AECOM

Prepared for:
City of Meriden
Office of Economic Development
Meriden, Connecticut

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Rev.

Analysis of Brownfield Cleanup Alternatives
77 Cooper Street
Meriden, Connecticut

Contents

1.0 Introduction **1**

2.0 Site History **1**

3.0 Remediation Standard Regulations **2**

3.1 Direct Exposure Criteria 3

3.2 Pollutant Mobility Criteria 3

3.3 Surface Water Protection Criteria 3

3.4 Volatilization Criteria 4

4.0 Analysis of Alternatives **4**

4.1 Alternative 1: No Action 4

4.2 Alternative 2: Excavation and Off-Site Disposal of Soils using Site-Derived Backfill 4

4.3 Alternative 3: Installation of a Permanent Cap as an Engineered Control 5

5.0 Evaluation of Cleanup Process **5**

6.0 References **6**

List of Tables

Table 1 – Alternative 1: No Action

Table 2 – Alternative 2: Excavation and Off-Site Disposal

Table 3 – Alternative 3: Installation of Permanent Cap

Table 4 – Cost Estimate Analysis of Brownfields Cleanup Alternatives

List of Figures

Figure 1: Site Location Map

Figure 2: Interim Soil Remediation Plan Map

1.0 Introduction

This Analysis of Brownfield Cleanup Alternatives (ABCA) for the property located at 77 Cooper Street in the City of Meriden, Connecticut was prepared by AECOM at the request of the City of Meriden Office of Economic Development. Remediation activities are planned for the subject parcel. A portion of the remediation is being funded by the City of Meriden's site-specific Cleanup Grant (No. BF97182201), which is administered through the U.S. Environmental Protection Agency (USEPA). The purpose of this ABCA is to compare cleanup alternatives proposed at the subject parcel and recommend an alternative that brings the subject parcel closer to compliance with the Connecticut Remediation Standard Regulations (RSRs) and in accordance with the Interim Remedial Action Plan (IRAP) (AECOM, September 2011) submitted to the City of Meriden Office of Economic Development.

2.0 Site History

The subject parcel is one of two parcels (together referred to as "the Site"), totaling approximately 7.2 acres in size, located at 77 Cooper Street and 104 Butler Street in the City of Meriden, New Haven County, Connecticut. The Site is bisected by Harbor Brook and located in an area of mixed commercial, industrial, and residential land use. The Site is bounded by Cooper Street to the south, and residential/commercial properties to the east, west, and north. Portions of the Site are located within the 100-year flood plain. A Site location map is provided as Figure 1.

The Site is bordered by railroad tracks and Cherry Street residences to the east; commercial establishments, Harbor Towers and Hanover Towers to the north; Louie's Auto Garage and Cooper Street to the south/southeast; and the former Veteran's Memorial Medical Center and Cook Avenue residences to the west. A Yankee Gas natural gas facility and residential properties are located to the south of the Site, across Cooper Street.

The Site history was described in the Brownfields Targeted Site Assessment Final Report (Weston, September 1999) and Supplemental Phase II Environmental Site Evaluation (GZA, June 2000). The Site was used for a variety of industrial and manufacturing purposes from the late 1800s until approximately 1974, at which time the property was vacated. Industrial activities historically conducted on the Site included silverware and gun manufacturing. Processes included casting, plating, machining, trimming, polishing, buffing, forging, storage, and shipping. The Site has remained vacant since 1974, and is currently abandoned.

Three buildings, constructed between approximately 1886 to 1947, are present on the Site: Building A (Factory H) is a 100,000+ square foot, multi-story former manufacturing structure; Building B is a 900 square foot former transformer/electrical house; and Building C is a 7,200 square foot former power plant. There are several additional structures, including a footbridge and water tower. A fourth building (Building D), formerly on the northeast portion of the Site, was destroyed by fire and demolished circa 1980. Initially a gun manufacturing shop, Building D housed a machine shop, a foundry, and a pattern shop. Building A is located to the west of the brook, Building B is located over the brook and Building C is located east of the brook. The remainder of the eastern side of the brook is primarily a cleared space. Figure 2 presents a Site plan showing these various features.

Factory H is known to have used alkali soaps, sulfuric acid, oils, nickel, silver, chromium, copper, zinc, acid and alkali solutions, and halogenated and non-halogenated solvents. Other contaminants of concern (COCs) on the Site include, but may not be limited to, asbestos, other metals (including lead), cyanide, polychlorinated biphenyls (PCBs), extractable total petroleum hydrocarbons (ETPH), and volatile and semi-volatile organic compounds (VOCs and SVOCs, respectively). Twenty-two cyclone-like dust collectors were previously located along the east side of Building A. The dust collectors were used to collect metal dust from the former silverware manufacturing operations. Nineteen of the 22

dust collectors and associated framing were removed during a Supplemental Environmental Project (SEP) performed in December 2008 by TransWaste, Inc.

