

APPLICANT AND SITE ELIGIBILITY

Eligible Entity: The applicant, the County of Broome, is a general purpose unit of local government as defined under 40 CFR Part 31.

Applicant Information: Broome County Department of Planning
and Economic Development
County Office Building
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Chief Executive: Barbara Fiala, County Executive

Date Submitted: October 16, 2009

Site Ownership: Broome County is the sole owner of the property, having taken the property in a tax foreclosure.

Letter from the State or Tribal Environmental Authority: See Attached

Site Ownership and Property Ownership Eligibility

Basic Site Information:

Name: 312 Maple Street
Location: 312 Maple Street
Endicott, NY 13760
Owner: County of Broome

Status and History of Contamination at the Site: The site is approximately 0.93 acres in size and is located on the southwest corner of Maple Street and North Duane Street in the Village of Endicott, New York. The structures on the site consist of three interconnected buildings with the main entrance from Maple Street.

Broome County foreclosed on the LMS of North America, the previous owner, in 1993. The building was vacant at the time that the County took ownership. A potential buyer, Joseph Belardinelli purchased the building at a tax auction. Broome County contracted with C&S Engineers, Inc. to perform a Phase I Environmental Site Assessment as part of this sale. That Phase I brought to light several environmental concerns that precluded Mr. Belardinelli from securing a mortgage for the property. While the environmental characterization and interim

remediation has taken place on site, Mr. Belardinelli has leased the property from the County for his cabinet making business.

Previous activities undertaken at this Site that may have potentially contributed to environmental problems include shoe manufacturing, coal storage, electronic assembly, and metal finishing. From the C&S Phase I, the property had the following uses/occupants history:

- 1908 - Elmer Lacey sold the Site property to Albert Bolt.
- 1922 - Collingwood Shoe Co. purchased the Site property for the manufacture of shoes.
- 1947 - Collingwood Shoe Co. sold Site property to Regal Shoe
- 1950s through 1960s - Endicott Johnson Corp. occupied Building 3 and Sanford Manufacturing Co. and National Shoe Products Co. occupied Building 1. (Building 1 and Building 3 were apparently separate structures during this time and Building 2 was not yet constructed).
- 1965 to 1981 - Robina Industries, an electronic assembler, owned the Site property.
- 1988 to 1993 - LMS of North America purchased and occupied the Site property for the manufacture of internal circuitry for multilayer printed wiring boards. Envirocycle Inc., a computer recycler, occupied the facility after LMS until 1993.
- 1993 - Broome County took over ownership of the property and the property was unoccupied at the time of the C&S Phase I ESA.

Occupancy or site use information was not available for the Site between 1982 and 1988. The area surrounding the Site consists of residential dwellings to the north. Railroad tracks have been located adjacent to the Site on the south since the early 1900s. Portions of the southern side of the Site and the adjacent western property were historically occupied by several coal companies including Round Hill Coal Company and E.B. Lacey Coal Company. A former railroad spur was used along the southern portion of the Site (south side of Building 2) in addition to historic concrete coal storage silos and lumber storage areas. Various structures belonging to the coal companies were located in the southern portion of the Site and have been removed. No information was available regarding these structures and when they were removed.

Two potential source areas of TCE contamination were originally identified at the site. The primary exterior contamination source area is a zone of unsaturated soils contaminated with TCE located southeast of Building 2 adjacent to the southern adjoining railroad property. The smaller interior possible source area was identified as three dry wells located inside Buildings 2 and 3. Based on subsequent meetings and conversations with representatives of the NYSDEC, the surface soils south and east of Building 2 were defined as areas of concern requiring additional investigation and possibly requiring remediation. The groundwater at the site had been identified as impacted with TCE. No other contamination had been identified in the groundwater. The source of the TCE was expected to be located in the unsaturated, overburden soil and fill material and apparently not associated with the groundwater at the Site.

Based on previous site investigations, the volume of unsaturated soils contaminated with TCE was estimated at approximately 250 cubic yards (cy). The TCE contaminated soil source area also appeared to be on both the 312 Maple Street site and the adjoining railroad property belonging to the Norfolk Southern Railroad (NSR) adjacent to the site to the south.

Two of the site dry wells are located inside Building 2 and one is located in Building 3. These dry wells were assumed to be about three feet deep and determined to allow for drainage into the subsurface soils. The levels of volatile organic compounds (VOCs) detected in the soil samples (collected during previous investigations) from the bottom of the dry wells were considered to be low. Metals and other compounds (e.g., semi-volatile organic compounds (SVOCs)) were also identified in previously completed soil analysis although at low concentrations typical of historic fills and activities common to the Site area.

Contaminated surface soils (i.e., primarily arsenic) were identified in the area to the east of Building 3. Additionally, surface soils south of Building 2 were identified to be contaminated with elevated levels of polycyclic aromatic hydrocarbons (PAHs). These areas of concern were identified during initial environmental investigations.

Sites Ineligible for Funding: The project site is not listed or proposed for listing on the National Priorities List, not subject to unilateral administrative orders, court orders, administrative orders on consent, or judicial consent decrees issued to or entered into by parties under CERCLA, and not subject to the jurisdiction, custody, or control of the United States government.

US EPA Region 2 approved the property environmental assessment activities under Broome County's current cooperative agreement (see attached).

