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DSS

City of Buffalo

OFFICE OF STRATEGIC PLANNING
Byron W. Brown, *Mayor*
Brian Reilly, *Commissioner*

December 2, 2009

Mr. David S. Szymanski
Environmental Engineering Technician III
Division of Environmental Remediation, Region 9
New York State Dept. of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: **Bern Metal Site**

Dear Mr. Szymanski:

The City of Buffalo has prepared this progress report as part of the inspection and monitoring activities required by the Operations, Maintenance and Monitoring Plan for the Bern Metal/Universal Metal Site in Buffalo, New York.

Introduction

The Bern Metal Site is located at Bender Street and Clinton Avenue in the City of Buffalo, Erie County, New York and encompasses an area of about 3.7 acres. The Site is bordered on the south and west by CSX and Norfolk Southern railroads, on the east by Laub Industries warehouse and the north by residences and small commercial establishments.

The former use of the site has included the reclamation of metals from used wet cell batteries and for reprocessing/recycling metal sludge and scrape metal. The reclamation activities contaminated the soil, ditch sediments and groundwater at the site. The groundwater is not used as a potable source.

The NYSDEC conducted a Phase I investigation on the Bern site in 1987. The investigation reveled waste piles, drums of waste, sludge and metal waste on site.

In 1990 the USEPA conducted a removal action on the Bern site and secured the property. In 1990 to 1992 the USEPA conducted soil sampling during the removal action. The analytical results detected elevated concentrations of lead, chromium and copper in the site soil. The EPA's subsequent removal action included the removal of abandoned drums, waste piles, electrical transformers (from the Universal site), and contaminated soil. Adjacent residential yards also underwent cleanup and the site was fenced and areas capped with asphalt.

A remedial investigation was conducted in two phases during 1994 – 1995 and a record of decision was issued in 1996. The record of decision determined that the selected remedy would be:

- Excavation of certain soil and sediment from off site areas and consolidation on-site;
- Building demolition and on-site consolidation;
- Installation of a multi layer cap;
- Long term groundwater monitoring;
- Long term site maintenance; and,
- Implementation of a property deed restriction.

Activities to implement the Record of Decision were undertaken and completed in 2002.

O & M REQUIREMENTS

An O & M Plan was developed for the Bern Metal Site to confirm that systems constructed during the remedial action perform as designed. The following OMM activities have been implemented at the site: installation of new groundwater monitoring wells; groundwater monitoring; routine inspections and maintenance of the final cover system, surface-water drainage system, groundwater monitoring wells, and other ancillary components (e.g., fences, warning signs); and the repair and replacement of items exhibiting deficiencies or performance below designed levels.

The activities described in the O&M Plan will continue for a 30-year duration or until a modification or termination of any such activity is approved by the New York State Department of Environmental Conservation (NYSDEC).

The City of Buffalo or its representative is required to perform O&M activities at the site and is responsible for performing site inspections, performing and documenting site maintenance activities, preparing monthly reports to document the site inspections and maintenance activities performed, and implementing the groundwater monitoring well sampling and analysis activities. In addition, the City of Buffalo has retained an offsite laboratory subcontractor to provide analytical services in accordance with the analytical requirements.

The City of Buffalo continues to conduct post-closure inspections of the Bern Metal property portion of the site. This was done, as required, on a monthly basis during the first year after final cover completion and after a significant precipitation event (e.g., 5-year, 24-hour rainfall event). After the first year, the City of Buffalo performed the post-closure inspections on a quarterly basis, and will continue to do so through the 10th year, and on an annual basis between years 10 through 30. The frequency of inspections will not change without the prior approval of the NYSDEC.

The need for maintenance and repairs of the final cover system, side slopes, and storm water drainage systems has been evaluated during the routine inspections. The purpose of these inspections is to confirm that the final closure measures taken to limit storm water infiltration and to prevent the migration of contaminants are operating as intended. Along with an inspection of the overall appearance and aesthetics of the Bern Metal property, the following items on the Bern Metal property require inspection:

- Final cover system;
- Storm water drainage system;
- Site access and security systems; and,
- Site monitoring wells.

Final Cover System

The overall integrity of the final cover system on the Bern Metal property has been and will continue to be assessed during the inspections. Final cover maintenance and repair will be required if an inspection reveals any of the following conditions:

- Settlement/subsidence relative to the surrounding areas;
- Topsoil erosion;
- Cracking of the final cover system;
- Ponding of storm water;
- Vehicle ruts;
- Exposed or damaged geosynthetic cover components;
- Animal burrows;
- Vegetative distress;
- Loss of vegetation due to traffic, drought, or excessive moisture; or
- Weed, brush, or tree development.

The inspections will include observation for these conditions and other conditions that could be construed to be potentially detrimental to the function of the final cover system. Repairs will be performed at areas exhibiting deficiencies or potential problems and, where applicable, repairs will be performed in accordance with the Technical Specifications included in the *Bidding and Contract Documents, Construction for Final Remedial Action, Bern Metal/Universal Metal Site* (Contract Documents, BBL, July 2002). Remedies can include additional soil cover or repair of the cover as a result of erosion, settlement, cracking, ponding, or other similarly damaging conditions. Reseeding will be performed when a loss of vegetation is noted. Bush and tree seedlings will be removed upon discovery to prevent disruption of the final cover system.

General Maintenance

General and routine maintenance of the vegetative cover layer of the final cover system will include the following:

- Mowing will be performed once per year near the end of the growing season to prevent the growth of shrubs, trees, and other deep-rooted vegetation, as well as for aesthetic purposes. Mowing shall be delayed until after September 1 of each year, if such a delay will not affect the integrity of the final cover system.

- Lime and fertilizer are optional and should be applied only if the vegetation is not meeting the functional end-use requirements. The lime and fertilizer requirements are provided in the Materials and Performance Specifications Section MP-02212, of the Contract Documents.

- Weed control of the final cover system is to be kept free of vegetation that may have a deep root system. Tree seedlings and bushes are not permitted and will be removed if starting to establish. Weeds that are generally considered "lawn weeds" are permissible, as long as the desired vegetation is not being crowded out, and the cover density remains good.

- Overseeding will be done with a seed blend of perennial rye grass for damaged areas where average turf loss is less than 50%.

- Reseeding will be done for damaged areas where average turf loss is greater than 50%. The damaged area will be disked or tilled to 4 inches in depth; topsoil will be added to the low spots; and seed, lime, fertilizer, and mulch will be applied in accordance with Section MP-02212 of the Contract Documents.

Final Cover System Maintenance

Repairs to the final cover system, in addition to those for the vegetated topsoil layer, will be necessary only when a site inspection identifies a problem requiring further corrective action. Some of the anticipated corrective action methods are as follows:

- Erosion (rills and gullies) and cracks in the protection soil layer will be filled with compacted soil before they reach a depth of 6 inches. The soil used for filling will be similar in nature to the soil cover used during construction. A slight overfill of approximately 1-inch will be used to eliminate the preferential pathway that initially caused the erosion.

- Animal burrows, which disturb an area, will be backfilled and hand-tamped to fill the void. The soil used for backfilling the protection soil layer will be similar in nature to the soil cover used during construction.

- Cracks or ponding are likely the result of settlement. Cracks will be filled as described above for erosion. Where ponding occurs, the vegetation and topsoil will be removed, and the depression filled with soil of the same type and compacted to the same requirements as the original protection soil layer. Once

the fill material is within 6 inches of the original grade (as necessary to promote positive drainage); topsoil will be placed, seeded, and fertilized in accordance with Section MP-02212 of the Contract Documents.

