URS

July 13, 2011

Ms. Jessica LaClair
Bureau D Section A
New York State Department
of Environmental Conservation
625 Broadway
Albany, New York 12233-7013

Re: Focused Corrective Measure Study
GE Parts and Repair Service Center
Tonawanda, New York

Dear Ms. LaClair:

On behalf of the GE Energy (GE), URS has prepared the attached *Focused Corrective Measure Study* (*Focused CMS*) for the GE Parts and Repair Service Center in Tonawanda, New York. This *Focused CMS* has been prepared in response to your June 7, 2006 request and in accordance with the terms of GE's May 1996 *Part 373 Hazardous Waste Management Permit* (*373 Permit*). This *Focused CMS* evaluates three potential corrective measure alternatives for addressing the historical polychlorinated biphenyl (PCB) impacts that were identified during closure of the Commercial PCB Storage Area.

We look forward to your comments on this report and on the recommended corrective measures. Please contact Ms. Dawn Varacchi-Ives of GE at 978-353-3738 or the undersigned if you have any questions or comments regarding this material.

Very truly yours,
URS CORPORATION – NEW YORK

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Project Manager

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cc: Ms. Kathleen Emery, NYSDEC (electronic copy only)
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FOCUSED CORRECTIVE MEASURE STUDY
GE PARTS AND REPAIR SERVICE CENTER
TONWANDA, NEW YORK

Prepared For:

GE ENERGY

July 13, 2011

Prepared by:

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ACRONYMS AND SYMBOLS

AOC	Area of Concern
bgs	Below Ground Surface
CMI	Corrective Measure Implementations
CMS	Corrective Measures Study
CSA	Container Storage Area
GE	GE Energy
HSWA	Hazardous and Solid Waste Amendments
$\mu g/100\ cm^2$	micrograms per 100 square centimeters
mg/kg	milligrams per kilogram
NYSDEC	New York State Department of Environmental Conservation
PCB	Polychlorinated Biphenyl
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RSCO	Recommended Soil Cleanup Objective
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency
URS	URS Corporation
VOC	Volatile Organic Compound

1.0 INTRODUCTION

On behalf of GE Energy (GE), URS Corporation – New York (URS) has prepared this *Focused Corrective Measures Study (CMS)* for GE's Parts and Repair Service Center at 175 Milens Road in the Town of Tonawanda, New York (Figure 1). This *Focused CMS* has been prepared in response to the June 7, 2006 letter from the New York State Department of Environmental Conservation (NYSDEC) that requested GE address the historical polychlorinated biphenyl (PCB) impacts that were identified during closure of the Commercial PCB Storage Area. A copy of the NYSDEC June 7, 2006 letter is included as Appendix A. In accordance with the NYSDEC's request, this *Focused CMS* is considered an addendum to the July 31, 2001 *Revised CMS Final Report.*

The purpose of this *Focused CMS* is to formally evaluate corrective measures for PCB impacts that remain after closure of the Commercial PCB Storage Area at the site. The April 11, 2006 *Commercial PCB Storage Area Closure Certification Report*, which was submitted to both the NYSDEC and the United States Environmental Protection Agency (USEPA), documented GE's efforts to decommission the Commercial PCB Storage Area, evaluate the extent of PCB impacts beyond the storage area, and implement remedial measures to limit potential exposure to the remaining PCB impacts. The NYSDEC approved the closure of the Commercial PCB Storage Area in a letter issued on June 7, 2006. The USEPA approved closure of the area in a letter dated July 19, 2006 (see Appendix B).

This report is organized into the following nine sections:

- Section 1.0 – Introduction. This section presents a brief overview of the rationale for the report and the report organization.

- Section 2.0 – Background. This section presents background information for the site and the status of Resource Conservation and Recovery Act (RCRA) Corrective Actions for the site.

- Section 3.0 – Current Site Conditions. This section identifies the areas of concern that are evaluated in this *Focused CMS* and discusses the current conditions in each of the areas.

- Section 4.0 – Corrective Measure Study Process and Objectives. This section describes the objectives of this *Focused CMS* and the CMS process.

- Section 5.0 – Corrective Measure Technologies. This section summarizes the corrective measure technologies considered appropriate for the areas of concern. In addition, each technology is screened with respect to implementability, effectiveness and relative cost to determine if the technology is to be included within the proposed corrective measure alternatives.

- Section 6.0 – Evaluation Criteria. This section describes the criteria used to evaluate potential corrective measure alternatives for the site.

- Section 7.0 – Corrective Measure Alternatives. This section describes the corrective measure alternatives developed for the site and compares the alternatives to the evaluation criteria presented in Section 6.0.

- Section 8.0 – Recommendation. This section presents the recommended corrective measure alternative.

- Section 9.0 – Schedule. This section presents the schedule to implement the recommended corrective action.

2.0 BACKGROUND

The information in this background section provides a brief site description, a summary of the site geology, an overview of the Corrective Measure process, and a summary of the site's history.

2.1 SITE DESCRIPTION

GE's Tonawanda Parts and Repair Service Center is at 175 Milens Road in Tonawanda, New York (Figure 1). The facility is approximately 15 miles north of downtown Buffalo and two miles east of the Niagara River. Surrounding property use can be described as urban, and includes some commercial businesses and other industries.

The site plan, which is presented as Figure 2, illustrates the site layout. The site is secured with a chain link fence and gate, and is improved with a 69,000-square foot, slab-on-grade building. The northern portion of the building was constructed in 1968 and 1969. The building expanded to its current configuration in 1978 when an addition was constructed on the south side of the building.

GE uses the service center to repair industrial equipment such as electric motors, transformers, turbines, pumps, and compressors. Historical operations at the Tonawanda service center have included receiving liquids, solids, and other articles containing polychlorinated biphenyls (PCBs) from customers and other GE facilities prior to shipment off-site for disposal or destruction at facilities with appropriate permits. Hazardous wastes generated during routine operations, some of which were subject to dual regulation by the USEPA and NYSDEC, were stored in either the RCRA Container Storage Area or the Commercial PCB Storage Area, depending upon their nature.

2.1.1 Hazardous Waste Storage

GE previously stored hazardous wastes in a RCRA Container Storage Area (RCRA CSA) prior to off-site disposal of the wastes. The RCRA CSA was a covered area adjacent to the east side of the Tonawanda service center building (Figure 2). The RCRA CSA was subject to a *Part 373 Permit* issued by NYSDEC and a *Hazardous and Solid Waste Amendments* (*HSWA*) *of 1984 Permit* issued by USEPA.

The RCRA CSA was closed in general accordance with the NYSDEC approved *Revised RCRA Closure Plan*, dated January 4, 2002. Closure activities were documented in the *RCRA Closure Certification Report*, which was submitted to NYSDEC and USEPA on September 19, 2002. NYSDEC notified GE in a letter, dated April 3, 2006, that the RCRA CSA was officially considered closed.

2.1.2 Commercial PCB Storage Area

Prior to August 2000, GE operated a Commercial PCB Storage Area inside the Tonawanda service center under the terms of an approval issued by USEPA on June 9, 1995. The Commercial PCB Storage Area was also covered by the *Part 373 Permit* because PCBs are regulated as hazardous waste in New York State.

GE used the PCB storage area to service PCB-containing equipment and to store PCB wastes generated by activities at the shop prior to shipping the wastes to appropriately licensed off-site disposal facilities. As shown in Figure 2, the Commercial PCB Storage Area was comprised of three areas (PCB work area, PCB container storage area, and PCB drum storage area) in the southeast corner of the shop. GE decommissioned the PCB drum storage area and the northern portion of the work area in 1994.

In November 2000, the Commercial PCB Storage Area was decommissioned in accordance with the *Revised Closure Plan,* which was submitted to USEPA on June 28, 2000. The *Revised Closure Plan* was approved by the USEPA in a letter dated June 29, 2000 and the NYSDEC in a letter dated September 11, 2000. The decommissioning work was documented in the *Commercial PCB Storage Area Closure Certification Report* submitted to USEPA and NYSDEC on April 11, 2006. The NYSDEC approved the closure of the Commercial PCB Storage Area in a letter issued on June 7, 2006 and the USEPA approved closure of the area in a letter dated July 19, 2006.

2.2 GEOLOGY AND HYDROGEOLOGY

The soils underlying the site consist of very dense compact glaciolacustrine sediments, which are predominantly clays and silts. These sediments are approximately 60 to 70 feet thick. There are isolated areas of fill, which may contain perched groundwater, present near the building in utility excavations. Bedrock underlies the glaciolacustrine sediments.

The regional groundwater flow pattern beneath the site is probably toward the west-northwest. Published information indicates the presence of these four hydrostratigraphic zones in the area around the site:

- Unsaturated zone – which extends to at least 15 feet below the ground surface (bgs);
- Tension-saturated zone – which is also called the capillary fringe and extends from approximately 15 to 25 feet bgs;
- Saturated overburden – which extends from approximately 25 feet bgs to the top of bedrock at approximately 60 to 70 feet bgs; and
- Saturated bedrock.

2.3 STATUS OF RCRA CORRECTIVE ACTION

The Tonawanda service center is subject to RCRA Correction Action under the terms of the *Part 373 Permit*. This section provides a brief summary of the RCRA corrective action activities that have been conducted at the site and the corrective measures that were recommended in the NYSDEC-approved *Revised Corrective Measure Study Final Report*. Additional details of the previous environmental investigations and remediation work can be found in the *Revised CMS Final Report*, the *RCRA Closure Certification Report*, and the *Commercial PCB Storage Area Closure Certification Report*.

2.3.1 Overview

In accordance with the terms of the *373 Permit*, GE has begun Corrective Action at the site. Under RCRA, Corrective Actions are to be implemented wherever they are necessary, including areas beyond the facility. Corrective Actions included a RCRA Facility Assessment (RFA), a RCRA Facility Investigation (RFI), and, if needed, Corrective Measures. GE completed the RFA in 1988, the RFI in 1998, and submitted a CMS Report in 2000. In a letter dated February 18, 2003, NYSDEC approved the *Revised Corrective Measure Study Final Report*, which was dated July 31, 2001. Based on conversations with NYSDEC, GE understands that NYSDEC will likely issue a corrective measures permit to replace the existing *373 Permit*, which expired June 1, 2006.

2.3.2 RCRA Facility Investigation

A RFI was conducted in 1998. The results of the RFI indicate that the concentrations of selected constituents (primarily PCBs) at the Tonawanda service center exceed the recommended soil cleanup objectives (RSCOs) published by the NYSDEC in TAGM HWR-94-4046. The RFI identified five locations for which corrective measures were warranted due to concentrations of PCBs in surface soil, subsurface soil, or sediment. In addition, the RFI identified an area with elevated concentrations of volatile organic compounds (VOCs) in soil and perched groundwater within a former tank excavation. The six areas identified as requiring corrective measures were:

- The surface soils near the rail spur;
- The former rinse water underground storage tank (UST) excavation;
- The sewer lines east of the building near the former rinse water tank;
- The area near the old oil/water separator;
- The on-site storm sewers and drains; and
- The storm sewer along Milens Road.

The locations of these areas, except for the Milens Road storm sewer, are shown in Figure 2.

2.3.3 Corrective Measures Proposed for Site

At NYSDEC's request, GE conducted a CMS in 2000 and submitted a *Revised CMS Final Report* in 2001. The *Revised CMS Final Report* evaluated and selected corrective measures for portions of the site that were identified during the RFI as needing corrective measures.

The proposed corrective measure for the site, which was approved by the NYSDEC on February 18, 2003, includes:

- Excavation and off-site disposal of surface soil with PCB concentrations greater than 1 mg/kg from these areas at the site:
    - Rail spur;
    - East of building;
    - Small areas near fence east of building;
    - Small areas between building and east fence;
    - Off-site soil south of rail spur; and
    - Off-site soil north of rail spur.
- Excavation and off-site disposal of subsurface soil with PCB concentrations greater than 10 mg/kg from the former rinse water tank excavation.
- Replacement of the sewer lines that pass through the subsurface excavation areas on the east side of the building.
- Backfilling excavations with clean fill.
- Removal and off-site disposal of sediments in these structures at and near the site:
    - Truck bay trench and sump;
    - Rail bay trench;
    - Truck bay drain;
    - On-site storm sewer, including manholes and catch basins; and

    - Off-site storm sewer along Milens Road, including manholes.

- Cleaning of the on-site storm sewers (including manholes, catch basins, trench drains, and sump) and off-site sewers along Milens Road to remove residual contamination.

- Sealing the floor drain in the northeast part of building

- Conducting a five-year groundwater monitoring program to confirm that the underlying groundwater continues to not be impacted by site activities.

3.0 CURRENT SITE CONDITIONS

This section summarizes current conditions in the areas that are evaluated in this *Focused CMS*. The conditions of other portions of the site are summarized in the *Revised CMS Final Report*. The two Areas of Concerns (AOCs) evaluated in this *Focused CMS* are the:

- Concrete Floor Slab, which includes all interior areas of the building except the PCB CSA, the northern portion of the PCB Work Area, the PCB drum storage area, and several areas where PCBs were not historically present (e.g., lunch room, offices, clean storage room, and garage); and
- Transportation Corridor, which is the asphalt-covered area south of the building and the concrete ramp to the depressed loading dock.

The two AOCs are depicted on Figure 3. The impacts to these areas were discovered during closure of the facility's Commercial PCB Storage Area and were documented in the April 11, 2006 *Commercial PCB Storage Area Closure Certification Report*. NYSDEC requested that GE perform a focused CMS for the truck bay, depressed dock, and the transportation corridor after reviewing the *Commercial PCB Storage Area Closure Certification Report*. The truck bay and depressed dock have been combined for this CMS into one AOC, the concrete floor slab.

Impacts to groundwater are not associated with either of the AOCs. As discussed in Section 2, there is no shallow groundwater at the site. The conditions in the AOCs evaluated in this *Focused CMS* are unlikely to impact groundwater.

3.1 CONCRETE FLOOR SLAB

The concrete floor slab AOC includes the entire floor slab within the building, except for two areas that were decommissioned in 1994 (the PCB Drum Storage Area and the northern portion of PCB Work Area), the PCB Container Storage Area that was decommissioned in 2000, and other areas where PCBs were not historically present (e.g., lunch room, offices, clean storage room, and garage). The concrete floor slab is approximately six to seven inches thick. The entire concrete floor slab AOC, except for locations where stationary equipment covers the concrete, is currently covered by a double epoxy coating system that conforms to the requirements of Toxic Substance Control Act (TSCA) for the continued use of PCB-impacted porous surfaces.

GE conducted seven separate sampling events between November 2000 and March 2004 to evaluate the extent of PCBs in the concrete floor slab within the building. The program consisted of collection and analysis of wipe samples from the concrete floor surface, surface concrete chip samples, and subsurface concrete and soil samples. Each sample was analyzed for PCBs. Figure 4 summarizes the sampling locations and analytical results associated with the surface wipe and surface concrete chip samples inside the service center. Figures 5 and 6 illustrate the sampling results and locations of the surface and subsurface concrete samples and subsurface soil samples collected from within and near the at-grade truck bay and depressed dock, respectively.

The analytical results for samples collected during the closure of the Commercial PCB Storage Area indicated that the surface of the concrete floor slab had been impacted by PCBs. The concentrations of PCBs detected in the surface samples were greater than the cleanup objectives of 10 micrograms/100 square centimeters (10 $\mu g/100\ cm^2$) for wipe samples of surfaces or 1 mg/kg for concrete chip samples in the *Revised Closure Plan* for the Commercial PCB Storage Area. The sampling results also indicated that the PCB impacts were limited to the upper two to three inches of the concrete and that the underlying soil has not been impacted. Based on the analytical results of samples collected throughout the facility, URS concluded that PCB impacts to the shop floor stemmed from historical housekeeping practices.

After evaluating options for remediation of the shop floor, GE elected to use the double wash, double rinse procedures followed by double epoxy coating of the concrete floor in contrasting colors and labeling the floor with the PCB (M_L) mark as outlined in TSCA for continued use of porous surfaces impacted by PCBs (40 CFR Part 761.30(p)). This approach was selected because it would be less disruptive to shop operations than removal and replacement of the floor slab. Between December 2003 and May 2004, GE implemented the above described cleaning and epoxy coating of the shop floor to protect the on-site workers and minimize the potential for migration into the environment. The April 11, 2006 *Commercial PCB Storage Area Closure*

Certification Report describes the cleaning and coating activities in detail. Figure 7 illustrates the areas within the facility where the floor was cleaned and epoxy coated.

3.2 TRANSPORTATION CORRIDOR

The transportation corridor AOC is comprised of the paved area south of the service center and the concrete access ramp to the depressed dock. This area extends from the south wall of the building to the fence at the south end of the site and also extends from the east side to the west side of the site. The asphalt ranges from approximately two to eight inches in thickness. As shown in Figure 8, out-of-service equipment (transformers) is stored along the fence on the south and east sides of the transportation corridor AOC. The entire AOC, expect for the concrete ramp and the areas where equipment is stored, was covered by a new 1-½ inch thick layer of asphalt in 2004.

GE initially collected asphalt chip samples from the transportation corridor in November 2000. Based on those results, GE conducted a more extensive sampling program in the asphalt area south of the service building in May 2001 to evaluate the extent of PCB impacts. A 30-foot by 30-foot reference grid was established over the area, and asphalt chip samples were collected from 11 locations approximately 60 feet apart. Subsurface asphalt and subsurface soil samples were collected from two locations. The sampling locations and analytical results are presented in Figure 8.