Sites Requiring a Property-Specific Determination: Not applicable

Environmental Assessment Required for Cleanup Proposals: The following environmental reports have been prepared for the property:

- "Phase I Environmental Site Assessment", prepared for Broome County and prepared by C&S Engineers, dated January 12, 1996.
- "Limited Phase II Environmental Site Assessment", prepared for Broome County and prepared by Gaynor Associates, dated March 1996.
- "Environmental Investigation, 312 Maple Street, Endicott, NY", prepared by GZA GeoEnvironmental of New York, dated September 1999 for Broome County.
- "Supplemental Environmental Site Investigation, 312 Maple Street, Endicott, New York", prepared by GZA GeoEnvironmental of New York, dated April 1999 for Broome County.
- "Remedial Investigation/Remedial Alternatives Report (RI/RAR)- Draft, 312 Maple Street, Endicott, New York", prepared by GZA GeoEnvironmental of New York, dated July 2009 for Broome County. (see attached)

Property Ownership Eligibility

CERCLA §107 Liability: Broome County is not potentially liable for the contamination at 312 Maple Street under CERCLA §107, because Broome County is a local government entity that in 1993 acquired the property involuntarily through tax delinquency by the previous owners.

Enforcement Actions: There are no ongoing or anticipated environmental enforcement actions related to the project site. There are no orders from local or state entities regarding the responsibility of any party, including Broome County, for the contamination or hazardous substances at the site. Broome County has worked closely with the New York State Department of Environmental Conservation and the New York State Department of Health since investigation activities began on the site.

Information on the Property Acquisition: In 1993, Broome County foreclosed on LMS of North America, the previous property owner, due to property tax delinquency. The County is the fee simple/sole owner of the site. There are no familial, contractual, corporate, or financial relationships or affiliations with the prior owners or operators of the site.

After the County foreclosed on the property, it was sold at public auction. The successful bidder, Joseph Belardinelli, was unable to secure a mortgage when concerns were raised due to an environmental assessment. Mr. Belardinelli has leased the property from the County since that time for the conduct of his cabinet manufacturing business with the agreement that he will complete his purchase when the property has been fully remediated. Mr. Belardinelli, and his business, are not considered by NYS Department of Environmental Conservation as a contributor to the contamination.

Timing and/or Contribution Toward Hazardous Substances Disposal: The contamination onsite is attributed to prior owner/operators at the who manufactured internal circuitry for multilayer printed wiring boards (LMS) and recycled computers (Envirocycle Inc.). This use ceased prior to the County taking ownership through tax foreclosure. Broome County has not, at any time, arranged for the disposal of hazardous substances at the site or transported hazardous substances to the site.

Pre-Purchase Inquiry: Broome County did not conduct an environmental assessment prior to foreclosing on the property.

Post-Acquisition Uses: After acquisition through tax-foreclose, Broome County leased the property to Joseph Belardinelli for his cabinet making business. The lease agreement is designed to allow the property to be used productively while the investigation and remediation took place.

Continuing Obligations:

Broome County has aggressively investigated the site, and has acted to prevent or limit exposure to the previously released hazardous substances. These efforts include the following:

- Completion of an Interim Remedial Measure (IRM) to excavate and dispose of TCE contaminated soil in a potential TCE source area and to close former interior dry wells;
- Delineation of subsurface soil conditions on the adjacent Norfolk Southern Rail property right-of-way located adjacent to the IRM excavation area.
- Installation of on-Site and off-Site sub slab depressurization systems at the Site buildings and at three off-Site commercial facilities (located on Maple Street and Jennings Street).

Further details of these activities are in Sections 2.8 and 2.9 in the attached RI/RAR.

Cleanup Authority and Oversight Structure: The investigations and IRM were undertaken as part of the New York State Environmental Restoration Program. By accepting ERP funds, Broome County committed to carry out a work plan in exchange for receiving liability protections set forth in New York State Environmental Conservation Law 56-0509. With participation in the ERP program, the site is subject to ongoing review by the DEC of the work plan, test results, and proposed remedial alternatives.

To complete the cleanup plan, Broome County will negotiate an access agreement with Norfolk Southern Railroad. Norfolk Southern has worked cooperatively with the County on the project to date.

Cost Share: The total federal cleanup fund request of \$131,666 will require a 20% cost share of \$26,334 for a total project cost of \$158,000. The existing investigation funded by the State Environmental Restoration Program has sufficient funds remaining, and Broome County will use these funds for the required cost share. These funds are provided to the County via a State Assistance Contract that remains in effect.

Community Notification: Broome County Planning and the local Environmental Management Council has engaged the community in an extensive, long-term notification and education process regarding 312 Maple Street. Under the supervision of NYSDEC, the Broome County Department of Planning and Economic Development developed and executed a Citizen Participation Plan for the site (see attached). The highlights of this process are as follows:

- The County, in cooperation with the New York State DEC and the New York State Department of Health, prepared and distributed a 'Fact Sheet'
- Published investigation related documents on its website, <http://www.gobroomecounty.com/broome/planning/pubs>
- Conducted a well-publicized, and well-attended public hearing to discuss the site and its potential remediation. This meeting was held at a local high school. The meeting was advertised via press releases and a fact sheet mailed to nearly 300 property owners in the vicinity of the site.
- Published a community notification ad and conducted a public hearing specifically for the EPA Cleanup Application at the Town of Union Town Hall. The application was made available in the Broome County Planning Department and on the County's website.

