.

The QA/QC program used throughout the RA was rigorous and in conformance with EPA and NYSDEC standards; therefore, EPA and NYSDEC have determined that all analytical results are accurate to the degree needed to assure satisfactory execution of the RA, and that they are consistent with both the ROD and the RD plans and specifications, as modified by the as-built documentation.

IV. ACTIVITIES AND SCHEDULE FOR COMPLETION

The activities that remain to be completed for the Site include finalization of the Site Management (SM) Plan (including the Soil Management Plan and Operation & Maintenance (O&M) Plan), finalization of RA report, performance of long-term monitoring, performance of five-year reviews, preparation of a Final Close-Out Report, and deletion of the Site from the NPL. These activities will be completed according to the following schedule.

Activity	Responsible Organization	Estimated Completion
Submission of Draft RA Report	PRP Contractor	September 2010
Approval of RA Report	EPA/NYSDEC	October 2010
Submission of Draft SM Plan	PRP Contractor	October 2010
Approval of SM Plan	EPA/NYSDEC	December 2010
Approve Final Close-Out Report	EPA/NYSDEC	December 2011
Deletion from NPL	EPA/NYSDEC	March 2012
Conduct Five-Year Review	EPA/NYSDEC	October 2014

V. SUMMARY OF REMEDIATION COSTS

The estimated costs to implement the selected remedy in the 2005 ROD included a capital cost of $2.1- $2.7 million and annual O&M costs of $31,000-$88,000. With regard to the remediation costs, the PRPs were not required by the terms of the Consent Decree to make such cost information available. However, the PRPs have estimated both the capital and annual O&M costs to be near the low range of their respective estimates.

VI. FIVE-YEAR REVIEW

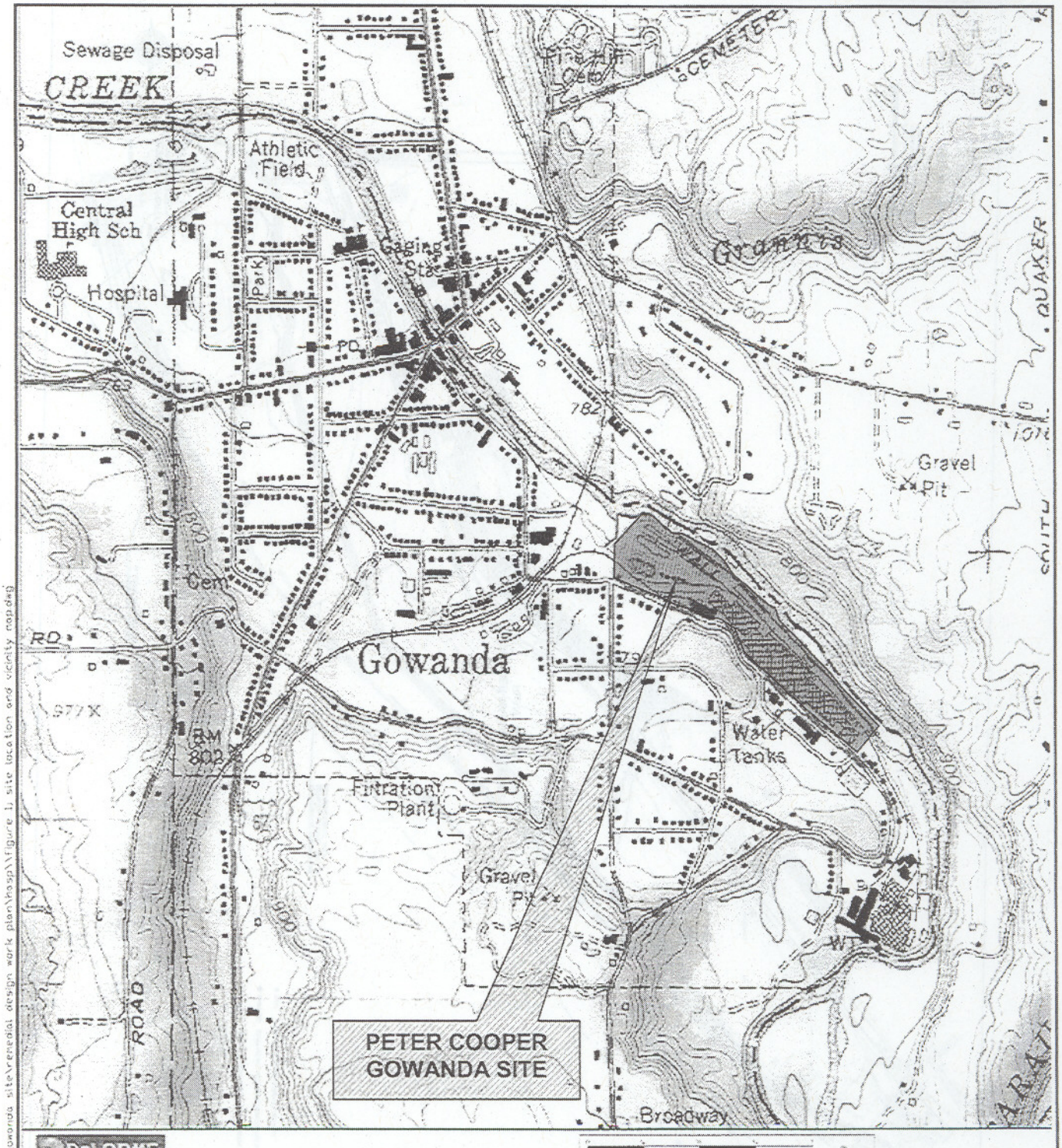
Hazardous substances remain at this Site above levels which would allow for unlimited use and unrestricted exposure. Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, Section 121(c), EPA must conduct five-year reviews. The five-year reviews to be conducted at the Site are statutory. The first Five-Year Review Report will be completed prior to October 2014, which is five years from the initiation of construction of the remedy.