A number of studies have been completed on the Site. Information from these reports has been included in the Phase II/III Environmental Site Assessment (ESA) Report (Metcalf & Eddy, 2007). During completion of pervious investigations, soil, sediment, soil gas, and groundwater samples were collected and analyzed for Site-related COCs. Metals, cyanide, VOCs, TPH, polycyclic aromatic hydrocarbons (PAHs), and asbestos were detected and are associated with a number of areas of concern (AOCs) identified for the Site. A total of 33 AOCs were identified, designated AOC-1 to AOC-33. Each area varies with respect to the degree of characterization.

Under the guidance of the CTDEEP and on behalf of MidState Medical Center (MMC) (former occupant of 116 Cook Avenue), removal/stabilization activities were performed by Advanced Environmental Interface, Inc. (AEI) to remove certain hazardous materials and stabilize certain hazardous conditions at the former International Silver Company/Insilco Factory H in 2004 and 2005. A total of 23 removal/stabilization areas were identified. These removal/stabilization areas have been assigned labels of "Stabilization Area" A through W (SA-A to SA-W). A number of the stabilization areas (SA) overlap with specific AOCs. Combining AOCs and SAs (where appropriate), a total of 56 AOCs/SAs have been identified for the Site.

An IRAP was prepared by AECOM in September 2011. The IRAP was developed based on results of a Phase II/III ESA (Metcalf & Eddy, 2007), Supplemental Investigation and Soil-Reuse Evaluation (AECOM, 2009), and in conjunction with previous investigation results with respect to the CTDEEP RSRs and USEPA cleanup requirements. It was developed under available funding to address specific area(s) of contaminated soil and not intended to completely address soil contamination nor impacted groundwater. Remediation areas were prioritized based on the exceedences of PCBs, then by PMC exceedences, then all other exceedence areas as the remaining funds allow.

The IRAP includes three primary activities to be completed:

1. Soil remediation and disposal of contaminated soils from specific "hot spot" areas located along the western bank of Harbor Brook that contain concentrations of PCBs and metals above residential direct exposure criteria (R DEC) and industrial /commercial (I/C) DEC, and ETPH exceeding RES DEC, I/C DEC and GB pollutant mobility criteria (PMC).
2. After excavation, an interim geotextile fabric will be placed to demarcate the excavation areas and the excavations will be backfilled as a means of Site restoration.
3. Area within Building A (Saw Tooth) will be backfilled as a means of Site restoration.

The interim soil remedial actions will include:

- PCB soil remediation along the southeastern perimeter of the former Saw Tooth Building;
- Backfilling of former interior portion of Building A with on-Site inert demolition debris (i.e. brick and concrete);
- Soil excavation of other "hot spot" areas, with direct loading and subsequent off-Site disposal;
- Placement of a geotextile fabric liner at the extents of the excavation; and
- Backfilling the excavation areas with the existing gravel (if clean), followed by backfilling with on-Site inert demolition debris (i.e. brick and concrete).

3.0 Remediation Standard Regulations

The RSRs contain numerical default criteria for contaminated soil and surface water that are based on the potential for direct human health exposure to COCs (direct exposure criteria); on the potential for

the soils to have an adverse impact on groundwater (pollutant mobility criteria); on the potential for groundwater to have an adverse impact on nearby surface water (surface water protection criteria); and on the potential for soil vapor to impact nearby indoor air quality (volatilization criteria). The RSRs also provide standards relative to the removal of non-aqueous phase liquids. Additional information on these criteria is presented in the following sections.

3.1 Direct Exposure Criteria

There are two sets of DEC specified in the RSRs; one derived for residential land use and the other derived for industrial and certain commercial land use. The RSR definition of "residential activity" includes activities related to a residence or dwelling, as well as activities related to schools, hospitals, daycare centers, playgrounds, or outdoor recreation areas. The R DEC apply in areas with residential activities, but are also the default criteria used to evaluate potential human exposure in all areas. I/C DEC may be applied to areas that do not fit the definition of residential activity, but an Environmental Land Use Restriction (ELUR) must be recorded on the land record to prevent residential uses of the property.

ETPH, PAHs, PCBs, and total metal concentrations were found to exceed the R DEC and I/C DEC over dispersed areas of the Site. Exceedance of the R DEC and I/C DEC generally extend from ground surface to depths of two to six feet in some areas of the Site.

3.2 Pollutant Mobility Criteria

Two sets of PMC are specified in the RSRs; one for areas with a groundwater classification of GA/GAA and one for a groundwater classification of GB. Class GA/GAA groundwater is groundwater that is an existing or potential source of potable water and is presumed to be suitable for human consumption without the need for prior treatment. Class GB groundwater is presumed to have been degraded by past urban or industrial activities and may not be suitable for human consumption without prior treatment. The Site is located in a GB classified groundwater area. For GB areas, the PMC applies to soils above the seasonal high water table.

The RSRs include default numerical PMC for contaminated soils, which may be compared directly to the total mass concentration. For inorganic compounds and PCBs, the mass concentration may be compared to 20 times the PMC or directly to SPLP (synthetic precipitation leachate procedure) results, which are reported as a ratio of contaminant mass per volume of leachate (mg/L). For substances other than ETPH, SPLP results in a GB area may be compared against ten times the groundwater protection criteria (GWPC) or alternative PMC may be proposed by the application of dilution factors.

