MALCOLM PIRNIE

REMEDIAL WORK PLAN/
REMEDIAL ACTION WORK PLAN

Former Ames/Hills Plaza Site
City of Jamestown
New York

Prepared for:

THE KROG CORPORATION

STATE OF NEW YORK
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SECTION 1 Introduction

1.1 Purpose and Scope

The Krog Corporation plans to redevelop the former Ames/Hills Plaza Site in Jamestown, New York for use as a professional office park complex. Malcolm Pirnie has prepared this Remedial Work Plan (RWP) in support of the New York State Department of Environmental Conservation (NYSDEC)-sponsored Brownfields Cleanup Program (BCP) remediation of the Site. This Work Plan summarizes the conclusions of site investigations performed on the site and describes the remedy selection process for the site.

Section 2.0 summarizes the results of previous site investigations and presents remedial objectives based on the results of a human health risk assessment performed using investigation data. Section 3.0 describes the range of potentially applicable remedies available and presents an evaluation of proposed alternatives compared with NYSDEC criteria. Section 4.0 presents the conceptual design and proposed implementation schedule of the selected remedial alternative.

1.2 Background

The Site is a former department store plaza situated on approximately seven acres of land centrally located in the City of Jamestown, Chautauqua County, New York. The geography of the site is characterized as bounded to the north and east by the Chadakoin River and on the south and western sides by developed properties that presently include restaurants, light retail businesses and associated parking lots.

The vacant department store building now occupies the easternmost portion of the site. Historic development of the easternmost portion of the site included: furniture manufacturing and storage facilities (i.e., Jamestown Chair Company, Watson Manufacturing Co., A.P. Olsen & Co. Modern Cabinet Co., and Diamond Furniture Co.) mills including the Brooklyn Mills, and Pearl City Mills, and a tire service center and gasoline filling station.

Historic use of the westernmost portion of the site included businesses associated with metal working, (i.e., Jamestown Iron Works, the Manor Iron Works, Cast Iron Welding and Brazing Co.) associated foundries and machine shops. A furniture factory, shock absorber company, gasoline filling station and a tire and battery service center were also located on the property. Over time, the former mills and iron works building structures were demolished and the properties redeveloped. As an element of the City of Jamestown's urban renewal efforts during the 1970s, surficial fill material was reportedly placed on the property.

Under the BCP Program a 77,000 square feet single-story brick and steel framed former department store building is being renovated into a medical office building. The majority of the site consists of an asphalt paved parking lot that extends from the west facing building front to the western property boundary. East of the building is an asphalt paved truck entrance and loading docks. Two small open grassy areas are located immediately north and south of the building. A public access river walk adjoining the Chadakoin River is located immediately to the north of the parking lot and has been extended along the river to the eastern end of the site. The riverbank along the easternmost side of the site is wooded. A restaurant is located adjacent to the northwest corner of the site, and a pharmacy was recently built near the southwestern corner of the site.

Summary of Site Conditions

SECTION 2

2.1 Summary of Previous Investigations

The following is a summary of previous environmental investigations performed at the former Ames/Hills Plaza Site. Information for portions of this summary was obtained from copies, or portions of reports made available by the Krog Corporation.

December 2000 – In December 2000, the NYSDOT excavated and removed four underground storage tanks (USTs) encountered west of and adjacent to the site on South Main Street. As a result of this action, the New York State Department of Environmental Conservation (NYSDEC) identified this action as Spill No. 0075070. Three confirmatory borings were advanced to collect soil samples at locations presumed to be downgradient of the former tanks. The samples were submitted for volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis by Methods 8021 and 8270, respectively. Analytical results for the soil samples did not detect VOC/SVOC concentrations above the NYSDEC Spill Technology and Remediation Series (STARS) or Technical and Administrative Guidance Memorandum (TAGM) 4046 guidance values. The NYSDEC subsequently issued a determination of inactive status for this incident during January 2001.

September and October 2003 –A Phase 1 Environmental Site Assessment was performed at the Former Ames/Hills Plaza Site to characterize the existing, known environmental conditions. The October 2003 Phase I Site Assessment Report generally did not identify evidence of recognized environmental concerns except for the presence of two drums found in the former department store building. One was a 55-gallon drum containing waste oil which was placed in a drum overpack container. The second drum was a 35-gallon drum of partially spent aerosol cans. A compressed gas cylinder and two small propane tanks were also observed.

Based on a review of historic Sanborn® fire insurance maps and documented on-site work practices, a limited subsurface investigation was recommended to better characterize existing environmental conditions.

December 2003 – A limited Phase 2 Environmental Site Assessment was performed to characterize site soils and to determine the potential contaminant impacts if any, related to historic on-site work practices.

The Phase 2 investigation supplemented a November 2003 drilling program that included the advancement of 37 soil boreholes designated BH-1 through BH-37 to depths of 12 to 16 feet below ground surface (bgs). Soil samples were collected based on photo ionization detector (PID) screening results and submitted for target compound list (TCL) VOC and SVOC analyses by Methods 8260 and 8270. Results of the investigation identified low concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) compounds and selected VOCs at eight borehole locations. Analytical results for soil samples submitted from four borehole locations (BH-5, BH-7, BH-11 and BH-22) identified selected SVOCs and carcinogenic polycyclic aromatic hydrocarbons (PAHs) that exceeded STARS and TAGM guidance criteria. Conclusions presented in the report suggest that the source of the VOC and SVOC/PAH contaminants may be related to the historic release of a petroleum-based product.

Coincident with the submittal of soil samples for VOC and SVOC analysis, six soil samples were submitted for Resource Conservation and Recovery Act (RCRA)-listed metals testing. The analytical results for the samples collected at borings BH-5, BH-7, BH-11, BH-22 and BH-33 identified concentrations of arsenic, mercury and silver that exceeded Eastern USA Background Concentration ranges or NYSDEC TAGM 4046 guidance values for soils. Based on these concentrations, it is calculated that lead and mercury could exceed Toxicity Characteristic Leaching Procedure (TCLP) Regulatory Levels at one or more locations.

Based on a review of the Limited Subsurface Investigation Report, the NYSDEC assigned Spill Number 0375393 to the Plaza site and issued a determination that additional investigation was necessary to characterize the site media and potential groundwater impacts.

March 2004 – During February 2004, a subsurface drilling investigation on behalf of the Krog Corporation was performed to address a request by the NYSDEC to further investigate potential impacts to groundwater media at the Ames/Hills site. A total of four boreholes designated BH-38 through BH-41 were advanced at locations selected by the NYSDEC, and temporary well points (TPMW-1 through TPMW-4) installed to facilitate groundwater sample collection.

The stratigraphy of the shallow overburden was characterized during borehole advancement and a PID was used to screen the soil samples as they were recovered. Although elevated PID measurements were recorded, only one borehole (BH-38) exhibited petroleum-based odors. Subsequent to borehole advancement, four temporary monitoring wells designated TPMW-1 through TPMW-4 were installed in the borings BH-38 through BH-41, respectively. Groundwater samples were collected and submitted for the STARS-listed VOCs and SVOCs chemical analysis by USEPA Methods 8260 and 8270.

Results of the groundwater analytical testing generally indicated no significant impacts to the site's shallow groundwater. However, elevated concentrations of four benzene analytes (VOCs) and two PAHs (SVOCs) were detected above NYSDEC Class GA Groundwater Standards in the groundwater sample collected at the TPMW-1 monitoring well installed within borehole BH-38.

July 2004 – To support a due diligence effort for property acquisition, a total of 18 soil borings and eight test pits were advanced within the site boundaries to better characterize the physical and chemical nature of the shallow overburden fill material. The boreholes which were designated BH-42 through BH-59 were advanced within confines of the former Ames/Hills building and at selected locations within the parking lot.

Soil samples were collected at each borehole and test pit location based on PID screening results coupled with visual and olfactory observations. Samples were submitted for TCL VOC/SVOC analytes and target analyte list (TAL) metals. One soil sample submitted from test pit location TP-2 was analyzed for the New York State Department of Health (NYSDOH) petroleum fingerprint analysis by Method 310.13. In addition to soils testing, a second round of groundwater samples were collected from the four temporary monitoring wells (TPMW-1 through TPMW-4) and submitted for TAL metals analysis plus cyanide.

Analytical results of the soils testing identified elevated levels of PAHs and metals above NYS guidance criteria. Specifically, elevated PAHs were detected at the boreholes designated BH-45 (4-6'), BH-46 (4-6'), BH-51 (6-8'), BH-53 (4-6'), BH-57 (12-14') and BH-59 (8-10'). Soil samples submitted from boreholes designated BH-42, BH-44, BH-46, BH-57 and BH-59 detected elevated concentrations of arsenic, copper, magnesium and mercury that exceeded TAGM 4046 soils guidance criteria. In addition to the SVOCs and metals identified above, elevated concentrations of undetermined VOC and SVOC tentatively identified compounds (TICS) were detected at the BH-46, BH-47 and BH-51 borehole locations.

The results of groundwater testing identified elevated concentrations of barium, arsenic, and lead above NYSDEC Class GA groundwater standards at the TPMW-1, TPMW-2 and TPMW-4 well locations. Groundwater exceedences for iron, magnesium, manganese, and sodium were identified in each monitoring well TPMW-1 through TPMW-4. These are naturally occurring and common nutrients.

September 2004**—**Three shallow groundwater monitoring wells were installed along the northern perimeter of the property to determine potential impacts to groundwater at downgradient locations within the site boundary. During the drilling of well borings MW-3 and MW-4, evidence of historic petroleum impact (e.g., oily sheen, petroleum odor, elevated PID readings) was observed in the subsurface soil/fill material. The depth of the impacted soil ranged from six to 14 feet at boring MW-3 and from 7.5 to 10 feet at MW-4. Subsequent to the advancement of the borings to a depth of approximately 15 feet bgs, the monitoring wells designated as MW-3, MW-4 and MW-5 were installed and groundwater sampled for TCL VOCs, SVOCs and TAL metals.

The analytical results for the groundwater samples collected during the September sampling event identified measurable concentrations of VOC's, SVOC's and tentatively identified compounds (TICs) primarily at the MW-3 location. However, none of the concentrations were detected above the NYSDEC Class "GA" groundwater standards. Elevated concentrations of antimony and barium were detected above NYSDEC Class GA groundwater standards at MW-3 and MW-4 well locations. Groundwater exceedences for iron, manganese, and sodium were identified in each monitoring well MW-3 through MW-5.

December 2004 - An air quality characterization study was performed at the Site to evaluate potential impacts of soil vapor intrusion to the existing building. The air sampling was performed within the building as well as outdoors near the building and from beneath the slab foundation. Stainless steel Summa canisters were used to collected the air quality samples.

To assess background concentrations of VOCs in the area of the site, two samples of ambient air outside the building were collected. One sample was collected upwind (south) of the building and one sample was collected downwind (north) of the building. Three indoor air samples were collected using identical Summa canister sampling trains and procedures to evaluate the presence of VOCs in indoor air. The air samples were analyzed for VOCs using USEPA Compendium Method TO-15. One of the indoor air samples was not analyzed because of equipment malfunction. Sub-slab soil vapor samples were collected at five spatially distributed locations beneath the building floor to characterize the soil vapor.

Several VOCs were identified in indoor air samples at low concentrations, but the collection and analysis of background air samples from outdoor locations indicates that all but one of these compounds is also present at higher concentrations in background ambient air. The only VOC present in indoor air that is not also present at higher concentrations in background samples was trichlorofluoromethane at concentrations that ranged from 20 micrograms per cubic meter ($\mu g/m^3$) to 26 $\mu g/m^3$. The Generic Target Indoor Air Concentration provided by the USEPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil, for trichlorofluoromethane is 700 $\mu g/m^3$.

Numerous VOCs were detected in sub-slab soil vapor underlying the on-site building, yet when compared to the USEPA Generic Screening Levels for shallow soil vapor, provided in the USEPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway, all VOC concentrations measured in sub-slab soil vapor were less than the draft guidance values. Furthermore, with the exception of those VOCs present in background air, VOCs present in sub-slab soil vapor were not detected in indoor air within the building, except trichlorofluoromethane.

January 2005 - Implementation of the NYSDEC approved BCP remedial investigation work plan required a supplemental sampling program at the Plaza site to better characterize the physical and chemical nature of surface and subsurface soils and shallow groundwater. In addition to collecting surface soils, five borings were advanced and three test pits were excavated to complete the investigation.

Five surface soil samples were collected in four grass-covered areas adjacent to the Chadakoin River and one green space island within the paved parking lot. The uppermost two inches of soil was collected and analyzed for the target compound list (TCL) VOCs, SVOCs and target analyte list (TAL) metals at sample locations designated SS-1 through SS-5.

Analytical results for the surface soils testing identified elevated concentrations of PAHs and metals above the NYS TAGM 4046 guidance criteria. Specifically, elevated concentrations of Benzo(A)Pyrene and Chrysene exceeding 4046 criteria and urban background levels were detected. Additionally, one or more of the surface soil samples contained elevated levels of arsenic, beryllium, chromium, copper, iron, mercury, nickel, and zinc hat exceeded TAGM 4046 soils guidance values. It should be noted that the samples collected at locations SS-2, SS-3 and SS-4 had the greatest number of metals exceedences and highest total BaP (Benzo (A) Pyrene) equivalent reference numbers.