The analytical results for the samples collected from the transportation corridor indicated that there were several areas where PCBs were detected in the surface of the asphalt pavement at concentrations above 1 mg/kg. No PCBs were detected in the subsurface asphalt or soil at the two locations where subsurface soil samples were collected.

GE elected to remove the top inch of asphalt from the areas of the transportation corridor that were not used for equipment storage. After removal of the top inch of pavement in December 2004, GE characterized the removed asphalt and properly disposed the material at off-site facilities approved and licensed to accept such wastes. Subsequent to the asphalt removal, several confirmation samples of the resulting asphalt surface were collected and analyzed for

PCBs. The remediated area was then repaved with 1-½ inches of new asphalt. The extent of pavement removal and replacement as well as confirmation sampling locations and results are illustrated in Figure 9. As shown in Figure 9, PCBs were detected in some of the samples at concentrations greater than 1 mg/kg, but below the cleanup level established by TSCA regulations for low occupancy areas. These locations are now covered by a 1-½ inch layer of asphalt.

4.0 CORRECTIVE MEASURE STUDY PROCESS AND OBJECTIVES

This section provides an overview of the CMS process and presents the corrective action objectives for the concrete floor slab and transportation corridor.

4.1 CORRECTIVE MEASURE STUDY PROCESS

This *Focused CMS* evaluates corrective measure alternatives for the two areas of concern at the facility that are technologically feasible, reliable, and effectively mitigate hazards to minimize damage to, and provide adequate protection of human health and the environment.

The CMS process consists of these four tasks:

Task I: Identification and Development of the Corrective Measure Alternatives

Task I includes a description of the current site situation, the establishment of corrective action objectives, the screening of corrective measure technologies, and the identification of the corrective measure alternatives for the site.

Task II: Evaluation of the Corrective Measure Alternatives

In Task II, the corrective measure alternatives are evaluated on the basis of technical, environmental, human health, and institutional concerns. A cost estimate is developed for each alternative.

Task III: Justification and Recommendation of the Corrective Measure Alternative

In Task III, a corrective measure alternative is recommended for the areas of concern and objectives identified. The alternative will be justified on the basis of technical, environmental, human health, and institutional considerations.

Task IV: Reports

The information gathered during Tasks I, II, and III is formulated into a final report including a recommended corrective measure alternative.

After the *Focused CMS* is completed, a corrective measure has been selected, and the NYSDEC prepares a draft Statement of Basis and permit modification, GE will conduct a public notice process. Following the public comment period, the NYSDEC will modify GE's *373 Permit* to incorporate the selected corrective measure. At that time, GE will initiate the Corrective Measure Implementation (CMI), which will include a CMI Plan and schedule for implementation. The CMI will also include the final engineering design and construction of the selected corrective measures. If the selected measures include operation, maintenance, and monitoring, these activities will be implemented following construction.

4.2 OBJECTIVES

In accordance with the June 7, 2006 letter from NYSDEC, this *Focused CMS* will use the same objectives as the *Revised CMS Final Report* and the *Revised Closure Plan* for the Commercial PCB Storage Area. These objectives are considered to be protective of human health and the environment.

Objectives from Revised CMS Final Report

The site cleanup objectives in the *Revised CMS Final Report,* which were established in the *CMS Task I Report* and approved by the NYSDEC, are to:

- Remove or prevent contact with and off-site transport of sediments that contain PCBs at concentrations greater than the RSCO of 1 mg/kg;

- Remove or prevent contact with, off-site transport of, and infiltration of precipitation through surface soils that contain PCBs at concentrations greater than the RSCO of 1 mg/kg;

- Remove or prevent contact with, and infiltration through, subsurface soils that contain PCBs or VOCs at concentrations greater than the RSCOs (10 mg/kg for subsurface PCBs); and

- Prevent or control the migration of perched groundwater that contains PCBs or VOCs at concentrations that exceed New York State groundwater standards.

Objectives from Revised Closure Plan

The objective of the *RCP* was to ensure that surfaces of the facility that may have been impacted by operation of the Commercial PCB Storage Area were cleaned in accordance with the levels specified in 40 CFR Part 761 Subpart G – PCB Spill Cleanup Policy. Specifically, the cleanup objectives listed in the *RCP* were:

Media	Location	Cleanup Objective for PCBs
Surfaces	Indoor solid surfaces and high contact outdoor solid surfaces	10 μg/100 cm^2
Surfaces	Indoor vault areas and low-contact, out door impervious solid surfaces	10 μg/100 cm^2
Surfaces	Low-contact , outdoor, impervious solid surfaces	10 μg/100 cm^2 or 100 μg/100 cm^2 and encapsulated
Soil	Less than 10 inches below surface	1 mg/kg
Soil	More than 10 inches below surface	10 mg/kg

Objectives for Focused CMS

The corrective actions at GE's Tonawanda service shop for this *Focused CMS* should address the following potential exposure and contaminant migration pathways:

- Direct contact with asphalt and concrete that contain PCBs;
- Off-site transport of PCB-impacted asphalt and concrete; and
- Infiltration of water through impacted asphalt and concrete.

The corrective action objective for this *Focused CMS* at the Tonawanda site is to:

- Remove or prevent contact with, off-site transport of, and infiltration of precipitation through, asphalt and concrete that contain PCBs at concentrations greater than the RSCO of 1 mg/kg or 10 µg/100 cm^2.

As discussed about in Section 3.0, groundwater is not being considered as a separate AOC in this *Focused CMS*.

5.0 CORRECTIVE MEASURE TECHNOLOGIES

Potential corrective measure technologies are screened in this section in order to evaluate whether they are applicable for the AOCs being evaluated in this *Focused CMS*. In the *CMS Task I Report*, 15 corrective measure technologies that could potentially be applicable to GE's Tonawanda service shop were identified based on the RFI results and an understanding of site conditions. These potential technologies were screened in the *Revised CMS Final Report.* Based on the characteristics of the two AOCs being evaluated in this *Focused CMS,* the potential technologies were further refined to these seven technologies:

- No Additional Action;
- Institutional Actions;
- Surface Covering;
- Storm Water Controls;
- Removal;
- Disposal; and
- Thermal Treatment.

These potentially applicable corrective measure technologies are briefly described and screened in this section. In an effort to screen out corrective measures technologies that are not appropriate or are too costly, this section also includes an evaluation of effectiveness, implementability, and relative cost of each potential technology.

Effectiveness addresses the extent to which a technology satisfies the corrective action objectives and contributes substantially to the protection of human health and the environment. The ability of a technology to reduce contaminant toxicity, mobility, or volume is considered as a measure of its effectiveness.

The implementability of a technology is defined by its technical feasibility, availability, and administrative feasibility. Technical feasibility involves the construction, operation, maintenance, replacement, and monitoring of a technology's technical components, as appropriate. Availability addresses the resources required to implement specific components of a technology and the ability to obtain them. Administrative feasibility is dependent upon the acceptability of a technology to applicable agencies and other interested parties, and it can be effected by the permanence of the solution.

The overall cost to implement the remedy includes capital, operation and maintenance (if required), and monitoring costs. Due to the limited number of technologies being considered, and the fact that cost estimates for the selected alternatives will be fully developed in Section 7.0, this preliminary evaluation only uses general cost ratings, such as low cost (below $100,000), moderate cost (up to $1,000,000), and high cost (over $1,000,000). At the technology screening stage, the cost of a technology is merely considered to compare technologies to each other.

No Additional Action

No additional action involves allowing the site to remain in its current condition and taking no additional action to address contamination at the site other than the remedial measures already completed. No additional action at this site includes the corrective measures already implemented.

> *Effectiveness:* The corrective measures already implemented at the site are effective in reducing the potential for individuals to come in contact with contaminated media.
>
> *Implementability:* The corrective measures are already implemented.
>
> *Cost:* The relative cost is zero.
>
> *Conclusion:* No additional action will be retained for use at the site.

Institutional Actions

Institutional actions involve placing access restrictions on areas that contain contaminated media. Institutional actions may include imposing deed restrictions, posting signs, and installing fences. Institutional controls can limit human exposure to materials that remain on-site.

> *Effectiveness:* Institutional actions are effective in reducing the potential for individuals to come in contact with contaminated media.
>
> *Implementability:* The facility already restricts access and is completely fenced. Signs in the form of M_L marks are already in place at the facility, per TSCA regulations. Institutional actions are readily implementable.
>
> *Cost:* The relative cost is low.
>
> *Conclusion:* Institutional actions will be retained for use at the site.

Surface Covering

Surface covering involves the placement of barriers such as epoxy coatings for concrete and additional asphalt layers (topping) over asphalt to serve as a barrier and prevent contact with contaminated media. They may also be used to limit the infiltration of precipitation and runoff through contaminated media.

> *Effectiveness:* Coatings and toppings would be effective in preventing contact with and transport of contaminated media. Properly maintained coatings and toppings would be effective in limiting water infiltration.
>
> *Implementability:* Coatings and toppings have already been implemented at the site.
>
> *Cost:* The relative cost is moderate.
>
> *Conclusion:* Surface capping in the form of epoxy coatings for concrete and asphalt toppings for asphalt pavement will be retained.

Storm Water Controls

Storm water controls include grading, diversion and drains to control the flow of storm water which might otherwise collect and infiltrate through contaminated media.

> *Effectiveness:* Grading, diversions, and drains to direct water flow, both inside and outside of the building are effective in controlling water flow.
>
> *Implementability:* Drains are already present at the site. Remediated asphalt has been graded to reduce storm water infiltration. If additional asphalt remediation is undertaken at the site, storm water control measures could be incorporated into the design.
>
> *Cost:* The relative cost is low to moderate when incorporated within a properly engineered remediation design.
>
> *Conclusion:* Storm water controls will be retained as an integral part of any corrective measure alternative.

Removal

The removal of contaminated concrete flooring and asphalt would involve a cessation of on-site daily operations, temporary relocation of existing equipment, and removing, loading, and transporting the concrete and/or asphalt to an off-site facility for treatment or disposal. Utilities would have to be disconnected and protected, and any associated piping and drainage systems underlying the facility would have to be either destroyed and re-built, or protected and restored to working condition. The excavated areas would then be replaced in kind with concrete and/or asphalt, and all utilities, piping and equipment replaced and checked prior to renewed operation. Short-term impacts to the surrounding community with regards to noise, dust, and increased truck traffic would be significant.

> *Effectiveness:* Removing all contaminated concrete flooring from within the building and asphalt from the asphalt pavement area would be effective in eliminating PCB contamination in these media.

Implementability: Removal of the concrete flooring from within the entire building would cause complete shut down of the facility for an extended period of time, would cause an employee layoff for an extended period of time, and it would be difficult to restore the facility to current operations. Removal of the concrete flooring is not considered to be implementable because of the potential long-term impact to the business. Removal of all or portions of asphalt from the transportation corridor would cause disruption of onsite activities for a shorter period of time, but would be detrimental to shop operations due to the disruption of deliveries and shipment of customer parts. While impacts would be significant, removal of some or all portions of the asphalt could be implemented.

Cost: The relative cost of removing the concrete flooring, including considering the loss of the use of the facility over an extended period of time, is high. The relative cost of removing asphalt, considering the disruption of onsite activities, is moderate to high.

Conclusion: Removal of concrete from the entire building is not retained. Removal of all or portions of asphalt from the asphalt pavement area is retained.

Disposal

Excavated and/or removed materials could be disposed at properly licensed off-site facilities to which the waste material would be transported. Off-site disposal of removed materials is an effective means of containment, although it does not permanently destroy or reduce the toxicity of the waste.

Effectiveness: Removed materials could be effectively disposed off-site at appropriately licensed facilities.

Implementability: Disposal facilities that can manage wastes with the levels of PCBs present at the site are readily available.

Cost: The relative cost, while dependent on the volume of materials to be disposed, is considered to be moderate.

Conclusion: Off-site site disposal of excavated or removed materials will be retained.

Thermal Treatment

Thermal treatment is used to destroy or desorb organic contaminants from contaminated media after the contaminated materials have been removed. It involves heating homogenized material to a temperature at which volatile and semi-volatile organic compounds vaporize. Incineration involves heating removed materials to the point of combustion in order to oxidize organic material, including contaminants. The off-gases from thermal treatment are treated to remove the organic compounds and particulate matter.

Effectiveness: Thermal treatment at an off-site facility would be effective in treating PCBs.

Implementability: Thermal treatment is most applicable for soils. Excavated/removed concrete and asphalt would have to be crushed to meet the size requirement for treatment.

Cost: Given the relatively low levels of PCBs present at the site, and the pre-processing required for site materials, other corrective measures are considered to be more cost effective than thermal treatment for this site.

Conclusion: Thermal treatment will not be retained.

The corrective measures that remain following this screening process have been assembled into three corrective measures alternatives. Table 1 presents a summary of the three corrective measures alternatives and shows the technologies that are included in each alternative.

6.0 EVALUATION CRITERIA

In accordance with the *Part 373 Permit*, the corrective measure alternatives developed in this report are evaluated on the basis of technical, environmental, human health, and institutional concerns, and a cost estimate is developed for each alternative. This section describes the evaluation criteria that are used in this *Focused CMS*.

6.1 TECHNICAL EVALUATION

The technical evaluation of each alternative includes evaluations of the expected performance, reliability, implementability, and safety of each corrective measure alternative.

Performance

The evaluation of the performance of each alternative focuses on its expected effectiveness and useful life. The effectiveness is evaluated in terms of the ability of the alternative to contain, remove, destroy, or treat media of concern, namely PCB-impacted concrete and asphalt. The useful life of each alternative is defined as the length of time for which the effectiveness can be maintained. This is a function of the expected service lives of various components of the alternative and the availability of required resources.

Reliability

The reliability of the alternatives is a function of operation and maintenance requirements and the demonstrated reliability of the component technologies, both individually and in combination, under conditions similar to those anticipated at GE's Tonawanda service shop.

Implementability

The evaluation of the alternatives' implementability addresses the ease of construction, the time required for construction, and the time required for beneficial results to be observed.

Safety

The evaluation of the safety of each alternative focuses on the safety of nearby communities and environments as well as workers during implementation.

6.2 ENVIRONMENTAL IMPACT

The environmental assessment for each alternative focuses on the facility conditions and contamination migration pathways addressed by each alternative. The assessment includes an evaluation of the short- and long-term beneficial and adverse effects of the alternative, an examination of the effects of the alternative on environmentally sensitive areas, and an analysis of the measures available to mitigate adverse effects.

6.3 HUMAN HEALTH EFFECTS

Each alternative has been evaluated in terms of the extent to which it mitigates short- and long-term potential exposure to residual contamination, and in terms of the ability of the alternative to protect human health both during and after implementation. This evaluation includes estimates of concentrations and types of contamination that will remain at GE's property, potential exposure routes, and potentially affected populations.

Each alternative has been evaluated to estimate the potential level of exposure to contaminants during and after its implementation. The anticipated residual contaminant concentrations have been compared with relevant standards, criteria, and guidelines for the protection of human health.

6.4 INSTITUTIONAL NEEDS

Each alternative has been evaluated to assess the impact of various institutional requirements on its design, operation, and timing. The alternatives are evaluated to assess whether they will comply with relevant federal, New York State, and local environmental and public health standards, regulations, criteria, and guidelines, and in particular, the cleanup objectives identified for this site in Section 4.2.

In addition to the consideration of the ability of the alternative to comply with regulations and guidelines, URS' evaluation takes into account the anticipated reaction of the local community to the implementation of the alternatives.

6.5 COST ESTIMATE

The present worth of each corrective measure alternative has been estimated using a discount rate of five percent and a maximum project life of thirty years. The estimated present worth includes direct and indirect capital costs and annual operation and maintenance costs. The components that are considered for each of these costs are:

Direct Capital Costs

- Construction costs, including materials, labor, and construction equipment;
- Equipment costs, including treatment, containment, disposal, and service equipment; and
- Buildings and services costs, including process and non-process buildings, utility connections, purchased services, and disposal.

Indirect Capital Costs

- Engineering expenses, including administration, preparation of plans (material management, access control), developing an operation and maintenance schedule, design, construction supervision, drafting, and testing of alternatives;
- Surveying;
- Legal fees and license or permit costs;
- Startup and shakedown costs; and
- Contingency allowances for unforeseen circumstances.

Operation and Maintenance Costs

- Operating labor costs;
- Maintenance materials and labor costs;
- Auxiliary materials and energy, including electricity, chemicals, water and sewer service, and fuel;
- Purchased services, including sampling costs and laboratory fees;

- Disposal and treatment costs for waste materials generated during the operation of the alternative;
- Administrative costs;
- Insurance, taxes, and licensing costs; and
- Maintenance reserve and contingency funds.

The sources used to develop the cost estimates include actual costs, vendor quotes, and published reference materials, including R. S. Means' *Heavy Construction Cost Data* (2009).