ETPH levels exceeded the acceptable GB PMC over dispersed areas of the Site.

3.3 Surface Water Protection Criteria

The Surface Water Protection Criteria (SWPC) may be applied to groundwater where groundwater likely discharges into a nearby surface water. The RSRs allow for the proposal of site-specific alternative SWPC.

Based on a groundwater evaluation performed as part of the Phase II/III ESA Report (Metcalf & Eddy, 2007), VOCs and metals are present in groundwater above the SWPC over dispersed areas of the Site.

3.4 Volatilization Criteria

The Volatilization Criteria (VC) is applicable for contaminated groundwater within 15 feet of the ground surface or a building. The intent of these criteria is to prevent human exposure to volatile organic vapors emanating from impacted groundwater. As with soil criteria, the VC for both residential (R VC) and industrial/commercial (I/C VC) uses are specified and alternative criteria may be developed with the approval of the CTDEEP.

Groundwater at the Site is typically found within 10 feet of the ground surface. Based on a groundwater evaluation performed as part of the Phase II/III ESA Report (Metcalf & Eddy, 2007), VOCs are present in groundwater above the R VC and I/C VC over dispersed areas of the Site. No soil vapor samples exceeded the VC.

4.0 Analysis of Alternatives

This ABCA documents the analysis of soil cleanup alternatives. This analysis was prepared to meet requirements of the USEPA Brownfields program and used to develop the proposed IRAP. The remedial alternatives considered are:

- No Action;
- Excavation and off-Site disposal of soils using Site-derived backfill;
- Installation of a permanent cap as an engineered control.

These remedies are evaluated and compared in terms of effectiveness, implementability, and cost, as specified in the USEPA *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*. The No Action alternative is included as a baseline for comparison to other alternatives in accordance with USEPA guidance. Summaries of comparative information are presented in Table 1 through Table 3. Cost comparisons of alternatives are shown in Table 4.

4.1 Alternative 1: No Action

No remedial action occurs under this alternative. This option is not recommended as human health and the environment are not adequately protected under this alternative.

4.2 Alternative 2: Excavation and Off-Site Disposal of Soils using Site-Derived Backfill

This alternative includes the excavation of contaminated soil from identified "hot spot" areas of the Site. Contaminated soil would be transported and disposed of at an approved off-Site landfill or treatment facility. Once contaminated soil has been removed, a geotextile fabric will be placed to demarcate the excavation extent and inert construction and demolition (C&D) debris generated from the razing of Site building(s) would be used as backfill. This approach is consistent with the IRAP, which was developed with consideration to available funding. Remediation areas are prioritized based on the exceedences of PCBs above RES DEC and I/C DEC, then by TPH and metals exceeding RES DEC, I/C DEC and GB PMC, then all other exceedence areas as the remaining funds allow. Remediation details are shown on Figure 2.

This alternative would systematically remove source areas of contamination from the Site to improve protection of human health and the environment in regards to contaminate exposure, mobility, and surface erosion of contaminated soil. However, due to funding limitations, additional future remediation would still be required. This alternative is consistent with the overall redevelopment goal

of the Site, which is to provide an adequate flood-control basin. Disadvantages of this alternative include extensive truck traffic during project implementation, which would elevate traffic congestion, fuel consumption, and the overall carbon footprint of the project. This alternative has a high cost associated with excavation, transport, and disposal of contaminated soil, but provides some cost savings with the reuse of Site derived C&D material as excavation backfill. Based on the relatively high effectiveness and implementability of this option relative to cost, this option is preferred.

4.3 Alternative 3: Installation of a Permanent Cap as an Engineered Control.

This alternative includes the installation of a permanent cap over the existing grade to render contaminated soils "inaccessible". The permanent cap would require the import and placement of clean fill backfill to the Site. It would consist of a one foot sub-base soil overlain by a continuous poly-liner that would be bonded together at adjoining seams. To protect the liner, a one foot layer of soil would be placed above it then covered with approximately four inches of loam to be seeded. Once the engineered control is installed, an ELUR would be recorded on the Site to restrict activities which may compromise the integrity of the permanent cap. An operations and maintenance program would be implemented, which would require periodic inspection of the engineered control.

This alternative would be protective of human health and the environment in regards to contaminate exposure, leachability, and surface erosion of contaminated soil for this specific remediation area. However, source areas of contamination would remain intact and this alternative would not address groundwater impacts. Additional future remediation activities would still be required. Disadvantages of this alternative include generating the most noise and truck traffic during project implementation. Installation of a permanent cap is not consistent with the overall redevelopment goal of the Site as a flood-control basin. Because this alternative is the most costly and most complicated to implement without providing greater effectiveness and is inconsistent with redevelopment goals, this option is not recommended.