Soil samples were collected at each borehole and test pit location based on PID screening results coupled with visual and olfactory observations. Samples were submitted for TCL VOC/SVOC analytes and target analyte list (TAL) metals. One soil sample submitted from the 6-8' bgs interval at monitoring well location MW-3 was analyzed for the New York State

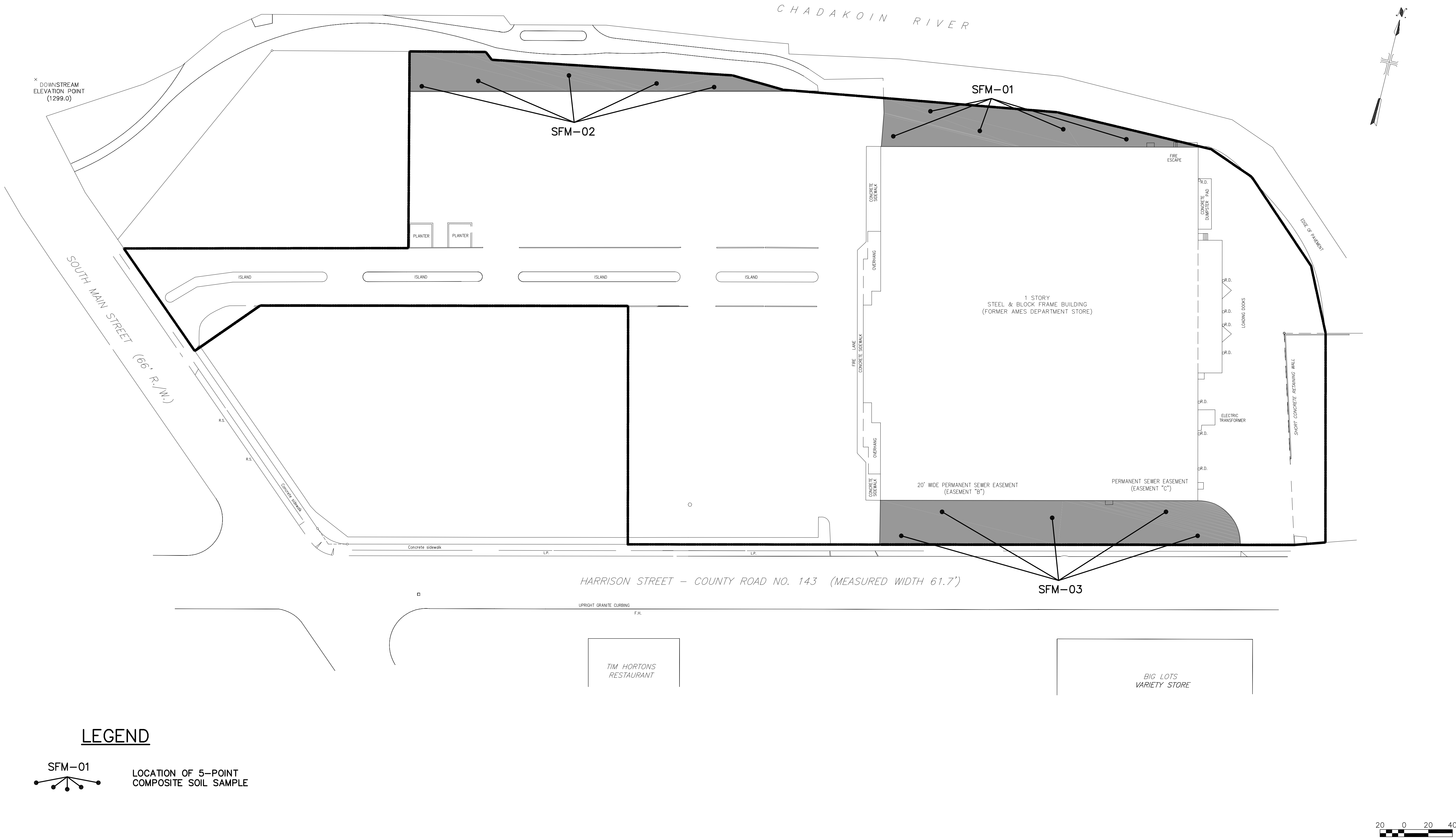
Department of Health (NYSDOH) petroleum fingerprint analysis by Method 310.13. In addition to soils testing, groundwater samples were collected from the newly installed shallow ground water monitoring wells MW-1 and MW-2. Groundwater samples were submitted for TCL VOC/SVOC analytes and target analyte list (TAL) metals.

Analytical results of the subsurface soils testing identified elevated levels of PAHs and metals above NYS guidance criteria. Specifically, elevated PAHs were detected at the boreholes designated MW-1 (6-8') and MW-2 (2-6') and test pit location TP-9 (4.0-4.5'). Concentrations of arsenic, beryllium, chromium, copper, iron, nickel, zinc and mercury exceeded TAGM 4046 soils guidance criteria in one or more of the sampled locations. In addition to the SVOCs and metals identified, measurable concentrations of undetermined VOC and SVOC tentatively identified compounds (TICS) were detected at the borehole and test pit locations. Results of the single sample analyzed for petroleum "finger print" analysis identified remnants of #2 fuel oil in the sample collected from the 6 to 8 feet depth interval of boring MW-3.

The results of groundwater testing identified elevated concentrations of lead above NYSDEC Class GA groundwater standards at the MW-1 and MW-2 well locations. Groundwater exceedences for iron, manganese, and sodium were identified in each monitoring well although these are naturally occurring and common nutrients. The elevated sodium concentrations may be attributable to the application and infiltration of road salt.

May 2005 - Surface and subsurface soil samples were collected to evaluate the soils in the open grassy areas north and south of the building, as well as north of the parking lot in order to determine potential suitability as cover material. An additional subsurface soil sample was collected from test pit TP-14 located north of the northwest corner of the building for the same purpose. This sample was collected to characterize the visually impacted soils previously identified in test pit TP-4.

The surface and subsurface soil samples (SFM-01, SFM-02, and SFM-03) collected from the grassy areas consist of a composite of five sample points in each area, see Figure 2-1. Sample depths were from the surface to two feet below ground surface at the grassy areas north of the



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15 SOUTH MAIN STREET
JAMESTOWN, NY

FORMER AMES/HILLS PLAZA

FIGURE 2-1
LOCATIONS OF SOIL FILL
MANAGEMENT COMPOSITE SAMPLES

DATE SEPTEMBER 2005

SHEET ____ OF ____

CAD REF. NO. ____

XREFS: IMAGES:None
User:DEWYER Spec:PIRNIE STANDARD File:F:\Projects\3198004\CADD\Jamestown\CADD\FIGURE 2-1.DWG Scale:1:1 Date:09/22/2005 Time:13:06 Layout:Layout

building and parking area (SFM-01, and SFM-02), and the upper six inches of topsoil from the grassy area south of the building (SFM-03). These samples were collected and analyzed to evaluate their potential reuse on-site as subgrade fill or topsoil, according to the Soil/Fill Management Plan (Appendix A). The analytical results summarized in Table 2-13, indicate elevated levels of PAHs and several metals above the NYS guidance criteria. However, none of the soil samples from the grassy areas exceed the proposed Site Specific Action Levels (SSALs), as provided in Table A-1 of Appendix A.

The analytical results of the subsurface soil sample collected from TP-14 also identified elevated PAHs and metals above the NYS guidance criteria. Three metals, copper, lead, and zinc, also exceeded the proposed SSALs. Analytical results for TP-14 are summarized in Table 2-14.

2.2 Site Investigation Results Summary

Analytical results from all of the site investigations are presented in Tables 2-1 through 2-14.

Results of the investigations completed since December 2000 confirmed the following:

Subsurface Soil/Fill Material

- The uppermost overburden unit at the site is a soil/fill material. This unit is described as silty sand and gravel with variable amounts of C&D debris. This unit is covered over most of the site property by an asphalt parking lot and existing building structure.
- Analyses of subsurface soil/fill samples identified elevated concentrations of selected PAHs and metals exceeding NYSDEC TAGM 4046 soil cleanup criteria. Only very low concentrations of PCBs and Pesticides have been detected sporadically in the subsurface soil/fill.
- Evidence of historical petroleum impact was encountered along the northern boundary of the site at borings MW-3 and MW-4.

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TABLE 2-1
SUMMARY OF ANALYTICAL RESULTS - SURFACE SOILS
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046(1)	Urban Background Concentrations(2)(3)	SS-1 0.0 - 0.1' 01/26/2005	SS-2 0.0 - 0.1' 01/26/2005	SS-3 0.0 - 0.1' 01/26/2005	SS-4 0.0 - 0.1' 01/26/2005	SS-5 0.0 - 0.1' 01/26/2005
Volatile Organic Compounds - VOCs (ug/kg)							
Dichlorodifluoromethane	NA	NA	3 J	3 J		2 J	
Methyl Acetate	NA	NA					4 J
Total VOCs	10,000	NA	3	3		2	4
Semi-Volatile Organic Compounds - SVOCs (ug/kg)							
2-Methylnaphthalene	36,400	NA			120 J		
Acenaphthene	50,000***	NA		370 J	810		
Acetophenone	NA	NA	220 J	680	110 J		
Anthracene	50,000***	NA		750	1,500	300 J	
Benzo(A)Anthracene	224or MDL	169 -59,000	380 J	4,200	6,200	1,400	
Benzo(A)Pyrene	61	165 - 220	***260 J***	***4,400***	***5,800***	***1,300***	***390 J***
Benzo(B)Fluoranthene	1,100	15,000 - 62,000	550 J	5,000 J	8,300 J	1,600 J	
Benzo(G,H,I)Perylene	50,000***	900 - 47,000		530	750		
Benzo(K)Fluoranthene	1,100	300 - 26,000	440	4,700	4,200	1,600	
Benzyl Butyl Phthalate	50,000***	NA		7,400		370 J	
Bis(2-Ethylhexyl) Phthalate	50,000***	NA	200 J	1,900	200 J	2,800	
Caprolactam	NA	NA	270 J	2,300			
Carbazole	NA	NA		840	1,400	270 J	
Chrysene	400	251 - 640	550	***5,800***	***9,400***	***1,800***	400 J
Dibenz(A,H)Anthracene	14or MDL	NA		1,100	1,300	340 J	
Dibenzofuran	6,200	NA		160 J	420 J		
Di-N-Butyl Phthalate	810	NA		4,400			
Fluoranthene	50,000***	200 - 166,000	1,100	11,000	19,000	4,400	1,000
Fluorene	50,000***	NA		340 J	720		
Indeno(1,2,3-C,D)Pyrene	NA	8,000 - 61,000		2,600	2,800	720	
Naphthalene	13,000	NA			210 J		
Phenanthrene	50,000***	NA	430	5,000	12,000	2,100	590 J
Phenol	30or MDL	NA		160 J			
Pyrene	50,000***	145 - 147,000	620	7,700	15,000	2,700	740 J
Total SVOCs	500,000***	NA	5,020	71,330	90,240	21,700	3,120
Total BaP Equivalent(5)	NA	NA	363	6,785	8,966	2,046	394
TAL Metals (mg/kg)							
Aluminum	SB	33,000	4,710 J	9,100 J	7,160 J	7,330 J	7,190 J
Arsenic	7.5 or SB	3-12 **	6.4	***12.4***	8.7	7.1	10.2
Barium	300 or SB	15-600	44.4 J	97.6 J	88.5 J	75.6 J	76.3 J
Beryllium	0.16 or SB	0-1.75	0.25	0.44	0.29	0.41	0.32
Cadmium	1 or SB	0.1-1	0.24	***1.5***		0.39	
Calcium	SB	130 - 35,000 ***	10,700 J	4,390 E	14,400 J	19,500 J	9,760 J
Chromium, Total	10 or SB	1.5 - 40 **	11.4	21.9	8.4	***115***	10.9
Cobalt	30 or SB	2.5 - 60 **	4.3	9	6.3	5.3	7.3
Copper	25 or SB	1 - 50	35.7 J	***87.8 J***	32.1 J	***58.6 J***	38.7 J
Iron	2,000 or SB	2,000 - 550,000	13,600 J	23,900 J	17,100 J	18,600 J	18,200 J
Lead	400 (4)	****	78.3 J	93.9 J	24.5 J	484 J	33.3 J
Magnesium	SB	100 - 5,000	3,560 J	3,090 J	4,210 J	3,530 J	4,460 J
Manganese	SB	50 - 5,000	413 J	892 J	710 J	482 J	547 J
Nickel	13 or SB	0.5 -25	14.7	***27.6***	13.5	15.6	17.9
Potassium	SB	8,500 - 43,000 **	542	885	782	697	992
Vanadium	150 or SB	1-300	8.9	17.4	10.6	13	10.4
Zinc	20 or SB	9-50	***110 J***	***602 J***	***84.2 J***	***176 J***	***89.7 J***
Mercury	0.1 or SB	0.001 - 0.2	0.038	0.137	0.036	0.06	0.027

TABLE 2-1 (cont'd)
SUMMARY OF ANALYTICAL RESULTS - SURFACE SOILS
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.
Blank space indicates analyte was not detected.
Shaded and framed concentrations exceed TAGM values.
Bold/Italic values exceed upper limits of urban background concentrations.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.
(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.
(4) USEPA Region 3 Soil Screening Level.
(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** New York State background concentration.*
**** - The Soil Cleanup Objective refers to the sum of these compounds.*
J - Indicates an estimated value.
NA - Not Applicable or Not Available.

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TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOILS
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	**NYSDEC TAGM 4046(1)**	**Urban Background Concentrations(2)(3)**	**MW-1 6-8' 01/25/2005**	**MW-2 2-6' 01/25/2005**	**MW-3 6-8' 01/26/2005**	**SOIL DUP-1 (MW-3) 01/26/2005**	**MW-4 7.5-8' 01/25/2005**	**MW-5 (4-6) 01/26/2005**	**TP-9 4-4.5' 01/27/2005**	**TP-11 6.5-7.0' 01/28/2005**
Volatile Organic Compounds - VOCs (ug/kg)										
Acetone	200	NA			33				28 J	73
Carbon Disulfide	2,700	NA							2 J	1 J
Cyclohexane	NA	NA				21				
Dichlorodifluoromethane	NA	NA								2 J
Isopropylbenzene (Cumene)	NA	NA			2 J	25				
Methyl Ethyl Ketone (2-Butanone)	NA	NA			8 J					14 J
Methylcyclohexane	NA	NA				170				
Methylene Chloride	100	NA					21 J			7
Total VOCs	10,000	NA			43	216	21		30	97
Semi-Volatile Organic Compounds - SVOCs (ug/kg)										
Acenaphthene	50,000***	NA							1,100 J	
Anthracene	50,000***	NA							2,200	
Benzo(A)Anthracene	224or MDL	169 -59,000	460	500					3,000	
Benzo(A)Pyrene	61	165 - 220	***480***	***500***					***2,400***	
Benzo(B)Fluoranthene	1,100	15,000 - 62,000	440 J	420 J					2,100 J	
Benzo(G,H,I)Perylene	50,000***	900 - 47,000	310 J	370 J					1,700 J	
Benzo(K)Fluoranthene	1,100	300 - 26,000	340 J	390					1,800 J	
Bis(2-Ethylhexyl) Phthalate	50,000***	NA		220 J						
Carbazole	NA	NA							760 J	
Chrysene	400	251 - 640	560	580					***3,100***	
Dibenzofuran	6,200	NA							720 J	
Di-N-Octylphthalate	50,000***	NA			67 J			36 J		
Fluoranthene	50,000***	200 - 166,000	1,200	1,200			290 J		7,600	
Fluorene	50,000***	NA							1,300 J	
Indeno(1,2,3-C,D)Pyrene	NA	8,000 - 61,000	290 J	320 J						
Phenanthrene	50,000***	NA	880	720			300 J		8,200	
Pyrene	50,000***	145 - 147,000	1,000	930			230 J		5,900	
Total SVOCs	500,000***	NA	5,960	6,150	67		820	36	41,880	
Total BaP Equivalent(5)	NA	NA	608	634	0		0	0	2,959	
Petroleum Products - Method 310.13 (mg/kg)										
Fuel Oil #2	NA	NA	--	--	35	26	--	--	--	--

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.
Blank space indicates analyte was not detected.
-- Indicates sample was not analyzed for this parameter.
Shaded and framed concentrations exceed TAGM values.
Bold/Italic values exceed upper limits of urban background concentrations.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.
US Dept. of Health and Human Services, August 1995.
(4) USEPA Region 3 Soil Screening Level.

(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** New York State background concentration.*
**** - The Soil Cleanup Objective refers to the sum of these compounds.*
J - Indicates an estimated value.
NA - Not Applicable or Not Available.