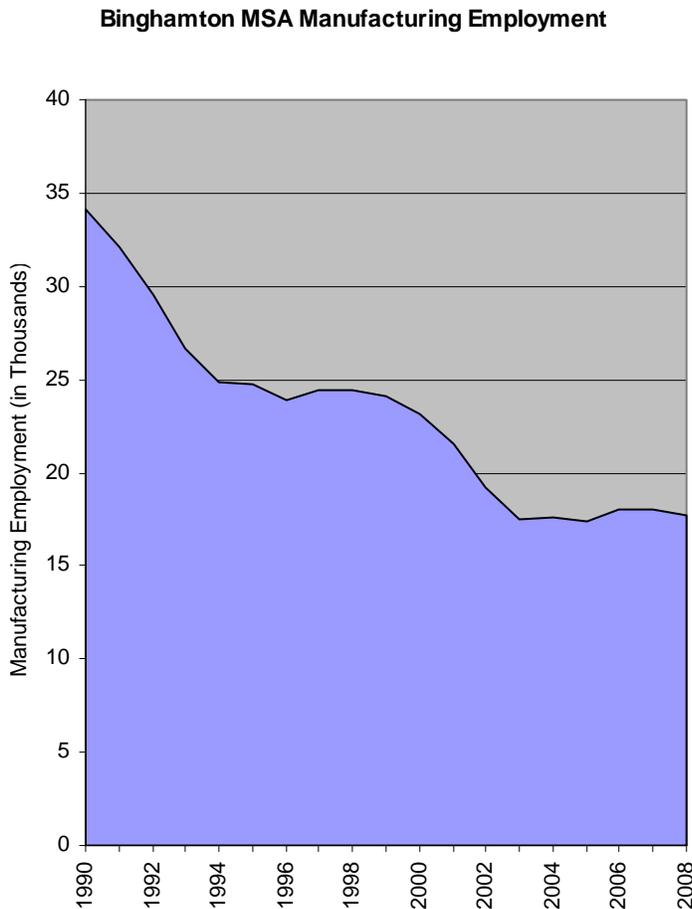
Evaluation of Subawardees and Contractors: Broome County will contract with an environmental engineering firm consistent with the competitive procurement provisions of 40 CFR 31.36 to provide the technical expertise necessary to design and manage the remediation of 312 Maple Street.

RANKING CRITERIA FOR CLEANUP GRANTS

Community Need

Financial Need: Broome County has endured a painful economic restructuring that included defense downsizings, manufacturing cutbacks, population declines, and increases in poverty. Impacts include:

- Local defense procurement contracts are one-half of their 1994 level.
- Broome County’s manufacturing employment has declined 48% since 1990
- Between 1970 and 2008, the County’s population decreased by 12%
- Over the same period, the Village of Endicott’s population declined by 25%
- Poverty rates have increased nearly 100% since 1989.



The economic restructuring began with defense downsizings, long a core part of the local economy. This trend can be tracked by following defense procurement contract awards for County firms. The total value of defense contract awards in 1994 (\$343 million) was over twice the amount of contracts awarded in 2008 (\$152.6 million). (Source: Consolidated Federal Funds Report)

The defense downsizings rippled throughout the entire manufacturing sector. As the major defense firms cut back, suppliers and contract manufacturers also announced layoffs. For the period from 1990 through 2008, the Binghamton MSA, the area that includes Broome and Tioga counties, lost approximately 16,300 manufacturing jobs. That is a job loss of 104 manufacturing jobs per month. The ongoing loss of manufacturing jobs for the Binghamton MSA is shown by the chart to the left. (Source: NYS Department of Labor)

As the economic base eroded, the County’s population dropped, and this decline has been most pronounced in the villages and urban core of the County. Between 1970 and 2008, the County population declined by 12% (from 221,815 in 1970 to an estimated 195,018 in 2008) while the population in the Village of Endicott declined by 25% from 16,556 to an estimated 12,411. Over this same period, the New State Population increased by 7%, from 18.2 million to an estimated 19.49 million (Source: US Census Bureau).

This decline was most pronounced among skilled workers and upper-income residents. County-wide the percent of individuals below poverty nearly doubled between 1989 (7.4%) and 2007

(14.5%). Over the same period, the poverty rate statewide increased by just 12%. to 13.8% (Source: US Census Bureau)

Health, Welfare and Environmental: In addition to the social impacts, the downsizings and plant closings resulted in abandoned and underutilized manufacturing facilities. These brownfields are concentrated in the urban core of Broome County.

In 2000, the local Environmental Management Council (EMC), a grassroots citizens advisory committee, formed a subcommittee to address brownfield redevelopment in the county. The EMC Brownfield Subcommittee consisted of interested citizens, local planning and economic development officials, environmental consultants, developers and public health officials. Working with the EMC brownfield subcommittee, the Broome County Department of Planning and Economic Development assembled a database and inventory of known or suspected brownfield sites. The inventory was built using existing public data, interviews with key officials, digital aerial photography, and tax assessor's records.