5.0 Evaluation of Cleanup Process

In order to implement Alternative 2, which would include excavation and off-Site disposal of soils using Site-derived backfill, several steps would be taken and/or are already in progress. These include the following:

- The IRAP has been completed and is available for public comment;
- This ABCA and related documents are being made available for USEPA and public comment; and,
- Technical specifications and drawings have been prepared.

It should be noted that the available funding, including USEPA Brownfields funding, for the remedial actions at this Site are not sufficient to fully remediate the entire Site at this time. However, the work to be completed will advance the Site closer to full remediation and compliance with the IRAP and future redevelopment.

6.0 References

Site Assessment Report, HRP Associates, Inc., June 21, 1988;

Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. EPA Office of Solid Waste and Emergency Response, Washington, D.C. Interim Final, United States Environmental Protection Agency (USEPA), October 1988;

Assessment of Site Environmental Conditions Report, Advanced Environmental Interface (AEI), January 24, 1990;

Underground Storage Tank Sampling Report, ICF Kaiser Engineers, Inc., December 17, 1990;

Removal Program Preliminary Assessment/Site Investigation Report, Roy F. Weston, Inc., December 22, 1997;

International Silver Company, Factory H, Brownfields Targeted Site Assessment Final Report, Roy F. Weston, Inc., September 8, 1999;

Supplemental Phase II, Environmental Site Evaluation, International Silver Company, Factory H Site, Meriden, Connecticut, GZA GeoEnvironmental, Inc., June 2000;

Removal Program After Action Report for the Chrome Engineering Site, United States Environmental Protection Agency (USEPA) prepared by Weston Solutions, Inc., February 2004;

Ground Penetrating Radar Survey Results For The Investigation For The Location Of: Underground Storage Tanks & Utilities At: 77 Cooper St., Meriden, CT, Subsurface Information Surveys, July 2005.

Removal Stabilization Activities Summary Report, Former International Silver Company/Insilco Factory H Site, Meriden, CT, Advanced Environmental Interface (AEI), February 2006;

Phase I Environmental Site Assessment Report, International Silver Company, Factory H, Meriden, Connecticut, Metcalf & Eddy, Inc. (M&E), April 2006;

Phase II/III Environmental Site Assessment Report, International Silver Company, Factory H, Meriden, Connecticut, Metcalf & Eddy, Inc. (M&E), March 2007;

Quality Assurance Project Plan Addendum for Supplemental Environmental Investigation, Insilco Factory H Site, Meriden, Connecticut, Metcalf & Eddy, Inc. (M&E), January 2009;

Quality Assurance Project Plan Addendum for Soil Re-Use Evaluation, Insilco Factory H Site, Meriden, Connecticut, AECOM Technology Corp. (AECOM), February 2009;

Supplemental Investigation and Soil Re-Use Evaluation Report, Former Insilco Factor H, Meriden, Connecticut, AECOM Technology Corp. (AECOM), August 2009; and,

Interim Remedial Action Plan; Former Insilco Factor H, 77 Cooper Street, Meriden, Connecticut, AECOM Technology Corp. (AECOM), September 2011.

Tables

Table 1

Screening of Remedial Alternatives

Alternative 1: No Action

Description: No remedial action would occur.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• None	• No action makes this the easiest alternative to implement.	• There is no estimated cost to this option. • No capital cost. • No O&M cost.
Disadvantage	**Disadvantage**	**Disadvantage**
• Does not mitigate on-Site risk due to direct exposure. • Does not reduce mobility of contaminants to groundwater. • Does not reduce erosion of surface contaminants to sediment. • Not a permanent remedy.	• Limits redevelopment options of the Site.	• Additional remedial actions may be required in the future at unknown cost.

Conclusion: The No Action alternative is not protective of human health or the environment. It does not reduce on-Site risk or contaminant mobility and is not recommended for implementation.

Table 2

Screening of Remedial Alternatives

Alternative 2: Excavation and off-Site disposal of soils using Site-derived backfill

Description: This alternative would include the excavation of contaminated soil from the Site to address impacted soils. Once contaminated soil has been excavated, transported, and disposed, inert C&D material derived from the Site will be used as backfill.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Likely to address all soil exposure and mobility risk within proposed remediation limits. • Permanent remedy. • Removal of source areas.	• Proven technology and implementation. • Consistent with redevelopment goals.	• Estimated cost is $119,000* • Allows for on-Site reuse of C&D material.
Disadvantage	**Disadvantage**	**Disadvantage**
• High carbon footprint, fuel use, and associated "hidden costs" due to extensive heavy truck traffic required.	• None	• Capital cost to excavate, transport, and dispose of an anticipated large volume of soil.

Note: * See Table 4 Cost Estimate Analysis of Brownfields Cleanup Alternatives

Conclusion: Excavation and off-Site disposal is a common procedure for remediation. This action would reduce risk of human exposure as well as reduce infiltration through contaminated soil, addressing pollutant mobility. Based on the relatively high effectiveness and implementability of this option relative to cost, this option is preferred.