- In the event that damage to the underlying geosynthetic components is identified, appropriate maintenance and repairs will be performed, as necessary, in accordance with the applicable requirements presented in the Contract Document specifications.

Storm Water Drainage System

The condition of the storm water drainage system for the final cover system will be assessed as part of the inspection and maintenance activities for the final cover system. Components of the storm water drainage system that will be inspected include:

- Mid-slope drainage swales;
- Perimeter drainage ditches; and,
- Outlet drainage ditches.

These components will be periodically monitored to confirm that they are performing as designed. The storm water drainage system components will be inspected for worn or degraded vegetation, settlement, ponding, channel erosion or breach, and displaced riprap. In areas where inspections indicate a decrease in the performance of a particular component due to erosion, steps will be taken to restore the component by increasing the thickness of the erosion protection layer (e.g., topsoil or rip-rap) to the original design depth. In areas where inspections indicate a decrease in the performance of a particular component due to a blockage, the item(s) obstructing the flow will be removed.

General/routine maintenance of the storm water drainage system may include removing sediment and/or vegetation from the drainage structures. Reconstructing and/or adding drainage features may also be required if excessive erosion takes place. The inspections will be performed in conjunction with and at the same frequency as the general site inspections, including after a 5-year, 24-hour storm event, if practical. Repairs will be conducted, as required, prior to the next inspection.

Facility Access Control

The City of Buffalo Police Department will provide random patrols to check the site for signs of tampering or vandalism. Access controls to the facility include fencing around the Bern Metal property and one gate located at the end of Bender Avenue that will be locked at all times.

The chain link fence, as well as the one access gate described above, will be inspected by the City of Buffalo for structural integrity and signs of vandalism and/or tampering on a monthly basis. Repairs, if necessary, will be performed by a fencing subcontractor, immediately following the inspection. The access gate will also be checked to verify that the latch assembly and lock are in place. Examples of potential site security fencing maintenance activities include:

- Replacement of damaged or malfunctioning gate locks;
- Repair of fencing or gates due to storm damage or vandalism; and,
- Removal of brush or fallen trees from fencing.

Site Monitoring Wells

Monitoring wells for the site were installed after the performance of the completed remedial action. The overall integrity of the site groundwater monitoring wells has been inspected at the same time and frequency as the final cover system inspection. In general, the City of Buffalo will note any signs of vandalism (e.g., tampered locks) and frost heaving or other damage to the protective casing and concrete apron. Groundwater monitoring wells found to be insecure (not covered or locked) will be immediately secured. Staff gauges will also be inspected for any movement or damage. The findings of the monitoring well inspection will be noted on the Post-Closure Inspection Form.

Additional groundwater monitoring well inspections have been conducted during sampling activities. During sampling activities, inspections will focus on the integrity of the well screen and function of the monitoring well (e.g., identify whether the screen is obstructed).

ACTIVITIES CONDUCTED – June 2008 through May 2009

Quarterly inspections were undertaken in August and November of 2008 and February and May of 2009. The reports are included in Appendix A. Inspections were completed with the use of the Post-Closure Form for Operation, Maintenance and Monitoring of the Bern Metal/Universal Site, included in the Operation, Maintenance and Monitoring Plan. Information from the forms was then transcribed into a quarterly inspection report for each inspection.

The City's consultant, GZA, sampled the groundwater monitoring wells on May 14, 2009. The groundwater analytical results and site groundwater trend information is included in Appendix B.

The appended information and this correspondence will comprise the Annual O & M Report for the time period from June 2008 until May 2009. The next Annual Report will be provided to the State in June 2010, after the May 2010 groundwater sampling activities are completed.

EVALUATION OF REMEDIAL SYSTEMS

The purpose of the selected site remedy is to be protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent possible and is cost effective. The remedy satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

Base on the results of the O&M completed to date the selected remedy appears to be performing as required and as designed/expected. This is based on the routine inspections and groundwater analytical trend results, discussed below.

CONDITIONS OBSERVED AND CORRECTIVE ACTION TAKEN

The following is a list of out of scope conditions noted during site activities and the corrective actions taken, if necessary:

- Animal burrows were noted at several locations on the containment cell during the quarterly inspections. Trapping and baiting for rodent control took place November 5, 2009. The backfilling of animal burrows is scheduled for mid to late November 2009, once trapping activities have ceased for the season;
- Damage to the perimeter fence has been noted during quarterly inspections. Fence repair was completed August 2009;
- Some areas of the mid-slope swale have collapsed due to animal burrowing and lawn cutting traffic. Repair of the mid-slope swale was undertaken on November 23, 2009;
- Some areas of the cover vegetation require reestablishment. Reseeding is scheduled for Spring of 2010;
- The outfall ditch located on Norfolk Southern rail property has been repaired; and,
- Some areas of the perimeter ditch contained rooted plants. Grass cutting and removal of rooted vegetation took place on August 31 and November 2, 2009.

ANALYTICAL RESULTS

The results of the groundwater analyses conducted during the past year, the engineering evaluation of the results and a piezometric map of the ground water surface are provided in Appendix B. Trend analysis of the results indicate that lead has not been detected above Class GA criteria during the eight sampling events conducted during the past six years. Based on this information the City is requesting that the frequency of groundwater sampling be reduced at the site. Unless required by the NYSDEC next year's sampling event will not be scheduled.

SCHEDULED ACTIVITIES

- Quarterly inspections will be conducted on the site during 2009 and 2010;
- Future rodent control activities will be scheduled on an as needed basis;

- Reseeding and reestablishing soil cover is scheduled for the spring of 2010 and on an as needed basis;
- Future landscaping activities will be scheduled on an as needed basis; and,
- Inspection and monitoring reports will be submitted to the Department according to the OM&M Plan schedule.

If you have any questions regarding the above please contact me at (716) 851-6587.

Sincerely,
OFFICE OF STRATEGIC PLANNING

Dennis Sutton, CPG
Environmental Project Manager

Attachments

Copies to: John Heffron, Esq - COB
Peter Merlo, P.E. - COB
David Flynn, Esq. – Phillips, Lytle, Hitchcock, Blaine & Huber LLP
Brenda Joyce, Esq. – Jaeckle, Fleischmann & Mugel LLP
Joseph Molina III – BBL

Appendix A
Quarterly Inspection Reports

Post Closure Inspection Report for Operation, Maintenance and Monitoring; Inactive Hazardous Waste Site, Bern Metal/Universal Metal Site Bender Street, Buffalo, New York

Date: May 24, 2009; 10:25 AM
Weather: sunny, warm, 70-75 F, winds 5-15 mph
Inspectors: D. Sutton, COB; D. Szymanski, NYSDEC

1. **General Site Conditions** –The gate on Bender Avenue was locked. The perimeter fence warning signs were in place and in good condition. All previously damaged areas of the perimeter fence had been repaired.

   There was very little trash/litter noted on the property. The survey control monuments were in good condition.

2. **Maintenance Road Conditions** –The site access road surface within the containment cell was accessible and in good condition.

3. **Final Cover Vegetation** – The grass cover was generally in good condition. Small trees have rooted and grown intertwined with the perimeter fence in some locations. No protruding objects or erosion were noted. A small area near the toe of the outlet ditch had poor cover growth that should be reestablished.