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOILS
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046(1)	Urban Background Concentrations(2)(3)	MW-1 6-8' 01/25/2005	MW-2 2-6' 01/25/2005	MW-3 6-8' 01/26/2005	SOIL DUP-1 (MW-3) 01/26/2005	MW-4 7.5-8' 01/25/2005	MW-5 (4-6) 01/26/2005	TP-9 4-4.5' 01/27/2005	TP-11 6.5-7.0' 01/28/2005
TAL Metals (mg/kg)										
Aluminum	SB	33,000	7,490 J	11,000 J	5,500 J	5,850 J	7,120 J	8,010 J	4,710 J	8,730 J
Arsenic	7.5 or SB	3-12 **	9.4	***12.2***	4.1	4.3	7.7	7.9	6.9	***16.2 J***
Barium	300 or SB	15-600	209	214	70.4 J	72.3 J	57.9	103 J	202	81.5
Beryllium	0.16 or SB	0-1.75	0.38	1.1	0.57	0.55	0.37	0.29	0.31	0.36
Cadmium	1 or SB	0.1-1	0.39	0.33					0.36	0.24
Calcium	SB	130 - 35,000 ***	5,920 J	***70,400 J***	3,100 J	3,120 J	30,900 J	5,490 J	25,200 J	11,100 J
Chromium, Total	10 or SB	1.5 - 40 **	10.6 J	14.2 J	6	5.8	8.5 J	9.2	6.5	11.9
Cobalt	30 or SB	2.5 - 60 **	5.3	6.4	4.3	5.3	5.8	6.7	4	8.4
Copper	25 or SB	1 - 50	***50.7 J***	***68.1 J***	48.9 J	***56.1 J***	25.5 J	36.3 J	25.4 J	37.8 J
Iron	2,000 or SB	2,000 - 550,000	13,800 J	19,700 J	8,910 J	9,240 J	14,700 J	17,300 J	13,200	22,300 J
Lead	400 (4)	****	239 J	144 J	22.3 J	25.9 J	23.4 J	37.8 J	94.8 J	107 J
Magnesium	SB	100 - 5,000	2,340 J	3,790 J	1,130 J	1,230 J	***7,810 J***	2,780 J	2,880 J	4,750 J
Manganese	SB	50 - 5,000	479 J	911 J	312 J	338 J	655 J	858 J	353	488 J
Nickel	13 or SB	0.5 -25	13	16.6	18.8	21.2	13.1	14.7	9.3	19.1
Potassium	SB	8,500 - 43,000 **	763	1,210	460	439	957	900	675	874
Sodium	SB	6,000 - 8,000		281					161	
Vanadium	150 or SB	1-300	12.3	18.5	10.7	11.6	10.2	11.9	8.4	13.3
Zinc	20 or SB	9-50	***185 J***	***126 J***	***78.5 J***	***88.4 J***	***62 J***	***60.7 J***	***131 J***	***104***
Mercury	0.1 or SB	0.001 - 0.2	***0.2 J***	***0.421 J***	0.11	0.118		***0.208***	0.185	0.158
PCBs										
PCBs	10.0 Subsurface	NA	--	--				--	--	--

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.
Blank space indicates analyte was not detected.
-- Indicates sample was not analyzed for this parameter.
Shaded and framed concentrations exceed TAGM values.
Bold/Italic values exceed upper limits of urban background concentrations.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.
(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.
(4) USEPA Region 3 Soil Screening Level.
(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** New York State background concentration.*
**** - The Soil Cleanup Objective refers to the sum of these compounds.*
J - Indicates an estimated value.
NA - Not Applicable or Not Available.

TABLE 2-3
LCS, Inc. JULY 2004 VOC SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

VOC SOIL DATA - ASP00 METHOD 8260

Compound	BH44 (6-8) 7/7/2004 ug/kg	BH46 (4-6) 7/7/2004 ug/kg	BH47 (10-12) 7/7/2004 ug/kg	DUPLICATE[1] BH47 (10-12) 7/7/2004 ug/kg	BH49 (10-12) 7/7/2004 ug/kg	BH50 (10-12) 7/7/2004 ug/kg	BH56 (2-4) 7/8/2004 ug/kg	BH57 (12-14) 7/8/2004 ug/kg	BH58 (6-8) 7/8/2004 ug/kg	TAGM Recommended Soil Cleanup Objectives ug/kg
2-Butanone	11 U	4 J	1500 U	2000 U	12 U	4 J	11 U	12 U	12 J	300
Acetone	11 U	12	1500 U	2000 U	4 J	8 J	10 J	**11 U**	42	200
Benzene	11 U	11 U	1500 U	2000 U	12 U	12 U	11 U	12 U	13 U	60 or MDL
Carbon Disulfide	11 U	2 J	1500 U	2000 U	12 U	12 U	11 U	1 J	13 U	2,700
Cyclohexane	11 U	11 U	1500 U	580 J	12 U	12 U	11 U	12 U	13 U	NL
Dichlorodifluoromethane	11 U	11 U	1500 U	2000 U	12 U	12 U	11 U	12 U	2 J	NL
Ethylbenzene	11 U	6 J	1500 U	2000 U	12 U	12 U	11 U	12 U	13 U	5,500
Isopropylbenzene	11 U	11 U	1500 U	880 J	12 U	12 U	11 U	12 U	13 U	2,300
Methylcyclohexane	11 U	11 U	1500 U	**2900**	12 U	12 U	11 U	12 U	13 U	NL
Methylene chloride	**11 UJ**	**13 UJ**	**1500 UJ**	**2000 UJ**	**12 UJ**	**16 UJ**	**11 UJ**	11 J	**13 UJ**	100
Toluene	11 U	3 J	1500 U	2000 U	12 U	12 U	11 U	12 U	13 U	1,500
Total Xylenes	11 U	32	1500 U	2000 U	12 U	12 U	11 U	12 U	13 U	1,200
Vinyl chloride	11 U	11 U	1500 U	2000 U	12 U	12 U	11 U	12 U	13 U	200
TICs	77 BJN	290 JN	170,000 JN	215,000 JN	14 BJN	13 BJN	15 BJN	252 JN	19 BJN	10,000*

Compound	BH59 (8-10) 7/8/2004 ug/kg	TP1 (3-5) 7/14/2004 ug/kg	TP2 (0.3-3) 7/14/2004 ug/kg	TP3 (4-6) 7/14/2004 ug/kg	TP5 (6-8) 7/14/2004 ug/kg	TP6 (5-7) 7/14/2004 ug/kg	TP7 (7-9) 7/14/2004 ug/kg	TP8 (2-4) 7/14/2004 ug/kg	DUPLICATE 3 TP8 (2-4) 7/14/2004 ug/kg	TAGM Recommended Soil Cleanup Objectives ug/kg
2-Butanone	6 J	29	39	38	11 U	5 J	12 J	7 J	10 U	300
Acetone	13	100 B	140 B	120 B	11 **U**	21 **U**	36 **U**	36	**10 U**	200
Benzene	11 U	13 U	12 U	12 U	11 U	13 U	14 U	10 U	10 U	60 or MDL
Carbon Disulfide	11 U	13 U	2 J	12 U**J**	1 J	13 U**J**	14 U**J**	2 J	1 J	2,700
Cyclohexane	11 U	13 U	12 U	12 U	11 U	13 U	14 U	10 U	10 U	NL
Dichlorodifluoromethane	11 U	3 J	2 J	12 U	11 U	4 J	14 U	10 U	10 U	NL
Ethylbenzene	11 U	13 U	12 U	12 U	11 U	13 U	14 U	10 U	10 U	5,500
Isopropylbenzene	11 U	13 U	12 U	12 U	11 U	13 U	14 U	10 U	10 U	2,300
Methylcyclohexane	11 U	13 U	12 U	12 U	2 J	13 U	14 U	10 U	10 U	NL
Methylene chloride	**11 UJ**	**13 U**	13 **U**	15 **U**	13 **U**	**13 U**	**14 U**	12 **U**	10 **U**	100
Toluene	11 U	13 U	12 U	12 U	11 U	13 U	14 U	10 U	10 U	1,500
Total Xylenes	11 U	13 U	12 U	12 U	5 J	13 U	14 U	10 U	10 U	1,200
Vinyl chloride	11 U	13 U	1 J	12 U	11 U	13 U	14 U	10 U	10 U	200
TICs	16 BJN	286 BJN	274 J	11 BJN	196 J	12 BJN	152 BJN	155 JN	192 JN	10,000*

ug/kg = micrograms per kilogram
TAGM Recommended Soil Cleanup Objectives = Division Technical and Administrative Guidance Memorandum No. 4046
(TAGM 4046): Determination of Soil Cleanup Objectives and Cleanup Levels and addendum (August, 2001)
STARS Memo #1 Guidance Values = Spill Technology and Remediation Series Petroleum-contaminated Soil Guidance Policy (August 1992)
NL = Not Listed
MDL = Method Detection Limit
J = Indicates an estimated value
E = Identifies compounds whose concentrations exceed the calibration range of the instrument for that particular analysis
U = Indicates compound was analyzed for, but not detected at or above the reporting limit
N = Indicates presumptive evidence of a compound. This flag is used only for Tentatively Identified Compounds, where the identification is based on the Mass Spectral library search.
It is applied to all TIC results.
B = This analyte was also detected within the laboratory's method blank and may be the result of laboratory contamination.
* = As per TAGM 4046 individual and sum of VOCs not listed, Tentatively Identified Compounds (TICs) must be <or = 10,000mg/kg

Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, to reflect adjustments to the data by the data validator.

TABLE 2-4
LCS, Inc. JULY 2004 SVOC SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

SVOC SOIL DATA - ASP00 METHOD 8270

Compound	BH43 (6-8) 7/7/2004 ug/kg	BH44 (6-8) 7/7/2004 ug/kg	BH45 (4-6) 7/7/2004 ug/kg	BH46 (4-6) 7/7/2004 ug/kg	BH47 (10-12) 7/7/2004 ug/kg	DUPLICATE[1] BH47 (10-12) 7/7/2004 ug/kg	BH48 (6-8) 7/7/2004 ug/kg	BH49 (10-12) 7/7/2004 ug/kg	BH50 (10-12) 7/7/2004 ug/kg	BH51 (6-8) 7/8/2004 ug/kg	BH53 (4-6) 7/8/2004 ug/kg	TAGM Recommended Soil Cleanup Objectives ug/kg
2-Methylnaphthalene	360 U	11 J	1800 U	800 J	96 J	94 J	390 U	400 U	410 U	450 J	3700 U	36,400
Acenaphthene	360 U	380 U	1800 U	3800 J	25 J	23 J	390 U	400 U	410 U	2600 J	3700 U	50,000***
Acenaphthylene	360 U	380 U	1800 U	7400 U	450 U	460 U	390 U	400 U	410 U	3500 U	3700 U	50,000***
Anthracene	360 U	380 U	1800 U	6100 J	20 J	18 J	390 U	400 U	410 U	5100	110 J	50,000***
Benzo(a)anthracene	360 U	380 U	110 J	9800	17 J	18 J	390 U	400 U	410 U	8400	500 J	224 or MDL
Benzo(a)pyrene	360 U	380 U	83 J	7500	450 U	460 U	390 U	400 U	410 U	5800	390 J	61 or MDL
Benzo(b)fluoranthene	360 U	380 U	86 J	6600 J	450 U	460 U	390 U	400 U	410 U	4000	410 J	220 or MDL
Benzo(ghi)perylene	360 U	380 U	1800 U	2600 J	450 U	460 U	390 U	400 U	410 U	3100 J	210 J	50,000***
Benzo(k)fluoranthene	360 U	380 U	53 J	7200 J	450 U	460 U	390 U	400 U	410 U	4600	280 J	220 or MDL
Biphenyl	360 U	380 U	1800 U	240 J	450 U	460 U	390 U	400 U	410 U	160 J	3700 U	NL
Bis(2-ethylhexyl) phthalate	**360 U**	**380 U**	1800 U	7400 U	**450 U**	**460 U**	**390 U**	**400 U**	**410 U**	**3500 U**	**3700 U**	50,000***
Butyl benzyl phthalate	16 J	380 U	1800 U	7400 U	450 U	460 U	390 U	400 U	410 U	3500 U	430 J	50,000***
Carbazole	360 U	380 U	1800 U	3200 J	450 U	460 U	390 U	400 U	410 U	1300 J	3700 U	NL
Chrysene	360 U	380 U	100 J	8700	15 J	15 J	390 U	400 U	410 U	7100	450 J	400
Di-n-butyl phthalate	360 U	380 U	1800 U	7400 U	450 U	14 J	390 U	400 U	410 U	3500 U	3700 U	8,100
Di-n-octyl phthalate	70 J	39 J	1800 U	7400 U	450 U	13 J	390 U	14 J	10 J	3500 U	3700 U	50,000***
Dibenzo(a,h)anthracene	360 U	380 U	1800 U	1500 J	450 U	460 U	390 U	400 U	410 U	1300 J	3700 U	14.3 or MDL
Dibenzofuran	360 U	380 U	1800 U	2500 J	18 J	17 J	390 U	400 U	410 U	1200 J	3700 U	6,200
Fluoranthene	360 U	15 J	220 J	22000	69 J	73 J	390 U	400 U	410 U	17000	880 J	50,000***
Fluorene	360 U	380 U	1800 U	3800 J	34 J	34 J	390 U	400 U	410 U	2700 J	3700 U	50,000***
Indeno(1,2,3-cd)pyrene	360 U	380 U	1800 U	2800 J	450 U	460 U	390 U	400 U	410 U	2800 J	190 J	3,200
Naphthalene	360 U	380 U	1800 U	2200 J	450 U	460 U	390 U	400 U	410 U	280 J	3700 U	13,000
Phenanthrene	360 U	12 J	70 J	21000	140 J	140 J	11 J	400 U	410 U	22000	570 J	50,000***
Pyrene	360 U	13 J	200 J	15000	63 J	63 J	390 U	400 U	410 U	16000	770 J	50,000***
TICs	200 J	0	0	13900 J	27020 JN	19810 JN	675 J	582 J	140 J	14180 J	3150 J	500,000***

ug/kg = micrograms per kilogram

TAGM Recommended Soil Cleanup Objectives = Division Technical and Administrative Guidance Memorandum No. 4046

(TAGM 4046): Determination of Soil Cleanup Objectives and Cleanup Levels and addendum (August, 2001)

NL = Not Listed

MDL = Method Detection Limit

*** = Total Semi-VOCs < 500ppm, and Individual Semi-VOCs < 50ppm

J = Indicates an estimated value.

U = Indicates compound was analyzed for, but not detected at or above the reporting limit.

B = This analyte was also detected within the laboratory's method blank and may be the result of laboratory contamination.

N = Indicates presumptive evidence of a compound. This flag is used only for Tentatively Identified Compounds, where the identification is based on the Mass Spectral library search.

It is applied to all TIC results.

= Analyte Detected above Recommended Soil Cleanup Objectives.

Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, based on the results of the data validation of the SDGs for samples collected 7/7/04 and 7/8/04.