The foundation for this work was the extensive GIS coverages maintained by the Broome County Department of Health. Their data includes illegal dumpsites, Sanborn Insurance Map information dating back to the 1800's, chemical bulk storage, dry cleaner locations, VOC survey sites, environmental cleanup locations, wellhead data, hazardous materials sites, historic orchard sites, pesticide/herbicide storage sites, chemical spill sites, and much more.

The Planning Department assembled this information and mapped it against databases of available commercial and industrial property provided by the Broome County Industrial Development Agency, the Binghamton Local Development Corporation, and the Town of Union Local Development Corporation. Lists of properties taken through tax foreclosure were added to this inventory. Finally, this information was augmented by interviews with key development officials in each town to uncover potential, undocumented problem sites. The resulting database was then geocoded so that it matches the County Planning Department's Geographic Information System.

The EMC Brownfield's Subcommittee prepared an extensive site ranking methodology of sites within the County's database of Brownfield sites. The ranking methodology looked at three factors:

- Environmental and Health Factors
- Legal and Financial Factors
- Land Use, Zoning and Development Considerations

In an effort to prioritize brownfield sites, and gain a greater understanding of their threat potential, the EMC Brownfields Subcommittee developed a sophisticated screening tool. Using the EMC's process, the *hazard potential* of sites is characterized first based on both the toxicity and the amount of contaminant present. As part of this process, the amount of information available regarding the site is also considered. Then the *exposure potential* for receptors is considered. The final result of this portion of the screening process, is a letter grade that

indicates the hazard potential of each site. The following table summarizes the hazard potential rankings:

Health Risk Assessment at Redeveloped Brownfield Sites

Site Hazard Potential Ranking	Visitors	Employees	Residents	Construction/Utility Workers
A	Low	Low	Low	Low-Medium
B	Low	Low	Low-Medium	Low-Medium
B-	Low	Low	Low-Medium	Low-Medium
C	Low	Low-Medium	Medium	High
C-	Low	Medium	Medium	High
D	Low-Medium	Medium-High	Medium-High	High
D-	Medium	High	High	High

The project site, 312 Maple Street, received a rank of D, for its potential health risk especially to employees, residents and construction/utility workers. The TCE contamination onsite has contributed to offsite contamination and soil vapor intrusion in nearby properties. To address the soil vapor intrusion both on and offsite, Broome County has completed an Interim Remedial Measure (IRM) to excavate and dispose of TCE contaminated soil in a potential TCE source area and to close former interior dry wells; and installed onsite and offsite sub slab depressurization systems at the Site buildings and at three off-Site commercial facilities (located on Maple Street and Jennings Street).

Project Description and Feasibility of Success

Based on previously completed site investigations by GZA, approximately 250 cubic yards (or approximately 400 tons) of TCE contaminated soil was estimated to be located in the area of monitoring well MW-1 (assumed “source area”). Additionally, a portion of the assumed “source area” contamination is located within the adjacent NSR property located south of the Site. The following activities were completed as part of the IRM between May 15 and May 18, 2006.

Exterior TCE Contaminated Soil Removal: Excavation efforts of the IRM were completed in the general area proximate to MW-1 located east of Building #2 on the 312 Maple Street property and along the northern side of the railroad property boundary line.

Soil excavation of the “source area” was removed by GZAs subcontractor (Marcor Remediation Services) using standard excavation methods with a Komatsu WA250 PT front loader and a Komatsu PC160LC track excavator. Based on soil samples collected during our previous investigations, impacted soil was anticipated to be at relatively shallow depths (less than 4-feet deep). Excavated soil was screened for total VOCs with an OVM equipped with a PID. As agreed upon with NYSDEC, GZA used an OVM screening value of 0.5 parts per million (ppm)

for the determination of “clean soil” (less than 0.5 ppm) versus VOC impacted soil (greater than 0.5 ppm) requiring excavation for off-Site disposal.

The excavated “clean soil” was placed adjacent to the excavation and/or placed back in the excavation in a controlled manner (compacting with the excavator bucket). The excavated TCE impacted soil was stockpiled on top of two layers of plastic sheeting that was laid out in the paved area south of the existing Building 3. At the completion of the excavation, the stockpiled soil was secured and covered with two layers of plastic sheeting and surrounded by temporary fencing until disposal to a facility permitted to accept the impacted soil was arranged. Community air monitoring was conducted during these IRM activities which included visual observations for dust and down gradient monitoring with the OVM. The excavated sandy soils were generally observed to be moist and therefore no dust was generated. Additionally, down wind OVM screening did not identify migrating VOC vapors from the excavation activities.

The limits of the excavation generally ranged from about 30 feet to 40 feet long, about 6 feet to 10 feet wide and about 9 feet bgs. The bottom of the excavation typically extended into a gravel and cobble soil layer. Groundwater was not encountered at the bottom of the excavation. The extents of the excavation were generally limited on the south, west and north due to proximity of the adjacent property and the existing Building 2 foundation.