4. **Storm Water Drainage System** – The storm water drainage system appeared in good condition. The catch basins appeared in good condition. Numerous animal burrows were noted on the mid-slope swale. Some areas of the swale were in poor condition and had collapsed due to animal burrows. There were some areas of the drainage ditch that contained rooted vegetation.

5. **Groundwater Monitoring Wells** – All groundwater monitoring well casings were in good condition and locked. Cement footers appeared in good condition. The footer for RD-2 was slightly loose.

6. **Other Items**
   There is a small pile of sandy loam situated on top of the containment cell – for use in backfilling animal burrows.

Post Closure Inspection Report for Operation, Maintenance and Monitoring; Inactive Hazardous Waste Site,
Bern Metal/Universal Metal Site
Bender Street, Buffalo, New York

Date: February 24, 2009; 13:50 PM
Weather: sunny, cold, 20 F, winds 5-10 mph
Inspectors: D. Sutton, COB; D. Szymanski, NYSDEC

1. **General Site Conditions** –The gate on Bender Avenue was locked. A snow drift blocked access to the gate. The perimeter fence warning signs were in place and in good condition. All previously damaged areas of the perimeter fence had been repaired.

   There was very little trash/litter noted on the property. The survey control monuments were in good condition.

2. **Maintenance Road Conditions** –The site access road surface within the containment cell was snow covered but appeared in good condition.

3. **Final Cover Vegetation** – The grass cover was generally in good condition. Some areas were snow covered. Numerous animal burrows were noted on the mid-slope swale. Some areas of the swale had collapsed due to animal burrows. Small trees have rooted and grown intertwined with the perimeter fence in some locations. No protruding objects or erosion were noted. A small area near the toe of the outlet ditch had poor cover growth that should be reestablished.

4. **Storm Water Drainage System** – The storm water drainage system was snow covered. Norfolk Southern Railroad repaired the damaged outlet drainage ditch near the southern end of the cell by installing a culvert pipe and re-grading with rip rap stone. The catch basins appeared in good condition.

5. **Groundwater Monitoring Wells** – All groundwater monitoring well casings were in good condition and locked. Cement footers appeared in good condition.

6. **Other Items**
   There is a small pile of sandy loam situated on top of the containment cell – for use in backfilling animal burrows.

Post Closure Inspection Report for Operation, Maintenance and Monitoring; Inactive Hazardous Waste Site, Bern Metal/Universal Metal Site Bender Street, Buffalo, New York

Date: November 14, 2008; 9:30 AM
Weather: sunny, warm with high clouds, 50 - 55 F, winds 0-5mph
Inspectors: D. Sutton, COB

1. **General Site Conditions** –The gate on Bender Avenue was locked. The perimeter fence warning signs were in place and in good condition. All previously damaged areas of the perimeter fence had been repaired.

   There was very little trash/litter noted on the property. The survey control monuments were in good condition.

2. **Maintenance Road Conditions** –The site access road surface within the containment cell was in good condition.

3. **Final Cover Vegetation** – The grass cover had recently been cut and was generally in good condition. Limited areas on some of the steeper sloped areas had not been cut. Numerous animal burrows were noted throughout the containment cell, especially the mid-slope swale. Some areas of the swale had collapsed due to animal burrows. Small trees have rooted and grown intertwined with the perimeter fence in some locations. Some ponding water was noted in limited areas of the drainage ditch. No protruding objects or erosion were noted. A small area near the toe of the outlet ditch had poor cover growth that should be reestablished.

4. **Storm Water Drainage System** – The storm water drainage system generally appeared in good condition. Most of the rooted plants and small trees that were previously observed to be growing in the drainage ditch had been cut.

   Norfolk Southern Railroad repaired the damaged outlet drainage ditch near the southern end of the cell by installing a culvert pipe and re-grading with rip rap stone. The catch basins appeared in good condition.

5. **Groundwater Monitoring Wells** – All groundwater monitoring well casings were in good condition and locked. Cement footers appeared in good condition, however the cement footer on well # RD-2 had slight movement when jostled.

6. **Other Items**
   There is a small pile of sandy loam situated on top of the containment cell – for use in backfilling animal burrows.

Post Closure Inspection Report for Operation, Maintenance and Monitoring; Inactive Hazardous Waste Site, Bern Metal/Universal Metal Site Bender Street, Buffalo, New York

Date: August 25, 2008; 9:30 AM
Weather: sun and clouds, 65 - 75 F, winds 5-10 mph
Inspectors: D. Sutton, COB; David Szymanski, NYSDEC

1. **General Site Conditions** –The gate on Bender Avenue was locked. The perimeter fence warning signs were in place and in good condition. All previously damaged areas of the perimeter fence had been repaired.

   There was very little trash/litter noted on the property. The survey control monuments were in good condition. There were several areas of the containment cell where cover was bare and requires reestablishment, all other areas appeared in good condition.

2. **Maintenance Road Conditions** –The site access road surface within the containment cell was in good condition. It was heavily vegetated during the inspection.

3. **Final Cover Vegetation** – The cover was overgrown and heavily vegetated but generally in good condition. Numerous animal burrows were noted throughout the containment cell, especially the mid-slope swale. Some areas of the swale had collapsed due to animal burrows and lawn cutting tractor traffic. Small trees have rooted and grown intertwined with the perimeter fence in some locations. No protruding objects, ponding water or erosion were noted.

4. **Storm Water Drainage System** – The storm water drainage system generally appeared in good condition, however, numerous rooted plants and small trees were observed to be growing in many locations in the drainage ditch.

   Norfolk Southern Railroad was on-site during the last inspection and has agreed to repair the damaged outlet drainage ditch near the southern end of the cell by installing a culvert pipe and re-grading. To date the repairs have not been made. The catch basins appeared in good condition.

5. **Groundwater Monitoring Wells** – All groundwater monitoring well casings were in good condition and locked. Cement footers appeared in good condition, however the cement footer on well # RD-2 had some slight movement.

6. **Other Items**
   There is a small pile of sandy loam situated on top of the containment cell – for use in backfilling animal burrows.

Appendix B
Groundwater Sampling Results
And Trend Analysis Summary

GZA GeoEnvironmental

Engineers and Scientists

May 26, 2009
File No. 21.0055808.10

Mr. Dennis Sutton
City of Buffalo
65 Niagara Square
920 City Hall
Buffalo, New York 14202

Re: Results of 2009 Annual Groundwater Sampling &
3-year Synopsis of Groundwater Data
Bern Metal/Universal Metal Site
Buffalo, New York

535 Washington Street
11th Floor
Buffalo, New York
14203
716-685-2300
FAX 716-685-3629
www.gza.com

Dear Mr. Sutton:

GZA GeoEnvironmental of New York (GZA) is pleased to provide the City of Buffalo this letter report to summarize the 2009 annual groundwater sampling at the Bern Metal/Universal Metal property (Site) in Buffalo, New York. GZA purged and collected groundwater samples for the City of Buffalo from the five monitoring well locations at the Site (See Figure 1 in Attachment 3) on May 14, 2009. This is the fourth annual sampling event scheduled to be conducted by GZA over a five year time frame (through 2010) to assess the concentrations of total lead in groundwater. The general scope of our field work done on May 14, 2009 is noted below.

- Prior to collection of groundwater measurements or purging, the top of the well riser was screened with an organic vapor meter (OVM) equipped with a photoionization detector (PID). Organic vapors were not detected at any of the five monitoring well locations.