TABLE 2-4
LCS, Inc. JULY 2004 SVOC SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

SVOC SOIL DATA - ASP00 METHOD 8270

Compound	BH57 (12-14) 7/8/2004 ug/kg	BH59 (8-10) 7/8/2004 ug/kg	TP1 (3-5) 7/14/2004 ug/kg	TP2 (0.3-3) 7/14/2004 ug/kg	TP3 (4-6) 7/14/2004 ug/kg	TP5 (6-8) 7/14/2004 ug/kg	TP6 (5-7) 7/14/2004 ug/kg	TP7 (7-9) 7/14/2004 ug/kg	TP8 (2-4) 7/14/2004 ug/kg	DUPLICATE3 TP8 (2-4) 7/14/2004 ug/kg	TAGM Recommended Soil Cleanup Objectives ug/kg
2-Methylnaphthalene	110 J	180 J	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	36,400
Acenaphthene	460	3800 U	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	50,000***
Acenaphthylene	380 U	120 J	340 U	13 J	360 U	15 J	350 U	370 U	390 U	390 U	50,000***
Anthracene	540	440 J	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	50,000***
Benzo(a)anthracene	680	1000 J	52 J	100 J	32 J	110 J	9 J	370 U	390 U	390 U	224 or MDL
Benzo(a)pyrene	390	760 J	42 J	82 J	22 J	91 J	350 U	370 U	390 U	390 U	61 or MDL
Benzo(b)fluoranthene	300 J	1000 J	29 J	79 J	22 J	60 J	15 J	370 U	390 U	390 U	220 or MDL
Benzo(ghi)perylene	140 J	270 J	35 J	62 J	14 J	67 J	350 U	370 U	390 U	390 U	50,000***
Benzo(k)fluoranthene	360 J	1400 J	46 J	53 J	15 J	94 J	350 U	370 U	390 U	390 U	220 or MDL
Biphenyl	70 J	3800 U	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	NL
Bis(2-ethylhexyl) phthalate	**380 U**	3800 U	**340 U**	**340 U**	**360 U**	**350 U**	**350 U**	**370 U**	**390 U**	**390 U**	50,000***
Butyl benzyl phthalate	1900	3800 U	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	50,000***
Carbazole	220 J	3800 U	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	NL
Chrysene	820	860 J	47 J	94 J	31 J	98 J	10 J	370 U	390 U	390 U	400
Di-n-butyl phthalate	44 J	100 J	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	8,100
Di-n-octyl phthalate	28 J	3800 U	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	50,000***
Dibenzo(a,h)anthracene	75 J	130 J	9 J	18 J	360 U	19 J	350 U	370 U	390 U	390 U	14.3 or MDL
Dibenzofuran	370 J	120 J	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	6,200
Fluoranthene	1600	1700 J	78 J	160 J	61 J	180 J	19 J	13 J	21 J	390 U	50,000***
Fluorene	500	290 J	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	50,000***
Indeno(1,2,3-cd)pyrene	150 J	270 J	29 J	52 J	12 J	57 J	350 U	370 U	390 U	390 U	3,200
Naphthalene	90 J	170 J	340 U	340 U	360 U	350 U	350 U	370 U	390 U	390 U	13,000
Phenanthrene	2000	1900 J	15 J	27 J	10 J	27 J	350 U	370 U	390 U	390 U	50,000***
Pyrene	1300	1600 J	87 J	180 J	60 J	200 J	16 J	12 J	16 J	390 U	50,000***
TICs	2862 J	0	0	0	0	0	4360 JN	0	0	0	500,000***

ug/kg = micrograms per kilogram
TAGM Recommended Soil Cleanup Objectives = Division Technical and Administrative Guidance Memorandum No. 4046
(TAGM 4046): Determination of Soil Cleanup Objectives and Cleanup Levels and addendum (August, 2001)
NL = Not Listed
MDL = Method Detection Limit
*** = Total Semi-VOCs < 500ppm, and Individual Semi-VOCs < 50ppm
J = Indicates an estimated value.
U = Indicates compound was analyzed for, but not detected at or above the reporting limit.
B = This analyte was also detected within the laboratory's method blank and may be the result of laboratory contamination.
N = Indicates presumptive evidence of a compound. This flag is used only for Tentatively Identified Compounds, where the identification is based on the Mass Spectral library search.
It is applied to all TIC results.
= Analyte Detected above Recommended Soil Cleanup Objectives.

Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, to reflect adjustments to the data by the data validator.

TABLE 2-5
LCS, Inc. JULY 2004 METALS SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

METALS SOIL DATA - ASP00 METHODS 6010/7470/7471

Compound	BH42 (0-2) 7/7/2004 mg/kg	BH42 (6-8) 7/7/2004 mg/kg	BH44 (0-2) 7/7/2004 mg/kg	BH44 (6-8) 7/7/2004 mg/kg	BH45 (0-2) 7/7/2004 mg/kg	BH45 (4-6) 7/7/2004 mg/kg	BH46 (0-2) 7/7/2004 mg/kg	BH46 (4-6) 7/7/2004 mg/kg	Eastern USA Background Concentrations mg/kg	NYSDEC Guidance Value mg/kg
Aluminum - Total	6400 J	8300 J	8350 J	9400 J	10900 J	12500 J	6940 J	7790 J	33,000	SB
Antimony - Total	0.42 J	0.63 J	0.66 BJ	0.42 UJ	0.52 BJ	0.43 UJ	0.48 J	0.51 BJ	NA	SB
Arsenic - Total	8.8 J	20.2 J	11.3 J	9.4 J	9 J	10.1 J	8.8 J	7.1 J	3-12**	7.5 or SB
Barium - Total	90.7 J	79.8 J	100 J	147 J	83.3 J	197 J	119 J	109 J	15-600	300 or SB
Beryllium - Total	0.29 J	0.35 J	0.39 J	0.36 B	0.5 J	0.46 J	0.4 B	0.46 J	0-1.75	0.16 or SB
Cadmium - Total	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.06 B	0.04 U	0.1-1	1 or SB
Calcium - Total	28300 J	1060 J	19400 J	2050 J	11300 J	2460 J	15100 J	42900 J	130-35,000**	SB
Chromium - Total	7.6 J	9.1 J	11.3 J	9.8 J	12.1 J	10.7 J	14.6 J	13.4 EJ	1.5-40**	10 or SB
Cobalt - Total	5.9 J	7.1 J	7.4 J	6.6 J	9 J	7.6 J	6.1 J	5.4 BEJ	2.5-60**	30 or SB
Copper - Total	10.6	20.2	36.6	22.1	23.4	10.8	45.8	117	1-50	25 or SB
Iron - Total	16300 J	19900 J	22800 J	17800 J	21200 J	16300 J	16800 J	18700 J	2,000-550,000	2,000 or SB
Lead - Total	9.3	17	67.7	84.1	28.7	18.7	136	107	***	SB**
Magnesium - Total	2440 J	2440 J	7310 J	2530 J	4410 J	1920 J	4260 J	4320 J	100-5,000	SB
Manganese - Total	746 J	551 J	790 J	373 J	530 J	900 J	495 J	683 J	50-5,000	SB
Mercury - Total	0.008 U	0.007 U	0.098	0.153	0.045	0.032	0.274	0.167 J	0.001-0.2	0.1
Nickel - Total	12.9 J	16.8 J	17.5 J	14.2 J	19.6 J	12 J	14.3 J	12.6 J	0.5-25	13 or SB
Potassium - Total	808 J	726 J	1010 J	807 J	1290 J	1040 J	958 J	1040 J	8,500-43,000**	SB
Selenium - Total	0.53 U	0.51 U	0.53 U	0.54 U	0.52 U	0.55 U	0.55 U	0.54 U	0.1-3.9	2 or SB
Silver - Total	0.13 UJ	0.12 UJ	0.13 UJ	0.16 J	0.13 UJ	0.14 J	0.18 J	0.19 J	NA	SB
Sodium - Total	562	190 J	205 J	163 J	642	366 J	79.5 J	148 J	6,000-8,000	SB
Vanadium - Total	9.1 J	11.4 J	13.5 J	13.3 J	15.6 J	18.9 J	11.7 J	13 J	1-300	150 or SB
Zinc - Total	37.3 J	**51.4** J	**79.6** J	**62.1** J	**64.1** J	**58.4 J**	**109** J	**106** J	9-50	20 or SB

mg/kg = milligrams per kilogram
NYSDEC Guidance Values = Division Technical and Administrative Guidance Memorandum No. 4046
(TAGM) 4046): Determination of Soil Cleanup Objectives and Cleanup Levels (August, 2001)
SB = Site Background Levels
NA = Not Available
* = Indicates analysis is not within the quality control limits.
** = New York State Background
*** = Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61ppm.
Average background levels in metropolitan or suburban areas, or near highways, typically range from 200-500ppm.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
E = Indicates a value estimated or not reported due to the presence of interferences.
N = Indicates spike sample recovery is not within the quality control limits.
U = Indicates element was analyzed for, but not detected at or above the reporting limit.
[shaded cell] = Analyte detected above Eastern USA and Recommended Soil Cleanup Objectives
Bold = Indicates analyte appears present at an elevated site background concentration.

Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, to reflect adjustments to the data by the data validator.

TABLE 2-5
LCS, Inc. JULY 2004 METALS SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

METALS SOIL DATA - ASP00 METHODS 6010/7470/7471

Compound	BH47 (0-2) 7/7/2004 mg/kg	BH47 (10-12) 7/7/2004 mg/kg	DUPLICATE[1] BH47 (10-12) mg/kg	BH48 (0-2) 7/7/2004 mg/kg	BH48 (6-8) 7/7/2004 mg/kg	BH49 (0-2) 7/7/2004 mg/kg	BH51 (0-2) 7/8/2004 mg/kg	BH54 (6-8) 7/8/2004 mg/kg	Eastern USA Background Concentrations mg/kg	NYSDEC Guidance Value mg/kg
Aluminum - Total	9250 J	7230 J	6980 J	9420 J	9720 J	10900 J	12000 J	9450 J	33,000	SB
Antimony - Total	0.4 UJ	0.53 UJ	0.52 BJ	0.43 BJ	0.47 BJ	0.43 BJ	0.4 UJ	0.43 UJ	NA	SB
Arsenic - Total	10 J	8 J	10.2 J	9 J	9.1 J	8.2 J	10 J	9.5 J	3-12**	7.5 or SB
Barium - Total	75.8 J	80.5 J	71.8 J	82.1 J	100 J	171 J	73.6 J	104 J	15-600	300 or SB
Beryllium - Total	0.45 B	0.33 J	0.34 J	0.43 J	0.42 BJ	0.48 J	0.49 J	0.42 J	0-1.75	0.16 or SB
Cadmium - Total	0.04 U	0.05 U	0.07 J	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.1-1	1 or SB
Calcium - Total	5830 J	2090 J	2160 J	5700 J	2700 J	1560 J	1740 J	28800 J	130-35,000**	SB
Chromium - Total	13.4 J	8 J	8.1 J	11.3 J	10.6 J	12.4 J	12.2 J	10.6 J	1.5-40**	10 or SB
Cobalt - Total	7.6 J	4.7 J	5.1 J	7.4 J	7.2 J	7.9 J	9.7 J	7.7 J	2.5-60**	30 or SB
Copper - Total	28.7	27.7	48.8	31.4	24.4	16.6	23.8 J	29.1 J	1-50	25 or SB
Iron - Total	19500 J	11900 J	13300 J	19400 J	18600 J	21100 J	22800 J	21000 J	2,000-550,000	2,000 or SB
Lead - Total	19.9	23.1	54.5	28.3	57.4	16.7	17.7	24.4	***	SB**
Magnesium - Total	3910 J	1800 J	1960 J	2940 J	2730 J	2770 J	3250 J	8190 J	100-5,000	SB
Manganese - Total	459 J	206 J	211 J	474 J	518 J	633 J	608 J	687 J	50-5,000	SB
Mercury - Total	0.007 U	0.018 J	0.038	0.007 U	0.1	0.019	0.007 U	0.008 U	0.001-0.2	0.1
Nickel - Total	17 J	11.5 J	12.3 J	16.9 J	15.6 J	18.2 J	20.6 J	17.7 J	0.5-25	13 or SB
Potassium - Total	1060 J	749 J	795 J	1030 J	1120 J	916 J	1140 J	1410 J	8,500-43,000**	SB
Selenium - Total	0.51 U	0.68 U	0.66 U	0.53 U	0.57 U	0.54 U	0.52 U	0.55 U	0.1-3.9	2 or SB
Silver - Total	0.12 UJ	0.23 J	0.2 J	0.13 UJ	0.3 J	0.13 UJ	0.13 UJ	0.13 UJ	NA	SB
Sodium - Total	52.4 BJ	111 J	117 J	36.3 J	67.6 J	77.4 J	53.5 J	86.4 J	6,000-8,000	SB
Vanadium - Total	13.2 J	10.4 J	10.4 J	13.4 J	13.9 J	17.7 J	16.8 J	12.8 J	1-300	150 or SB
Zinc - Total	**52.6** J	**65.3** J	106 J	**70.6** J	**64.9** J	**50.7** J	**57.2** J	**84.3** J	9-50	20 or SB

mg/kg = milligrams per kilogram
NYSDEC Guidance Values = Division Technical and Administrative Guidance Memorandum No. 4046
(TAGM) 4046): Determination of Soil Cleanup Objectives and Cleanup Levels (August, 2001)
SB = Site Background Levels
NA = Not Available
* = Indicates analysis is not within the quality control limits.
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*** = Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61ppm.
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Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, to reflect adjustments to the data by the data validator.

TABLE 2-5
LCS, Inc. JULY 2004 METALS SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

METALS SOIL DATA - ASP00 METHODS 6010/7470/7471

Compound	BH57 (12-14) 7/8/2004 mg/kg	BH59 (0-2) 7/8/2004 mg/kg	BH59 (8-10) 7/8/2004 mg/kg	TP1 (0.3-3) 7/14/2004 mg/kg	TP1 (3-5) 7/14/2004 mg/kg	TP2 (0.3-3) 7/14/2004 mg/kg	TP2 (5-7) 7/14/2004 mg/kg	TP3 (4-6) 7/14/2004 mg/kg	Eastern USA Background Concentrations mg/kg	NYSDEC Guidance Value mg/kg
Aluminum - Total	7010 J	6560 J	8240 J	6860	3680	8740	13500	9040	33,000	SB
Antimony - Total	0.44 UJ	0.43 UJ	0.45 UJ	5.6 J	4.5 J	4 J	0.54 UJ	0.7 J	NA	SB
Arsenic - Total	14.8 J	7.6 J	7.8 J	17.5 J	24.1 J	13.9 J	5.4 J	13.9 J	3-12**	7.5 or SB
Barium - Total	137 J	499 J	111 J	2010	69.5	486	324	207	15-600	300 or SB
Beryllium - Total	0.27 J	0.62	0.63	0.66	0.49 J	0.63	0.4 J	0.41 J	0-1.75	0.16 or SB
Cadmium - Total	0.04 U	0.04 U	0.04 U	1.4	0.04 U	0.91	0.12 J	0.04 J	0.1-1	1 or SB
Calcium - Total	1750 J	18700 J	7500 J	6190	2290	8690	3920	2820	130-35,000**	SB
Chromium - Total	7.8 J	9.2 J	12.2 J	20.7	25.1	18.9	12.7	9.8	1.5-40**	10 or SB
Cobalt - Total	8.3 J	5.5 BJ	6.1 J	8.9	12	10.3	5.2 J	8.4	2.5-60**	30 or SB
Copper - Total	49 J	177 J	54.2 J	378	81.4	299	18.9	17.6	1-50	25 or SB
Iron - Total	16000 J	17100 J	14800 J	54100	153000	52900	15300	23600	2,000-550,000	2,000 or SB
Lead - Total	13.7	83.3	71.4	819	102	458	17.4	47.6	***	SB**
Magnesium - Total	2390 J	3110 J	2340 J	1830	600	4030	2310	2530	100-5,000	SB
Manganese - Total	1660 J	430 J	341 J	589	844	638	645	4130	50-5,000	SB
Mercury - Total	0.008 U	0.007 U	0.061	1.1 J	0.239 J	0.223 J	0.16 J	0.445 J	0.001-0.2	0.1
Nickel - Total	14.4 J	11.7 J	14.3 J	40.2	27	173	12.8	13.9	0.5-25	13 or SB
Potassium - Total	718 J	1250 J	977 J	913	547	732	1310	855	8,500-43,000**	SB
Selenium - Total	0.56 U	0.55 U	0.57 U	0.6 UJ	0.49 U	0.57 UJ	0.69 UJ	0.75 J	0.1-3.9	2 or SB
Silver - Total	0.14 UJ	0.19 J	0.14 UJ	0.54 J	0.37 J	0.29 J	0.17 UJ	0.13 UJ	NA	SB
Sodium - Total	253 J	395 J	112 J	511 J	225 J	462 J	362 J	226 J	6,000-8,000	SB
Vanadium - Total	10.2 J	15.2 J	15 J	19	54.4	22.5	16.3	16.2	1-300	150 or SB
Zinc - Total	**63.9** J	**85.5** J	**70.8** J	860	81.4	889	65.8	61.3	9-50	20 or SB

mg/kg = milligrams per kilogram
NYSDEC Guidance Values = Division Technical and Administrative Guidance Memorandum No. 4046

(TAGM) 4046): Determination of Soil Cleanup Objectives and Cleanup Levels (August, 2001)

SB = Site Background Levels
NA = Not Available
* = Indicates analysis is not within the quality control limits.
** = New York State Background
*** = Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61ppm. Average background levels in metropolitan or suburban areas, or near highways, typically range from 200-500ppm.
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= Analyte detected above Eastern USA and Recommended Soil Cleanup Objectives
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Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, to reflect adjustments to the data by the data validator.