The limits of the IRM excavation were determined based on visual observations, OVM screening results, and adjacent NSR property boundary limitations. GZA collected confirmatory soil samples prior to backfilling to assess the concentrations of TCE remaining in the bottom and sidewalls of the excavation. GZA collected one confirmatory sample from each excavation sidewall (identified as NORTHWALL, EASTWALL, SOUTHWALL and WESTWALL), and one excavation bottom sample (identified as BOTTOM). Confirmatory samples were analyzed for Target Compound List (TCL) VOCs via EPA Method 8260. Confirmatory samples tested identified four VOC compounds including methylene chloride, chloroform, TCE, PCE and 1,1,1-trichloroethene. However, none of the detected compounds were identified as exceeding their respective soil cleanup objectives (SCOs) for unrestricted or restricted use as defined in 6 New York Code Rules and Regulation Part 375-6 Remedial Programs Soil Cleanup Objectives (Part 375 SCOs) shown in Tables 375-6.8 (a) and 375-6.8 (b).

Once the determination was made that no additional soils were to be excavated and after collection of the sidewall and bottom confirmatory samples, approximately three feet of a clean gravel bank run stone was placed in the bottom of the excavation. The backfill material was tamped with the excavator bucket and leveled off. A piping system was installed in the excavation for potential future remedial use as either a soil vapor extraction (SVE) system or in-situ injections, if deemed necessary at a later date. The piping is constructed of 2-inch diameter PVC slotted piping (similar to that used in groundwater monitoring well screen material) and placed on the bottom of the excavation (about 6 feet bgs). It extended the length of the excavation, with elbows placed upward along the southeast corner of Building 2. The screened piping was then placed on top of and covered with approximately 6 to 8-inches of clean pea-gravel material. The remainder of the excavation was backfilled and compacted with clean, imported bank run stone material. Plastic sheeting was placed in the excavation about 18-inches below grade in an effort to create a cap to limit short circuiting from atmospheric air over the

excavation in the event an SVE system is connected to the constructed piping in the excavation. Clean, imported backfill material was placed and compacted over the plastic sheeting up to the ground surface and tamped down by running the excavator over the area. Repairs to the concrete pad and/or asphalt pavement within the IRM excavation area were made by Broome County and/or the current Site occupant in 2007.

Drywells No. 1 And No. 2 Closure: During the exterior excavation activities, drywell # 1 and #2, located inside Building 2 were opened to access the interior chambers. To gain access to the drywells, Marcor (GZAs excavation subcontractor) saw cut an approximate 4 foot by 4 foot square area over the top of each drywell. Once open, GZA determined the dry wells were apparently constructed from steel 55-gallon drums with several holes punctured into the sidewalls and bottom of the drum to allow accumulated drainage water to flow into the subsurface soils. Marcor removed the minimally accumulated sediment in the bottom of each drywell and then broke through and removed the bottom steel portion of each drywell. Approximately 6-inches of soil below each drywell was removed by hand methods (i.e., post hole digger). Excavated soil was screened in a similar manner as discussed in Section 2.5. Visual and olfactory observations and engineering judgment were employed to determine the extent of soil excavation (about 6-inches below the structure bottom) from each drywell. At the completion of soil removal, confirmatory soil samples were collected from the bottom of each drywell. Samples were tested for TCL VOCs via EPA Method 8260, TCL SVOCs via EPA Method 8270, Target Analyte List (TAL) metals and polychlorinated biphenyl's (PCBs) via EPA Method 8082. The drywells were then closed by backfilling each with concrete up to existing floor grade. In addition to the confirmatory sampling, one soil probe was completed as close as allowable to the outside of each dry well structure for similar laboratory testing.

The volume of soil excavated from the two drywells was small (less than ½-cubic yard), and was placed with the exterior IRM stockpiled soil for off-Site disposal.

Confirmatory samples tested from the bottom of the two drywells identified detections of five VOC compounds including toluene, chloroform, TCE, 1,1,1-trichloroethene and chlorobenzene. None of the detected compounds were identified exceeding their respective Part 375 SCOs listed on Table 375-6.8(b) for restricted use. Approximately fifteen SVOCs and several metals were identified in the bottom samples although none exceeded their respective Part 375 Restricted Use SCOs with exception of cadmium and copper at concentrations of 7.7 and 321 ppm respectively in Drywell #1 which had concentrations slightly exceeding their restricted residential SCOs (see Table 10). Due to the depth below the concrete slab floor and due to dry well closure and filling with concrete, potential exposure to these metals is considered minimal.

Waste Soil Transportation and Disposal: At the completion of excavation activities at the Site (exterior "source area" and interior drywells), the impacted soil was sampled and tested for waste characterization analysis required by the Broome County Municipal Landfill where the excavated soil was to be taken for disposal. Because the excavation was limited to the southern property boundary, the soil excavation for this revised IRM work was reduced to about 130 tons of TCE impacted soil. GZA collected one composite sample from the stockpiled soil (identified as Stockpile-3) and tested for toxicity characteristic leaching procedure (TCLP) VOCs, SVOCs, metals and PCBs. Additionally, the composite sample was tested for pesticides, herbicides,

ignitability, reactivity and corrosivity. At the request of the Broome County Landfill, two grab samples were also collected from the stockpiled soil and tested for TCLP VOCs and SVOCs. The results of the waste characteristic analysis identified the excavated soil as non-hazardous soil allowing for disposal at the county landfill. Upon receipt of the waste analysis, GZAs subcontractor coordinated with the landfill facility for the proper waste manifests and scheduling disposal of the soil into provided dump trucks for delivery to the designated landfill.