- Confirmed that the water level measuring point was marked on the top of the well riser on the apparent high point or the northern side if it was relatively level.

- Measured static water level readings and sounded the bottom of each of the five monitoring well locations (RD-1, RD-2, RD-3R/RD-3, RD-4, and RD-5/PZ-1).

- Purged a minimum of three well volumes from monitoring wells RD-1, RD-2, RD-4 and RD-5/PZ-1with a low flow peristaltic pump. Due to slow groundwater recharge, approximately two well volumes were purged from RD-3R/RD-3 before the well went "dry". Groundwater was allowed to recharge with sufficient volume to collect the required sample volume. Water quality readings were collected while the wells were purged. A copy of the groundwater sampling log for each well is included as Attachment 1.

- Purged groundwater was placed in a 55-gallon drum that was stored inside a locked fenced area of the Site.

- A duplicate groundwater sample (RD-DUP) was collected from monitoring well location RD-5. Sample RD-DUP was collected in concurrence with RD-5 sampling.

- The samples collected for the City of Buffalo from wells RD-1, RD-2, RD-3R/RD-3, RD-4, RD-5/PZ-1 and duplicate sample RD-DUP were packed in an ice-filled cooler and shipped to the GZA GeoEnvironmental Laboratory in Hopkinton, Massachusetts following typical chain-of-custody procedures on May 14, 2009. The samples were analyzed for Total Lead via EPA Method 6010.

- Reviewed the analytical report (Attachment 2) received from our laboratory. The results of the Total Lead analysis were below method detection limits for the five wells (and duplicate sample) from RD-1, RD-2, RD-3R/RD-3, RD-4, and RD-5/PZ-1.

- Prepared a groundwater contour drawing, included as Figure 1 in Attachment 3, based on the water level measurements collected from the established monitoring well locations on May 14, 2009. Based on recent groundwater measurements, groundwater appears to be flowing to the south, which is consistent with previous sample rounds.

GROUNDWATER RESULTS

The results of the groundwater samples collected for the City of Buffalo indicated that lead was not detected above method detection limits from within the five locations RD-1, RD-2, RD-3R/RD-3, RD-4 and RD-5/PZ-1 sampled.

The contents of the purge water drum were discharged to the combined storm and sanitary drain located within the locked fence area, per verbal approval of the Buffalo Sewer Authority. The drum was removed from the Site.

GROUNDWATER TREND ANALYSIS

Groundwater sample analysis for the Site has included the following:

- Volatile organic compounds (VOCs) (benzene, toluene, ethylbenzene and xylenes) via EPA Method 8260;
- Polychlorinated biphenyls (PCBs) via EPA Method 8082; and
- Metals (cadmium, chromium, lead, manganese and zinc) via EPA Method 6010.

Volatile Organic Compounds

VOCs were analyzed for in years 2003, 2004 and 2005. The results of the groundwater sample analysis were not above method detection limits during those sample rounds. VOC sample analysis was removed from the groundwater sampling criteria per New York State Department of Environmental Conservation (NYSDEC) approval for the 2006 through 2010 sample rounds. Field observations (i.e., olfactory or visual) and field screening (non-detected measurements with organic vapor meter) from 2006 through 2009 do not indicate the presence of VOCs.

Polychlorinated Biphenyls

PCBs were analyzed for in years 2003, 2004 and 2005. The results of the groundwater sample analysis were non-detect for PCBs. PCBs were removed from the groundwater sampling criteria per NYSDEC approval for the 2006 through 2010 sample rounds. PCBs are not expected to be present in the groundwater.

Metals

Manganese was detected in the five groundwater monitoring wells at concentrations that exceed its NYSDEC Class GA groundwater standard[1] of 300 parts per billion (ppb) in the 2003, 2004 and 2005 sampling events. Detected concentrations ranged from about 300 ppb to 4,800 ppb, depending on location. However, manganese was not considered to be a significant environmental concern and was removed from the groundwater sampling criteria per NYSDEC approval for the 2006 through 2010 sample rounds.

Zinc has been detected in various monitoring locations but at concentrations that are below its respective NYSDEC Class GA groundwater criteria of 5,000 ppb in the 2003, 2004 and 2005 sampling events. Zinc was not considered to be a significant environmental concern and was removed from the groundwater sampling criteria per NYSDEC approval for the 2006 through 2010 sample rounds.

Chromium was detected once (April 2005) in the groundwater sample collected from monitoring well RD-2 at a concentration below its Class GA groundwater criteria of 50 ppb in the 2003, 2004 and 2005 sampling events. Chromium was not considered to be a significant environmental concern and was removed from the groundwater sampling criteria per NYSDEC approval for the 2006 through 2010 sample rounds.

Cadmium was not detected above method detection limits in the groundwater samples collected during the 2003, 2004 and 2005 sampling events. Cadmium was removed from the groundwater sampling criteria per NYSDEC approval for the 2006 through 2010 sample rounds.

The current groundwater sampling program for years 2006 through 2010 consists of annual sampling for lead (the constituent of concern). The results of the groundwater samples collected for the City of Buffalo indicated that lead was not detected above method detection limits in locations RD-1, RD-2, RD-3R/RD-3, and RD-4 in the 2007, 2008 and 2009 sampling event. RD-5/PZ-1 had a detected concentration of 0.010 ppb in the 2008 sampling event, which is below its NYSDEC Class GA criteria of 25 ppb. RD-5/PZ-1 did not have detected concentrations above method detection limits in the 2007 or 2009 sampling events.

GROUNDWATER FLOW CONDITIONS

Our estimated groundwater flow direction at the Site has been consistent for the past six years and is in a southern direction (see Figure 1). There appears to be groundwater mounding in

[1] NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations dated October 1993; Revised June 1998; ERRATA Sheet dated January 1999; and Addendum dated April 2000 (NYSDEC Class GA).

the western portion of the Site in the vicinity of the former Site building, which is no longer present above grade. The groundwater contour shown in Figure 1 is from May 2009. The actual cause of the mounding is unknown (GZA was not present during the demolition and backfilling of the former building) but may be due to portions of the former building remaining in the subsurface or materials used to backfill in the vicinity of the building. The mounding has been observed in a majority of the groundwater elevation measurements collected since 2003.

GZA recommends that the annual groundwater sampling should be discontinued. Lead has been detected at concentrations above method detection limits but below the Class GA criteria in three samples tested in the eight sample rounds completed within the last six years at the Site.

- October 30, 2003: PZ-1, 4.1 ppb
- April 29, 2004: RD-3, 15 ppb
- May 17, 2007: RD-5/PZ-1, 10 ppb

Lead has not been detected above method detection limits at the other sampling locations.

One groundwater sampling event remains on our contract with the City of Buffalo. If NYSDEC agrees with our recommendations, the remaining sampling event will not be completed.