TABLE 2-5
LCS, Inc. JULY 2004 METALS SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

METALS SOIL DATA - ASP00 METHODS 6010/7470/7471

Compound	TP5 (6-8) 7/14/2004 mg/kg	TP6 (5-7) 7/14/2004 mg/kg	TP7 (0.3-3) 7/14/2004 mg/kg	TP7 (7-9) 7/14/2004 mg/kg	TP8 (0-2) 7/14/2004 mg/kg	TP8 (2-4) 7/14/2004 mg/kg	DUPLICATE 3 TP8 (2-4) mg/kg	Eastern USA Background Concentrations mg/kg	NYSDEC Guidance Value mg/kg
Aluminum - Total	6430	8320	8450	8700	10700	11800	12800	33,000	SB
Antimony - Total	0.41 J	0.51 J	0.71 J	0.42 UJ	0.4 UJ	0.44 UJ	0.48 J	NA	SB
Arsenic - Total	9.1 J	9.8 J	8.3 J	4 J	9.6 J	10.7 J	10.4 J	3-12**	7.5 or SB
Barium - Total	124	112	89.6	138	101	176	233	15-600	300 or SB
Beryllium - Total	0.35 J	0.44 J	0.47 J	0.3 J	0.48 J	0.48 J	0.6 J	0-1.75	0.16 or SB
Cadmium - Total	0.36 J	0.04 U	0.04 U	0.04 U	0.04 U	0.22 J	0.18 J	0.1-1	1 or SB
Calcium - Total	47100	17600	8880	2010	9570	6660	9660	130-35,000**	SB
Chromium - Total	12.8	12.5	9.9	9.6	11.7	14.5	15	1.5-40**	10 or SB
Cobalt - Total	4.4 J	8.1	6.5	4.6 J	7.8	8	8.6	2.5-60**	30 or SB
Copper - Total	46.8	26.9	36.3	12.1	27.3	42.6	47.4	1-50	25 or SB
Iron - Total	15700	19300	18300	12200	19400	20500	20400	2,000-550,000	2,000 or SB
Lead - Total	91.6	189	240	28	37.2	184	176	***	SB**
Magnesium - Total	7520	4000	3250	1980	3250	3680	3910	100-5,000	SB
Manganese - Total	360	450	478	202	612	711	783	50-5,000	SB
Mercury - Total	0.045 J	0.304 J	0.21 J	0.043 J	0.051 J	0.17 J	0.221 J	0.001-0.2	0.1
Nickel - Total	13.3	17.3	14.6	11.1	16.5	20.1	19.2	0.5-25	13 or SB
Potassium - Total	876	1090	1100	766	955	1120	1580	8,500-43,000**	SB
Selenium - Total	0.52 UJ	0.5 UJ	0.53 UJ	0.54 UJ	0.51 UJ	0.57 UJ	0.58 UJ	0.1-3.9	2 or SB
Silver - Total	0.13 U	1.7	0.14 J	0.13 U	0.12 U	0.16 J	0.14 U	NA	SB
Sodium - Total	186 J	97.9 J	142 J	577	66.1 J	126 J	257 J	6,000-8,000	SB
Vanadium - Total	11.1	12.8	14.6	13	16.5	18.1	17.8	1-300	150 or SB
Zinc - Total	517	108	75.5	71.9	78.3	185	170	9-50	20 or SB

MG/KG = MILLIGRAMS PER KILOGRAM
NYSDEC Guidance Values = Division Technical and Administrative Guidance Memorandum No. 4046
(TAGM) 4046): Determination of Soil Cleanup Objectives and Cleanup Levels (August, 2001)
SB = Site Background Levels
NA = Not Available
* = Indicates analysis is not within the quality control limits.
** = New York State Background
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= Analyte detected above Eastern USA and Recommended Soil Cleanup Objectives
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TABLE 2-6
LCS, Inc. JULY 2004 CYANIDE AND pH SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

CYANIDE SOIL DATA - ASP00 METHOD 9012

Compound	BH42 (0-2) 7/7/2004 ug/kg	BH42 (6-8) 7/7/2004 ug/kg	BH43 (6-8) 7/7/2004 ug/kg	BH44 (0-2) 7/7/2004 ug/kg	BH44 (6-8) 7/7/2004 ug/kg	BH45 (0-2) 7/7/2004 ug/kg	BH45 (4-6) 7/7/2004 ug/kg	BH46 (0-2) 7/7/2004 ug/kg	BH46 (4-6) 7/7/2004 ug/kg	BH47 (0-2) 7/7/2004 ug/kg	Eastern USA Background Concentrations ug/kg	NYSDEC Guidance Value ug/kg
Cyanide - Total	4016 U	3670 U	NT	4202 U	4396 U	3891 U	4090 U	4000 U	4292 U	4000 U	NA	***
Leachable pH	NT	7.48	7.6	NT	7.88	NT	6.62	NT	11	NT	NA	NA

Compound	BH47 (10-12) 7/7/2004 ug/kg	DUPLICATE[1] BH47 (10-12) ug/kg	BH48 (0-2) 7/7/2004 ug/kg	BH48 (6-8) 7/7/2004 ug/kg	BH49 (0-2) 7/7/2004 ug/kg	BH49 (10-12) 7/7/2004 ug/kg	BH50 (10-12) 7/7/2004 ug/kg	BH51 (0-2) 7/8/2004 ug/kg	BH51 (6-8) 7/8/2004 ug/kg	BH53 (4-6) 7/8/2004 ug/kg	Eastern USA Background Concentrations ug/kg	NYSDEC Guidance Value ug/kg
Cyanide - Total	4000 U	4000 U	4000 U	4000 U	4000 U	NT	NT	3976 U	NT	NT	NA	***
Leachable pH	7.29	7.15	NT	7.3	NT	7.88	7.19	NT	7.72	7.67	NA	NA

Compound	BH54 (6-8) 7/8/2004 ug/kg	BH57 (12-14) 7/8/2004 ug/kg	BH58 (6-8) 7/8/2004 ug/kg	BH59 (0-2) 7/8/2004 ug/kg	BH59 (8-10) 7/8/2004 ug/kg	TP1 (0.3-3) 7/14/2004 ug/kg	TP1 (3-5) 7/14/2004 ug/kg	TP2 (0.3-3) 7/14/2004 ug/kg	TP2 (5-7) 7/14/2004 ug/kg	TP3 (4-6) 7/14/2004 ug/kg	Eastern USA Background Concentrations ug/kg	NYSDEC Guidance Value ug/kg
Cyanide - Total	4515 U	3899 U	NT	4219 U	4386 U	4938 U	3839 U	10400	5000 U	3810 U	NA	***
Leachable pH	8.43	8.31	7.44	NT	7.63	NT	5.42	7.51	NT	6.5	NA	NA

Compound	TP5 (6-8) 7/14/2004 ug/kg	TP6 (5-7) 7/14/2004 ug/kg	TP7 (0.3-3) 7/14/2004 ug/kg	TP7 (7-9) 7/14/2004 ug/kg	TP8 (0-2) 7/14/2004 ug/kg	TP8 (2-4) 7/14/2004 ug/kg	DUPLICATE 3 TP8 (2-4) ug/kg	Eastern USA Background Concentrations ug/kg	NYSDEC Guidance Value ug/kg
Cyanide - Total	4357 U	4065 U	4329 U	3945 U	3752 U	4566 U	4237 U	NA	***
Leachable pH	9.51	7.51	NT	6.74	NT	7.44	7.41	NA	NA

ug/kg = micrograms per kilogram
NYSDEC Guidance Values = Division Technical and Administrative Guidance Memorandum No. 4046
(TAGM) 4046): Determination of Soil Cleanup Objectives and Cleanup Levels (August, 2001)
NA = Not Available
NT = Not tested
U = Indicates element was analyzed for, but not detected at or above the reporting limit
*** = Some forms of Cyanide are complex and very stable while other forms are pH dependent and hence are very unstable.
Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objective.

TABLE 2-7
LCS, Inc. JULY 2004 PESTICIDES/HERBICIDES SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

PESTICIDES SOIL DATA - ASP00 METHOD 8081

Compound	BH44 (6-8) 7/7/2004 ug/kg	BH45 (4-6) 7/7/2004 ug/kg	BH46 (4-6) 7/7/2004 ug/kg	BH48 (6-8) 7/7/2004 ug/kg	BH49 (10-12) 7/7/2004 ug/kg	BH58 (6-8) 7/8/2004 ug/kg	BH59 (8-10) 7/8/2004 ug/kg	TP2 (0.3-3) 7/14/2004 ug/kg	TP7 (7-9) 7/14/2004 ug/kg	TP8 (2-4) 7/14/2004 ug/kg	DUPLICATE 3 TP8 (2-4) 7/14/2004 ug/kg	TAGM Recommended Soil Cleanup ug/kg
4,4'-DDD	72 U	18 U	32 J	18 U	19 U	40 J	38 U	97 U	18 U	77 U	77 U	2,900
4,4'-DDE	72 U	18 U	10 J	18 U	19 U	12 J	38 U	97 U	18 U	77 U	77 U	2,100
4,4'-DDT	19 J	4.5 J	28 J	18 U	19 U	32 J	15 J	97 U	18 U	77 U	77 U	2,100
alpha-Chlordane	180 U	44 U	60 J	46 U	48 U	180 U	94 U	240 U	44 U	190 U	190 U	NL
beta-BHC	41 J	0.74 J	50 J	9.3 U	9.6 U	42 J	14 J	48 U	8.9 U	38 U	38 U	200
delta-BHC	6.7 J	8.9 U	35 J	9.3 U	9.6 U	35 U	19 U	48 U	8.9 U	38 U	38 U	300
Dieldrin	72 U	18 U	5.8 J	18 U	19 U	71 U	38 U	97 U	18 U	77 U	77 U	44
Endrin	11 J	0.81 J	72 U	18 U	19 U	14 J	8.5 J	97 U	18 U	77 U	77 U	100
Endrin aldehyde	140 UJ	35 UJ	11 J	37 U	38 U	140 UJ	5.1 J	190 U	36 U	150 U	150 U	NL
Endrin ketone	72 UJ	18 U	44 J	18 U	19 U	47 J	38 UJ	97 U	18 U	77 U	3.2 J	NL
gamma-BHC (Lindane)	36 U	0.74 J	36 U	9.3 U	9.6 U	35 U	19 U	48 U	8.9 U	38 U	38 U	60
gamma-Chlordane	180 U	44 U	50 J	46 U	48 U	180 U	94 U	240 U	44 U	190 U	190 U	540
Heptachlor	1.6 J	8.9 U	36 U	9.3 U	9.6 U	35 U	19 U	48 U	8.9 U	38 U	38 U	100
Heptachlor epoxide	36 U	8.9 U	9.4 J	9.3 U	9.6 U	35 U	19 U	48 U	8.9 U	38 U	38 U	20
Methoxychlor	360 U	89 UJ	360 UJ	93 U	96 U	22 J	11 J	480 U	89 U	380 U	380 U	***

ug/kg = micrograms per kilogram

TAGM Recommended Soil Cleanup Objectives = Division Technical and Administrative Guidance Memorandum No. 4046

(TAGM 4046): Determination of Soil Cleanup Objectives and Cleanup Levels and addendum (August, 2001)

J = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit

U = Indicates element was analyzed for, but not detected at or above the reporting limit

*** = Total Pesticides < 10ppm

Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, based on the results of the data validation of the SDGs for samples collected 7/7/04 and 7/8/04.

HERBICIDES SOIL DATA - ASP00 METHOD 8151

No analytes were detected.

TABLE 2-8
LCS, Inc. JULY 2004 PCB SOIL DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

PCBs SOIL DATA - ASP00 METHOD 8082

Compound	BH42 (6-8) 7/7/2004 ug/kg	BH44 (6-8) 7/7/2004 ug/kg	BH45 (4-6) 7/7/2004 ug/kg	BH46 (4-6) 7/7/2004 ug/kg	BH47 (10-12) 7/7/2004 ug/kg	DUPLICATE[1]BH47 (10-12) 7/7/2004 ug/kg	BH48 (6-8) 7/7/2004 ug/kg	BH49 (10-12) 7/7/2004 ug/kg	TAGM Recommended Soil Cleanup Objectives ug/kg
Aroclor 1016	85 U	91 U	90 U	88 U	110 U	110 u	93 U	97 U	1,000/10,000
Aroclor 1248	85 U	91 U	90 U	88 U	110 U	110 U	93 U	97 U	1,000/10,000
Aroclor 1254	85 U	91 U	90 U	88 U	110 U	110 U	93 U	97 U	1,000/10,000

Compound	BH54 (6-8) 7/8/2004 ug/kg	BH58 (6-8) 7/8/2004 ug/kg	BH59 (8-10) 7/8/2004 ug/kg	TP2 (0.3-3) 7/14/2004 ug/kg	TP7 (7-9) 7/14/2004 ug/kg	TP8 (2-4) 7/14/2004 ug/kg	DUPLICATE 3 TP8 (2-4) 7/14/2004 ug/kg	TAGM Recommended Soil Cleanup Objectives ug/kg
Aroclor 1016	91 U	89 U	94 U	95 U	90 U	22 J	370 U	1,000/10,000
Aroclor 1248	91 U	89 U	29 J	190	90 U	96 U	370 U	1,000/10,000
Aroclor 1254	91 U	62 J	94 U	95 U	90 U	96 U	370 U	1,000/10,000

ug/kg = micrograms per kilogram

TAGM Recommended Soil Cleanup Objectives = Division Technical and Administrative Guidance Memorandum No. 4046 (TAGM 4046): Determination of Soil Cleanup Objectives and Cleanup Levels and addendum (August, 2001)

J = Indicates an estimated value.

U = Indicates compound was analyzed for, but not detected at or above the reporting limit.