7.0 CORRECTIVE MEASURE ALTERNATIVES

Three corrective measure alternatives have been developed from the technologies remaining following the screening process described in Section 5. These alternatives, which are considered to be effective and implementable for this site, are:

- Alternative 1: No Additional Action;
- Alternative 2: Remove and Replace Concrete Ramp, Complete Asphalt Overlay, Dispose Removed Materials, Maintain Epoxy Coating, and Maintain Asphalt; and
- Alternative 3: Remove and Replace Concrete Ramp, Remove and Replace Asphalt Pavement, Dispose Removed Materials, and Maintain Epoxy Coating.

A detailed description of each of the alternatives is provided in the following sections. Figures 10 through 12 show site plans and depict the major elements of each alternative. The alternatives are then evaluated against the criteria presented in Section 6.0 and then compared with each other with respect to the evaluation criteria.

7.1 ALTERNATIVE 1: NO ADDITIONAL ACTION

The No Additional Action Alternative involves:

- Corrective measures already implemented:
  - Double wash and double rinse shop floor;
  - Epoxy coating of shop floor with two contrasting colors;
  - Labeling of the floor with the PCB (M_L) mark;
  - Removal of the top 1 inch of asphalt from areas shown in Figure 10; and
  - Replacement of 1-½ inches of asphalt in removal areas.
- No new corrective measures.

The No Additional Action Alternative is presented for comparison. The corrective measures identified above have been completed for the facility. No other remedial actions would be taken.

If Alternative 1 were selected, no time would be required for construction because the corrective measures have already been implemented.

For purposes of comparison, this No Additional Action Alternative assumes that there would be no annual operation and maintenance activities or associated costs for this corrective measure. In actuality, operation and maintenance of the epoxy coating for the shop floor is required under TSCA regulations and is being conducted at the site.

7.1.1 Technical Evaluation

Alternative 1 would not remove, destroy, or treat PCB-impacted concrete and asphalt at the Tonawanda service center. Under this alternative, the majority of PCB-impacted concrete and asphalt are contained under existing surface coverings of either an epoxy or asphalt. Alternative 1 would require no implementation or maintenance and therefore, would pose no risk to workers or public safety during implementation.

7.1.2 Environmental Impact

Alternative 1 eliminates the exposure pathway of direct contact and off-site transport of PCB-impacted concrete and asphalt with the existing surface covers of epoxy for concrete and asphalt for the asphalt pavement, except near the fences on the east and south side of the transportation corridor. Without continued maintenance, infiltration of water through these areas would be reduced only in the short term.

7.1.3 Human Health Effects

Alternative 1 reduces the risk of exposure because the existing surface covers prevent direct contact with most of the impacted media. Infiltration of water through these areas would be reduced in the short term. Residual contamination remains below the surface covers at levels exceeding cleanup objectives. Without continued maintenance, the potential for human exposure would increase due to the presence of residual contamination. As noted above, maintenance is required per the TSCA regulations, but has been eliminated from this No Additional Action Alternative to provide a no action alternative for comparison to the other alternatives.

7.1.4 Institutional Needs

Alternative 1 would comply with cleanup objectives for the site for PCBs by preventing contact with, off-site transport of, and infiltration through PCB-impacted concrete and asphalt.

Measures have already been undertaken at the site to mitigate the majority of PCB impacts to concrete and asphalt. In addition, the work to epoxy coat the floor was performed in accordance with federal regulations for continued use of porous surfaces contaminated with PCBs (40CFR Part 761.30(p)), and the concentrations of PCBs remaining in the asphalt meet the cleanup levels for low occupancy areas as defined in 40CFR Part 761.61(a)(4)(i)(B).

Remaining PCB-impacted concrete and asphalt in the two areas of concern affect on-site workers and only minimally affect the community and/or the environment. It is not anticipated that public reaction would be negative if no additional action were taken at the Tonawanda site other than the corrective measures that have already been implemented.

7.1.5 Cost Estimate

There is no cost associated with Alternative 1 other than the costs of the corrective measures that have been completed. As shown in Table 2, these costs are approximately $645,000.

7.2 ALTERNATIVE 2: REMOVE AND REPLACE CONCRETE RAMP, ADDITIONAL ASPHALT OVERLAY, DISPOSE REMOVED MATERIALS, MAINTAIN EPOXY COATING, AND MAINTAIN ASPHALT

The second proposed corrective measure alternative involves:

- Corrective measures already implemented;
  - Double wash and double rinse shop floor;
  - Epoxy coating of shop floor with two contrasting colors;
  - Labeling of the floor with the PCB (M_L) mark;

- Removal of top 1 inch of asphalt from areas shown in Figure 10; and
- Replacement of 1-½ inches of asphalt over removal areas.

- Institutional actions:
  - Deed restrictions identifying areas of residual contamination and required maintenance in general accordance with 6 NYCRR Part 373-2.7(i) 2(i).
- Investigate and if necessary remove 1 inch of asphalt from areas not previously remediated.
- Investigate and if necessary remove and replace concrete ramp.
- Properly dispose of removed materials.
- Cover asphalt removal areas with 1-½ inches of new asphalt.
- Maintain epoxy coating.
- Maintain asphalt areas.

This alternative includes all the corrective measures already implemented at the site. The deed to the property would be amended to note the presence of residual PCBs in the concrete floor slab below the epoxy coating, and in the pavement south of the building beneath the surface coating. The restrictions would prohibit disruption of the asphalt topcoat and the epoxy coating, and would require the owner of the property to inspect and maintain both cover systems.

The floor of the concrete ramp that leads to the depressed dock on the south side of the building would be sampled to determine if the concrete has been impacted by PCBs. If appropriate, the concrete ramp would be removed and replaced. The removed materials would be characterized and properly disposed. Although the PCB content of the concrete in the floor of the ramp is unknown, it is likely similar (less than 25 mg/kg at the surface and non-detectable at depth) to the concrete in the base of the depressed dock within the service center.

Once accessible, the asphalt pavement where equipment is stored along the south and east fences would be sampled to determine if the asphalt surface has been impacted by PCBs. If appropriate, the upper inch of asphalt would be removed from the approximately 14,000 square foot area that was not remediated during the previous activities in December 2004. The removed materials would be characterized and disposed at a properly licensed off-site facility. Although the PCB content of the asphalt surface on the south and east sides of the transportation corridor is unknown, it is likely similar (approximately 10 mg/kg) as the adjacent materials that were removed in December 2004. An additional 1-½ inches of asphalt would be installed over the area to provide a surface cover over the PCB-impacted asphalt. The asphalt topcoat would be graded to prevent ponding of precipitation.

Annual operation and maintenance activities would ensure that the epoxy floor coating and asphalt topcoat remained in good condition and continued to serve as effective barriers. An operation and maintenance plan would include periodic inspections, repair procedures, and procedures for accommodating changes in shop operations. For the pavement, the inspection would likely include an annual inspection for cracks and signs of deterioration or inadequate storm water control, and appropriate sealing or repair, as necessary. For the epoxy coating, operations and maintenance would include monthly inspections by the facility for signs of wear or dings and application of additional epoxy coating, if needed.

URS estimates that if Alternative 2 were selected and incorporated into a modified *373 Permit* for GE's service shop, the investigation and final design could be completed within 120 days. We anticipate that construction of the corrective measure, including contractor selection, could be completed within eight to twelve months of NYSDEC approval of the final corrective measure design. The epoxy coating on the concrete floor and asphalt pavement would be maintained for a period of 30 years.

7.2.1 Technical Evaluation

Alternative 2 does not destroy or treat PCB-impacted concrete and asphalt at the Tonawanda service center. Under this alternative, the PCB-impacted concrete and asphalt would be contained under a covering of either an epoxy or asphalt. Well-maintained covers are a reliable containment method. Furthermore, epoxy coating is a method approved by the USEPA for the continued use of PCB-impacted concrete.

Alternative 2 could be implemented with moderate difficulty because of the loss of use of the depressed loading dock during ramp remediation. Replacement of the concrete ramp is expected to impact shop operations because the depressed loading dock is the only truck bay that allows truck-height access for shipping and receiving operations. Furthermore, complete replacement of the ramp would likely block access to the adjacent at-grade truck bay. While other truck bays that would not be impacted by the remedial activities could be used, these bays are not at truck-height and would present a challenge for loading and unloading some trucks. Transferring shipping and receiving operations to those bays would hinder shop operations during the construction period. Placing an additional 1-½ inches of asphalt to the existing pavement in previously non-remediated asphalt areas after those areas become accessible would not be difficult to implement as paving is a common construction-related activity. The contractor performing the work would be expected to comply with federal and state health and safety regulations. The risk to public safety would also be minimal so long as adequate dust control measures were used, as the activities would occur within the fenced facility.

7.2.2 Environmental Impact

Alternative 2 would address the potential contaminant migration and exposure pathways identified. Properly maintained epoxy and asphalt covers over residual PCB-impacted media would effectively reduce the risk of direct contact with, and the potential off-site transportation of, impacted materials as well as limit infiltration through impacted media over the long term.

7.2.3 Human Health Effects

Alternative 2 would maintain the current reduced risk of human exposure to PCBs in concrete flooring and asphalt at the site through the period of continued maintenance. In the short term, the equipment on the asphalt reduces the potential for direct contact with potentially PCB-impacted asphalt along the south and east fences. In the long term, residual contamination would remain below the epoxy coating and asphalt surface at levels exceeding cleanup objectives. The remedial work would be performed under a contractor's health and safety plan, and the risk of exposure to PCBs during remediation would be minimal if adequate dust controls and personal protective equipment (PPE) were used.

7.2.4 Institutional Needs

Alternative 2 would comply with cleanup objectives for the site for PCBs by preventing contact with, off-site transport of, and infiltration through PCB-impacted concrete and asphalt.

Measures have already been undertaken to mitigate the majority of PCB impacts to concrete and asphalt at the site. In addition, the work to epoxy coat the floor was performed in accordance with federal regulations for continued use of PCB-impacted concrete (40CFR Part 761.30(p)), and the concentrations of PCBs remaining in the asphalt meet the cleanup criteria for low occupancy areas as defined in 40CFR Part 761.61(a)(4)(i)(B).

Remaining PCB-impacted concrete and asphalt in the two areas of concern minimally affect on-site workers and minimally affect the community and/or the environment. It is not anticipated that public reaction would be negative if this limited action alternative was selected for GE's site. However, the community reaction to Alternative 2 is expected to be more favorable than the reaction to Alternative 1 with the inclusion of maintenance activities.

7.2.5 Cost Estimate

Table 3 presents a preliminary cost estimate for Alternative 2. As shown in Table 3, GE has already invested an estimated $645,000 to address the PCB impacts discovered during closure of the Commercial PCB Storage Area. The estimated present worth of the actions proposed in Alternative 2 is approximately $955,000. This includes direct and indirect capital costs of approximately $202,000 and annual operation and maintenance costs of approximately $49,000 per year for 30 years. Thus, the total present worth of this alternative, including the cost of the completed remedial actions, is approximately $1,600,000.

7.3 ALTERNATIVE 3: REMOVE AND REPLACE CONCRETE RAMP, REMOVE AND REPLACE ASPHALT PAVEMENT, DISPOSE REMOVED MATERIALS, AND MAINTAIN EPOXY COATING

The third proposed corrective measure alternative involves:

- Corrective measures already implemented:
  - Double wash and double rinse shop floor;

- Epoxy coating of shop floor with two contrasting colors;
- Labeling of the floor with the PCB (M_L) mark;
- Removal of top 1 inch of asphalt from areas shown in Figure 10; and
- Replacement of 1-½ inches of asphalt over removal areas.

- Institutional actions:
  - Deed restrictions identifying areas of residual contamination and required maintenance in general accordance with 6 NYCRR Part 373-2.7(i) 2(i).
- Design Investigation for Asphalt Pavement:
  - Survey;
  - Storm Water Control Site Plan; and
  - Plan for equipment relocation, facility disruptions, and transportation issues.
- Investigate and, if necessary, remove and replace concrete ramp.
- Temporarily re-locate equipment near fences.
- Remove asphalt south of the building to full depth.
- Grade the sub-base for proper drainage utilizing excavated on-site soils to the extent practical.
- Characterize and dispose off-site removed concrete, asphalt pavement, and excess excavated soils.
- Install base of ¾-inch stone topped with a minimum of six inches of asphalt pavement with appropriate drainage controls.
- Restore site, including replacing fencing, drains, curbing, and signage.
- Maintain epoxy coating.

This alternative includes all the corrective measures already implemented at the site. The deed to the property would be amended to note the presence of residual PCBs in the concrete floor slab below the epoxy coating. The restrictions would prohibit disruption of the epoxy coating and require the owner of the property to inspect and maintain the epoxy cover system.

The floor of the concrete ramp that leads to the depressed dock on the south side of the building would be sampled to determine if the concrete had been impacted by PCBs. If appropriate, the concrete ramp would be removed and replaced. The removed materials would be characterized and properly disposed. Although the PCB content of the concrete in the floor of the ramp is unknown, it is likely similar (less than 25 mg/kg at the surface and non-detectable at depth) to the concrete in the base of the depressed dock within the service center.

A pre-design investigation would be performed for the approximately 70,000 square foot area of asphalt pavement. It would include a survey of the site to identify boundaries, drainage structures, and constraints, such as the southern edge of the building, associated with development of a grading plan. Both a plan view and details for asphalt installation would be prepared. The plans would include provisions for equipment relocation, facility disruptions and both on- and off-site traffic issues.

Equipment currently stored near the fences along the south and east portions of the asphalt pavement would be temporarily re-located. This would require moving the equipment several times around the site or to a nearby GE service center. The closest GE service center is in Albany, New York and approximately 300 miles east of the facility.

All asphalt south of the building would be removed, characterized, and transported off-site for disposal. The sub-base would be graded in preparation for the asphalt pavement utilizing excavated soil as grading material as much as possible. An estimated excess 200 cubic yards of soil may have to be disposed off-site. This excavated soil would be sampled and characterized for disposal. The asphalt pavement would consist of a base of three-quarter inch stone topped with a minimum of six inches of asphalt. The design for the replacement pavement that would be installed south of the building would include storm water controls to prevent ponding and limit infiltration. Existing drainage structures and drains would be utilized wherever possible.

Annual operation and maintenance activities would ensure that the epoxy floor coating remains in good condition and continues to serve as an effective barrier. An operation and maintenance plan would include periodic inspections, repair procedures, and procedures for accommodating changes in shop operations. Operations and maintenance would include monthly inspections by the facility for signs of wear or dings and application of additional epoxy coating, if needed. Because this alternative will remove the PCB impacted materials from the transportation corridor, maintenance of the asphalt south of the building is not needed to maintain the effectiveness of the corrective action.

URS estimates that if Alternative 3 were selected and incorporated into a modified *373 Permit* for GE's Tonawanda service shop, the survey and final design could be completed within 120 days. We anticipate that construction of the corrective measure could be completed within eight to twelve months of NYSDEC's approval of the final design and GE's selection of a remedial contractor. The epoxy floor coating would be properly maintained for a period of 30 years. Maintenance would include annual inspections and replacement of the epoxy, if needed.

7.3.1 Technical Evaluation

Alternative 3 would remove PCB-impacted asphalt and contain the PCB-impacted concrete. A well maintained epoxy coating is a reliable containment method and is approved by the USEPA for the continued use of PCB-impacted concrete.

Alternative 3 could be implemented, but it would significantly disrupt the service center operations because there is only one entrance into and out of the facility, and the facility frequently operates multiple shifts. Removal of the asphalt would eliminate a majority of the site employee parking and would eliminate access for truck deliveries and shipment of completed projects to the customers. Removal of the existing asphalt would not be overly difficult to implement as excavation, grading, and paving are common construction-related activities. Care would have to be taken to avoid damage to the existing drainage controls, security controls, and other utilities. If the work is staged and replacement of the concrete ramp takes place prior to removal of the remaining parking lot the shop could utilize other truck bays for shipping and receiving operations. However, because the ramp leads to the only depressed loading dock, loss of its use during remedial work would hinder shop operations. The contractor performing the work would be expected to comply with federal and state health and safety regulations. The risk to public safety would also be minimal so long as adequate dust control measures are used, as the activities would occur within the fenced facility. Careful planning and coordination would be necessary to minimize disruption of on-site activities and maintain access for fire and emergency vehicles. Truck traffic for transportation of excavated asphalt to off-site disposal facilities and the importation of paving materials would impact the community.

7.3.2 Environmental Impact

Alternative 3 would address the potential contaminant migration and exposure pathways. A properly maintained epoxy coating over the residual PCB-impacted concrete would reduce the risk of direct contact with, and off-site transportation of, impacted materials as well eliminate the possibility of water infiltration through impacted concrete. The removal of PCB-impacted asphalt would eliminate the direct contact, off-site transport, and infiltration pathways associated with this media.

7.3.3 Human Health Effects

Removal of the pavement south of the building would eliminate the risk of human exposure to PCBs from asphalt at the site. However, the asphalt currently meets USEPA cleanup levels for low occupancy areas. The work would be performed under a contractor's health and safety plan, which would require the use of dust controls and PPE to mitigate the risk of worker exposure to impacted materials. Alternative 3 would reduce the risk of human exposure to PCBs in concrete for as long as the epoxy coating was maintained. Residual contamination would remain in concrete below the epoxy surface at levels exceeding cleanup objectives.

7.3.4 Institutional Needs

Alternative 3 would comply with the cleanup objectives for the site for PCBs by eliminating contact with, off-site transport of, and infiltration through PCBs in concrete, and by removing PCB-impacted asphalt.