Table 3

Screening of Remedial Alternatives

Alternative 3: Installation of a permanent cap as an engineered control

Description: This alternative includes the installation of a permanent cap to render impacted soils inaccessible, in accordance with the RSRs.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Likely to address all soil exposure and mobility risk within proposed	• Inspection of the cap to evaluate the effectiveness of this remedy can be simple.	• Estimated cost is $141,900*
Disadvantage	**Disadvantage**	**Disadvantage**
• Does not remove source areas. • High carbon footprint, fuel use, and associated "hidden costs" due to extensive heavy truck traffic required.	• Is not consistent with redevelopment goals. • Technically comprehensive relative to other options.	• Capital cost to excavate, transport, and dispose of an anticipated large volume of soil. • Capital costs of design and perform periodic O&M of the engineered control.

Note: * See Table 4 Cost Estimate Analysis of Brownfields Cleanup Alternatives

Conclusion: This alternative would be the most costly, most complicated to implement, and does not provide greater effectiveness. This alternative is inconsistent with redevelopment goals of the Site. Therefore, this option is not recommended.

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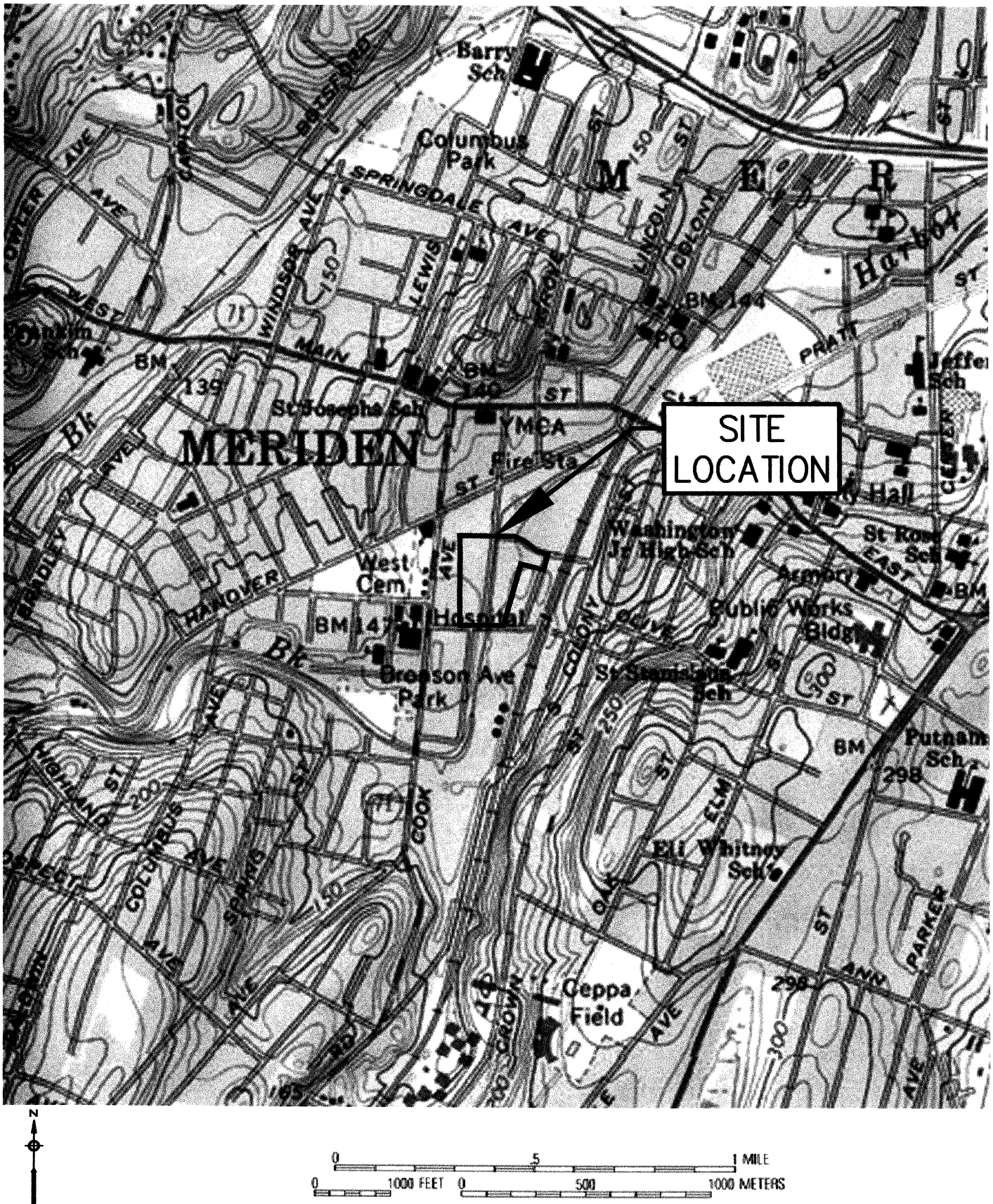
Table 4
Cost Estimate Analysis of Brownfields Cleanup Alternatives