Remaining TCE Soil on NSR Property: Some TCE impacted soil remains in the subsurface soil within depths ranging from 0 to 4 feet bgs as determined by soil probe sample SP-6. Impacted soils located off site (on the adjacent NSR property) that could not be excavated were left in place. This area was delineated during our 2008 site activities in an effort to better determine the volume and concentration of TCE impacted soils (see Section 2.1). Soil probes completed in this area (i.e., SP-10 through SP-23) identified an area of about 10 feet by 10 feet by 4 to 5 feet deep or about 25 cy of subsurface soils impacted with TCE at concentrations exceeding its respective Part 375 Restricted Use SCO.

Since completion of the on-Site IRM activities, NSR had cleaned up and disposed of various debris piles previously located within their right-of way area adjacent to the Site on the south. This material typically was observed consisting of asphalt, concrete, soil, scrap metal and old wood railroad ties. After the debris was removed, the railroad easement area was regraded with gravel ballast typical of railroad sidings. The edge was sloped slightly downward into the 312 maple Street asphalt parking lot.

Following the IRM and completion of the RI/RAR, two Areas of Concern (AOC) remain. These issues, and their proposed remedial plans, are as follows:

AOC #1 On-Site Groundwater

The volume of impacted groundwater at the Site exceeding the SGCs is estimated to be approximately 1,500,000 gallons. This volume is based on an assumed area (33,200 sf) shown on Figure 5, and assuming a conservative saturated overburden (water bearing) zone thickness that is twice the average saturated zone measured. A saturated zone thickness of 15 feet was used due to the variable and uncertain subsurface soil conditions.

Approximately 1.5 million gallons of contaminated groundwater (i.e., groundwater with TCE concentrations greater than 5 ppb) is assumed to be detected on-Site. Considering an average total TCE concentration of about 220 ppb for the area of on-Site impacted groundwater; less than 3 pounds of TCE per 1.5 million gallons is estimated (see Appendix G for calculations).

The average saturated aquifer thickness of about 7 to 8 feet was monitored and sampled, based on water level measurements in the monitoring wells. However, a 15 foot thickness was used in the calculation. The porosity value (assumed to be 0.4) is based on published values for this type of soil (sands and gravel).

Limited In-Situ Groundwater Treatment

Due to the relatively low levels of TCE present as the only detected VOC above groundwater cleanup standards, and relatively low Cr+6 concentrations in the on-Site groundwater, implementation of a full scale groundwater remedial technology (i.e., vapor extraction, air sparging, groundwater extraction and treatment) is not considered to be efficient or practical for this Site. It is GZA's opinion that due to remedial actions taken to remove the TCE impacted fill material/soil at the Site as part of the IRM, the groundwater conditions will improve with time. Additionally, the installation of SSDS's both on-Site and off-Site locations have further reduced the risk to human exposure of potential TCE vapors.

The limited in-situ treatment (i.e., reductive bioremediation) could consist of using direct push technologies to inject a hydrogen release compound (HRC) into the groundwater and "polish" the relatively low levels of TCE and Cr+6 contaminants present. It should be noted that an alternative permanganate based chemical injection material would be suitable for remediation of TCE in groundwater, however would not be effective in addressing the Cr+6 groundwater contamination. A suitable hydrogen release product to address the TCE and Cr+6 simultaneously in Site groundwater would be the injection of Regenesis product 3-D MicroEmulsion™ (3DMe™). This material would be injected into the groundwater zone at a water dilution of not less than 10 parts water to 1 part 3DMe™ (10:1 ratio).

Effectiveness – The in-situ reductive bioremediation alternative would further reduce the TCE concentration in the groundwater and the potential for off-site migration of contamination. Additionally, the diluted 3DMe™ material could be "primed" with the addition of an HRC material which would enhance carbon migration underneath the existing building to lower the redox potential which would result in the precipitation of the Cr+6 into a less harmful and immobile Cr+3. Groundwater monitoring and sampling would be done at various times during this remedial effort to verify the alternatives effectiveness.

Implementability – The materials, equipment and labor necessary to implement this technology are readily available and could be mobilized to the Site in a relatively short time period. It is anticipated that only one injection event (at about 18 to 20 locations at the Site) would likely be required as the diluted 3DMe™ material is comprised of free lactic acid, controlled release lactic acid and certain fatty acid components. This combination of materials allows for a slow release and a single application can provide longevity between 3 and 5 years. The injections would be completed at exterior locations in a relatively short time and could be coordinated away from on-going Site activities, thereby limit disturbance to the existing occupant.

Cost - \$90,000

AOC #2 Off-Site Subsurface Soil

AOC #2 consists of the impacted fill and subsurface soil remaining in the off-Site area that was unable to be excavated during the IRM activities (as discussed in Section 2.11). The estimated volume of impacted soil exceeding the Part 375 Unrestricted Use SCO remaining in this area is about 50 cubic yards (cy) or about 85 to 90 tons. This estimate assumes an approximate 350 square foot (sf) area and a thickness of around 4 feet. The COC based on the IRM and RI findings is identified as TCE. We have assumed that the soil remaining in the area of AOC#2 is

of similar characteristics to that excavated during the IRM. Therefore, it can be handled and disposed of in a similar manner. Coordination with NSR for access to the Site would be required for excavation on the railroad property. Based on our soil delineation sample results; it appears that excavations would not be required underneath the existing railroad ballast.