Measures have already been undertaken to mitigate the majority of the PCB impacts to concrete at the site. The remedial work already undertaken for the concrete floor complies with USEPA regulations for continued use of the floor (40CFR Part 761.30(p)). Remaining PCB-impacted concrete would minimally affect on-site workers and would not affect the community and/or the environment.

Community reaction to Alternative 3 may not be favorable as it includes significantly more truck traffic and short-term effects from noise during implementation.

7.3.5 Cost Estimate

Table 4 presents a preliminary cost estimate for Alternative 3. As shown in Table 4, GE has already invested an estimated $645,000 to address the PCB impacts discovered during closure of the Commercial PCB Storage area. The estimated present worth of the actions proposed in Alternative 3 is approximately $1,130,000. This includes direct and indirect capital costs of approximately $993,000 and annual operation and maintenance costs of approximately $13,000 per year for 30 years. Thus, the total present worth of this alternative, including the cost of the completed remedial actions, is approximately $1,780,000.

7.4 COMPARISON OF ALTERNATIVES

This section presents a comparison of the three alternatives. Table 5 presents a summary of the estimated costs to implement the corrective measure alternatives. Table 6 summarizes the evaluations of the alternatives.

The comparison of the corrective measure alternatives is based on their individual evaluations in the previous sections. The alternatives have been ranked qualitatively. In accordance with the terms of the *373 Permit*, preference has been given in the ranking process to the corrective measure alternatives that:

- Are most effective at performing the intended functions and maintaining performance for extended periods of time;
- Have proven effective under conditions similar to those anticipated at GE's Tonawanda facility;
- Do not require frequent or complex operation and maintenance activities;
- Can be constructed and operated to reduce levels of contamination to comply with applicable standards in the shortest period of time;
- Pose the least threat to the safety of nearby residents and environments as well as workers during implementation;

- Provide the minimum level of exposure to contaminants and the maximum reduction of exposure with time; and
- Pose the least adverse impact to the environment or promise the greatest improvement over the shortest period of time.

7.4.1 Technical Evaluation

All three alternatives would contain PCB-impacted concrete within the building under the existing epoxy coating. Alternative 1 would leave potentially impacted concrete in the loading ramp exposed. This concrete would be sampled and, if necessary, removed with Alternatives 2 and 3. Alternative 1 would contain the majority of PCB-impacted asphalt under a topcoat of asphalt. Alternative 2 would additionally contain potentially PCB-impacted asphalt beneath equipment stored near the fences, and provides for maintenance of the coverings over the long term. Properly maintained cover systems are a reliable containment method. Alternative 3 includes removal of PCB-impacted asphalt.

Alternative 1 would require no implementation or maintenance since no additional corrective measures would be implemented. Alternative 2 could be implemented with moderate difficulty to maintain access to the facility throughout remedial activities. However, Alternative 2 could not be fully implemented until the area beneath the equipment stored outside becomes accessible. Alternative 3 would be significantly more challenging to implement because there is only one entrance to the shop property. Careful planning and coordination would be necessary to minimize disruption of on-site activities and maintain access for fire and emergency vehicles. In addition, Alternative 3 would entail the most truck traffic of vehicles importing and exporting materials from the site.

7.4.2 Environmental Impact

All three alternatives address the potential contaminant migration and exposure pathways identified. The epoxy and asphalt covers reduce the risk of direct contact with, off-site transportation of, and infiltration through, PCB-impacted material. Alternative 2 reduces this risk over the long term with the addition of maintenance, covering the potentially impacted asphalt in the transportation corridor, and removal of potentially impacted concrete from the ramp that leads to the depressed dock. By including asphalt removal, Alternative 3 has the added advantage of eliminating the risk associated with PCBs in asphalt.

7.4.3 Human Health Effects

All alternatives reduce the risk of human exposure by direct contact with PCB-impacted concrete and asphalt with surface covers over the impacted materials. The deed restrictions included in Alternatives 2 and 3 would reduce the risk over the long term by requiring maintenance and plans for potential future construction activities. Alternative 3 would further eliminate the risk from PCB-impacted asphalt by its removal.

Residual contamination would remain at the site at levels exceeding cleanup objectives. Levels of residual contamination in PCB-impacted concrete would be the same for Alternatives 2 and 3 and slightly reduced from Alternative 1. Levels of residual contamination in PCB-impacted asphalt would be the similar for Alternatives 1 and 2. There would be no residual PCB-impacted asphalt at the site with Alternative 3.

Maintenance of the epoxy and asphalt coatings included in Alternatives 2 and 3 would limit the potential for human exposure due to the presence of residual PCB-impacted materials.

7.4.4 Institutional Needs

Alternatives 2 and 3 would comply with cleanup objectives for the site for PCBs by preventing contact with, off-site transport of, and infiltration through PCB-impacted concrete. Alternative 1 would not be as compliant because potentially impacted concrete on the ramp to the depressed dock and asphalt where equipment is stored in the south and east sides of the site would not be addressed. Alternatives 1 and 2 would comply with cleanup objectives for the site for PCBs by preventing contact with, off-site transport of, and infiltration through PCB-impacted asphalt. Alternative 3 would further prevent potential contact with PCB-impacted asphalt through its removal. Alternatives 2 and 3 would comply over the long term with the addition of proper maintenance.

Measures have already been undertaken to mitigate the majority of the PCB-impacted concrete and pavement at the site. Remaining PCB-impacted concrete and asphalt only minimally affect on-site workers. The epoxy coating installed on the concrete floor slabs was performed in accordance with Toxic Substance Control Act (TSCA) provisions for continued use of PCB-impacted porous surfaces (40CFR Part 761.30(p)). Residual PCBs present in the transportation corridor are present at concentrations that meet the federal cleanup criteria for low occupancy areas as defined in 40CFR Part 761.61(a)(4)(i)(B)).

Remaining PCB-impacted concrete and asphalt only minimally affect the community and/or the environment. The facility is secured by a fence, which restricts public access. Currently, the asphalt covering prevents direct contact with most of the PCB-impacted asphalt and prevents impacted media from migrating off-site where it could impact the public or the environment. The large equipment stored along the south and east fences is currently hindering access to and direct contact with the potentially PCB-impacted asphalt in these areas. In addition, the covered PCB-impacted asphalt meets USEPA cleanup levels for low occupancy areas, such as parking lots. GE does not anticipate adverse public reaction if Alternative 1 is implemented at the Tonawanda site. Community reaction to Alternative 2 is expected to be more favorable than the reaction to Alternative 1 with the inclusion of maintenance activities. Community reaction to Alternative 3 may not be favorable as it includes significantly more truck traffic and short-term effects from noise during implementation, and disruption of activity at and near the site.

7.4.5 Cost Estimate

Table 5 presents a summary of the estimated costs for the three corrective measure alternatives. This table is presented for reference. In accordance with the terms of the *373 Permit*, cost has not been considered as a factor in determining the most appropriate corrective measure for GE's Tonawanda service center.

8.0 RECOMMENDATION

URS recommends that Alternative 2 be implemented at the site. URS bases this recommendation upon the alternative comparison presented in Section 7.4.

Alternative 1 was not selected. In the short term it addresses the exposure and migration pathways identified, but without maintenance, residual contamination may pose a risk in the future.

Residual contamination would remain at the site at levels exceeding cleanup objectives in PCB-impacted concrete for both Alternatives 2 and 3. Measures have already been undertaken to mitigate the majority of contamination issues in concrete and asphalt at the site. Well-maintained covers are a reliable containment method for residual contamination. Alternatives 2 and 3 are equal in their ability to comply with cleanup objectives for the site by preventing contact with, off-site transport of, and infiltration through PCB-impacted concrete. In addition, all three alternatives comply with federal regulations for continued use of PCB-impacted porous surfaces.

Residual contamination would remain in PCB-impacted asphalt for Alternative 2; however, Alternative 2 would comply with cleanup objectives for the site for PCBs by preventing contact with, off-site transport of, and infiltration through PCB-impacted asphalt. In addition, the area where PCB-impacted asphalt would remain with Alternative 2 meets the federal definition of a low occupancy area and the measures already implemented meet the federal cleanup criteria for a low occupancy area. There would be no residual PCB-impacted asphalt at the site with Alternative 3.

As the facility is an operating service center within a fenced area, Alternative 3 poses the most difficult implementation. Careful planning and coordination to maintain access to the site for fire and emergency vehicles would be necessary. Excavation, removal and re-grading the entire asphalt area south of the shop would create noise and disrupt traffic not only on site, but also in the community. Alternative 3 would entail the most truck traffic for exporting excavated materials from the site to off-site disposal facilities, and importing paving materials to the site.

Remaining PCB-impacted concrete and asphalt in the two areas of concern only minimally affect on-site workers, the community and/or the environment. It is not anticipated that public reaction would be negative if Alternative 2 were implemented at the Tonawanda site. Community reaction to Alternative 3 may not be favorable as it includes significantly more truck traffic and short-term effects from dust and noise during implementation.

9.0 SCHEDULE

The corrective measure schedule will be established after the NYSDEC approves this *Focused CMS*. The schedule for the Corrective Measure Implementation will depend on a number of factors, including the NYSDEC's responses and seasonal work restrictions. URS expects that the implementation of the corrective measure may begin during the spring or summer following the NYSDEC's approval of this report.

URS anticipates that, following the NYSDEC's approval of this *Focused CMS*, the NYSDEC will issue a modified *373 Permit* for GE's Tonawanda service shop that incorporates the selected corrective measures as well as the corrective measures selected in the July 31, 2001 *Revised Corrective Measure Study Final Report*. GE will make the RFI results and information about the planned corrective measures available to the community during the public notice period for the modifications to the *373 Permit*.

The final corrective measure design process would be completed within approximately four months of the NYSDEC's issuance of the modified *373 Permit*. URS anticipates that the construction of the corrective measures, including the relocation of equipment, asphalt capping and restoration of the site, as well as the corrective measures already selected for the site could be completed in approximately eight to twelve months following the selection of a contractor, and would be dependent on seasonal and weather work restrictions. Maintenance of the epoxy coating and asphalt would continue for 30 years after the construction of the corrective measures has been completed.

TABLES

TABLE 1
SUMMARY OF CORRECTIVE MEASURE ALTERNATIVES
GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Surviving Technologies	**Alternative 1** No Additional Action	**Alternative 2** Remove and Dispose Concrete Ramp, Complete Asphalt Overlay, Maintain Epoxy Coating, and Maintain Asphalt	**Alternative 3** Remove and Dispose Concrete Ramp, Remove and Dispose Asphalt Pavement, and Maintain Epoxy Coating
Existing Corrective Measures	X	X	X
Institutional Actions		X	X
Surface Covers		X	X
Storm Water Controls		X	X
Excavation and Removal		X	X
Disposal		X	X

TABLE 2

PRELIMINARY COST ESTIMATE
ALTERNATIVE 1
NO ADDITIONAL ACTION
EXISTING CORRECTIVE MEASURES

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Elements	Quantity	Unit	Unit Cost	Cost	Source
PREVIOUSLY COMPLETED REMEDIAL ACTIONS					
Design Investigation and Engineering Design	1	LS	$75,000.00	$75,000	Invoices
Clean and Double Epoxy Coat Shop Floor	1	LS	$350,000.00	$350,000	Invoices
Disposal of Wastes from Floor Cleaning	1	LS	$10,000.00	$10,000	Invoices
Remove and Replace Asphalt Surface	1	LS	$125,000.00	$125,000	Invoices
Construction Oversight	1	LS	$60,000.00	$60,000	Invoices
Reporting	1	LS	$25,000.00	$25,000	Invoices
	Completed Remedial Actions Total			**$645,000**	
CAPITAL COSTS					
None required					
			Capital Cost Total	**$0**	
ANNUAL OPERATION AND MAINTENANCE					
None required					
			Annual O&M Total	**$0**	
	Present Worth Annual O&M, 30 Years, 5% Interest			**$0**	
TOTAL PRESENT WORTH OF PROPOSED REMEDIAL ACTIONS				**$0**	
TOTAL PRESENT WORTH OF ALTERNATIVE 1 (including completed remedial actions)				**$645,000**	

Sources: Invoices -Vendor invoices

TABLE 3

PRELIMINARY COST ESTIMATE
ALTERNATIVE 2
REMOVE AND REPLACE CONCRETE RAMP, COMPLETE ASPHALT OVERLAY, DISPOSE REMOVED MATERIALS, MAINTAIN ASPHALT PAVEMENT, AND MAINTAIN EPOXY COATING

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Elements	Quantity	Unit	Unit Cost	Cost	Source
PREVIOUSLY COMPLETED REMEDIAL ACTIONS					
Design Investigation and Engineering Design	1	LS	$75,000.00	$75,000	Invoices
Clean and Double Epoxy Coat Shop Floor	1	LS	$350,000.00	$350,000	Invoices
Disposal of Wastes from Floor Cleaning	1	LS	$10,000.00	$10,000	Invoices
Remove and Replace Asphalt Surface	1	LS	$125,000.00	$125,000	Invoices
Construction Oversight	1	LS	$60,000.00	$60,000	Invoices
Reporting	1	LS	$25,000.00	$25,000	Invoices
	Completed Remedial Actions Total			**$645,000**	
CAPITAL COSTS					
Institutional Actions					
Land Use Restrictions					
Site Survey	1	LS	$5,000.00	$5,000	Estimate
Deed Recording Fees	1	LS	$200.00	$200	Estimate
Coordination	40	HR	$85.00	$3,400	Estimate
Attorney fees	40	HR	$200.00	$8,000	Estimate
Develop Operations and Maintenance Plan	1	LS	$20,000.00	$20,000	Estimate
			Subtotal	**$36,600**	
Design Investigation					
Concrete Ramp					
Sampling Labor	30	MH	$85.00	$2,550	Estimate
Sampling Equipment	1	EA	$500.00	$500	Estimate
Laboratory Analysis - PCBs	14	EA	$95.00	$1,330	Vendor
Data Evaluation	30	MH	$85.00	$2,550	Estimate
Demolition and Shoring Plan and Ramp Design	1	EA	$15,000.00	$15,000	Estimate
Pavement on South and East Sides of Transportation Corridor					
Sampling Labor	16	MH	$85.00	$1,360	Estimate
Laboratory Analysis - PCBs	10	EA	$95.00	$950	Vendor
Data Evaluation	20	MH	$85.00	$1,700	Estimate
			Subtotal	**$25,900**	
Remove and Replace Concrete Ramp					
Assume bottom slab is impacted and sidewalls are not.					
Shoring	1	LS	$3,000.00	$3,000	Estimate
Cut Concrete	94	LF	$54.80	$5,151	Means
Demolish and Remove Concrete Ramp	14	CY	$275.00	$3,850	Means
Waste Characterization Samples	1	EA	$900.00	$900	Vendor
Load Removed Concrete	14	CY	$2.98	$42	Estimate
Transport and Dispose < 50 mg/kg PCBs	9	Ton	$93.11	$880	Vendor
Prepare and Compact Subbase	62	SY	$3.82	$238	Means, Estimate
Preparations (form work and reinforcing)	1	LS	$2,270.00	$2,270	Means, Estimate
Concrete Delivered and Finished	20	CY	$189.86	$3,797	Means, Estimate
			Subtotal	**$20,100**	
Remove and Replace Asphalt Surface on South and East Sides of Transportation Corridor					
Relocate Equipment	1	LS	$30,000.00	$30,000	Estimate
Remove 1 inch of Asphalt	1,556	SY	$4.16	$6,471	Vendor
Waste Characterization Samples	1	EA	$900.00	$900	Vendor
Load Removed Asphalt	44	CY	$2.98	$131	Estimate
Transport and Dispose < 50 mg/kg PCBs	53	Ton	$93.11	$4,888	Vendor
1-1/2 Inches of New Asphalt	1,556	SY	$9.00	$14,000	Vendor
			Subtotal	**$56,400**	

TABLE 3

PRELIMINARY COST ESTIMATE
ALTERNATIVE 2
REMOVE AND REPLACE CONCRETE RAMP, COMPLETE ASPHALT OVERLAY, DISPOSE REMOVED MATERIALS, MAINTAIN ASPHALT PAVEMENT, AND MAINTAIN EPOXY COATING

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Elements	Quantity	Unit	Unit Cost	Cost	Source
			Capital Cost Subtotal	**$139,000**	
		Project Management and Engineering Design	15%	$20,900	
		Construction Oversight	10%	$13,900	
		Certification Report	10%	$13,900	
		Miscellaneous	5%	$7,000	
		Contingency	5%	$7,000	
			Capital Cost Total	**$202,000**	
ANNUAL OPERATION AND MAINTENANCE					
Maintenance					
Maintain Pavement					
Repair or replace 20% annually					
Remove and Replace 1-inch of Asphalt	1,556	SY	$13.16	$20,471	Means
Waste Characterization Samples	1	EA	$900.00	$900	Vendor
Transport and Dispose < 50 mg/kg PCBs	53	Ton	$93.11	$4,888	Vendor
Maintain Epoxy Floor					
Repair or topcoat 5% annually					
Labor and Material	3,325	SF	$2.63	$8,740	Estimate
			Subtotal	**$35,000**	
			Annual O&M Subtotal	**$35,000**	
		Project Management	10%	$3,500	
		Miscellaneous	10%	$3,500	
		Contingency	20%	$7,000	
			Annual O&M Total	**$49,000**	
			Present Worth Annual O&M, 30 Years, 5% Interest	**$753,000**	
			TOTAL PRESENT WORTH OF PROPOSED REMEDIAL ACTIONS	**$955,000**	
			TOTAL PRESENT WORTH OF ALTERNATIVE 2 (including completed remedial actions)	**$1,600,000**	