We appreciate the opportunity to work with you on this project. If you have any questions, please call us.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Christopher Boron
Senior Project Manager

Ernest R. Hanna, P.E.
Principal

Attachments
Attachment 1: Groundwater Sample Logs
Attachment 2: Laboratory Report
Attachment 3: Figure 1 – Site & Groundwater Contour Plan

ATTACHMENT 1

Site: BERN METAL

GROUNDWATER SAMPLING LOG

Event

Sampling Personnel: JMD
Job Number: 21.0055808.10
Weather: Sun 60°

Well ID: RD-1
Date: 5/14/07
Time In: 1:45
Time Out: 2:1

WELL INFORMATION *(record from top of inner casing at minimum)*

		TIC	TOC	BGS
Well Depth	(feet)		9.13	
Water Table Depth	(feet)		11.50	

check where appropriate

Well Type: Flushmount [ ] Stick-Up [x]
Well Locked: Yes [x] No [ ]
Measuring Point Marked: Yes [x] No [ ]
Well Diameter: 1" [ ] 2" [ ] Other: ____

WELL WATER INFORMATION

Length of Water Column:	(feet)	2.37
Volume of Water in Well:	(gal)	.39
Pumping Rate of Pump:	(mL/min)	
Pumping Rate of Pump:	(GPM)	
Minutes of Pumping:	(min.)	
Total Volume Removed:	(gal)	1.25 Gal

Conversion Factors

gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.004	0.16	0.66	1.5

1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.

Unit Stability

pH	Cond.	Turb.	DO	Temp.	ORP
+/-	+/-	< 50	+/-	+/-	+/-
0.1	3.00%	NTU's	10%		10 mV

SAMPLING INFORMATION

Analyses: Pb [x]

Sample ID: RD-1
Sample Time: 2:00
MS/MSD: Yes [ ] No [x]
Duplicate: Yes [ ] No [x]
Duplicate ID: NA
Total Bottles: 1

EVACUATION INFORMATION

Evacuation Method: Bailer [ ] Grundfos Pump [ ] Masterflex - Peristaltic Pump [x] (Geo Pump)
Tubing Used: Dedicated [x] Decon'ed [ ]
Sampling Method: Bailer [ ] Grunfos Pump [ ] Masterflex - Peristaltic Pump [ ]
Did well go dry? Yes [ ] No [ ]

Water Quality Meter Type: HORIBA U22

Time / Parameter	1 1:50 Initial	2 1:55	3 1:58	4 2:02	5	6	7	8	9
Volume Purged (gal)	0 Gal	.5	1 Gal	1.25					
Pump Rate (mL/min)									
Depth to Water (ft. TIC)	9.98	10.00	10	10.01					
pH	6.33	6.19	6.19	6.19					
Conductance (mS/cm)	1.58	1.55	1.53	1.52					
Turbidity (NTU's)	475	147	83	262					
DO (mg/L)	0.00	0	0.07	0.41					
Temp (°C)	10.0	10.11	10.35	10.39					
ORP (mV)	-69	-38	-32	-25					

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Site BERN METAL

GROUNDWATER SAMPLING LOG

5/14/09

Event

Sampling Personnel: JMD

Job Number: 21.00553020.10

Weather: Sun 60°

Well ID. RD-2

Date:

Time In: 2:20 **Time Out:**

WELL INFORMATION *(record from top of inner casing at minimum)*

		TIC	TOC	BGS
Well Depth	(feet)		11.82	
Water Table Depth	(feet)		8.94	

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Diameter: 1" ☐ 2" ☐ Other:

WELL WATER INFORMATION

Length of Water Column:	(feet)	2.88
Volume of Water in Well:	(gal)	.46
Pumping Rate of Pump:	(mL/min)	
Pumping Rate of Pump:	(GPM)	
Minutes of Pumping:	(min.)	
Total Volume Removed:	(gal)	1.5 Gal

Conversion Factors				
gallons per foot	1" ID	2" ID	4" ID	6" ID
of water column:	0.041	0.16	0.66	1.5
1 gal = 3.785 L =3785 mL = 0.1337 cubic ft.				

Unit Stability					
pH	Cond.	Turb.	DO	Temp.	ORP.
+/-	+/-	< 50	+/-	+/-	+/-
0.1	3.00%	NTU's	10%		10 mV

SAMPLING INFORMATION

Analyses: Pb ☒

Sample ID: RD-2
Sample Time: 15:00
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Duplicate ID: NO
Total Bottles: 1

EVACUATION INFORMATION

Evacuation Method: Bailer ☐ Grundfos Pump ☐ Masterflex - Peristaltic Pump ☒ Low Pump
Tubing Used: Dedicated ☒ Deconned ☐
Sampling Method: Bailer ☐ Grunfos Pump ☐ Masterflex - Peristaltic Pump ☐
Did well go dry? Yes ☐ No ☐

Water Quality Meter Type: Horiba U22

Time / Parameter	1	2	3	4	5	6	7	8	9
Time	2:28 Initial	2:33	2:37	2:40	2:43	2:47	2:51		
Volume Purged (gal)	0 Gal	.25 Gal	.5 Gal	0.75 Gal	1 Gal	1.5	1.5 Gal		
Purge Rate (mL/min)									
Depth to Water (ft. TIC)	10.45	9.70	9.95	10.13	10.31	10.55	10.21		
pH	6.48	6.43	6.38	6.35	6.32	6.24	6.70		
Conductance (mS/cm)	1.49	1.15	1.12	1.11	1.13	1.22	1.43		
Turbidity (NTU's)	311	8.1	7.6	5.5	2.4	3.6	2.7		
DO (mg/L)	2.87	0.79	0	0	0	0	0.0		
Temp (°C)	11.81	11.51	10.94	10.77	10.75	10.61	10.43		
ORP (mV)	-26	-27	-27	-27	-28	-29	[illegible]		

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Bein Metal

Site | Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: JMD
Job Number: [illegible]
Weather: Clouds 50°

Well ID. RDS-3R
Date: 5/14/09
Time In: 10:00 **Time Out:**

WELL INFORMATION *(record from top of inner casing at minimum)*

		TIC	TOC	BGS
Well Depth	(feet)		11.50	
Water Table Depth	(feet)		4.97	

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Diameter: 1" ☐ 2" ☐ Other:

WELL WATER INFORMATION

Length of Water Column:	(feet)	6.53
Volume of Water in Well:	(gal)	4.24
Pumping Rate of Pump:	(mL/min)	
Pumping Rate of Pump:	(GPM)	
Minutes of Pumping:	(min.)	
Total Volume Removed:	(gal)	7 GAL

Conversion Factors				
gallons per foot	1" ID	2" ID	4" ID	6" ID
of water column:	0.004	0.16	0.66	1.5
1 gal = 3.785 L =3785 mL = 0.1337 cubic ft.				

Unit Stability					
pH	Cond.	Turb.	DO	Temp.	ORP.
+/-	+/-	< 50	+/-	+/-	+/-
0.1	3.00%	NTU's	10%		10 mV

SAMPLING INFORMATION

Analyses:
[illegible] ☐
☐
☐
☐
☐

Sample ID:
Sample Time: 17:30
MS/MSD: Yes ☐ No ☐
Duplicate: Yes ☐ No ☐
Duplicate ID: NO
Total Bottles: 1

EVACUATION INFORMATION

Evacuation Method: Bailer ☐ Grundfos Pump ☐ Masterflex - Peristaltic Pump ☐ (Mega pump)
Tubing Used: Dedicated ☒ Deconned ☐
Sampling Method: Bailer ☐ Grundfos Pump ☐ Masterflex - Peristaltic Pump ☐
Did well go dry? Yes ☐ No ☐