Approved:

Walter E. Mugdan, Director
Emergency and Remedial Response Division

9/17/2010
Date

FIGURE 1



FILEPATH:\Acad\Benchmark\Collier_shannon\gowanda site\remedial design work plan\wsp\Figure 1, site location and vicinity map.dwg

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

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(716) 856-0599

PROJECT NO.: 0021-001-900

DATE: APRIL 2005

DRAFTED BY: BCH

SITE LOCATION AND VICINITY MAP

RD WORK PLAN - SWMECP

PETER COOPER GOWANDA SITE
GOWANDA, NEW YORK

PREPARED FOR

RESPONDENTS FOR PETER COOPER GOWANDA SITE

F:\CAD\Benchmark\Collier Shannon\Gowanda Site\Remedial Design Work Plan\SWMECP\Figure 2; Site Plan.dwg, 3/6/2008 1:41:29 PM

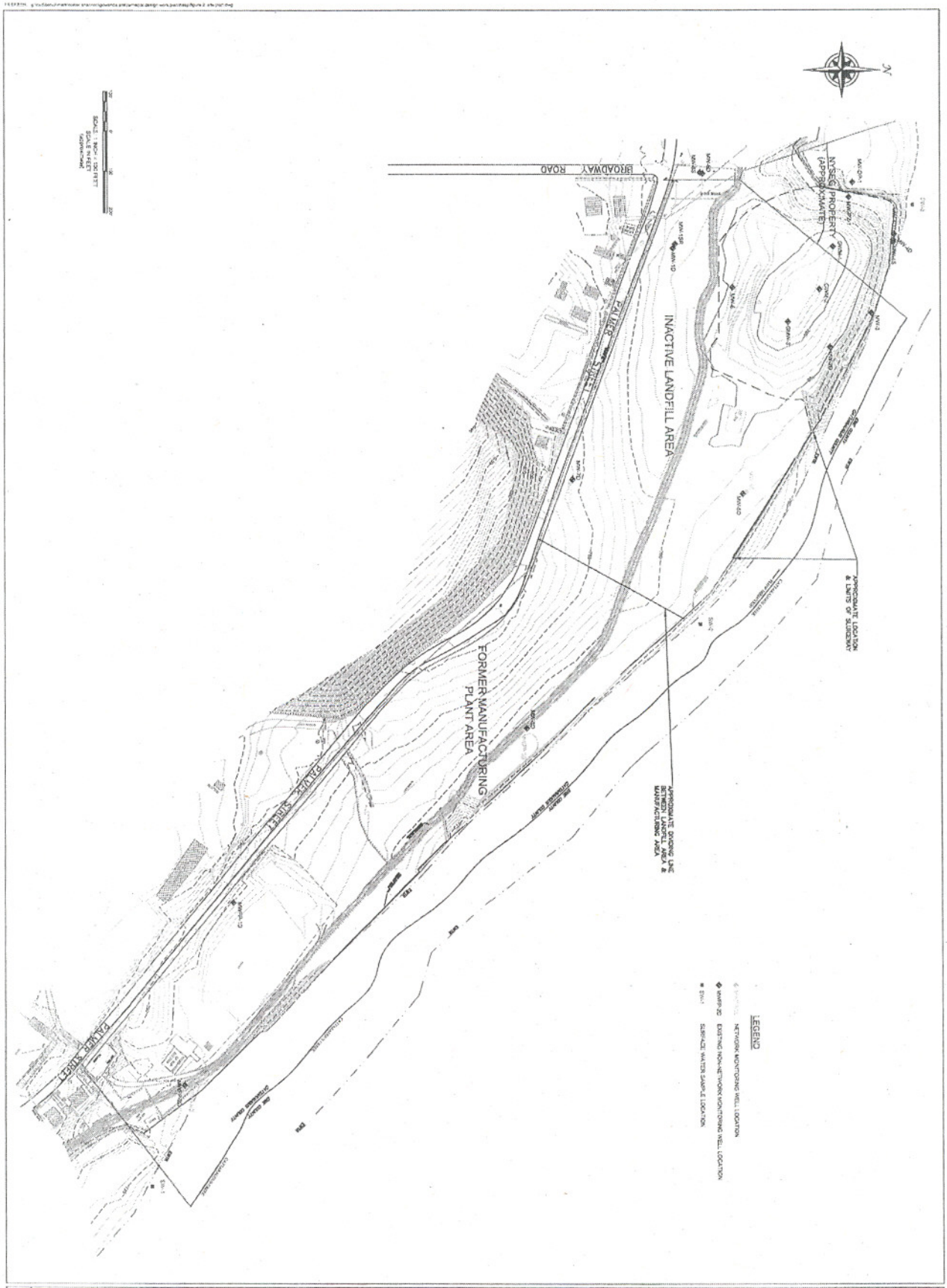

FIGURE 2

SITE PLAN

RD WORK PLAN - SWMECP

PETER COOPER GOWANDA SITE

GOWANDA, NEW YORK

PREPARED FOR

RESPONDENTS FOR PETER COOPER CORPORATION

DRAWN BY:	BCH
DATE:	APRIL 2008
CHECKED BY:	THF
APPROVED BY:	

SEAL

REVISIONS

NO.	BY	DATE	REMARKS

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