Sources:
Means - *Heavy Construction Cost Data, 14th Annual Edition* , R.S. Means Company, Inc., 2009
Vendor - Vendor quote
Invoices -Vendor invoices
Estimate - Engineering judgment

TABLE 4

PRELIMINARY COST ESTIMATE
ALTERNATIVE 3
REMOVE AND REPLACE CONCRETE RAMP, REMOVE AND REPLACE ASPHALT, DISPOSE REMOVED MATERIALS, MAINTAIN EPOXY COATING

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Elements	Quantity	Unit	Unit Cost	Cost	Source
PREVIOUSLY COMPLETED REMEDIAL ACTIONS					
Previously Completed Remedial Actions					
Design Investigation and Engineering Design	1	LS	$75,000.00	$75,000	Invoices
Clean and Double Epoxy Coat Shop Floor	1	LS	$350,000.00	$350,000	Invoices
Disposal of Wastes from Floor Cleaning	1	LS	$10,000.00	$10,000	Invoices
Remove and Replace Asphalt Surface	1	LS	$125,000.00	$125,000	Invoices
Construction Oversight	1	LS	$60,000.00	$60,000	Invoices
Reporting	1	LS	$25,000.00	$25,000	Invoices
	Completed Remedial Actions Total			**$645,000**	
CAPITAL COSTS					
Institutional Actions					
Land Use Restrictions					
Site Survey	1	LS	$5,000.00	$5,000	Estimate
Deed Recording Fees	1	LS	$200.00	$200	Estimate
Coordination	40	HR	$85.00	$3,400	Estimate
Attorney Fees	40	HR	$200.00	$8,000	Estimate
Develop Operations and Maintenance Plan	1	LS	$20,000.00	$20,000	Estimate
			Subtotal	**$36,600**	
Design Investigation - Concrete Ramp					
Concrete Ramp					
Sampling Labor	30	MH	$85.00	$2,550	Estimate
Sampling Equipment	1	EA	$500.00	$500	Estimate
Laboratory Analysis - PCBs	14	EA	$95.00	$1,330	Vendor
Data Evaluation	30	MH	$85.00	$2,550	Estimate
Demolition and Shoring Plan and Ramp Design	1	EA	$15,000.00	$15,000	Estimate
			Subtotal	**$21,900**	
Remove and Replace Concrete Ramp					
Assume bottom slab is impacted and sidewalls are not.					
Shoring	1	LS	$3,000.00	$3,000	Estimate
Cut Concrete	94	LF	$54.80	$5,151	Means
Demolish and Remove Concrete Ramp	14	CY	$275.00	$3,850	Means
Waste Characterization Samples	1	EA	$900.00	$900	Vendor
Load Removed Concrete	14	CY	$2.98	$42	Estimate
Transport and Dispose < 50 mg/kg PCBs	9	Ton	$93.11	$880	Vendor
Prepare and Compact Subbase	62	SY	$3.82	$238	Means, Estimate
Preparations (form work and reinforcing)	1	LS	$2,270.00	$2,270	Means, Estimate
Concrete Delivered and Finished	20	CY	$189.86	$3,797	Means, Estimate
			Subtotal	**$20,100**	
Design Investigation and Asphalt Removal					
Planning					
Site Survey	1	LS	$3,000.00	$3,000	Estimate
Run Off Control Plan	1	LS	$6,000.00	$6,000	Estimate
Remove and Reset Catch basins and Manholes	7	EA	$700.00	$4,900	Vendor, Estimate
Asphalt Demolition					
Remove Pavement	7,778	SY	$10.31	$80,189	Means
			Subtotal	**$94,100**	
Transportation and Disposal					
Asphalt					
Load Removed Asphalt	1,297	CY	$2.98	$3,865	Estimate
Load Removed Soil	200	CY	$2.98	$596	Estimate
Transport and Dispose < 50 mg/kg PCBs	1,900	TON	$93.11	$176,895	Vendor
Waste Characterization Samples - Full Analytical	2	EA	$900.00	$1,800	Vendor
Waste Characterization Samples - PCBs	4	EA	$95.00	$380	Vendor
			Subtotal	**$183,500**	

TABLE 4

PRELIMINARY COST ESTIMATE
ALTERNATIVE 3
REMOVE AND REPLACE CONCRETE RAMP, REMOVE AND REPLACE ASPHALT, DISPOSE REMOVED MATERIALS, MAINTAIN EPOXY COATING

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Elements	Quantity	Unit	Unit Cost	Cost	Source
Site Restoration					
Pavement					
Base Course, 3/4" Stone, 3"	7778	SY	$5.80	$45,111	Means
Binder Course, 3" Thick	7778	SY	$11.75	$91,389	Means
Top Course, 3" Thick	7778	SY	$12.90	$100,333	Means
Fence Repair	500	LF	$31.00	$15,500	Means
Gate Repair	1	EA	$9,300.00	$9,300	Means, Estimate
			Subtotal	**$261,600**	
			Capital Cost Subtotal	**$617,800**	
Project Management and Engineering Design			10%	$61,800	
Construction Oversight			15%	$92,700	
Certification Report			10%	$61,800	
Miscellaneous			8%	$49,400	
Contingency			8%	$49,400	
			Capital Cost Total	**$933,000**	
ANNUAL OPERATION AND MAINTENANCE					
Maintenance					
Maintain Epoxy Floor					
Repair or topcoat 5% annually					
Labor and Material	3,325	SF	$2.63	$8,740	Estimate
			Subtotal	**$8,700**	
			Long Term O&M Subtotal	**$8,700**	
Project Management			15%	$1,300	
Miscellaneous			10%	$900	
Contingency			20%	$1,700	
			Long Term O&M Total	**$13,000**	
			Present Worth Long Term O&M, 30 Years, 5% Interest	**$200,000**	
			TOTAL PRESENT WORTH OF PROPOSED REMEDIAL ACTIONS	**$1,130,000**	
			TOTAL PRESENT WORTH OF ALTERNATIVE 3 (including completed remedial actions)	**$1,780,000**	

Sources:
ECHOS - *Environmental Cost Data - Assemblies, 6th Annual Edition* , R.S. Means Company, Inc., 2005
Means - *Heavy Construction Cost Data, 14th Annual Edition* , R.S. Means Company, Inc., 2005
Means - *Repair and Remodeling Cost Data, 26th Annual Edition* , R.S. Means Company, Inc., 2005
Vendor - Vendor quote
Invoices -Vendor invoices
Estimate - Engineering judgment

TABLE 5

SUMMARY OF ESTIMATED COSTS FOR CORRECTIVE MEASURE ALTERNATIVES

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

ALTERNATIVE DESCRIPTION	CAPTIAL COSTS		ANNUAL O&M COSTS	PRESENT WORTH OF 30 YEARS OF ANNUAL O&M COSTS	TOTAL PRESENT WORTH FOR PROPOSED REMEDIAL ACTIONS	TOTAL PRESENT WORTH FOR PROPOSED AND COMPLETED REMEDIAL ACTIONS
	COMPLETED REMEDIAL ACTIONS	ADDITIONAL REMEDIAL ACTIONS				
1. NO ADDITIONAL ACTION	$645,000	$0	$0	$0	$0	$645,000
2. REMOVE AND REPLACE CONCRETE RAMP, COMPLETE ASPHALT OVERLAY, DISPOSE REMOVED MATERIALS, MAINTAIN ASPHALT PAVEMENT, AND MAINTAIN EPOXY COATING	$645,000	$202,000	$49,000	$753,000	$955,000	$1,600,000
3. REMOVE AND DISPOSE CONCRETE RAMP, REMOVE AND REPLACE ASPHALT, DISPOSE OF REMOVED MATERIALS, MAINTAIN EPOXY COATING	$645,000	$933,000	$13,000	$200,000	$1,130,000	$1,780,000

TABLE 6
COMPARISON OF CORRECTIVE MEASURE ALTERNATIVES

GE PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Alternative Description	Technical				Environmental	Human Health	Institutional
	Performance	*Reliability*	*Implementability*	*Safety*			
Alternative 1 No Additional Action (Existing Corrective Measures)	• Provides a physical barrier against direct contact with, migration of, and infiltration through for most of the PCB impacted concrete and asphalt at the site. Without maintenance, long term performance will not be reliable.	• Without maintenance, the existing corrective measures will eventually fail.	• Not difficult. • Already constructed.	• No direct risk from implementation.	• Mostly, but not completely, addresses three exposure pathways in the short term. • Technologies not reliable in the long-term without maintenance.	• Paved areas under stored equipment are generally inaccessible; however, some risk of direct contact remains.	• Meets NYSDEC-approved remedial objectives. • Does not meet NYSDEC-approved numerical cleanup objectives. • Complies with TSCA regulations for continued use of PCB-impacted concrete and cleanup standards for low occupancy areas. • Public reaction is anticipated to be neutral.
Alternative 2 Remove and Replace Ramp Complete Pavement Overlay Maintain Epoxy Coating and Pavement Overlay	• Provides a physical barrier against direct contact with, migration of, and infiltration through the PCB impacted concrete and asphalt at the site.	• Technologies have proven reliable at similar sites. • Reliability of epoxy coatings and asphalt overlay depends on regular maintenance.	• Difficult to implement without impacting shop operations. • Estimated time to construct: 8-12 months (weather permitting).	• Low risk from implementation.	• Eliminates risk of direct contact. • Reduces risk of off-site migration and infiltration through impacted media. • Impacted materials are properly disposed in an off-site landfill or contained with a barrier on-site.	• Eliminates risk of direct contact.	• Meets NYSDEC-approved remedial objectives. • Does not meet NYSDEC-approved numerical cleanup objectives. • Complies with TSCA regulations for continued use of PCB-impacted concrete and cleanup standards for low occupancy areas. • Public reaction is anticipated to be favorable, with reservations about impacted media left in place.
Alternative 3 Remove and Replace Ramp Remove and Replace Asphalt Maintain Epoxy Coating	• Provides a physical barrier against direct contact with, and migration of PCB impacted concrete. • Removes impacted asphalt.	• Technologies have proven reliable at similar sites. • Reliability of epoxy coating depends on regular maintenance.	• Not possible to implement without impacting shop operations. • Estimated time to construct: 8-12 months (weather permitting).	• Slight risk from implementation.	• Eliminates risk of direct contact. • Reduces risk of off-site migration and infiltration through impacted media. • Impacted materials are properly disposed in an off-site landfill or contained with a barrier on-site. • Removal of impacted material reduces the potential for exposure over the long term.	• Eliminates risk of direct contact.	• Meets NYSDEC-approved remedial objectives • Does not meet NYSDEC-approved numerical cleanup objectives for concrete. • Meets NYSDEC-approved numerical cleanup objectives for asphalt. • Complies with TSCA regulations for continued use of PCB-impacted concrete. • Public reaction is anticipated to be favorable towards cleanup, but unfavorable regarding increased truck traffic, careful planning and coordination to maintain access for fire and emergency vehicles, and short-term effects from dust and noise during implementation.

FIGURES

Title:	SITE LOCATION MAP
Location:	175 MILENS ROAD TONAWANDA, NEW YORK
Client:	GE ENERGY

0 2000 4000

APPROXIMATE SCALE IN FEET
SCALE= 1:24000

BASEMAP SOURCES:

<u>REFERENCE</u>

USGS 7.5-minute Series Topographic Maps:
Buffalo Northwest Quadrangle 1965
Buffalo Northeast Quadrangle 1965
Tonawanda West Quadrangle 1980
Tonawanda East Quadrangle 1980

URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 8.5 x 11	Job No.: 38394785

FIGURE 1

J:\38394785 GE Tonawanda 2011\Focused CMS\FINAL - 7-2011 update\Figs\Figure 1 Site Location.dwg User:Karen_Peppin Jul 13, 2011 - 2:53pm

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

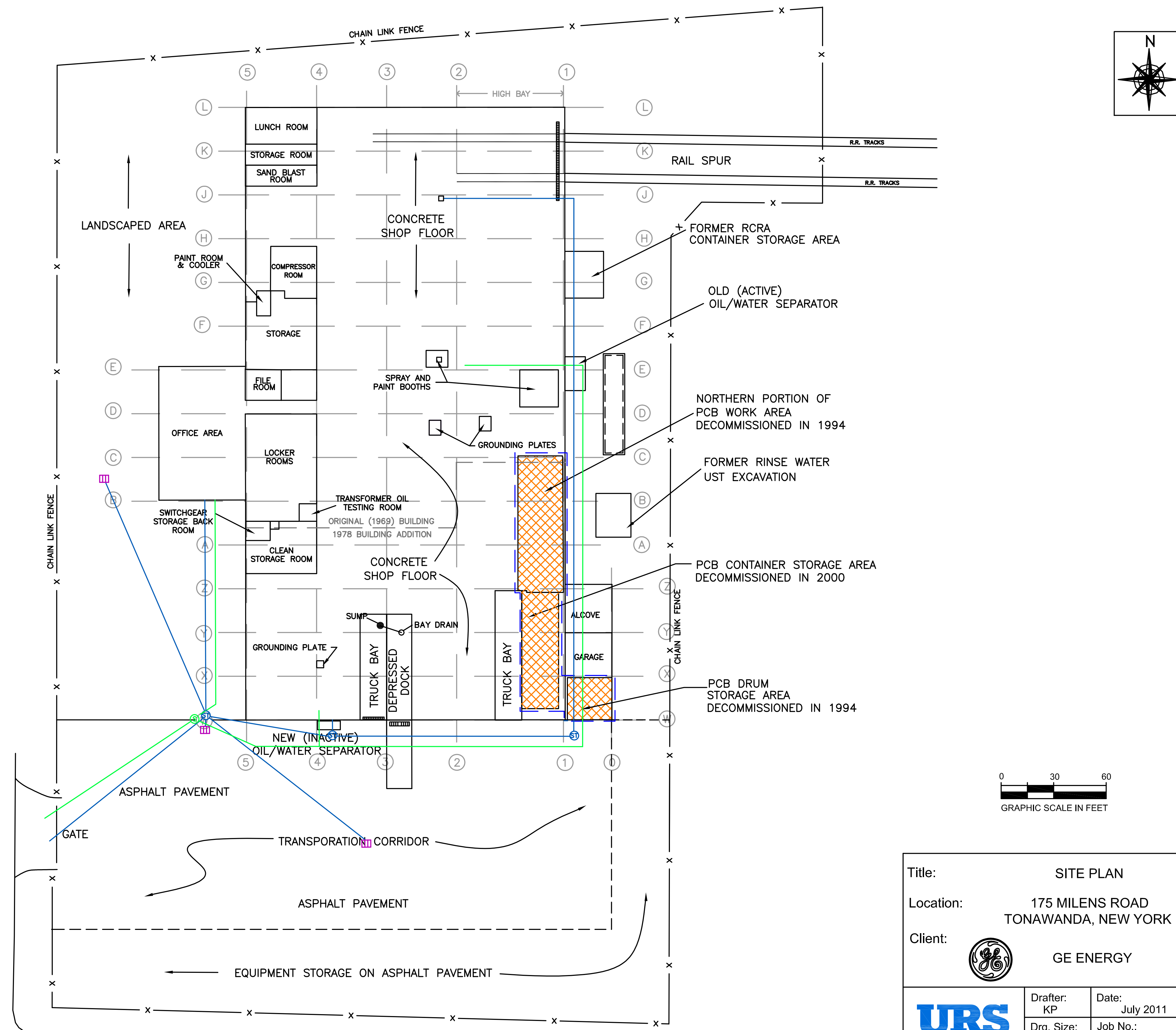
2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OF OFF–SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.

3. BETWEEN DECEMBER 2003 AND MAY 2004 THE FACILITY CONCRETE FLOOR WAS SUBJECTED TO A DOUBLE WASH AND DOUBLE RINSE AND EPOXY COATED WITH CONTRASTING COLORS AND LABELING.

4. SOURCES FOR THIS FIGURE WERE:
   A. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
   B. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS–BUILT 4–19–78.