1,000/10,000 = Surface/Subsurface

MALCOLM PIRNIE

TABLE 2-9
SUMMARY OF ANALYTICAL RESULTS - GROUNDWATER
FORMER AMES/HILLS PLAZA
JAMESTOWN, NEW YORK

Sample Location Collection Date	NYSDEC CLASS "GA" STANDARDS[1]	MW-1 02/04/05	MW-2 02/04/05	GW-DUP2 (MW-2) 02/04/05	MW-3 09/09/04	GW-DUP1 (MW-3) 09/09/2004	MW-4 09/09/04	MW-5 09/09/04
Volatile Organic Compounds - VOCs (ug/l)								
Acetone	50					12 J		10 J
Cyclohexane	NA				14	12		
Tentatively Identified Compounds - TICs	NA				246 J	235 J	125 J	
Semi-Volatile Organic Compounds - SVOCs (ug/l)								
2-Methylnaphthalene	NA				10	11		
Acenaphthene	(20)				0.9 J	0.9 J		
Bis(2-Ethylhexyl) Phthalate	5							
Fluorene	(50)				0.7 J	0.8 J		
Pentachlorophenol	1T				2 J			
Phenanthrene	(50)				1 J	2 J		
Tentatively Identified Compounds - TICs	NA				95 JN	59 JN	4 J	
TAL Inorganic Analytes (ug/l)								
Aluminum	NA	4,690 J	1,870 J	2,120 J	1,770	718	576	240
Antimony	3				79.2 J	20 J	9.6 J	
Arsenic	25	11.2				37.3 J		
Barium	1000	349 J	585 J	602 J	1200	1210	585	607
Beryllium	(3)				0.52 J	0.55 J	0.34 J	0.26 J
Calcium	NA	209,000 J	145,000 J	142,000	162,000	163,000	144,000	135,000
Chromium, Total	50	5.2			6.2 J	3.3 J	4.4 J	4.3 J
Cobalt	NA	5.2						
Copper	200	17.2 J	32.9 J	59.7 J				
Iron	300	9,250 J	24,300 J	21,400 J	27,900 J	26,600 J	4,870 J	14,300 J
Lead	25	41.4 J	92.6 J	172 J		5.5		
Magnesium	(35,000)	34,200 N	17,300 J	17,200 J	18,800	18,600	23,800	20,800
Manganese	300	10,600	3,740	3,700	4,210	4,300	2,670	2,540
Potassium	NA	18,600	13,500	12,800	20,600 J	20,800 J	42,500 J	16,600 J
Selenium	10							
Sodium	20,000	348,000 J	72,100 J	71,400 J	78,000 J	78,300 J	273,000 J	58,300 J
Thallium	(0.5)					38.7 J		
Vanadium	NA	7.8	5.1	6.9				
Zinc	(2,000)	53.7 J	62.4 J	96.4 J	9.1 J			

Notes:

[1] Class GA Ambient Water Quality Standards and Guidance Values from TOGS series 1.1.1, June 1998, and April 2000 Addendum.

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.

Blank space indicates analyte was not detected.

Shaded and framed concentrations exceed Class GA groundwater standards or guidance values.

Values in ( ) represent Guidance Values.

[T] Applies to sum of all phenolic compounds.

NA - Not Applicable or Not Available.

J - Indicates and estimated value.

Created by: BW Date: 02/21/2005
Checked by: LG Date: 02/22/2005

TABLE 2-10
LCS, Inc. JULY 2004 METALS GROUNDWATER DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

METALS GROUNDWATER DATA - ASP00 METHODS 6010/7470/7471						
Compound	**TPMW1 7/14/2004 ug/l**	**DUPLICATE 2 TPMW1 ug/l**	**TPMW2 7/14/2004 ug/l**	**TPMW3 7/14/2004 ug/l**	**TPMW4 7/14/2004 ug/l**	**NYSDEC Groundwater Standard (Class GA) ug/l**
Aluminum - Total	896	787	298	561	1160	NL
Antimony - Total	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3
Arsenic - Total	18	17.9	30.5	4.1 **J**	11.2	25
Barium - Total	1180	1200	433	295	269	1000
Beryllium - Total	0.48 **J**	0.28 **J**	0.36 **J**	0.40 **J**	0.24 U	3
Cadmium - Total	0.43 **J**	0.64 **J**	0.35 U	0.35 U	0.35 U	5
Calcium - Total	157000	161000	153000	209000	74300	NL
Chromium - Total	2.1 **J**	1.7 **J**	1.2 U	1.2 U	4.2 **J**	50
Cobalt - Total	1.4 **J**	1.5 **J**	1.4 **J**	1.6 **J**	0.98 **J**	NL
Copper - Total	5.2 **J**	5.2 **J**	2.5 **J**	6.8 **J**	8.0 **J**	200
Iron - Total	27000	27300	5990	1170	5500	300
Lead - Total	2.8 **J**	3.0 **J**	2.5 **J**	3.8	45.7	25
Magnesium - Total	20300	20800	33000	34400	8850	35000
Manganese - Total	6150	6280	2020	3850	3250	300
Mercury - Total	0.037 U**J**	0.037 U**J**	0.037 U**J**	0.037 U**J**	0.037 U**J**	0.7
Nickel - Total	2.2 **J**	1.4 U	1.5 **J**	1.9 **J**	2.6 **J**	100
Potassium - Total	15000 **J**	15800 **J**	14600 **J**	14500 **J**	15700 **J**	NL
Selenium - Total	4.8 U**J**	4.8 U**J**	4.8 U**J**	4.8 U**J**	4.8 U**J**	10
Silver - Total	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	50
Sodium - Total	156000	160000	294000	323000	290000	20000
Vanadium - Total	1.8 **J**	1.5 **J**	1.1 U	1.4 **J**	2.4 **J**	NL
Zinc - Total	12.7 **J**	11.2 **J**	6.5 **J**	7.2 **J**	32.7	2000

ug/l = micrograms per liter

NYSDEC Groundwater Standard (Class GA) = 6 NYCRR Part 703 (June 1998 and April 2000 Addendum)

NL = Not listed

B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

U = Indicates element was analyzed for, but not detected at or above the reporting limit.

= Analyte detected above Recommended Groundwater Standard

Note: Results in RED TEXT indicate modifications to the LCS, Inc. data tables by Malcolm Pirnie, to reflect adjustments to the data by the data validator.

TABLE 2-11
LCS, Inc. JULY 2004 CYANIDE GROUNDWATER DATA
As Presented in "Focused Soil and Groundwater Investigation Report", August 2004

CYANIDE GROUNDWATER DATA - ASP00 METHOD 9012						
Compound	**TPMW1 7/14/2004 ug/l**	**DUPLICATE 2 TPMW1 ug/l**	**TPMW2 7/14/2004 ug/l**	**TPMW3 7/14/2004 ug/l**	**TPMW4 7/14/2004 ug/l**	**NYSDEC Grounwater Standard ug/l**
Cyanide - Total	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	200

ug/l = micrograms per liter

NYSDEC Groudwater Standard = 6 NYCRR Part 703 (June 1998 and April 2000 Addendum)

NA = Not Available

U = Indicates element was analyzed for, but not detected at or above the reporting limit

MALCOLM PIRNIE

TABLE 2-12

SUMMARY OF ANALYTICAL RESULTS - INDOOR AIR & SUBSLAB SOIL VAPOR CHARACTERIZATION (1)

FORMER AMES/HILLS PLAZA

JAMESTOWN, NEW YORK

Sample Area ID:	USEPA Draft Guidance for Vapor Intrusion to Indoor Air Pathway (2)		Outdoor Air		Indoor Air			Sub-Slab Soil Vapor				
Sample ID:			OA-1	OA-2	IA-1	IA-2	IA-3 (3)	SSSV-1	SSSV-2	SSSV-3	SSSV-4	SSSV-5
Collection Date:	Generic Target Indoor Air Concentration R = 10^{-4}	Generic Target Shallow Soil Gas Concentration	12/21/2004	12/21/2004	12/21/2004	12/21/2004	12/21/2004	12/21/2004	12/21/2004	12/21/2004	12/21/2004	12/21/2004
Units:	(ug/m^3)	(ug/m^3)	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Parameter							Not analyzed					
1,1,1-Trichloroethane	2,200	22,000						13				
1,2,4-Trimethylbenzene	6.0	60						24	16	6.4	12	9.3
1,3,5-Trimethylbenzene	6.0	60						8.4	4.9	3.5	4.6	3.8
1,3-Butadiene	0.87	8.7						0.49			0.88	
2,2,4-Trimethylpentane								4		2.5		0.93
4-Ethyltoluene								20	9.8	7.9	8.4	6.9
Acetone	350	3,500						21	33	40	33	55
Benzene	31	310	1.9	0.96	1.5	1.2		14	4.5	20	18	5.8
Bromodichloromethane	14	140										2.3
Carbon Disulfide	700	7,000		1.8				4.4	56	9.3	25	4
Chloroform	11	110						13	4.3	6.3	3.7	8.3
Chloromethane			1.1	1.1		1.1						
Cyclohexane								6.2	2.8	9.6	20	5.9
Dichlorodifluoromethane	200	2,000	2.8	2.9	4.2	2.6		3.5	2.6	3.4	3.3	3.6
Ethylbenzene	220	2,200						13	6.5	23	14	6.5
Methyl Ethyl Ketone	1,000	10,000		3.5				4.4	8	7.4	7.7	7.1
Methyl tert-Butyl Ether	3,000	30,000						3.4		3.6	2.7	
Methylene Chloride	520	5200						4.2	2.2	2.6	2.1	2.5
n-Heptane			2.5	2.6	1.2	0.94		16	5.3	19	74	11
n-Hexane	200	2,000	1.4		0.95	0.88		11	3.4	11	33	9.5
Tetrachloroethene	81	810						8.8	1.9	3.9	13	5.8
Toluene	400	4,000	17	27	11	8.3		60	22	72	53	30
Trichloroethene	2.2	22		5.2				5				
Trichlorofluoromethane	700	7,000	1.3	1.4	26	20		110	120	110	84	62
Xylene (m,p)	7,000	70,000		1.3	1.4	1.6		48	39	120	48	27
Xylene (o)	7,000	70,000						18	27	32	16	9.6
Xylene (total)	7,000	70,000		1.3	1.4	1.7		65	69	150	65	37

Notes:

(1) Only those analytes with concentrations greater than the reporting limt, and at a minimum of one location are shown. Blank cell indicates compound not detected.

(2) USEPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater to Soils (Subsurface Vapor Intrusion Guidance).

(3) IA-3 not analyzed due to flow controller malfunction.

IA = Indoor Air Sample

OA = Outdoor Air Sample

SSSV = Sub-Slab Soil Vapor Sample

TABLE 2-13
SUMMARY OF ANALYTICAL RESULTS - SOIL/FILL MANAGEMENT SOIL SAMPLES
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046 (2)	Site Specific Action Levels (SSALs)	SFM-01 (0-2) 05/25/2005	SFM-02 (0-2) 05/25/2005	SFM-DUP (SFM-02) 05/25/2005	SFM-03 (0-0.5) 05/25/200	SFM-04 -- 08/03/2005	SFM-05 -- 09/08/2005
Volatile Organic Compounds - VOCs (ug/kg)								
Cis-1,2-Dichloroethylene		N/A						
Cyclohexane	NA	N/A						
Isopropylbenzene (Cumene)	NA	N/A						
Methylcyclohexane	NA	N/A						
Methylene Chloride	100	N/A	7	6	5	5 J	5	7 U
Total VOCs	10,000	10,000	7	6	5	5 J	5	7
Semi-Volatile Organic Compounds - SVOCs (ug/kg)								
Acenaphthene	50,000 ***	N/A	260 J	140 J	150 J			120 J
Acenaphthylene	50,000 ***	N/A						160 J
Anthracene	50,000 ***	N/A	600 J	370 J	390 J	130 J	330 J	580 J
Benzo(A)Anthracene	224 or MDL	N/A	***1,700 J***	***1,600***	***1,400***	***610 J***	***1,200 J***	***2100***
Benzo(A)Pyrene	61	N/A	***1,600 J***	***1,400***	***1,500***	***520 J***	***1,100 J***	***2,000***
Benzo(B)Fluoranthene	1,100	N/A	***2,100***	***1,900***	***2,300***	800 J	***1,400 J***	***24,000***
Benzo(G,H,I)Perylene	50,000 ***	N/A	1,100 J	940 J	1,100 J	420 J	830 J	1,400 J
Benzo(K)Fluoranthene	1,100	N/A	520 J	580 J	***2,400***	220 J	420 J	1,100 J
Bis(2-ethylhexyl)Phthalate	50,000 ***	N/A						1,900
Carbazole	NA NA	N/A	160 J	150 J	100 J	94 J		270 J
Chrysene	400	N/A	***1,600 J***	***1,400***	***1,500***	***580 J***	***1,100 J***	***2,500***
Di-N-Butyl Phthalate	8,100	N/A						1,200 J
Dibenz(A,H)Anthracene	14 or MDL	N/A	***320 J***	***300 J***	***270 J***	***100 J***	***200 J***	***400 J***
Dibenzofuran	6,200	N/A	100 J					
Fluoranthene	50,000 ***	N/A	3,600	3,400	3,000	1,600	2,500 J	5,100
Fluorene	50,000 ***	N/A	230 J	100 J				150 J
Indeno(1,2,3-C,D)Pyrene	NA NA	N/A	1,000 J	840 J	910 J	360 J	690 J	1,200 J
Napthalene	13,000	N/A						130 J
Phenanthrene	50,000 ***	N/A	2,500	2,100	1,800	1,000 J	1,600 J	2,300
Pyrene	50,000 ***	N/A	3,400	2,900	2,700	1,200 J	2,200 J	3,400
Total SVOCs	500,000 ***	500,000	20,790 J	18,120 J	19,520 J	7,634 J	13,570	50,010
Pesticides (ug/kg)								
4,4-DDE	2,100	N/A	6.7 J		6.5 J	1.8	4.7	
4,4-DDT	2,100	N/A	6.6 J		8.1 J	3.4	8.8 J	2.8 UJ
Total Pesticides	10,000	10,000	13.3 J		14.6 J	5.2	13.5	2.8

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.

Blank space indicates analyte was not detected.

Shaded and framed concentrations exceed SSAL values.

Bold and Italics *concentrations exceed NYSDEC TAGM 4046 values.*

** - analysis not within quality control limits.*

B - indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

N - indicates spike sample recovery outside quality control limits.

E - indicates a result estimated or not reported due to the presence of interferences.

J - Indicates an estimated value.

NA - Not Applicable or Not Available.

MALCOLM PIRNIE

TABLE 2-13
SUMMARY OF ANALYTICAL RESULTS - SOIL/FILL MANAGEMENT SOIL SAMPLES
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	**NYSDEC TAGM 4046 (2)**	**Site Specific Action Levels (SSALs)**	**SFM-01 (0-2) 05/25/2005**	**SFM-02 (0-2) 05/25/2005**	**SFM-DUP (SFM-02) 05/25/2005**	**SFM-03 (0-0.5) 05/25/200**	**SFM-04 -- 08/03/2005**	**SFM-05 -- 09/08/2005**
PCBs								
PCB-1254 (Arochlor 1254)	N/A	N/A	12 J					
PCB-1260 (Arochlor 1260)	N/A	N/A		12 J	11 J	7.3 J		10 J
Total PCBs	1,000	1.0' / 10,000	12 J	12 J	11 J	7.3 J		10 J
TAL Metals (mg/kg)								
Aluminum	SB	N/A	6,560	8,400	7,760	8,710	8,720	7,090 J
Arsenic	7.5 or SB	25	***8.8 N***	***8.9 N***	***10.4 N***	5.5 N	***11 NJ***	***9.8***
Barium	300 or SB	N/A	83.6 N	93.8 N	97.8 N	70.4 N	105	129
Beryllium	0.16 or SB	N/A	***0.34 N***	***0.35 N***	***0.41 N***	***0.35 N***	***0.58***	***0.44***
Cadmium	1 or SB	20					0.59	0.35
Calcium	SB	N/A	11,700 *	5,560 *	9,620 *	2,900 *	9,830 E*J	14,300 J
Chromium, Total	10 or SB	N/A	9.5 N	***10.6 N***	***11.4 N***	9.4 N	***12.6***	9
Cobalt	30 or SB	N/A	5.7 N	6.8 N	6.4 N	6.1 N	6.2	6.2
Copper	25 or SB	200	***37.6 N***	***25.6 N***	***39.7 N***	16.7 N	***70.8 NJ***	***31.9***
Cyanide	***	NA					6.4	
Iron	2,000 or SB	N/A	***15,800***	***16,400***	***22,200***	***15,500***	***20,300 EJ***	***17,200***
Lead	SB	500	89.4 N	48.7 N	79 N	21.5 N	119 EJ	70.9 J
Magnesium	SB	N/A	3,790 N	2,900 N	3,130 N	2,240 N	3,500 ENJ	3,750
Manganese	SB	N/A	441 E	476 E	490 E	484 E	496 EJ	393
Mercury	0.1	1	***0.122 N****	***0.217 N****	***0.119 N****	0.037 N*	***0.304***	***0.11 J***
Nickel	13 or SB	35	12.8 N	***14.5 N***	***15.1 N***	12.1 N	***17***	***13.9***
Potassium	SB	N/A	823 N	815 N	805 N	538 N	943 NJ	1270
Sodium	SB	N/A						
Vanadium	150 or SB	N/A	10.3 N	11.3 N	12.2 N	12.7 N	13	11.3
Zinc	20 or SB	300	***81.5 N****	***68.3 N****	***101 N****	***64.7 N****	***138 E*J***	***99.3***

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.