77 Cooper Street
Meriden, Connecticut
September 27, 2011

Task	Units	Qty	Unit Cost	Item Cost
Mobilization/Demobilization				
Mobilize/Demobilize equipment	LS	1	$2,000	$2,000
Clearing and grubbing, all areas	Acre	0.25	$5,000	$1,250
Erosion and sedimentation controls	LF	300	$11	$3,300
Anti-tracking pads	EA	1	$2,000	$2,000
Decontamination Pads	EA	1	$1,500	$1,500
Public notification signage	LS	1	$1,000	$1,000
			Subtotal	$11,050
General Support Operations				
Temporary fencing	LF	500	$6	$3,000
Dust & noise monitoring equipment, rental	WK	1	$250	$250
Dust control	WK	1	$1,000	$1,000
			Subtotal	$4,250
Alternative #2 - Soil Excavation Areas A & B				
Waste characterization soil samples - analysis	EA	2	$1,403	$2,806
Excavation and Direct Load	Day	3	$1,500	$4,500
Soil T&D (TSCA hazardous PCBs)	Ton	97	$200	$19,444
Confirmation Soil Samples	EA	92	$78	$7,194
Backfill labor and equipment	Day	2	$1,500	$3,000
Backfill material (recycled concrete and debris)	Ton	70	$30	$2,100
Geotextile Fabric	SF	1750	$0.25	$438
Surveying	LS	1	$2,500	$2,500
Maintenance and Protection of Traffic (Police Detail)	Day	1	$500	$500
			Subtotal	$42,482
Alternative #2 and #3 - PCB Remedial Evaluation - Area C				
Pre-remediation samples - wipe samples of surficial stone	EA	36	$78	$2,808
Remove & backfill traprock @ 36 locations for soil sample collection - labor & equipment	Day	2	$1,500	$3,000
Pre-remediation samples - underlying soil	EA	36	$78	$2,808
AECOM labor for sampling (stone and soil)	Day	4	$500	$2,000
AECOM labor for evaluation of data	LS	1	$1,500	$1,500
Surveying	LS	1	$1,000	$1,000
			Subtotal	$13,116
Alternative #2 - Soil Excvation Areas 1- 4				
Waste characterization soil samples - analysis	EA	1	$2,013	$2,013
Excavate, Stockpile and Replace Surficial Stone	Day	1	$1,500	$1,500
Excavation and Direct Load Contaminated Soil	Day	1	$1,500	$1,500
Soil T&D (Non-Haz)	Ton	131	$68	$8,925
Soil T&D (Haz)	Ton	44	$200	$8,750
Confirmation Soil Samples	EA	10	$309	$3,088
Backfill labor and equipment	Day	1	$1,500	$1,500
Backfill material (recycled concrete and debris)	Ton	126	$30	$3,780
Geotextile Fabric	SF	2100	$0.25	$525
Surveying	LS	1	$1,500	$1,500
			Subtotal	$33,080
Alternative #3 - Engineered Control - Areas A & B				
Place Subbase sand layer - equipment and labor	Day	3	$1,500	$4,500
Place Subbase sand layer - material (sand that meets specification)	CY	280	$30	$8,400
HDPE Liner	SF	7575	$3.00	$22,725
Place sand drainage layer - equipment and labor	Day	3	$1,500	$4,500
Place sand drainage layer - material (sand that meets specification)	CY	280	$30	$8,400
Place 4" Topsoil layer - material	SY	842	$12	$10,104
Record ELUR	LS	1	$7,500	$7,500
Cap inspection and reporting - year 1	LS	4	$950	$3,800
Cap inspectionanfd reporting year 2	LS	2	$950	$1,900
Cap inspection and reporting - years 3 - 30	LS	28	$950	$26,600
			Subtotal	$98,429
AECOM Costs				
Oversight	week	1	$5,000	$5,000
Remedial Action Report	LS	1	$10,000	$10,000
			Subtotal	$15,000
Total - Alternative #2: Soil Excavation				**$119,000**
Total - Alternative #3: Engineered Control				**$141,900**

Figures



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PLOT DATE: Wednesday, September 28, 2011 2:25:49 PM