LEGEND

– DECOMMISSIONED PCB AREA
– FLOOR DRAIN
– TRENCH DRAIN
– COLUMN LINES
– COMMERCIAL PCB STORAGE AREA
– STORM MANHOLE
– SANITARY MANHOLE
– CATCH BASIN
– STORM SEWER
– SANITARY SEWER



Title:	SITE PLAN
Location:	175 MILENS ROAD TONAWANDA, NEW YORK
Client:	GE ENERGY

URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 2

J:\38394785 GE Tonawanda 2011\Focused CMS\7-2011 update\Figs\F2 Site Planning User:Karen_Peppin Jul 12, 2011 - 3:27pm

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

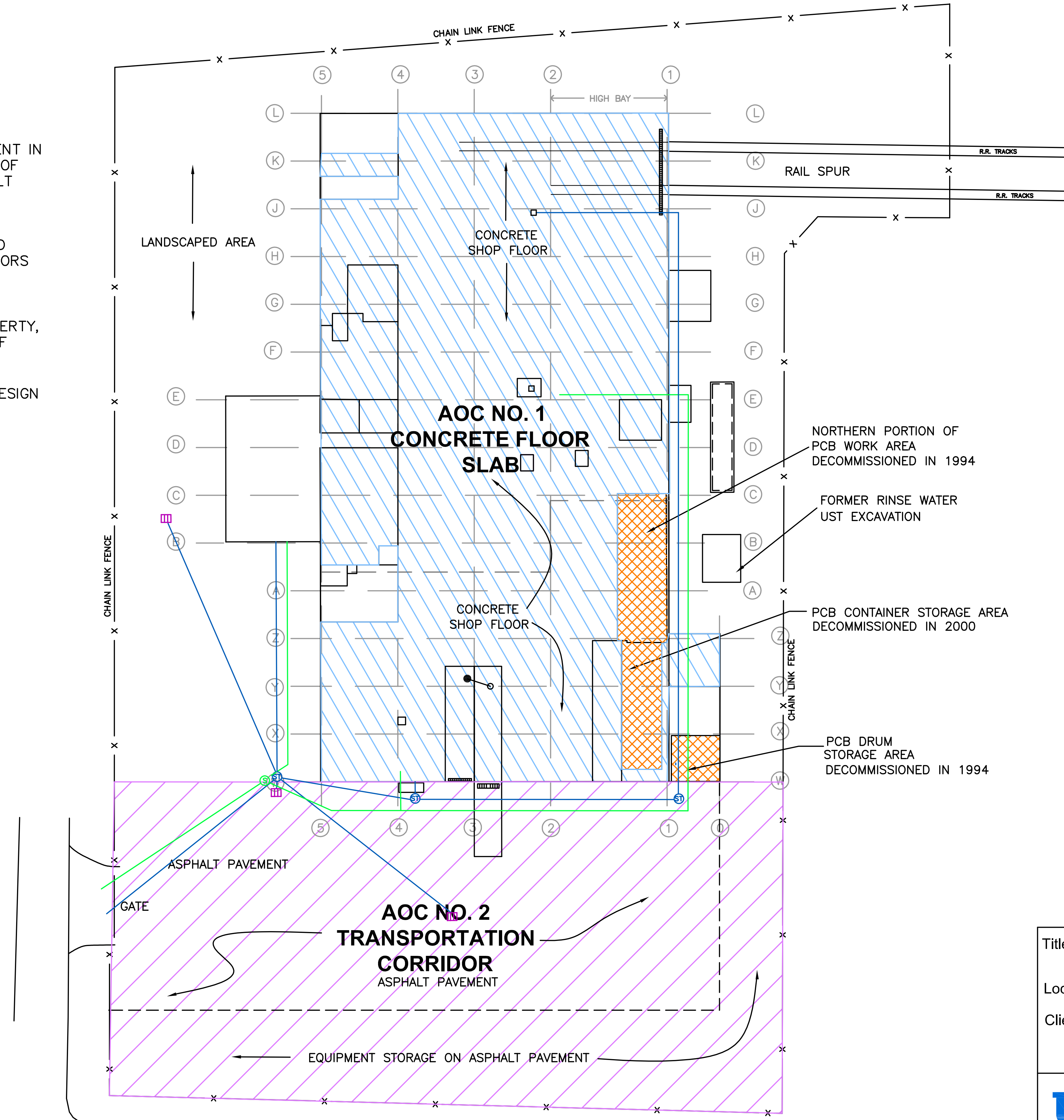
2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OF OFF–SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.

3. BETWEEN DECEMBER 2003 AND MAY 2004 THE FACILITY CONCRETE FLOOR WAS SUBJECTED TO A DOUBLE WASH AND DOUBLE RINSE AND EPOXY COATED WITH CONTRASTING COLORS AND LABELING.

4. SOURCES FOR THIS FIGURE WERE:
   A. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
   B. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS–BUILT 4–19–78.

LEGEND

– DECOMMISSIONED PCB AREA
– FLOOR DRAIN
– TRENCH DRAIN
– COLUMN LINES
– AOC No. 1
– AOC No. 2
– STORM MANHOLE
– SANITARY MANHOLE
– CATCH BASIN
– STORM SEWER
– SANITARY SEWER



N

0 30 60
GRAPHIC SCALE IN FEET

Title:	AREAS OF CONCERN FOR THIS FOCUSED CMS
Location:	175 MILENS ROAD TONAWANDA, NEW YORK
Client:	GE ENERGY

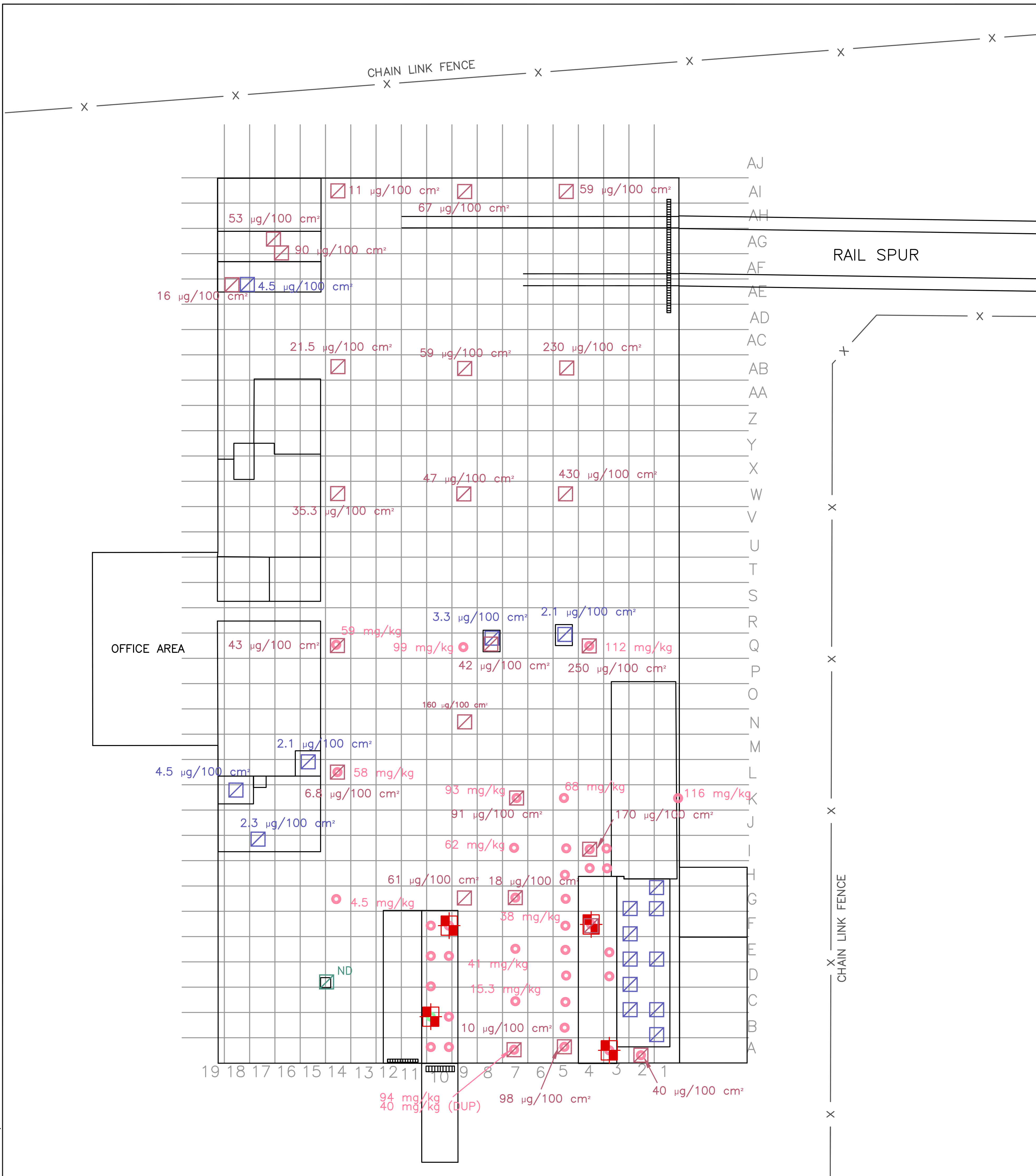
URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 3

J:\38394785 GE Tonawanda 2011\Focused CMS\7-2011 update\Figs\F3 Areas of Concern.dwg User:Karen_Peppin Jul 12, 2011 - 3:13pm



LEGEND

TRENCH DRAIN

ND — WIPE SAMPLE WITH PCB CONCENTRATIONS BELOW DETECTION LIMITS, SAMPLE ID, AND PCB CONCENTRATION IN µg/100 cm²

2.3 µg/100 cm² — WIPE SAMPLE WITH PCB CONCENTRATIONS LESS THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN µg/100 cm²

61 µg/100 cm² — WIPE SAMPLE WITH PCB CONCENTRATIONS GREATER THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN µg/100 cm²

CONCRETE CHIP SAMPLE WITH PCB CONCENTRATIONS BELOW DETECTION LIMITS

15.3 mg/kg — CONCRETE CHIP SAMPLE WITH PCB CONCENTRATIONS GREATER THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN mg/kg

CONCRETE CORE SAMPLE LOCATION

NOTES:
1. LOCATIONS ARE APPROXIMATE.
2. FIGURES 5 AND 6 SHOW DETAILS FOR TRUCK BAY AND DEPRESSED DOCK, RESPECTIVELY

SOURCES:
1. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
2. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS-BUILT 4-19-78.
3. "1/16 FLOOR PLAN AND MEZZANINE FLOOR PLAN" CANNON DESIGN, INC., APRIL 19, 1978.

0 20 40
GRAPHIC SCALE IN FEET

N

Title: SUMMARY OF PCB SAMPLING RESULTS INSIDE SERVICE CENTER

Location: 175 MILENS ROAD TONAWANDA, NEW YORK

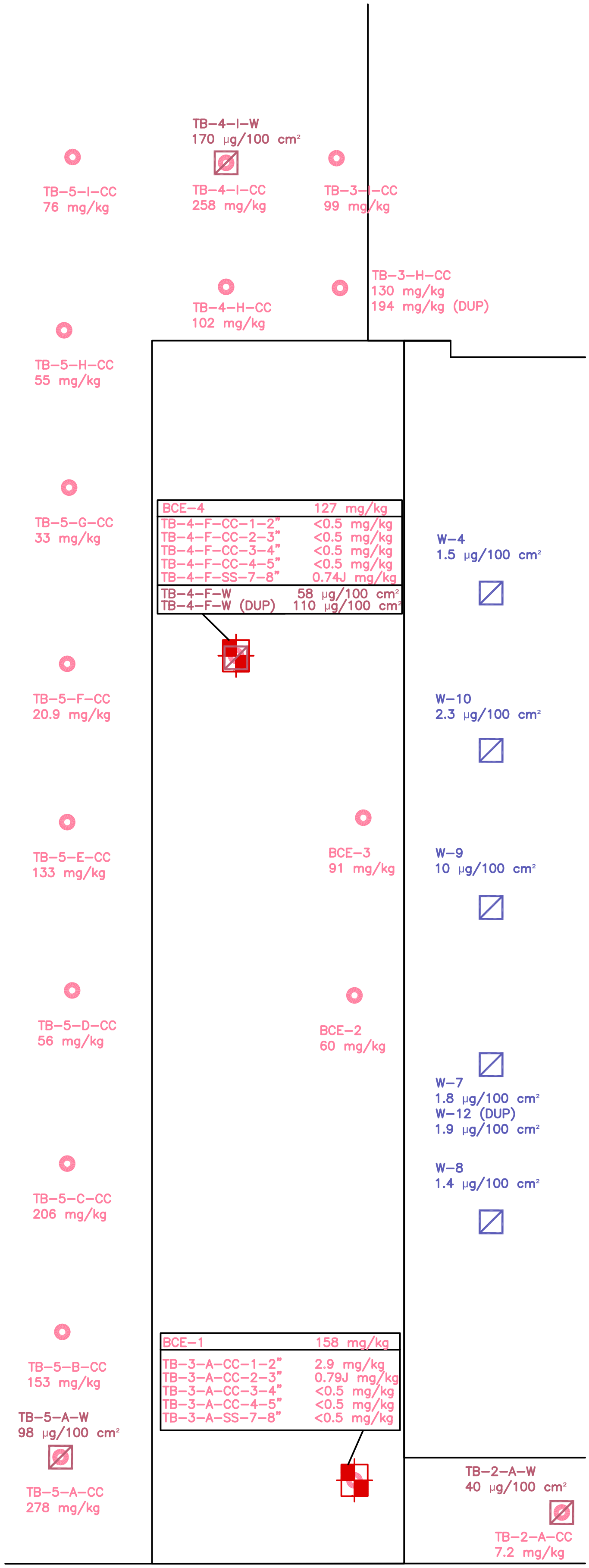
Client: GE ENERGY

URS
URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 x 17	Job No.: 38394785

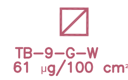
FIGURE 4

J:\38394785 GE Tonawanda 2011\Focused CMS\7-2011 update\Figs\F4 floor samp sum.dwg User:Karen_Peppin Jul 12, 2011 - 3:12pm

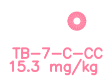


LEGEND

WIPE SAMPLE WITH PCB CONCENTRATIONS LESS THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN µg/100 cm²

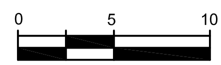


WIPE SAMPLE WITH PCB CONCENTRATIONS GREATER THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN µg/100 cm²



CONCRETE CHIP SAMPLE WITH PCB CONCENTRATIONS GREATER THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN mg/kg

CONCRETE CORE SAMPLE LOCATION



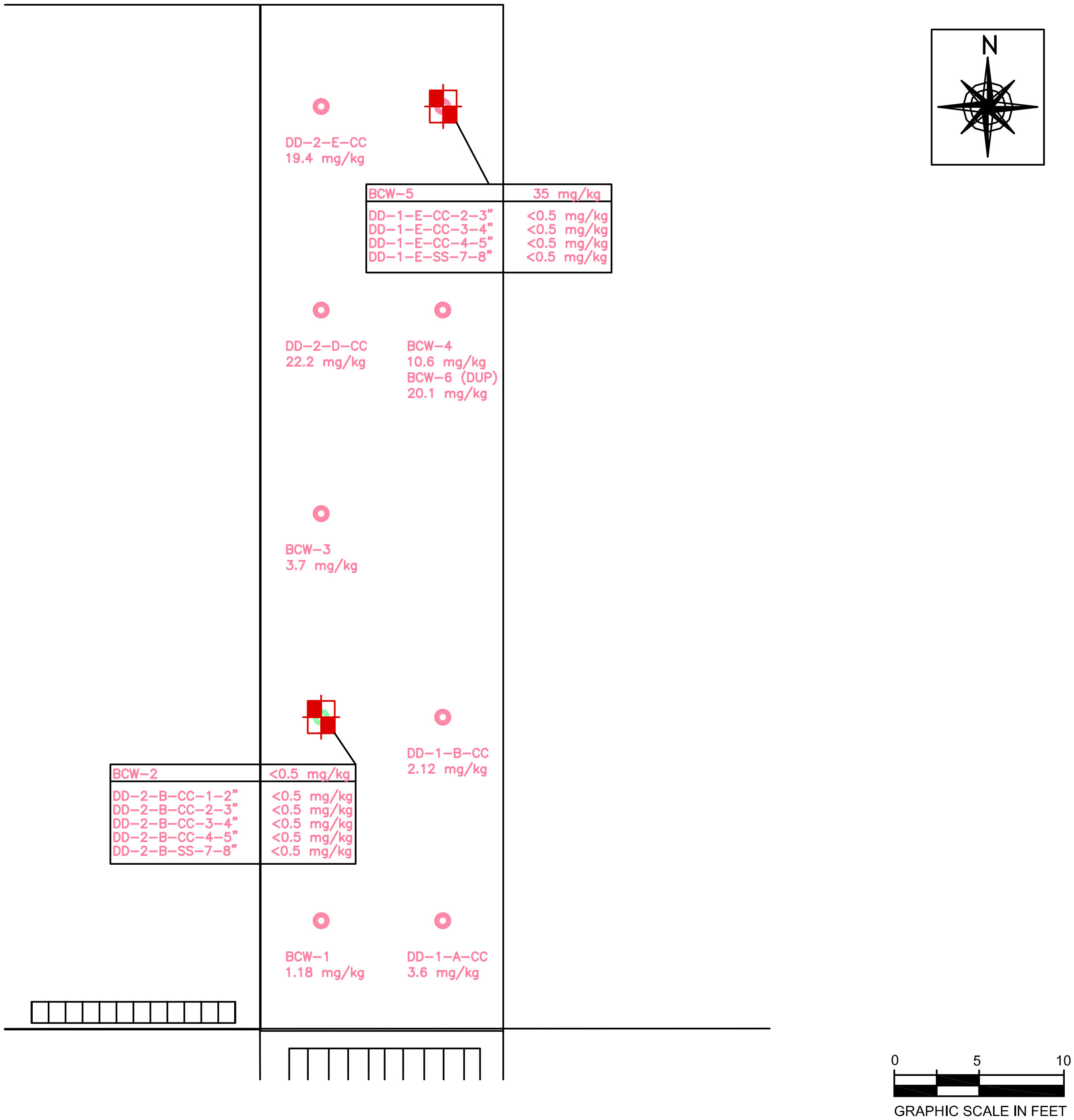
GRAPHIC SCALE IN FEET

NOTES:
1. LOCATIONS ARE APPROXIMATE.
2. FIGURE 6 SHOWS DETAILS FOR THE DEPRESSED DOCK. FIGURE 4 SHOWS ALL THE INTERIOR SAMPLING LOCATIONS.