Blank space indicates analyte was not detected.

Shaded and framed concentrations exceed SSAL values.

Bold and Italics *concentrations exceed NYSDEC TAGM 4046 values.*

** - analysis not within quality control limits.*

**** - Site-specific forms of cyanide should be taken into consideration when establishibg soil cleanup objectives.*

B - indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

N - indicates spike sample recovery outside quality control limits.

E - indicates a result estimated or not reported due to the presence of interferences.

J - Indicates an estimated value.

NA - Not Applicable or Not Available.

TABLE 2-14
SUMMARY OF ANALYTICAL RESULTS
REMEDIAL CHARACTERIZATION SAMPLE TP-14
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection D	NYSDEC TAGM 4046 (2)	Site Specific Action Levels (SSALs)	TP-14 (6.5-7.0) 05/20/20
Volatile Organic Compounds - VOCs (ug/kg)			
Cyclohexane	NA	N/A	850
Isopropylbenzene (Cumene)	NA	N/A	280 J
Methylcyclohexane	NA	N/A	8,300
Methylene Chloride	100	N/A	
Total VOCs	10,000	10,000	9,430 J
Total Petroleum Hydrocarbons - VOCs (mg/kg)			
TPH	NA	N/A	830
Petroleum Products - Method 310.13 (mg/kg)			
Kerosene	NA	N/A	350
Motor Oil	NA	N/A	1,000
Semi-Volatile Organic Compounds - SVOCs (ug/kg)			
Acenaphthene	50,000 ***	N/A	
Anthracene	50,000 ***	N/A	170 J
Benzo(A)Anthracene	224 or MDL	N/A	***610 J***
Benzo(A)Pyrene	61	N/A	***660 J***
Benzo(B)Fluoranthene	1,100	N/A	840 J
Benzo(G,H,I)Perylene	50,000 ***	N/A	660 J
Benzo(K)Fluoranthene	1,100	N/A	310 J
Carbazole	NA NA	N/A	
Chrysene	400	N/A	***770 J***
Dibenz(A,H)Anthracene	14 or MDL	N/A	***170 J***
Dibenzofuran	6,200	N/A	
Fluoranthene	50,000 ***	N/A	1,200 J
Fluorene	50,000 ***	N/A	120 J
Indeno(1,2,3-C,D)Pyrene	NA NA	N/A	530 J
Phenanthrene	50,000 ***	N/A	520 J
Pyrene	50,000 ***	N/A	1,200 J
Total SVOCs	500,000 ***	500,000	7,760 J
Pesticides (ug/kg)			
P,P-DDE	2,100	N/A	
P,P-DDT	2,100	N/A	
Total Pesticides	10,000	10,000	0

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are sho
Blank space indicates analyte was not detected.
-- Indicates sample was not analyzed for this parameter.
Shaded and framed concentrations exceed SSAL values.
Bold and Italics *concentrations exceed NYSDEC TAGM 4046 values.*
** - analysis not within quality control limits.*
B - indicates a value greater than or equal to the instrument detection limit, but less than the quantitati
N - indicates spike sample recovery outside quality control limits.
E - indicates a result estimated or not reported due to the presence of interferences.
J - Indicates an estimated value.
NA - Not Applicable or Not Available.

Created by: B.Walker Date: 6/20/2005
Checked BY: M. Malinoski Date: 6/30/05

Surface Soil

- Only a very small percentage of the site is open grass area (i.e., not covered by the main building or pavement for parking or site roadways).
- Where surface soils are present in the grassed areas adjacent to the site, samples were collected. These samples contained PAHs and metals above TAGM values. Selected PAH concentrations detected at locations SS-2, SS-3 and SS-4 were greater than the upper limit of accepted Urban Background Concentrations.

Groundwater

- Groundwater samples collected at the Site contained few VOCs and SVOCs at concentrations below the NYSDEC Class "GA" groundwater standards. VOC and SVOC tentatively identified compounds were also present in the samples from wells MW-3 and MW-4.
- Concentrations of antimony, arsenic, barium, iron, lead, manganese and sodium have been detected in groundwater samples at concentrations above NYSDEC Class GA groundwater standards.

Indoor Air

- Indoor air samples collected within the existing building structure identified only one compound (trichlorofluoromethane) above background concentrations and well below the Generic Target Indoor Air Concentration criteria provided by the USEPA.

2.3 Risk Assessment Results

2.3.1 Human Health Evaluation

Current/Future Scenario

The Site currently is and is planned to remain mostly covered by buildings and extensive asphalt paved parking lots and access roadways. These will prevent exposure to COPC in surface soil and subsurface soil/fill at most locations of the site. However, portions of the Site and the river walk park adjacent to the Site have and will continue to have exposed surface soil covered with grass or other landscaping. Also, the Site is accessible by trespassers, transient workers who maintain the river walk park, and recreational visitors of the river walk park, the river's edge, and the river itself.

From the nature of maintenance work, exposure to COPC in surface and subsurface soil by the transient worker is possible. Similarly, since the river's edge along the river walk park is maintained, exposure to surface water and sediment along the Chadakoin River by the transient worker is conservatively assumed to be possible. Exposures of the park visitor to surface water and sediment along or in the Chadakoin River during wading, other recreational activities (e.g., boating), and fishing, and to biota (i.e., fish) collected from the river and consumed, are conservatively assumed to be possible.

If during redevelopment of the site, exposed surface soil is removed and replaced with clean soil, the potential for exposure to surface soil by the transient worker could be eliminated. Finally, since the volume of diluent water is large in the Chadakoin River, COPC reaching the Chadakoin River through surface runoff or groundwater discharge is expected to become so diluted as to be undetectable and present insignificant exposure potential.

Future Scenario

The potential for exposure to COPC in the future was evaluated based on assumed redevelopment of the Site as a medical center and continued use of the river walk park. Under this scenario, additional potential receptors include the construction/utility worker, maintenance worker, on-Site worker, and commercial visitor.

Exposure of the construction\utility worker to COPC in surface and subsurface soil and shallow groundwater during construction, grading, or utility maintenance activities is likely or possible. Such exposures would be limited primarily to the construction/maintenance period. If the building is maintained and operated for occupancy, vapor intrusion of COPC in soil gas and groundwater into indoor air in the building might possibly occur in the future. Therefore, inhalation of COPC by the maintenance worker, on-Site worker, and commercial visitor is possible.

If during redevelopment of the site, exposed surface soil is removed and replaced with covered clean soil, the potential for exposure to surface soil and groundwater by the construction/utility worker and maintenance worker could be eliminated. In addition, the potential for exposure of the construction/utility worker to subsurface soil could be controlled through the development and implementation of a site-specific health and safety plan.

Finally, with renovation and reuse of the building, sampling of sub slab air would provide a mechanism to monitor for protection of the indoor air quality. If monitoring results show an increase in VOC in sub slab air, additional measures such as a sub slab vacuum and carbon scrubbing could be retrofitted to the sub slab piping to eliminate the vapor intrusion pathway.

2.3.2 Fish and Wildlife Impact Analysis

The majority of the site is paved and provides limited, low value wildlife habitat. Proposed redevelopment of the site includes use of much of the existing building as medical office space, retaining the large paved parking lot. Therefore, future use would continue to limit wildlife use at the site.

The river walk and the unpaved areas around the existing buildings are the portions of the site with the most wildlife value, although the area is limited. The adjacent Chadakoin River provides habitat for aquatic life and semi-aquatic wildlife. The most likely complete exposure pathways are those associated with aquatic life in the Chadakoin River.

Although COPECs in groundwater are likely to attenuate and/or dilute before and/or upon reaching the Chadakoin River, exposure pathways for potential contact with groundwater that may discharge to surface water are considered potentially complete.

The most likely potential for adverse effects are associated with aquatic life in the Chadakoin River. However, attenuation in soil and dilution in the river are likely sufficient to minimize that potential.

2.4 Remedial Objectives

Qualitative human health evaluation and fish and wildlife impact analyses were completed to evaluate potential for exposure to Site contaminants under the assumption that no remedial actions were performed. Since these assessments determined that there is potential for exposure at the site, the primary remedial action objective for the Site is to evaluate and select a remedy for the Site that supports the planned redevelopment and removes and/or reduces the potential risks posed by Site media to acceptable levels.

The potential for exposure to COPC in soils at the Site is limited given that the Site is and will be mostly covered by buildings and extensive asphalt paved parking lots and access roadways. However, the human health evaluation identified the following potential exposure pathways:

- Exposure to COPC in surface and subsurface soil is possible or likely for several receptor populations in the current and future scenarios.
- Exposure to COPC in groundwater is possible for the future construction /utility worker but is limited to the construction/maintenance period.
- Exposure to COPC in surface water and sediment is possible for the transient worker and park visitor if the river is used for recreational purposes such as wading, boating, and fishing (ingestion of fish).
- Exposure to COPC in indoor air by maintenance workers, on-site workers, and commercial visitors is possible in the future scenario if COPC in subsurface soil or groundwater were to migrate under the building.

The potential exposure scenarios presented above could all be eliminated or sufficiently controlled if the following measures were implemented:

- The majority of the visually impacted subsurface soil/fill is removed.

TABLE 2-14
SUMMARY OF ANALYTICAL RESULTS
REMEDIAL CHARACTERIZATION SAMPLE TP-14
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location **Sampling Depth (ft. bgs)** **Collection D**	**NYSDEC TAGM 4046 (2)**	**Site Specific Action Levels (SSALs)**	**TP-14** **(6.5-7.0)** **05/20/20**
PCBs			
PCB-1254 (Arochlor 1254)	N/A	N/A	
PCB-1260 (Arochlor 1260)	N/A	N/A	
Total PCBs	1,000	1,000 surface to 1.0' / 10,000 subsurface >1.0'	0
TAL Metals (mg/kg)			
Aluminum	SB	N/A	12,200
Arsenic	7.5 or SB	25	***11.3***
Barium	300 or SB	N/A	***487 ****
Beryllium	0.16 (HEAST	N/A	***1.2***
Cadmium	1 or SB	20	***1.8***
Calcium	SB	N/A	25,300 E
Chromium, Total	10 or SB	N/A	***13 N****
Cobalt	30 or SB	N/A	8.4
Copper	25 or SB	200	***2,500 ****
Iron	2,000 or SB	N/A	***33,000 E****
Lead	SB	500	**934 E***
Magnesium	SB	N/A	2,530 EN*
Manganese	SB	N/A	700 E*
Mercury	0.1	1	***0.129 N****
Nickel	13 or SB	35	***24.4***
Potassium	SB	N/A	1,730 N
Sodium	SB	N/A	328
Vanadium	150 or SB	N/A	25.1 N
Zinc	20 or SB	300	***1,710 E****
General Chemistry (Units as Indicated)			
Leachable Total Organic Carbon (ug/g)	N/A	N/A	75.1
Nitrogen, Ammonia (As N) (mg/kg)	N/A	N/A	8.6
Nitrogen, Nitrate (As N) (ug/g)	N/A	N/A	1.5
pH (s.u.)	N/A	N/A	6.33
Phosphorus, Dissolved (As P) (mg/kg)	N/A	N/A	1.1
Total Alkalinity (ug/g)	N/A	N/A	938
Total Kjeldahl Nitrogen (ug/g)	N/A	N/A	651

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are sho
Blank space indicates analyte was not detected.
-- Indicates sample was not analyzed for this parameter.
Shaded and framed concentrations exceed SSAL values.
Bold and Italics *concentrations exceed NYSDEC TAGM 4046 values.*
** - analysis not within quality control limits.*
B - indicates a value greater than or equal to the instrument detection limit, but less th
N - indicates spike sample recovery outside quality control limits.
E - indicates a result estimated or not reported due to the presence of interferences.
J - Indicates an estimated value.
NA - Not Applicable or Not Available.

- Exposed surface soil is removed and replaced or covered.
- Development and implementation of a site-specific health and safety plan for use during construction/utility work.
- Installation and sampling of a subslab vapor ventilation system.

The fish and wildlife impact analysis concluded the following:

- The majority of the site is paved and provides limited, low value wildlife habitat.
- Proposed redevelopment of the site includes use of much of the existing building as medical office space, retaining the large paved parking lot. Therefore, future development would continue to limit wildlife use at the site.
- Potential complete exposure pathways are those associated with aquatic life in the Chadakoin River. However, COPECs in groundwater are likely to attenuate and/or dilute before and/or upon reaching the Chadakoin River.

The following section describes the evaluation of potential remedial alternatives for the site.

Identification of Remedial Alternatives

SECTION 3

3.1 General Response Actions

In accordance with the October 2003 legislation outlining Brownfields Cleanup Program requirements, until soil cleanup numbers are developed, site owners are required to evaluate remedies that allow unrestricted site use as well as remedies that rely upon institutional controls or engineering controls (IC/ECs). Remedies available to provide unrestricted use of the site include:

- Excavation and off-site disposal of all fill materials on-site.
- Off-site disposal of fill materials excavated during construction only.
- In-situ or ex-situ treatment of the contaminated fill.

Treatment technologies potentially applicable for the contaminants associated with site include:

- solidification/stabilization,
- bioremediation,
- phytoremediation,
- chemical oxidation,
- electro kinetic separation
- soil flushing.

Restricted use remediation of the site can be accomplished by providing soil cover over all areas of the site where direct contact will not be precluded by the presence of either buildings or pavement. The following section describes each of these alternatives.

Description of Remedial Alternatives

SECTION 4

In order to expedite site remediation and redevelopment, Krog has proposed and is currently implementing an Interim Remedial Measure (IRM) to address petroleum-impacted soils near the northwest corner of the building. The IRM work plan and NYSDEC approval letter are provided in Appendix C. This description of Remedial Alternatives section addresses remedial alternatives for the remainder of the site.

4.1 Unrestricted Use Remedies

Excavation and Off-site Disposal

This alternative involves excavation of fill materials and off-site transport and placement in an appropriately permitted secure landfill. Two options exist under this alternative: excavation and off-site disposal of all fill materials or disposal of only those fill materials encountered during construction for Site infrastructure. The estimated cost for off-site disposal of <u>all</u> Site fill, backfilling and regrading prior to initiating Site construction activities begin would make the cost for Site development prohibitive, and thus will not be considered further.