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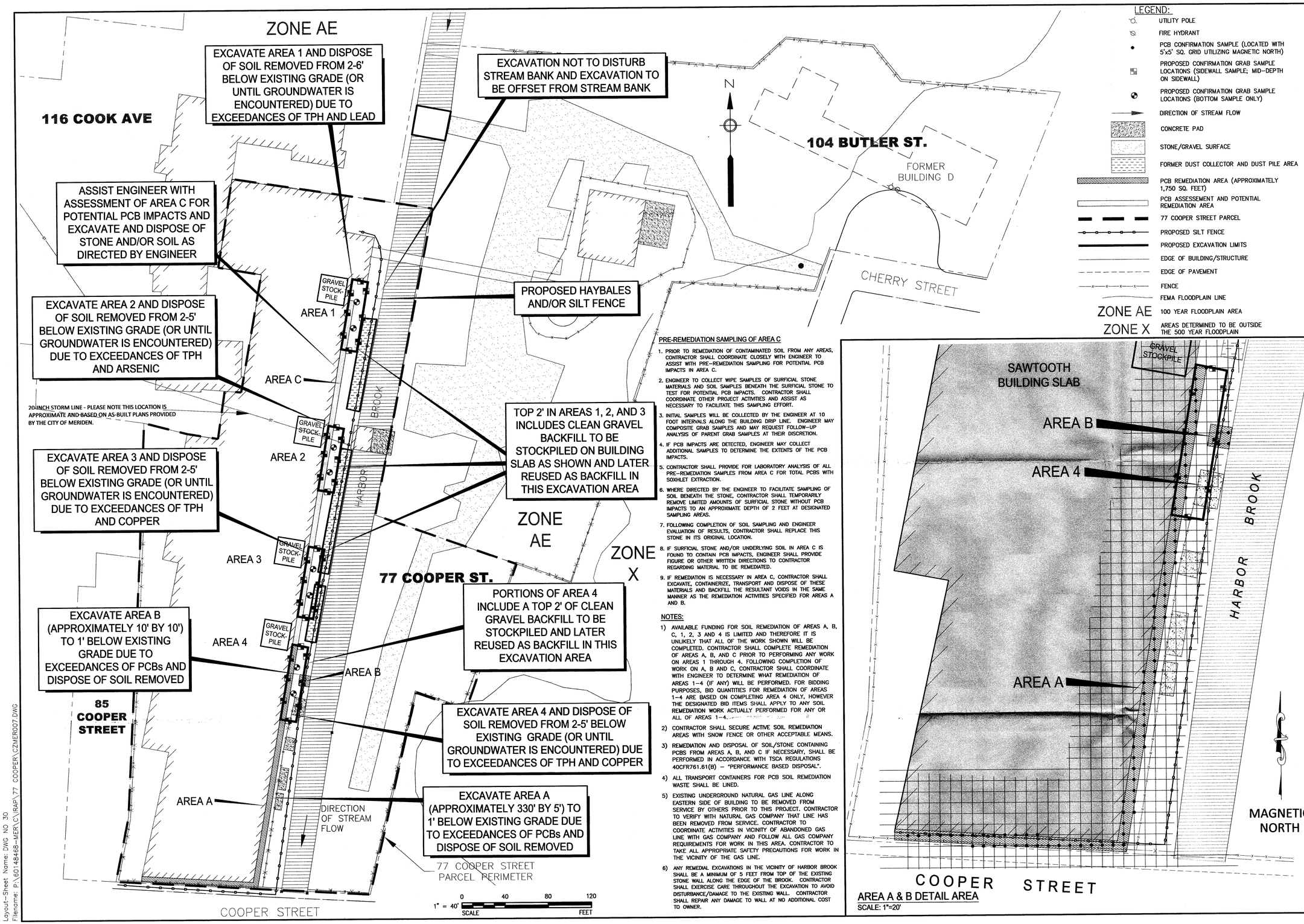
CITY OF MERIDEN, CONNECTICUT
INTERNATIONAL SILVER COMPANY, FACTORY H - 77 COOPER STREET
INTERIM REMEDIAL ACTION PLAN

SITE LOCATION MAP

SCALE: AS NOTED	DATE: SEPTEMBER 2011	FIGURE 1



AREA A & B DETAIL AREA
SCALE: 1"=20'

PRE-REMEDIATION SAMPLING OF AREA C

1. PRIOR TO REMEDIATION OF CONTAMINATED SOIL FROM ANY AREAS, CONTRACTOR SHALL COORDINATE CLOSELY WITH ENGINEER TO ASSIST WITH PRE-REMEDIATION SAMPLING FOR POTENTIAL PCB IMPACTS IN AREA C.
2. ENGINEER TO COLLECT WIPE SAMPLES OF SURFICIAL STONE MATERIALS AND SOIL SAMPLES BENEATH THE SURFICIAL STONE TO TEST FOR POTENTIAL PCB IMPACTS. CONTRACTOR SHALL COORDINATE OTHER PROJECT ACTIVITIES AND ASSIST AS NECESSARY TO FACILITATE THIS SAMPLING EFFORT.
3. INITIAL SAMPLES WILL BE COLLECTED BY THE ENGINEER AT 10 FOOT INTERVALS ALONG THE BUILDING DRIP LINE. ENGINEER MAY COMPOSITE GRAB SAMPLES AND MAY REQUEST FOLLOW-UP ANALYSIS OF PARENT GRAB SAMPLES AT THEIR DISCRETION.
4. IF PCB IMPACTS ARE DETECTED, ENGINEER MAY COLLECT ADDITIONAL SAMPLES TO DETERMINE THE EXTENTS OF THE PCB IMPACTS.
5. CONTRACTOR SHALL PROVIDE FOR LABORATORY ANALYSIS OF ALL PRE-REMEDIATION SAMPLES FROM AREA C FOR TOTAL PCBS WITH SOXHLET EXTRACTION.
6. WHERE DIRECTED BY THE ENGINEER TO FACILITATE SAMPLING OF SOIL BENEATH THE STONE, CONTRACTOR SHALL TEMPORARILY REMOVE LIMITED AMOUNTS OF SURFICIAL STONE WITHOUT PCB IMPACTS TO AN APPROXIMATE DEPTH OF 2 FEET AT DESIGNATED SAMPLING AREAS.
7. FOLLOWING COMPLETION OF SOIL SAMPLING AND ENGINEER EVALUATION OF RESULTS, CONTRACTOR SHALL REPLACE THIS STONE IN ITS ORIGINAL LOCATION.
8. IF SURFICIAL STONE AND/OR UNDERLYING SOIL IN AREA C IS FOUND TO CONTAIN PCB IMPACTS, ENGINEER SHALL PROVIDE FIGURE OR OTHER WRITTEN DIRECTIONS TO CONTRACTOR REGARDING MATERIAL TO BE REMEDIATED.
9. IF REMEDIATION IS NECESSARY IN AREA C, CONTRACTOR SHALL EXCAVATE, CONTAINERIZE, TRANSPORT AND DISPOSE OF THESE MATERIALS AND BACKFILL THE RESULTANT VOIDS IN THE SAME MANNER AS THE REMEDIATION ACTIVITIES SPECIFIED FOR AREAS A AND B.