Water Quality Meter Type: Horiba U22

Time / Parameter	1 10:15 Initial	2 10:35	3 10:45	4 10:55	5 11:05	6 11:15	7 11:25	8	9
Volume Purged (gal)	0	1 gal	2 gal	3 gal	4 gal	5 gal	6 gal	7 gal	
Purge Rate (mL/min)									
Depth to Water (ft. TIC)	5.5	6.72	7.22	7.67	8.72	9.46	10.15	10.83	
pH	6.26	6.61	6.50	6.55	6.49	6.45	6.41	6.37	
Conductance (mS/cm)	3.15	3.18	3.18	3.10	3.13	3.14	3.18	3.14	
Turbidity (NTU's)	72	180	542	193	215	220	237	618	
DO (mg/L)	8.35	6.60	3.52	3.36	2.77	2.54	1.36	1.29	
Temp (C)	11.74	10.76	10.16	10.37	10.68	10.51	10.20	10.03	
ORP (mV)	135	101	108	111	113	112	84	61	

[illegible]

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Recharge & Sample @ 17:30

Site: Bern Metal

GROUNDWATER SAMPLING LOG

Event: 5/14/09

Sampling Personnel: MAD
Job Number: 21205580B.10
Weather: Sunny 65°

Well ID: RP-4
Date: 5/14/09
Time In: 3:10
Time Out:

WELL INFORMATION (record from top of inner casing at minimum)

		TIC	TOC	BGS
Well Depth	(feet)		12.46	
Water Table Depth	(feet)		3.46	

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Diameter: 1" ☐ 2" ☐ Other:

WELL WATER INFORMATION

Length of Water Column:	(feet)	9.44
Volume of Water in Well:	(gal)	1.52
Pumping Rate of Pump:	(mL/min)	
Pumping Rate of Pump:	(GPM)	
Minutes of Pumping:	(min.)	
Total Volume Removed:	(gal)	3.5 Gal

Conversion Factors

gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.004	0.16	0.66	1.5

1 gal = 3.785 L =3785 mL = 0.1337 cubic ft.

Unit Stability

pH	Cond.	Turb.	DO	Temp.	ORP.
+/-	+/-	< 50	+/-	+/-	+/-
0.1	3.00%	NTU's	10%		10 mV

SAMPLING INFORMATION

Analyses: Pb ☐
☐
☐
☐
☐

Sample ID: RP-4
Sample Time: 1700
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☐
Duplicate ID: NO
Total Bottles: ONE

EVACUATION INFORMATION

Evacuation Method: Bailer ☐ Grundfos Pump ☐ Masterflex - Peristaltic Pump (Low Flow) ☒
Tubing Used: Dedicated ☒ Deconned ☐
Sampling Method: Bailer ☐ Grundfos Pump ☐ Masterflex - Peristaltic Pump ☐
Did well go dry? Yes ☐ No ☐

Water Quality Meter Type: Horiba U22

Time / Parameter	1 3:20 Initial	2 3:28	3 3:35	4 3:50	5 3:56	6 4:04	7 4:13	8	9
Volume Purged (gal)	0	.5 Gal	1 Gal	2 Gal	2.5	3 Gal	3.5 Gal		
Purge Rate (mL/min)									
Depth to Water (ft. TIC)	9.10	10.08	11.07	11.21	11.20	11.19	11.19		
pH	6.36	6.34	6.41	6.48	6.49	6.51	6.52		
Conductance (mS/cm)	1.48	1.38	1.37	1.32	1.32	1.31	1.31		
Turbidity (NTU's)	146	40.0	61.2	23	31.0	22.5	27.6		
DO (mg/L)	0	0	0.69	1.84	2.00	2.04	2.13		
Temp (°C)	9.4	9.38	9.45	9.29	9.24	9.19	9.16		
ORP (mV)	-106	-122	-127	-152	-155	-157	-161		

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Site: Bern Metal | Event:

GROUNDWATER SAMPLING LOG

Sampling Personnel: JMD
Job Number: [illegible]
Weather: Rain 58°

Well ID: RD 5
Date: 5/14/09
Time In: 12 30 | Time Out:

WELL INFORMATION *(record from top of inner casing at minimum)*

		TIC	TOC	BGS
Well Depth	(feet)		11.75	
Water Table Depth	(feet)		6.96	

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☐
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Diameter: 1" ☐ 2" ☐ Other:

WELL WATER INFORMATION

Length of Water Column:	(feet)	4.79
Volume of Water in Well:	(gal)	0.77
Pumping Rate of Pump:	(mL/min)	
Pumping Rate of Pump:	(GPM)	
Minutes of Pumping:	(min.)	
Total Volume Removed:	(gal)	2.5

Conversion Factors

gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.5

1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.

Unit Stability

pH	Cond.	Turb.	DO	Temp.	ORP
+/-	+/-	< 50	+/-	+/-	+/-
0.1	3.00%	NTU's	10%		10 mV

SAMPLING INFORMATION

Analyses: Pb ☐

Sample ID: RD5
Sample Time: 13 30
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☒ No ☐
Duplicate ID: RD-DUP
Total Bottles: ONE EACH.

EVACUATION INFORMATION

Evacuation Method: Bailer ☐ Grundfos Pump ☐ ~~Masterflex - Peristaltic Pump~~ GeoPump ☐
Tubing Used: Dedicated ☐ Decontaminated ☐
Sampling Method: Bailer ☐ Grundfos Pump ☐ Masterflex - Peristaltic Pump ☐
Did well go dry? Yes ☐ No ☐

Water Quality Meter Type: Horiba U22

Time / Parameter	1 12 38 Initial	2 12 40	3 [illegible]	4 1:05	5 1:18	6 1:[illegible]	7	8	9
Volume Purged (gal)	0 gal	.5	1 gal	1.5	2 gal	2.5 gal			
Purge Rate (mL/min)	~~3.20~~								
Depth to Water (ft. TIC)	3.20	8.64	9.10	9.35	10.81	11.50			
pH	6.27	6.33	6.31	6.28	6.28	6.26			
Conductance (mS/cm)	2.25	2.19	2.15	2.21	2.31	2.36			
Turbidity (NTU's)	32.4	28.5	12.7	12.2	14.8	19.2			
DO (mg/L)	3.90	0.00	6.53	1.20	1.67	1.78			
Temp (°C)	10.13	11.54	11.25	11.14	11.10	10.85			
ORP (mV)	11	-5		2	45	19			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

ATTACHMENT 2

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: **MA092** NH: **2028**
CT: **PH0579** RI: **LAO00236**
NELAC - NYS DOH: **11063**

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project No.: **21.0055808.10**
Work Order No.: **0905-00096**
Date Received: **05/15/2009**
Date Reported: **05/20/2009**

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
05/14/2009	Aqueous	0905-00096 001	RD - DUP
05/14/2009	Aqueous	0905-00096 002	RD - 5
05/14/2009	Aqueous	0905-00096 003	RD - 1
05/14/2009	Aqueous	0905-00096 004	RD - 2
05/14/2009	Aqueous	0905-00096 005	RD - 4
05/14/2009	Aqueous	0905-00096 006	RD - 3R

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.:	**Bern Metal**	Date Received:	**05/15/2009**
Project No.:	**21.0055808.10**	Date Reported:	**05/20/2009**
		Work Order No.:	**0905-00096**

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 05/15/09 via __GZA courier, _x_UPS, __FEDEX, or ___hand delivered. The temperature of the __temperature blank/_x_cooler air, was 3.1 degrees C. The temperature requirement for most analyses is above freezing to 6 degrees C. The samples were received intact for all requested analyses.

The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

2. EPA Method 6010B - Metals

Attach QC 6010B 05/18/09 - Aqueous

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Data Authorized By: _____

NELAC certification, as indicated by the NELAC Lab ID Number, is per analyte. For a complete list of NELAC validated analytes, please contact the laboratory.