Excavation and Off-Site Disposal

This alternative involves the excavation of contaminated soils, backfilling with clean soil and TCE impacted soil removal for disposal at a permitted solid waste disposal facility, as required. These soils are anticipated to be similar to the on-site soils excavated during the IRM activities. Based on the low concentrations of TCE, the on-Site soils were able to be disposed of at the Broome County landfill.

Effectiveness - Excavation and disposal of waste at a permitted landfill is an effective method of reducing the volume of contaminated material at the Site and eliminates the potential for direct contact with contaminated soils. In addition, this action reduces the potential for future contamination of groundwater. Placing excavated materials in a permitted facility reduces the risk to human health and the environment since the materials would be in a secure location with environmental monitoring.

Implementability – Contractors and disposal facilities (hazardous and non-hazardous) are readily available to implement this technology for the contaminated fill material/soil. The time frame for implementing this alternative is considered to be moderate (less than one year). The key to implementing this technology is coordination with NSR to allow for access and excavation of the impacted soils which are assumed to be limited to about 50 cy.

Cost - \$68,000

Budget for EPA funding and Leveraging of Other Resources

Budget Categories	Project Tasks	
	Task 1 Limited In-Situ Groundwater Treatment	Task 2 Excavation and Off- Site Disposal
Uses:		
Personnel	\$ -	\$ -
Fringe Benefits	\$ -	\$ -
Travel	\$ -	\$ -
Equipment	\$ -	\$ -
Supplies	\$ -	\$ -
Contractual	\$ 90,000.00	\$ 68,000.00
Other		
<i>Total</i>	\$ 90,000.00	\$ 68,000.00

Sources:		
EPA Clean Up Funds	\$ 75,000.00	\$ 56,666.00
Cost Share (NY State ERP)	\$ 15,000.00	\$ 11,334.00

Summary

EPA Clean Up Funds	\$ 131,666.00
Cost Share (NY State ERP)	\$ 26,334.00
<i>Total</i>	\$ 158,000.00

Outputs:

- Removal and disposal of an estimated volume of 50 cubic yards (cy) or about 85 to 90 tons of impacted soil.
- One injection event (at about 18 to 20 locations at the Site) of a limited in-situ treatment (i.e., reductive bioremediation) system using direct push technologies to inject a hydrogen release compound (HRC) into the groundwater.
- Organization of a community meeting to share the results of the environmental assessments with the affected community and to present the remedial alternatives for 312 Maple Street.
- Preparation and dissemination of a Fact Sheet to property owners in the vicinity of the site as well as published on the Broome County website.

Programmatic Capacity

To date the Planning Department has secured nearly \$875,000 for brownfield assessment, clean up, and planning.

The primary grant won by the Planning Department is the \$200,000 award by U.S. Department of Environmental Protection Agency (EPA) for the Brownfield Assessment Program. These funds are being used to conduct environmental investigations and end use plans at brownfield sites throughout the County.

The active projects being undertaken through this grant are as follows:

- 1151 Hoyt Avenue (Depot Site), Town of Fenton
EPA approval 8/22/06
Development of an EPA funded end use plan initiated 1/07
Kick off meeting held 1/23/07
First public meeting for end use plan held 5/16/07
Draft End Use Plan prepared 9/25/2009
- 375 State Street, City of Binghamton
EPA approval 3/17/06
Phase I Environmental Assessment completed 7/25/06

Phase I Environmental Assessment submitted to EPA on 9/5/06

- 1901 North Street, Village of Endicott
EPA approval 12/13/05
Evaluation of Existing Records and Existing Site Conditions (enhanced Phase I) completed 4/28/06
QAPP and HASP submitted 8/10/06
Environmental Assessment: Asbestos Sampling/Testing completed 10/17/06
Asbestos Removal and Demolition Cost Estimates completed 11/15/06
Using environmental documentation provided by the County through its EPA grant, the Village of Endicott secured a \$700,000 Restore-NY grant to clear the site. The buildings have now been demolished.

- 46 Corliss Avenue, Village of Johnson City
EPA approval 2/25/05
Phase I Environmental Assessment and limited Phase II testing completed 7/07
Using environmental documentation provided by the County through its EPA grant, the Village of Johnson City secured a \$400,000 Restore-NY grant to clear the site. Demolition bidding to take place in 2009.

- 312 Maple Street, Village of Endicott
EPA approval 10/24/03
Phase I and extensive Phase II work (Initial Remedial Investigation) completed in 1999
Revised Work Plan Addendum submitted 1/19/06
State Assistance Contract Cost Estimate and revised work plan submitted 9/5/06
Soil Vapor Migration Sampling (Events 1 and 2) completed 12/1/06
State Assistance Contract Amendment approved 12/15/06
Draft RI/RAR completed July 2009

The County is in full compliance with all reporting requirements for its EPA Brownfield cooperative agreement, including M/WBE, financial status and quarterly progress reports. Of the original \$200,000 grant amount, approximately \$162,860 has been expended and \$37,140 remains.