NOTES:

1) AVAILABLE FUNDING FOR SOIL REMEDIATION OF AREAS A, B, C, 1, 2, 3 AND 4 IS LIMITED AND THEREFORE IT IS UNLIKELY THAT ALL OF THE WORK SHOWN WILL BE COMPLETED. CONTRACTOR SHALL COMPLETE REMEDIATION OF AREAS A, B, AND C PRIOR TO PERFORMING ANY WORK ON AREAS 1 THROUGH 4. FOLLOWING COMPLETION OF WORK ON A, B AND C, CONTRACTOR SHALL COORDINATE WITH ENGINEER TO DETERMINE WHAT REMEDIATION OF AREAS 1-4 (IF ANY) WILL BE PERFORMED. FOR BIDDING PURPOSES, BID QUANTITIES FOR REMEDIATION OF AREAS 1-4 ARE BASED ON COMPLETING AREA 4 ONLY, HOWEVER THE DESIGNATED BID ITEMS SHALL APPLY TO ANY SOIL REMEDIATION WORK ACTUALLY PERFORMED FOR ANY OR ALL OF AREAS 1-4.
2) CONTRACTOR SHALL SECURE ACTIVE SOIL REMEDIATION AREAS WITH SNOW FENCE OR OTHER ACCEPTABLE MEANS.
3) REMEDIATION AND DISPOSAL OF SOIL/STONE CONTAINING PCBS FROM AREAS A, B, AND C IF NECESSARY, SHALL BE PERFORMED IN ACCORDANCE WITH TSCA REGULATIONS 40CFR761.61(B) – "PERFORMANCE BASED DISPOSAL".
4) ALL TRANSPORT CONTAINERS FOR PCB SOIL REMEDIATION WASTE SHALL BE LINED.
5) EXISTING UNDERGROUND NATURAL GAS LINE ALONG EASTERN SIDE OF BUILDING TO BE REMOVED FROM SERVICE BY OTHERS PRIOR TO THIS PROJECT. CONTRACTOR TO VERIFY WITH NATURAL GAS COMPANY THAT LINE HAS BEEN REMOVED FROM SERVICE. CONTRACTOR TO COORDINATE ACTIVITIES IN VICINITY OF ABANDONED GAS LINE WITH GAS COMPANY AND FOLLOW ALL GAS COMPANY REQUIREMENTS FOR WORK IN THIS AREA. CONTRACTOR TO TAKE ALL APPROPRIATE SAFETY PRECAUTIONS FOR WORK IN THE VICINITY OF THE GAS LINE.
6) ANY REMEDIAL EXCAVATIONS IN THE VICINITY OF HARBOR BROOK SHALL BE A MINIMUM OF 5 FEET FROM TOP OF THE EXISTING STONE WALL ALONG THE EDGE OF THE BROOK. CONTRACTOR SHALL EXERCISE CARE THROUGHOUT THE EXCAVATION TO AVOID DISTURBANCE/DAMAGE TO THE EXISTING WALL. CONTRACTOR SHALL REPAIR ANY DAMAGE TO WALL AT NO ADDITIONAL COST TO OWNER.

REV	DESCRIPTION	DRN	CHK	DATE (M/D/Y)
—				

1-INCH — VERIFY SCALE IF PLAN SHEET IS REDUCED

DRN BY: — DES BY: — CHK BY: — APP BY: —

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CITY OF MERIDEN
FACTORY H

77 COOPER STREET
INTERIM SOIL REMEDIATION PLAN MAP

DATE (M/Y) SEPTEMBER 2011
PROJECT NO. 60148468
FILENAME CZMER007.dwg
DRAWING NO. 2

Plotted By: thibodm
Plot File Date Created: Sep/28/2011 2:33 PM
Layout-Sheet Name: DWG NO 30
Filename: P:\60148468-MER\C\RAP\77 COOPER\CZMER007.DWG