Abbreviations:
% R = % Recovery
DF = Dilution Factor
DFS = Dilution Factor Solids
CF = Calculation Factor
DO = Diluted Out

Method Key:
Method 8260: The current version of the method is 8260B.
Method 8270: The current version of the method is 8270D.
Method 6010: The current version of the method is 6010B.

Please note that the laboratory signed copy of the chain of custody record is an integral part of the data report.

Soil data is reported on a dry weight basis unless otherwise specified.
Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.

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Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Sample ID: **RD - DUP** Sample No.: **001**

Sample Date: **05/14/2009**

Test Performed	Method	Results	Units	Tech	Analysis Date
TOTAL METALS					
Lead	EPA 6010B	<0.010	mg/L	LLZ	05/18/2009

GZA GeoEnvironmental, Inc.
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(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Sample ID: **RD - 5** Sample No.: **002**

Sample Date: **05/14/2009**

Test Performed	Method	Results	Units	Tech	Analysis Date
TOTAL METALS					
Lead	EPA 6010B	<0.010	mg/L	LLZ	05/18/2009

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Sample ID: **RD - 1** Sample No.: **003**

Sample Date: **05/14/2009**

Test Performed	Method	Results	Units	Tech	Analysis Date
TOTAL METALS					
Lead	EPA 6010B	<0.010	mg/L	LLZ	05/18/2009

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Sample ID: **RD - 2** Sample No.: **004**

Sample Date: **05/14/2009**

Test Performed	Method	Results	Units	Tech	Analysis Date
TOTAL METALS					
Lead	EPA 6010B	<0.010	mg/L	LLZ	05/18/2009

GZA GeoEnvironmental, Inc.
106 South Street
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(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Sample ID: **RD - 4** Sample No.: **005**

Sample Date: **05/14/2009**

Test Performed	Method	Results	Units	Tech	Analysis Date
TOTAL METALS					
Lead	EPA 6010B	<0.010	mg/L	LLZ	05/18/2009

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental of NY
364 Nagel Drive
Buffalo, NY 14225

Chris Boron

Project Name.: **Bern Metal**
Project No.: **21.0055808.10**

Date Received: **05/15/2009**
Date Reported: **05/20/2009**
Work Order No.: **0905-00096**

Sample ID: **RD - 3R** Sample No.: **006**

Sample Date: **05/14/2009**

Test Performed	Method	Results	Units	Tech	Analysis Date
TOTAL METALS					
Lead	EPA 6010B	<0.010	mg/L	LLZ	05/18/2009

GZA GEOENVIRONMENTAL, INC.
ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH ST, HOPKINTON, MA 01748
MASSACHUSETTS LABORATORY I.D. NO. MA092

EPA METHOD 6010B ANALYSIS
Metals by ICP

QUALITY CONTROL - AQUEOUS

DATE PREPARED: 5/18/2009

QC Sample	Method Blank	Lab Control Sample	LC Duplicate	LC/LCD Diff.
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	20%
Analyte				
Silver (Ag)	<0.0050	94.9	93.5	1.49
Aluminum (Al)	NA	NA	NA	NA
Arsenic (As)	<0.010	101	102	0.71
Boron (B)	NA	NA	NA	NA
Barium (Ba)	<0.0050	97.2	96.6	0.63
Beryllium (Be)	NA	NA	NA	NA
Calcium (Ca)	NA	NA	NA	NA
Cadmium (Cd)	<0.0050	102	101	0.86
Cobalt (Co)	NA	NA	NA	NA
Chromium (Cr)	<0.0050	100	98.7	0.84
Copper (Cu)	<0.015	104	103	1.05
Iron (Fe)	<0.025	101	100	1.07
Magnesium (Mg)	NA	NA	NA	NA
Manganese (Mn)	<0.0050	103	102	1.03
Molybdenum (Mo)	NA	NA	NA	NA
Nickel (Ni)	NA	NA	NA	NA
Lead (Pb)	<0.010	102	103	0.46
Antimony (Sb)	NA	NA	NA	NA
Selenium (Se)	<0.025	107	107	0.36
Strontium (Sr)	NA	NA	NA	NA
Titanium (Ti)	NA	NA	NA	NA
Thallium (Tl)	NA	NA	NA	NA
Vanadium (V)	NA	NA	NA	NA
Zinc (Zn)	<0.010	104	104	0.18
Zirconium (Zr)	NA	NA	NA	NA
Tin (Sn)	NA	NA	NA	NA

Matrix Spike / Duplicate Spike performed as per method and reported if assigned on Chain of Custody.

W.O. # 0905-00096
(for lab use only)

CHAIN-OF-CUSTODY RECORD

Sample I.D.	Date/Time Sampled	Matrix (A=Air, S=Soil, GW=Ground W., SW=Surface W., WW=Waste W., DW=Drinking W., P=Product, Other (specify))	ANALYSIS REQUIRED: ☐ pH ☐ Cond.	GC Methane, Ethane, Ethene	EPA 8260 - Full List	EPA 8260- STARS List	EPA 8021- Full List	EPA 8021- STARS List	EPA 524.2 DW VOCs	EPA 624 WW VOCs	☐ 601 ☐ 602 WW VOCs	EPA 8270 SVOCs - Full List	EPA 8270 STARS (PAHs)	EPA 8270 ☐ A ☐ BN	EPA 625 WW SVOCs	EPA 8082-PCBs	EPA 8081-Pest	TPH-GC (Mod. 8100)	TPH-GC w/FING.	Metals ☐ PPM-13	Metals ☐ R-8	Metals ☐ TAL List	Metals ☐ TAL List w/ CN	Metals (List Below) **	TCLP - Specify Below	SPLP - Specify Below	EPA 300 ☐ Cl ☐ NO3 ☐ SO4	LEAD					Total No. of Cont.	Note #
RD-DUP	5/14/09 12:00	GW																										X					1	
RD-5	13:30	GW																										X					1	
RD-1	14:00	GW																										X					1	
RD-2	15:00	GW																										X					1	
RD-4	17:00	GW																										X					1	
RD-3R	17:30	GW																										X					1	

PRESERVATIVE (Cl-HCl, M-Methanol, N-HNO3, S-H2SO4, Na-NaOH, O-Other) *

CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other)*

RELINQUISHED BY: J DAVIDE → DATE/TIME: 5/14/09 5:00pm RECEIVED BY: UPS

RELINQUISHED BY: UPS DATE/TIME: 5/15/09 1115 RECEIVED BY: [signature]

RELINQUISHED BY: DATE/TIME: RECEIVED BY:

NOTES: (Unless otherwise noted, all samples have been refrigerated to 4 +/- 2°C)
*Specify "Other" preservatives and container types in this space.

CONTAIN HNO3 PRESERVE

Project Manager: CHRIS BOLON

GZA GEOENVIRONMENTAL, INC.