SOURCES:
1. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
2. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS-BUILT 4-19-78.
3. "1/16 FLOOR PLAN AND MEZZANINE FLOOR PLAN" CANNON DESIGN, INC., APRIL 19, 1978.

Title:	SUMMARY OF PCB SAMPLING NEAR AT GRADE TRUCK BAY
Location:	175 MILENS ROAD TONAWANDA, NEW YORK
Client:	GE ENERGY

URS Corporation 3 Corporate Drive, Suite 203 Clifton Park, New York 12065	Drafter: KP	Date: July 2011
	Drg. Size: 8.5 x 11	Job No.: 38394785
	FIGURE 5	



LEGEND

TRENCH DRAIN

TB-9-G-W
61 µg/100 cm²

WIPE SAMPLE WITH PCB CONCENTRATIONS GREATER THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN µg/100 cm²

CONCRETE CHIP SAMPLE WITH PCB CONCENTRATIONS BELOW DETECTION LIMITS AND SAMPLE ID

TB-7-C-CC
15.3 mg/kg

CONCRETE CHIP SAMPLE WITH PCB CONCENTRATIONS GREATER THAN THE CLEANUP OBJECTIVE, SAMPLE ID, AND PCB CONCENTRATION IN mg/kg

CONCRETE CORE SAMPLE LOCATION

NOTES:
1. LOCATIONS ARE APPROXIMATE.
2. FIGURES 5 SHOWS DETAILS FOR THE TRUCK BAY.
FIGURE 4 SHOWS ALL THE INTERIOR SAMPLING LOCATIONS.

SOURCES:
1. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
2. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS-BUILT 4-19-78.
3. "1/16 FLOOR PLAN AND MEZZANINE FLOOR PLAN" CANNON DESIGN, INC., APRIL 19, 1978.

Title: SUMMARY OF PCB SAMPLING FOR DEPRESSED DOCK

Location: 175 MILENS ROAD TONAWANDA, NEW YORK

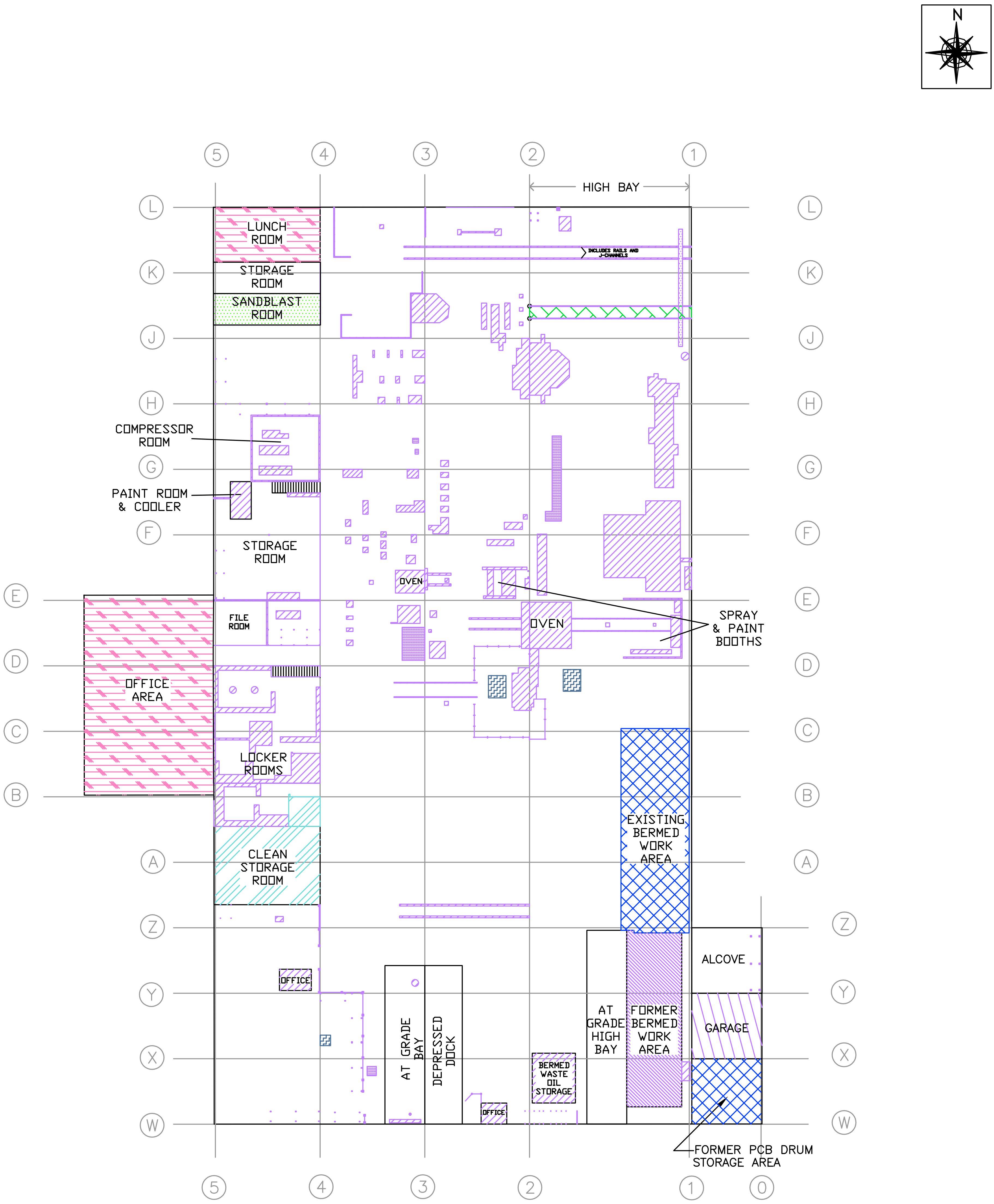
Client: GE ENERGY

URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 8.5 x 11	Job No.: 38394785

FIGURE 6



LEGEND

- Coating Completed
- Equipment/Office Removed, Coating Completed
- Drain Area Repaired, Coating Reapplied
- Inaccessible Areas, Coating Not Required
- Non-Contiguous Area, Coating Not Required
- Non-Manufacturing Areas
- Area Previously Clean Closed in 1994, Coating Not Required
- Area Documented Clean, Coating Not Required
- Cleaned Grounding Plate, Coating Not Required
- PCB-Contaminated, Asbestos-Containing Tile Removed, Coating Not Required
- Epoxy Top Coat Completed Over Existing Clean Base Coat for Aesthetics
- Heaved Concrete Replaced

NOTES:
1. Inaccessible areas are based on measurements taken during epoxy coating activities (December 2003 through June 2004).
2. The walls of the depressed dock were also coated with epoxy.
3. Interior of main shop area is 180 feet by 350 feet.

SOURCES:
1. "Map of General Electric Service Center Property, Part of Lot 45, Township 12, Range 8, Town of Tonawanda, Erie County, New York" Kriebel Associates, July 29, 1998.
2. "1/16 Floor Plan and Mezzanine Floor Plan" Cannon Design, Inc., April 19, 1978.
3. "1/8 Part Floor Plan and Details" Cannon Design, Inc., April 19, 1978.

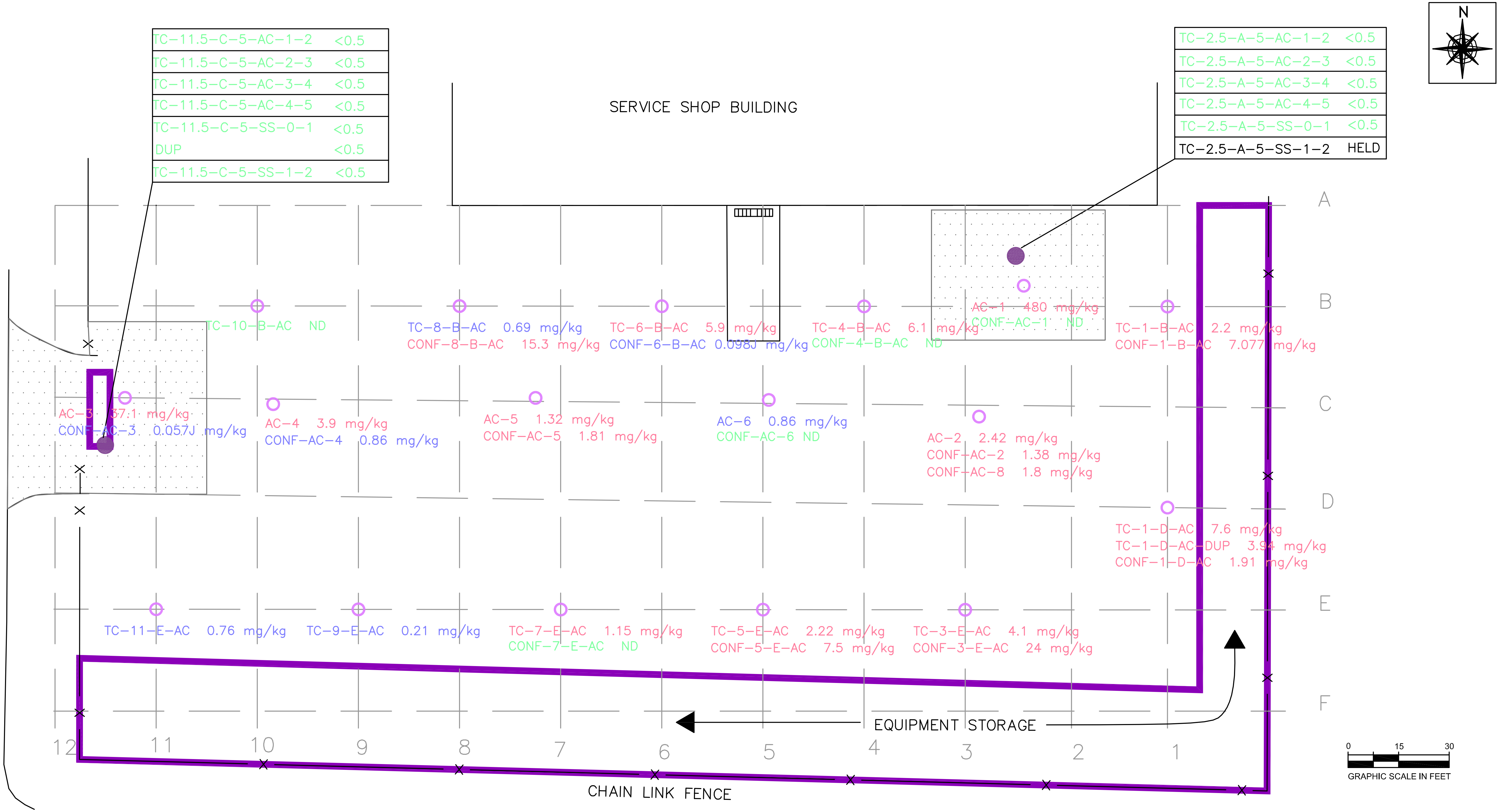
SCALE: 0 40 80
GRAPHIC SCALE IN FEET

Title: EPOXY-COATED AREAS AT THE TONAWANDA SERVICE CENTER
Location: 175 MILENS ROAD TONAWANDA, NEW YORK
Client: GE ENERGY

URS
URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11x17	Job No.: 38394785

FIGURE 7



LEGEND

- TRENCH DRAIN
- ASPHALT CHIP SAMPLE LOCATION
- CORE LOCATION
- TC-10-B-AC ND — SAMPLE ID FOR LOCATIONS WITH PCB CONCENTRATIONS BELOW DETECTION LIMITS
- TC-8-B-AC 0.69 mg/kg — SAMPLE ID AND PCB CONCENTRATION FOR SAMPLES WITH PCB CONCENTRATIONS LESS THAN CLEANUP OBJECTIVE
- TC-7-E-AC 1.15 mg — SAMPLE ID AND PCB CONCENTRATION FOR SAMPLES WITH PCB CONCENTRATIONS GREATER THAN CLEANUP OBJECTIVE
- AREA WHERE REMOVED ASHPALT SEGREGATED AS TSCA WASTE
- AREAS SOUTH OF THE SHOP WHERE ASHPALT WAS NOT REMOVED
- CONF-X-X-XX — SAMPLE ID FOR SAMPLES COLLECTED AFTER 1 INCH OF ASPHALT WAS REMOVED IN DECEMBER 2004 AND PRIOR TO RE-PAVING

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.
2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OF OFF-SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.
3. SOURCE: "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.

Title: SUMMARY OF PCB SAMPLING FOR TRANSPORATION CORRIDOR

Location: 175 MILENS ROAD TONAWANDA, NEW YORK

Client: GE ENERGY

URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 8

J:\38394785 GE Tonawanda 2011\Focused CMS\7-2011 update\Figs\F8 TC samp sum.dwg User:Karen_Peppin Jul 12, 2011 - 3:08pm

LEGEND

TRENCH DRAIN

ASPHALT CHIP SAMPLE LOCATION

CONF-X-X-XX SAMPLE ID FOR SAMPLES COLLECTED AFTER 1 INCH OF ASPHALT WAS REMOVED AND PRIOR TO RE-PAVING

AREAS SOUTH OF THE SHOP WHERE ASPHALT WAS NOT REMOVED

ASPHALT SURFACE REMOVED AND REPLACED

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OFF-SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.

3. SOURCE: "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.

Title: SUMMARY OF PCB CONCENTRATIONS ON THE ASPHALT SURFACE PRIOR TO RE-PAVING

Location: 175 MILENS ROAD TONAWANDA, NEW YORK

Client: GE ENERGY

URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 9

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

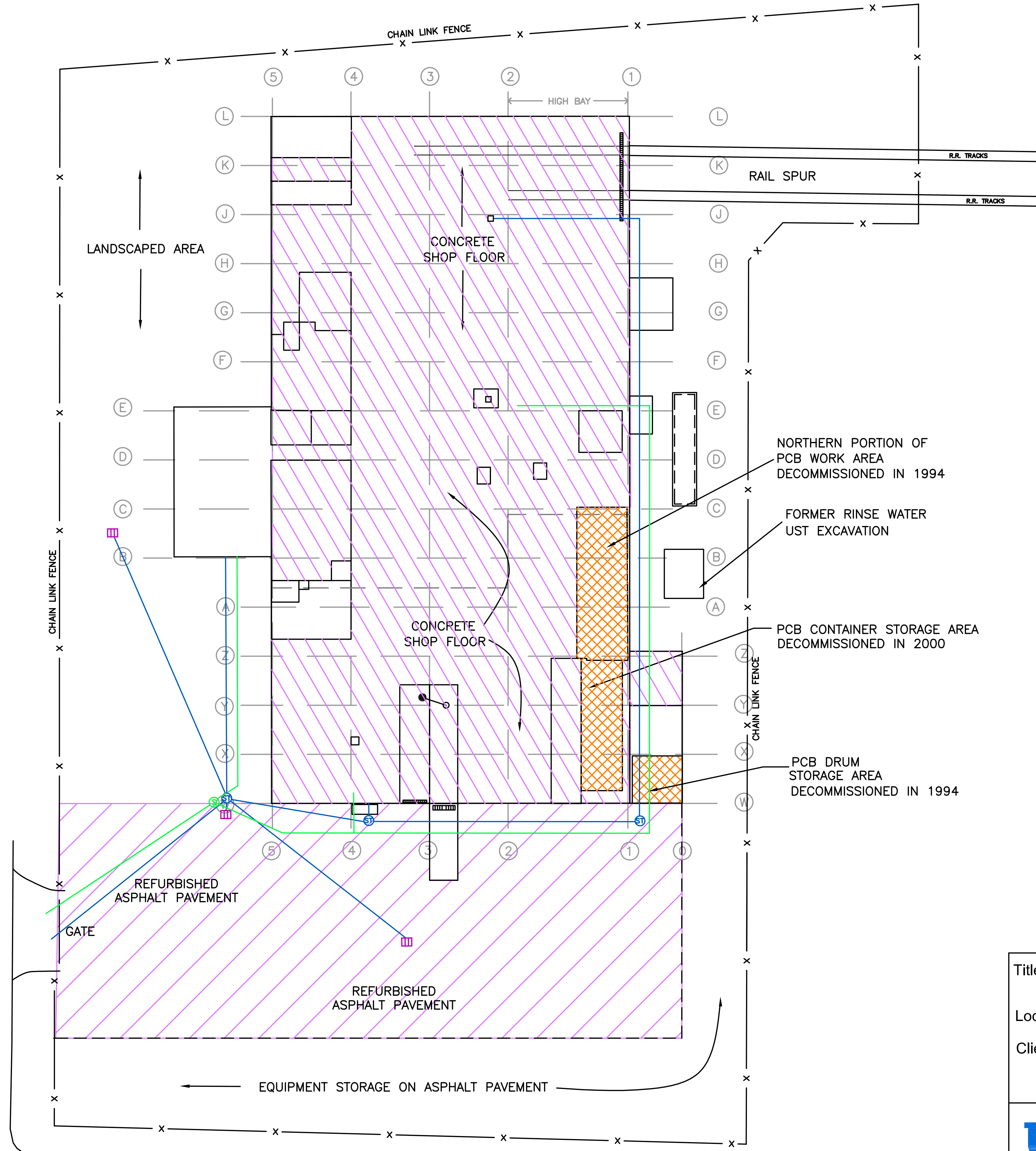
2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OF OFF–SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.