In early 2005, the Planning Department secured a \$155,000 grant for a New York State Brownfield Opportunity Area (BOA). This was the first round of funding by the State under this new program. The BOA program is designed to assist communities that have a concentration of brownfield sites, economic distress, and the potential for development. Through the BOA process, a community can receive funding to prepare a strategic revitalization plan focused on an area that has a concentration of brownfields and the potential for economic redevelopment. This first round of funding was dedicated to the Endicott-Johnson Industrial Spine BOA. That plan is now in final draft form, and the County is preparing an application for implementation funds to carry out its recommendations.

Broome County was awarded a second BOA designation for the Brandywine Corridor area in Binghamton. Using this \$175,500 grant, Broome County has contracted with Elan Planning and

Design to prepare a revitalization plan for one of the key corridors in the area. A 137-acre swath of land that is both a highly visible gateway and characterized by abandoned and contaminated properties. Elan has just begun their inventory and analysis work, and a completed BOA plan is expected in late 2010.

If awarded cleanup funds, Broome County will contract with an appropriately qualified environmental engineering firm. The in-house project manager for this effort will be Frank Evangelisti, the County's Chief Planner. Mr. Evangelisti has 15 years experience with managing brownfield projects, and nearly 25 years of experience writing and administering grants. Should employee turn over take place, the County Planning Department has a professional staff of 4 additional planners or equivalent positions, all of whom have grant administration experience and could oversee this project.

Broome County has not had any adverse audit findings from an OMB Circular A-133 audit, an audit conducted by a federal, state, tribal or local government inspector general or similar organization, or audits conducted by the U.S. Government Accountability Office. Broome County has not been required to comply with special 'high risk' terms and conditions under agency regulations implementing OMB Circular A-102.

Community Engagement and Partnerships

Broome County has engaged the community in an extensive, long-term notification and education process regarding 312 Maple Street. Under the supervision of NYSDEC, the Broome County Department of Planning and Economic Development developed and is executing a Citizen Participation Plan for the site (see attached). As the project progresses, the Broome County Planning Department will use their extensive mailing and email outreach lists to continue to inform individuals, community groups and agencies, and government entities about the cleanup and reuse of 312 Maple Street.

This public outreach and education effort will be carried out in partnership with the Environmental Management Council (EMC) a local grassroots environmental advocacy organization. The EMC was established in 1971 to preserve, protect, and enhance the local environment. The EMC is the focal point for public participation in local government decisions that effect the County's environment. Since its founding, the volunteer members of the EMC have conducted meetings and public information sessions, and prepared and presented reports, plans and advisory resolutions. A letter from the EMC is attached.

The Planning Department will specifically identify individual landowners and neighborhood stakeholders adjacent to and in the surrounding area of a 312 Maple Street using real property tax information records and GIS applications. These individuals, groups, and entities will be added to community outreach mail lists.

Community Meetings: In collaboration with the EMC, a community meeting will be organized to share the results of the environmental assessments with the affected community and to present the remedial alternatives for 312 Maple Street. The meeting will be held a location that is nearby the site, and it will be promoted via press releases and fact sheets mailed to property owners in the vicinity of the site.

Informational Resources: The Broome County Department of Planning will continue to update and disseminate fact sheets, in-depth information resources, and contact lists for the project. Through the help of local broadcast, print, and web-based media, and through the distribution of public notice flyers to public outlets, including libraries, community bulletin boards, neighborhood establishments, local schools and municipal offices, the community will be informed of progress of assessment, remediation and redevelopment efforts at 312 Maple Street.

Document Repositories: Broome County has established document repositories for the cleanup of 312 Maple Street at the following locations:

- Broome County Public Library; 185 Court Street; Binghamton, New York
- George F. Johnson Memorial Library, 1101 Park Street; Endicott, NY
- Broome County Department of Environmental Health; 225 Front Street, Binghamton, NY
- NYSDEC Region 7; 1679 NY Route 11; Kirkwood, NY

In addition, the Planning Department maintains an online repository for its 312 Maple Street project at:

<http://www.gobroomecounty.com/planning/pubs>

These repositories will be maintained throughout the cleanup process.

Project Benefits

Welfare and/or Public Health

Economic Benefits and/or Greenspace

Remediation of 312 Maple Street will result in the property being put to productive use as a cabinetmaking business. The current tenant, Joseph Belardinelli, attempted to purchase the property from Broome County at a tax auction. Mr. Belardinelli, however, was unable to secure financing due to the environmental conditions revealed during his due diligence. He has rented the property from the County since that time with his lease payments going toward the purchase price. Mr. Belardinelli will close on the acquisition when the property is remediated.

Once the property is cleaned up, it will be placed back on the tax rolls. At this point it will begin to generate property tax revenues for the Town of Union, the Union-Endicott School District, and Broome County. In addition, there have been no investments made in the building or property for upkeep or improvements due to it being in a state of limbo. When the acquisition is finalized, the new owner will address deferred maintenance issues related to its current status. The property will go from being an eyesore with environmental concerns to a stable, income producing property.

Environmental Benefits from Infrastructure Reuse/Sustainable Reuse

Broome County has a longstanding commitment to sustainable development and reuse of brownfield sites. The property at 312 Maple Street is served by public water and sewer and it is three blocks from the Main Street busline. The existing infrastructure and transportation network can readily accommodate the proposed reuse as a cabinet shop.