364 Nagel Drive
Buffalo, NY 14225
(716) 685-2300
FAX (716) 685-3629

TURNAROUND TIME: (Standard) Rush ____ Days, Approved by: ____ LAB USE: TEMP. OF COOLER 3.1 °C Temp Blank Cooler Air 0909

GZA FILE NO: 21.0055808.1 TASK NO: ____ P.O. NO. ____

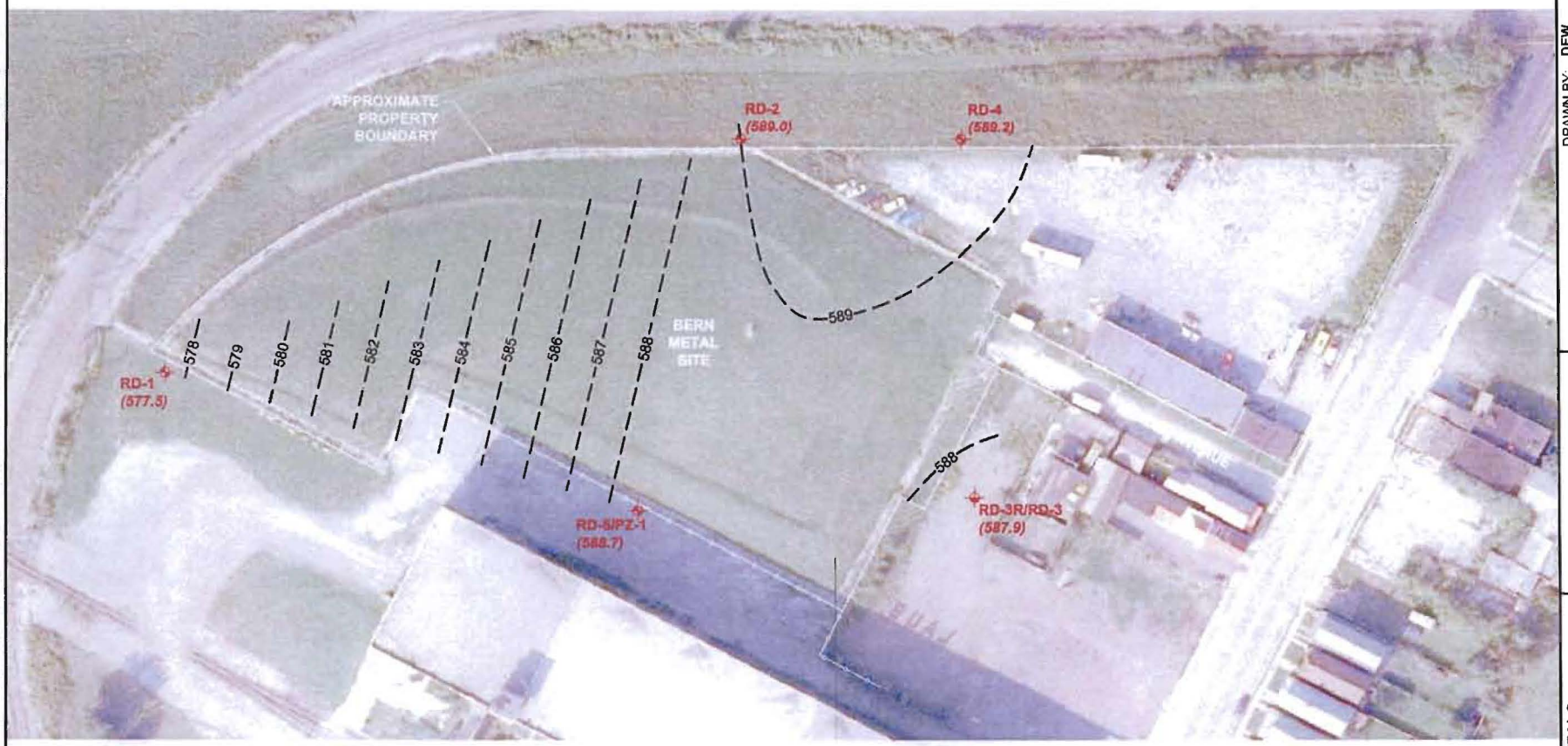
PROJECT BERN METAL

LOCATION BENDER AVE. BUFFALO, NY

COLLECTOR(S) JEN DAVIDE SHEET 1 OF 1

5/15/09 1000. (JW)

ATTACHMENT 3



LEGEND:

RD-1 (579.7) — APPROXIMATE LOCATION AND DESIGNATION OF EXISTING 2 INCH DIAMETER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED BY GZA IN MAY 2009

RD-3R/RD-3 (588.5) — APPROXIMATE LOCATION AND DESIGNATION OF EXISTING 4 INCH DIAMETER MONITORING WELL WITH GROUNDWATER ELEVATION MEASURED BY GZA IN MAY 2009

APPROXIMATE LOCATION AND ELEVATION OF GROUNDWATER CONTOUR (SEE NOTE 2)

NOTES:

1. PLAN MAP ADAPTED FROM A SITE PLAN PROVIDED BY THE CLIENT AND FIELD OBSERVATIONS.

2. GROUNDWATER CONTOURS SHOWN WERE DEVELOPED USING LINEAR INTERPOLATION OF WATER LEVEL MEASUREMENTS IN WIDELY SPACED WELLS AND ENGINEERING JUDGEMENT. THESE CONTOURS ARE SHOWN TO ILLUSTRATE GENERAL GROUNDWATER PATTERNS. THE CONTOUR LINES ARE APPROXIMATE AND ACTUAL CONTOURS MAY VARY FROM THE LOCATION SHOWN. THESE DATA SHOULD BE CONSIDERED ACCURATE TO THE DEGREE IMPLIED BY THE METHOD USED. FLUCTUATIONS IN GROUNDWATER LEVELS, DIRECTIONS AND FLOW RATES MAY OCCUR DUE TO VARIATIONS IN SURFACE WATER LEVEL, PRECIPITATION, BAROMETRIC PRESSURE AND OTHER FACTORS FROM THE TIME THE MEASUREMENTS WERE TAKEN.

3. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

DRAWN BY: DEW
DATE: MAY 2009

GZA GeoEnvironmental of New York

APPROXIMATE SCALE IN FEET
0 40 80 160

CITY OF BUFFALO
BERN METAL SITE
BENDER AVENUE
BUFFALO, NEW YORK

MAY 2009 ANNUAL GROUNDWATER SAMPLING
SITE AND GROUNDWATER CONTOUR PLAN

PROJECT No.
21.0055808.10

FIGURE No.
1

Appendix C
Institutional and Engineering Controls
Certification Form

Enclosure 1
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 915135

Site Name Bern Metal Corp.

Site Address: ~~22~~ 23 Bender Street Zip Code: 14206

City/Town: Buffalo

County: Erie

Allowable Use(s) (if applicable, does not address local zoning): Industrial

Site Acreage: 3.7

Verification of Site Details **Box 2**

	YES	NO
1. Are the Site Details above, correct?	☐	☒
If NO, are changes handwritten above or included on a separate sheet?	☒	
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☒
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	☒
If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification?	☐	
4. If use of the site is restricted, is the current use of the site consistent with those restrictions?	☒	☐
If NO, is an explanation included with this certification?	☐	
5. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	
If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☐	☐

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☐	☐

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

   I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

☒	☐

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

   I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES	NO
☐	☐

IC CERTIFICATIONS
SITE NO. 915135

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Dennis Sutton (print name) at Office of Strategic Planning 920 City Hall, Buffalo, NY 14202 (print business address)

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Dennis Sutton
Signature of Owner or Remedial Party Rendering Certification

12/2/09
Date

IC/EC CERTIFICATIONS

Box 7

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Peter Merlo (print name) at Department of Public Works 502 City Hall, Buffalo, NY 14202 (print business address)

am certifying as a Qualified Environmental Professional for the Remedial Party

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

Peter Merlo, P.E.
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

PE # 077924
Stamp (if Required)

12/1/09
Date