3. BETWEEN DECEMBER 2003 AND MAY 2004 THE FACILITY CONCRETE FLOOR WAS SUBJECTED TO A DOUBLE WASH AND DOUBLE RINSE AND EPOXY COATED WITH CONTRASTING COLORS AND LABELING.

4. SOURCES FOR THIS FIGURE WERE:
   A. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
   B. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS–BUILT 4–19–78.

LEGEND

- DECOMMISSIONED PCB AREA
- FLOOR DRAIN
- TRENCH DRAIN
- COLUMN LINES
- CLEANED AND EPOXY COATED CONCRETE SURFACES
- REFURBISHED ASPHALT PAVEMENT
- STORM MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- STORM SEWER
- SANITARY SEWER



N

0 30 60

GRAPHIC SCALE IN FEET

Title:	ALTERNATIVE 1 - PLAN VIEW
Location:	175 MILENS ROAD TONAWANDA, NEW YORK
Client:	GE ENERGY

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 10

J:\38394785 GE Tonawanda 2011\Focused CMS\7-2011 update\Figs\F10 Alternative 1-Plan View.dwg User:Karen_Peppin Jul 12, 2011 - 3:02pm

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

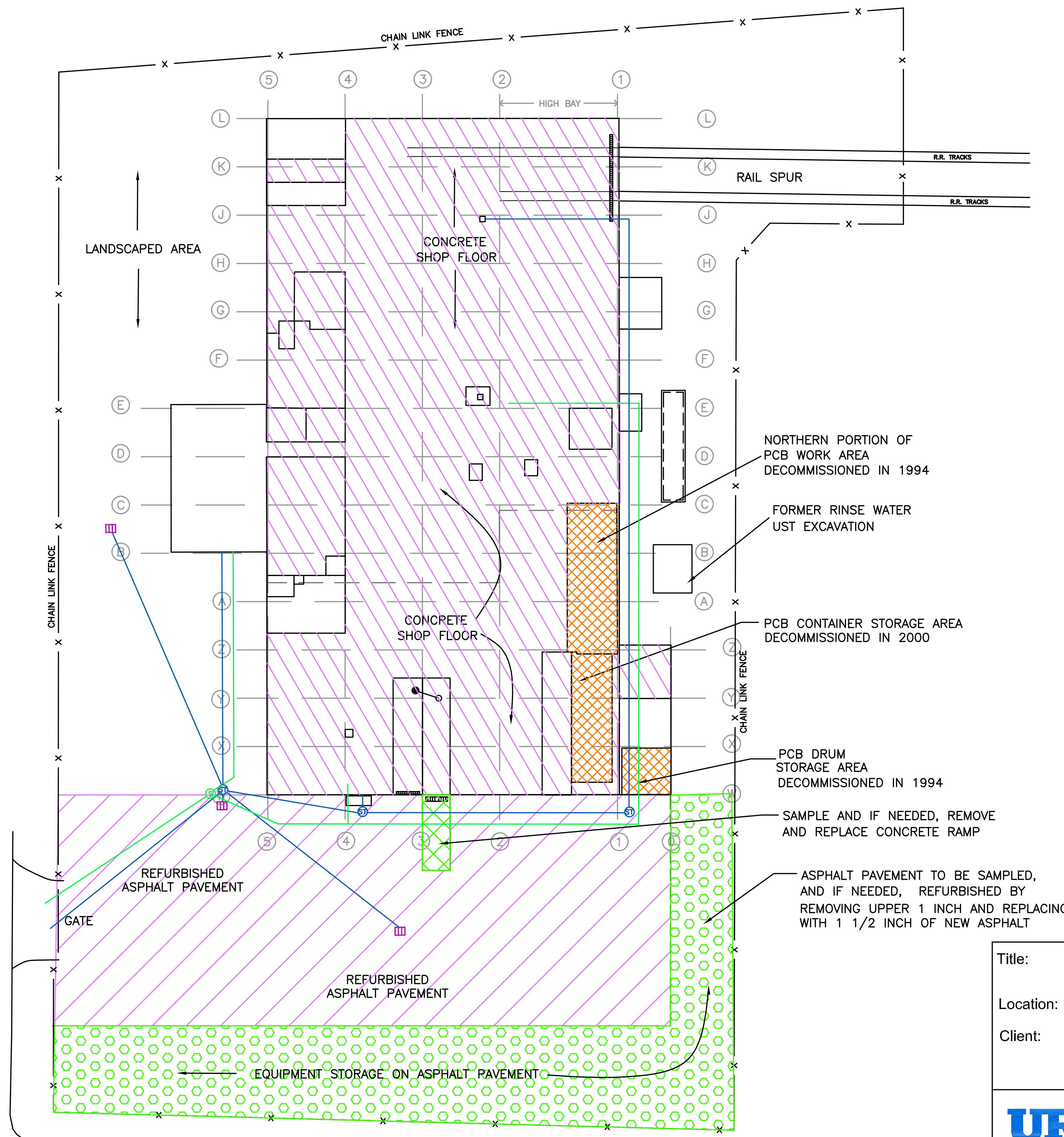
2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OF OFF-SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.

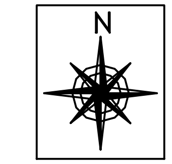
3. BETWEEN DECEMBER 2003 AND MAY 2004 THE FACILITY CONCRETE FLOOR WAS SUBJECTED TO A DOUBLE WASH AND DOUBLE RINSE AND EPOXY COATED WITH CONTRASTING COLORS AND LABELING.

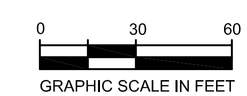
4. SOURCES FOR THIS FIGURE WERE:
   A. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
   B. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS-BUILT 4-19-78.

LEGEND

- DECOMMISSIONED PCB AREA
- FLOOR DRAIN
- TRENCH DRAIN
- COLUMN LINES
- CLEANED AND EPOXY COATED CONCRETE SURFACES
- REFURBISHED ASPHALT PAVEMENT
- CONCRETE RAMP TO BE SAMPLED, AND IF NECESSARY, REMOVED AND REPLACED
- ASPHALT PAVEMENT TO BE SAMPLED, AND, IF NECESSARY, REFURBISHED
- STORM MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- STORM SEWER
- SANITARY SEWER







Title: ALTERNATIVE 2 - PLAN VIEW

Location: 175 MILENS ROAD TONAWANDA, NEW YORK

Client: GE ENERGY

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 11

NOTES:

1. THE LOCATIONS OF SITE FEATURES ARE APPROXIMATE.

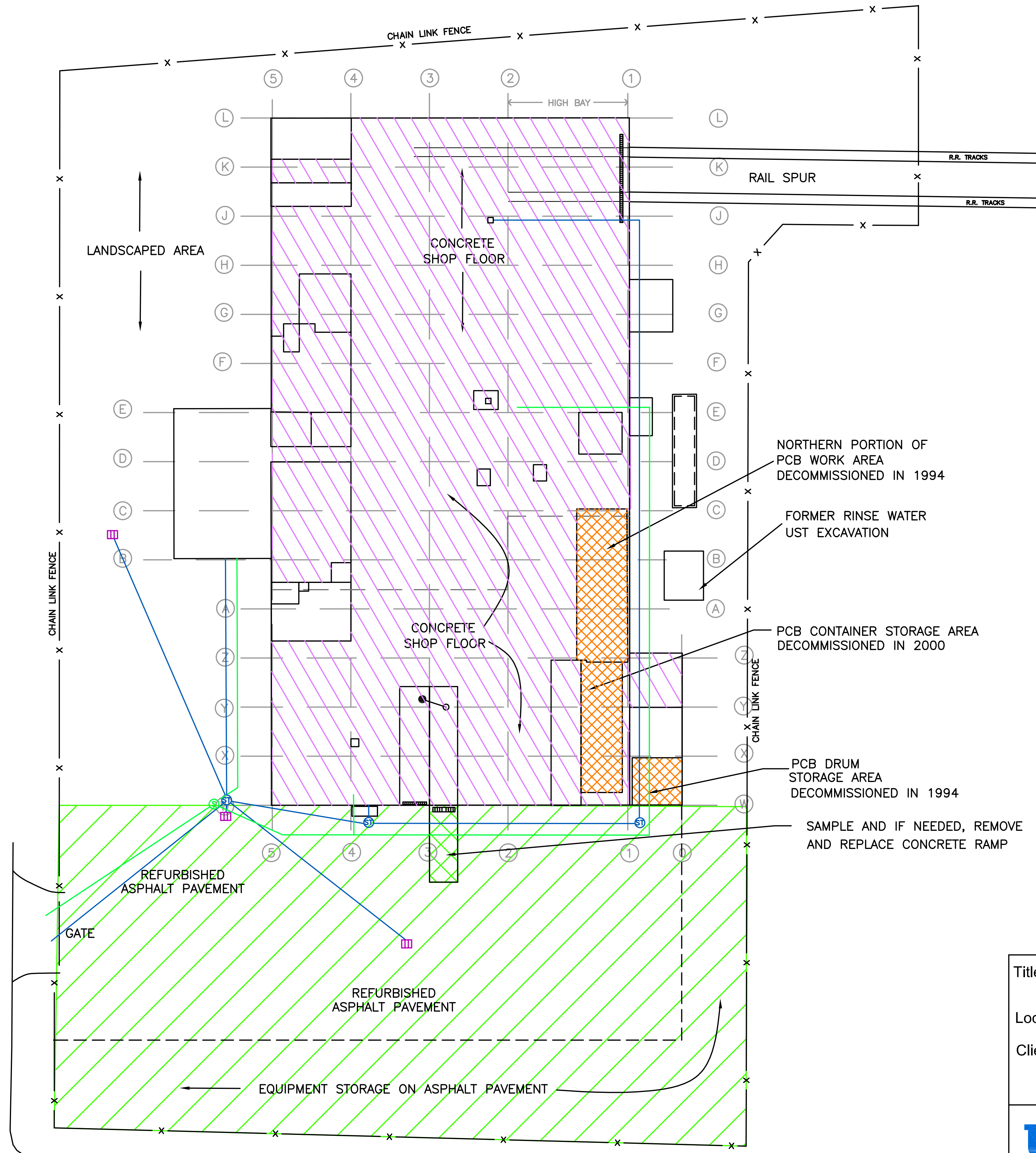
2. IN DECEMBER 2004, THE TOP INCH OF ASPHALT PAVEMENT IN THE TRANSPORTATION COORIDOR WAS REMOVED, DISPOSED OF OFF–SITE, AND REPLACED WITH NEW ASPHALT. THE ASPHALT BENEATH THE EQUIPMENT STORAGE WAS NOT REPLACED.

3. BETWEEN DECEMBER 2003 AND MAY 2004 THE FACILITY CONCRETE FLOOR WAS SUBJECTED TO A DOUBLE WASH AND DOUBLE RINSE AND EPOXY COATED WITH CONTRASTING COLORS AND LABELING.

4. SOURCES FOR THIS FIGURE WERE:
   A. "MAP OF GENERAL ELECTRIC SERVICE CENTER PROPERTY, PART OF LOT 45, TOWNSHIP 12, RANGE 8, TOWN OF TONAWANDA, ERIE COUNTY, NEW YORK" KRIEBEL ASSOCIATES, JULY 29, 1998.
   B. "1/8" PART FLOOR PLAN AND DETAILS," CANNON DESIGN INC., AS–BUILT 4–19–78.

LEGEND

- DECOMMISSIONED PCB AREA
- FLOOR DRAIN
- TRENCH DRAIN
- COLUMN LINES
- CLEANED AND EPOXY COATED CONCRETE SURFACES
- ASPHALT PAVEMENT TO BE REMOVED AND REPLACED
- CONCRETE RAMP TO BE SAMPLED, AND IF NECESSARY, REMOVED AND REPLACED
- STORM MANHOLE
- SANITARY MANHOLE
- CATCH BASIN
- STORM SEWER
- SANITARY SEWER



N

0 30 60
GRAPHIC SCALE IN FEET

Title:	ALTERNATIVE 3 - PLAN VIEW
Location:	175 MILENS ROAD TONAWANDA, NEW YORK
Client:	GE ENERGY

URS

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

Drafter: KP	Date: July 2011
Drg. Size: 11 X 17	Job No.: 38394785

FIGURE 12

APPENDIX A
NYSDEC LETTER DATED JUNE 7, 2006

D Porte, [illegible]

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

JUN 15 2006

June 7, 2006

Mr. Anthony Hejmanowski
EHS Coordinator
GE Apparatus Service Center
175 Milens Road
Tonawanda, New York 14150-6794

Dear Mr. Hejmanowski:

Closure Certification Report for the
Commercial PCB Storage Area
GE Apparatus Service Center
Tonawanda, NY

The New York State Department of Environmental Conservation (Department) has received the Closure Certification Report for the Commercial PCB Storage Area at the General Electric (GE) Apparatus Service Center in Tonawanda, New York, dated April 11, 2006. Upon review of this Report, the Department considers the Commercial PCB Storage Area officially closed. Authorization to operate this unit as a permitted container storage area is hereby terminated. The Department's acceptance of the closure of this unit is based upon the information contained in the Closure Certification Report.

The truck bay, depressed dock, and transportation corridor are not part of the permitted PCB storage area, but they are defined in the Revised Corrective Measure Study (CMS) Final Report dated July 31, 2001 as part of the closure of the Commercial PCB Storage Area. In Section 4.0 of the CMS it states that the "scope of the CMS does not include ... GE's ongoing closure of the PCB storage area". The Revised Closure Plan (RCP) for the PCB Storage Area, dated June 28, 2000, included the truck bay, depressed dock, and transportation corridor areas as part of the closure because additional investigation of the shop floor indicated PCB contamination. These three areas have not met the closure requirements in the approved RCP and therefore are not approved for closure. As stated in the March 1, 2006 letter from the USEPA to URS (as consultant for GE), "revision(s) to the closure plan are outside the scope of the areas approved for commercial storage, and therefore not relevant to closure under the Approval." Therefore, while the Commercial PCB Storage Area is adequately closed, the cleaning of the remaining areas to "continued use" and "low occupancy" levels as defined in Federal TSCA regulations does not meet the Department's requirements for closure or the cleanup objectives of the CMS.

In accordance with GE's Part 373 permit, if contamination is discovered at any time, corrective measures need to be evaluated and implemented. Therefore, since areas of known contamination are present, the Department requests that GE conduct a focused CMS for the truck bay, depressed dock, and transportation corridor areas as an addendum to the CMS Final Report. The cleanup objectives for these areas will remain the same as the objectives stated in the Revised CMS Final Report and the Revised Closure Plan for the PCB Storage Area.

If you have any questions, please contact Ms. Kathleen Emery of my staff at 716/851-7220.

Sincerely,

James G. Strickland , P.E.
Regional Hazardous Materials Engineer

cc: Ms. Kathleen Emery, NYSDEC, Buffalo
Ms. Jess LaClair, NYSDEC, Albany
Mr. Robert Phaneuf, NYSDEC, Albany
Ms. Dawn Varacchi, GE
Mr. Don Porterfield, URS
Mr. James Reidy, EPA, Region II

APPENDIX B
USEPA LETTER DATED JULY 19, 2006

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NEW YORK 10007-1866

JUL 19 2006

RECEIVED
JUL 25 2006
By

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Michael Higgins
Service Center Manager
GE Energy
175 Milens Road
Tonawanda, New York 14150

Re: General Electric Corporation - Tonawanda Service Center
Closure of PCB Storage Area

Dear Mr. Higgins:

The U.S. Environmental Protection Agency (EPA) Region 2 is in receipt of the letter dated April 11, 2006 from the URS Corporation. The URS letter provided certifications by the owner/operator and a professional engineer regarding the closure of the PCB Commercial Storage Area at the General Electric (GE) facility located at 175 Milens Road, Tonawanda, New York. These certifications are a required step in the closure process as described at 40 C.F.R. § 761.65(e)(8), and as incorporated into the PCB Commercial Storage Approval issued to GE on June 9, 1995.

EPA has reviewed the material supplied during the closure process, and reviewed the certifications referenced above. As such, EPA finds that GE has satisfied the closure requirements. As provided in 40 C.F.R. § 761.65(h), this letter serves as written notification that GE is no longer required to maintain financial assurance for final closure of the approved PCB Commercial Storage Area at the Tonawanda facility. The PCB Commercial Storage Approval dated June 9, 1995 is no longer in effect and this concludes the official closure of the PCB Commercial Storage Approval Area.

If you have any questions regarding this matter, please contact Vivian Chin, of my staff, at 732-906-6179.

Sincerely,

Original signed by
Patrick Durack

Dore LaPosta, Director
Division of Enforcement and Compliance Assistance

cc: Karen Peppin, URS Corporation