Treatment Technologies

Solidification/Stabilization (S/S) involves physically binding or enclosing the site contaminants within a stabilized mass (solidification), or inducing chemical reactions between the stabilizing agent and the contaminants to reduce their mobility (stabilization). S/S can be applied in-situ or ex-situ. The target contaminant group for in-situ S/S is generally inorganics and thus would not address the PAHs. The In-Situ Vitrification (ISV) process can destroy or remove organics and immobilize most inorganics in contaminated soils, sludge, or other earthen materials. The process has been tested on a broad range of

VOCs and SVOCs, other organics including dioxins and PCBs, and on most priority pollutant metals and radionuclides. However, future usage of the site may "weather" the materials and affect their ability to maintain contaminant stability. Most vitrification processes result in a significant increase in volume (up to double the original volume). In addition, the solidified material may potentially hinder future site uses. As a result S/S is considered not applicable for remediation of this site and will not be included for further consideration.

Bioremediation/Bio-augmentation describes the activity of naturally occurring or inoculated microbes stimulated by circulating water-based solutions through the contaminated soils to enhance in situ biological degradation of organic contaminants or immobilization of inorganic contaminants. Nutrients, oxygen, or other admixed materials may be used to enhance bioremediation and contaminant desorption from subsurface materials. The contaminant groups treated most often are PAHs, non-halogenated SVOCs (not including PAHs), and BTEX. Remediation of metals with microbial techniques is in the experimental stage, with limited data/guidance.

Bioleaching uses microorganisms to solubilize metal contaminants either by direct action of the bacteria, as a result of interactions with metabolic products, or both. Bioleaching can be used in-situ or ex-situ to aid the removal of metals from soil. Because of bioremediation's limited applicability for treating recalcitrant PAHs and metals, and the potential for the on-site metals concentrations to be toxic to the microorganisms, this treatment technology is not considered to be applicable for remediation of this site and will not be given further consideration.

Phytoremediation is a process that uses plants to remove, transfer, stabilize, or destroy contaminants in soil, sediment, and groundwater. The mechanisms of phytoremediation include enhanced rhizosphere biodegradation, which takes place in soil or groundwater immediately surrounding plant roots; phytoextraction (also known as phytoaccumulation), the uptake of contaminants by plant roots and the translocation/accumulation of contaminants into plant shoots and leaves; phytodegradation, the metabolism of contaminants within plant tissues; and phytostabilization, the production of chemical compounds by plants to immobilize contaminants at the interface of roots and soil. Phytoremediation applies to all biological, chemical, and physical processes that are influenced by plants (including the rhizosphere) and that aid in cleanup of the contaminated substances. Plants can be used in site remediation, both through the mineralization of toxic organic compounds and through the accumulation and concentration of heavy metals and other inorganic compounds from soil into aboveground shoots. Phytoremediation may be applicable for the remediation of metals, pesticides, solvents, explosives, crude oil, PAHs, and landfill leachates. Some plant species have the ability to store metals in their roots. As the roots become saturated with metal contaminants, they can be harvested. Hyper-accumulator plants may be able to remove and store significant amount of metallic contaminants. Currently, trees are under investigation to determine their ability to remove organic contaminants from ground water, translocate and transpiration, and possibly metabolize them either to CO2 or plant tissue. The depth of the treatment zone varies based on the plants used in phytoremediation, but in most cases, it is limited to shallow soils. High concentrations of some contaminants can be toxic to plants. In addition, the process occurs seasonally. Since different planting materials would be required for each group of site contaminants, this process likely requires many seasons to remediate to non-risk concentrations.

Given the limiting nature of the site with regards to open areas available for planting, selected plant species may not consistently remove materials from across the site and with depth; contaminants may potentially be mobilized into groundwater or bioaccumulated in animals. This treatment technology is not applicable for site remediation and will not be given further consideration.

Chemical Oxidation chemically converts hazardous contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, and/or inert. The oxidizing agents most commonly used are ozone, hydrogen peroxide, hypochlorites, chlorine, and chlorine dioxide. This technology can be applied in-situ or ex-situ. In-situ chemical oxidation (ISCO) using permanganate for soil and groundwater treatment and has been demonstrated at a number of sites for the following organics: chlorinated solvents (such as trichloroethylene [TCE]), naphthalene, and pyrene. Fenton's Reagent can be used to treat a wide range of organic contaminants in soil and groundwater, including chlorinated solvents, petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), and pesticides. ISCO has also been used to remediate polyaromatic hydrocarbons (PAHs), petroleum products, and ordnance compounds. Chemical treatment may be used to solubilize contaminants from the most contaminated fraction of the soil. Many processes manipulate the acid/base chemistry of the slurry to leach contaminants from the soil. Oxidizing and reducing agents (e.g., hydrogen peroxide, sodium borohydride) provide yet another option to aid in solubilization of metals since chemical oxidation/ reduction can convert metals to more soluble forms. Finally, surfactants may be used in extraction of the metals from soil. Because different chemicals would be required to treat each contaminant group, and application is limited by the ability of the oxidants to reach the contaminants, this treatment technology is not considered to be applicable for site remediation.

Electrokinetic Separation relies upon the application of a low-intensity direct current through the soil between ceramic electrodes that are divided into a cathode array and an anode array. This mobilizes charged species, causing ions and water to move toward the electrodes. Metal ions, ammonium ions, and positively charged organic compounds move toward the cathode. Anions such as chloride, cyanide, fluoride, nitrate, and negatively charged organic compounds move toward the anode. The current creates an acid front at the anode and a base front at the cathode. This generation of an in-situ acidic condition may help to mobilize sorbed metal contaminants for transport to the collection system at the cathode. Concentrated (migrated) contaminants are then removed for treatment or can be treated in treatment walls as they migrate. The polarity of the electrodes is reversed periodically, which reverses the direction of the contaminants back and forth through treatment zones. Electrokinetics has been used for decades in the oil recovery industry and to remove water from soils, but in-situ application of electrokinetics to remediate contaminated soil is new. Recently, attention has focused on developing in-situ electrokinetic techniques for the treatment of low permeability soils, which are resistant to remediation with traditional technologies because of their low hydraulic conductivity. Because of its limited effectiveness for non-polar organic contaminants, such as PAHs, this treatment technology will not be given further consideration.

In-Situ Soil Flushing is used to mobilize metals by leaching contaminants from soils so that they can be extracted without excavating the contaminated materials. An aqueous extracting solution is injected into or sprayed onto the contaminated area to mobilize the contaminants, usually by solubilization. After being contacted with the contaminated material, the extractant solution is collected using pump-and-treat methods for disposal or treatment and reuse. Common extracting agents include acids/bases, chelating agents, oxidizing/reducing agents and surfactants cosolvents. This process can be applied in-situ or ex-situ (soil washing). The target contaminant groups for soil washing are SVOCs, fuels, and heavy metals. The technology can be used on selected VOCs and pesticides. The technology offers the ability for recovery of metals and can clean a wide range of organic and inorganic contaminants from coarse-grained soils. However, complex mixture of contaminants in the soil (such as a mixture of metals, nonvolatile organics, and SVOCs) and heterogeneous contaminant compositions throughout the soil mixture make it difficult to formulate a single suitable washing solution that will consistently and reliably remove all of the different types of contaminants. There is additionally limited data regarding flushing for PAHs. For these reasons, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

4.2 Restricted Use Remedies

In order to eliminate potential exposure risks associated with direct contact with site fill material, the entire Site can be covered as part of site redevelopment. The cover system would be placed directly on top of the regraded on-site fill material and will include clean soil for outdoor, vegetated areas, asphalt for roads and parking lots, or concrete for sidewalks, buildings and heavy use areas. Responsibility for monitoring and maintenance of the site cover system is delineated in the Brownfield Cleanup Agreement. An Operation, Monitoring, and Maintenance (OM&M) Work Plan for implementation following remediation of the site is included in Appendix B.

The proposed cover system has been designed to be protective of human health and the environment. The primary exposure pathway for contaminants at the site (PAHs and metals in soil) is via direct contact. The proposed plan of covering the on-site fill material will eliminate the potential for direct contact with soil and is therefore protective of human health and the environment.

Exposure to soil fill piles generated during construction activities will be precluded for on-site workers and trespassers through covering. Exposure to fill at the surface would also be precluded for future on-site workers through covering. The potential for exposure through invasive on-site construction activities would be managed by implementation of the protocols described in the Soil/Fill Management Plan, presented in Appendix A.

Preparation of Site Surface

The site will require grading prior to cover placement activities. The surface will be graded in accordance with the redevelopment project grading plan such that precipitation events will not cause the formation of standing water. Prior to placement of the cover soil, all protruding material will be removed from the ground surface. Burning shall not be allowed on the site.

The placement of the cover material may occur as portions of the site are developed or after modification of the site building. Under either scenario, the site will be hydroseeded to limit dust generation from the soil/fill that has not yet been covered.

Soil

In areas that will not receive significant equipment or vehicular use, the minimum cover system will be composed of documented clean off-site soil tested in accordance with Section A.4 of the Soil/Fill Management Plan and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The completed soil cover will be of a thickness required to maintain sufficient vegetative cover to prevent exposure to the on-site fill material. The minimum soil thickness must be 24 inches.

In areas in which trees and shrubs will be planted, the bermed islands or greenspace mounds will be of sufficient thickness to allow the excavation of only clean fill to a depth sufficient to plant the tree or shrub root ball. Unless additional soil is required for the plantings, the soil cover thickness will be 24 inches. The soil used to cover the berms or mounds will contain sufficient organic material to allow the growth of trees and/or shrubs and will be of sufficient strength to support trees and/or shrubs at their maximum height. Fill materials containing lumps, pockets, or concentrations of silt or clay, rubble, debris, wood or other organic matter will not be acceptable. Fill containing unacceptable material shall be removed and disposed appropriately.

Topsoil used for the final cover shall meet the following general specifications:

1. Fertile, friable, natural loam surface soil, capable of sustaining plant growth, and free of clods of hard earth, plants or roots, sticks or other extraneous material harmful to plant growth. The topsoil will have the following characteristics:

   a. pH 5.5 to pH 7.6.

   b. Minimum organic content of 2.5 percent as determined by ignition loss.

   c. Soluble salt content not greater than 500 ppm.

2. Before delivery, soil samples will conform to the criteria specified in Sections 2.3 and 2.4 in the Soil/Fill Management Plan.

Grass seed used for final cover shall meet the following general specifications:

1. The grass seed mixture will be fresh, clean, new-crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America.

2. The entire ground surface disturbed by construction operations shall be seeded with 100 lbs/acre of seed conforming to the following:

   a.

Name of Grass	Application Rate (lbs/acre)	Purity (%)	Germination (%)
Perennial Ryegrass	10	95	85
Kentucky Bluegrass	20	85	75
Strong Creeping Red Fescue	20	95	80
Chewings Fescue	20	95	80
Hard Fescue	20	95	80
White Clover	10	98	75

   b. Germination and purity percentages should equal or exceed the minimum seed standards listed. If it necessary to use seed with a germination percentage less than the minimum recommended above, the seeding rate will be increased accordingly to compensate for the lower germinations.

   c. Weed seed content will be less than 0.25 percent and free of noxious weeds.

d. All seed shall be rejected if the label lists any of the following grasses:

   1) Sheep Fescue
   2) Meadow Fescue
   3) Canada Blue
   4) Alta Fescue
   5) Kentucky 31 Fescue
   6) Bent Grass

3. In addition to the seed mixtures listed above, one bushel per acre of oats or rye seed shall be sowed over the entire area, including drainage ditches, to provide a quick shade cover and to prevent erosion during turf establishment.

Protection from Soil Vapor Intrusion

In addition to the potential for exposure to COPC in surface and subsurface soil/fill, the human health evaluation identified a potential future exposure pathway of VOCs in subsurface soil/fill and groundwater to enter the building via vapor intrusion from beneath the building. Although recent sampling results indicate that such vapor intrusion is not currently a concern, the possibility remains and thus remedial measures will be implemented to mitigate this potential future pathway.

Asphalt

Where applicable, the cover system in areas that will become roads, sidewalks, and parking lots consists of a minimum of two inches of asphalt placed over the soil/fill material at the site. A supplemental layer of asphalt will be placed over the existing four-inch gravel subbase to provide stability for construction and to limit subsidence. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area regraded to a regular surface.

Concrete

Where applicable, the cover system in areas that will become slab-on-grade structures will consist of a minimum of two inches of concrete that will be placed above the soil/fill material. The concrete will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area regraded to a sufficient regular surface.

Remedial Evaluation Criteria

SECTION 5

The criteria used to evaluate the selected remedial technologies include the following:

- Short-term effectiveness and impacts
- Long-term effectiveness and permanence
- Implementability
- Reduction of toxicity, mobility and volume
- Conformance to standards, criteria and guidance
- Overall Protectiveness
- Cost

The issues considered for each critiera are discussed below.

Short term Effectiveness and Impacts **-** The effectiveness of alternatives in protecting human health and the environment during construction and implementation of the remedial action is evaluated by this criterion. Short-term effectiveness is assessed by protection of the community, protection of workers, environmental impacts, and time until protection is achieved.

Long term Effectiveness and Permanence **-** This criterion evaluates the long-term protection of human health and the environment at the completion of the remedial action. Effectiveness is assessed with respect to the magnitude of residual risks; adequacy of controls, if any, in managing residuals or untreated wastes that remain at the Site;

reliability of controls against possible failure, and potential to provide continued protection.

Reduction of Toxicity, Mobility, and Volume **-** This evaluation criterion prioritizes those remedial actions that permanently and significantly reduce toxicity, mobility, or volume of the hazardous substances. This criterion is satisfied when the treatment is used to reduce the principal threats at a site through destruction of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume of contaminated media.

Implementability **-** This assessment criterion evaluates the technical and administrative feasibility of implementing alternatives and the availability of services and materials.

Compliance with Standards, Criteria, and Guidelines **-** This threshold addresses whether or not a remedy will meet regulatory environmental limits.

Overall Protection of Human Health and the Environment **-** This is a threshold assessment, which addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled. This evaluation allows for consideration of whether an alternative poses any unacceptable short term or cross-media impacts.

Cost **-** The estimated capital and operation and maintenance (O&M) costs.

These criteria serve to provide a basis of comparison and allow for ranking of the alternatives by preference and acceptability.

Detailed Evaluation of Restricted Use Remedial Alternatives

SECTION 6

Potential remedial technologies that could reasonably be developed for the Site are identified and evaluated in this section. No unrestricted Site use alternatives are considered feasible for redevelopment of the Site. Only remedies that accomplish restricted Site use are evaluated in this detailed evaluation of remedial alternatives.

Alternative #1 – Soil/Fill Removal and Replacement Plus Cover System

Alternative #2 – Limited Excavation Using Soil/Fill Management Plus Cover System

6.1 Alternative #1 - Soil/Fill Removal and Replacement Plus Cover System

This alternative involves the removal of all soil/fill (remaining after implementation of the IRM), transport and placement of these materials in an appropriately permitted secure landfill, placement of clean backfill and installation of a cover system of either asphalt, concrete or a minimum of two-feet of clean fill.

Also, during renovation of the site building, a system of connected perforated pipes will be installed directly beneath the building foundation slab. Sub slab air samples will be collected from the system of perforated pipes to monitor the quality of the sub slab air. This air sampling will be conducted semiannually for the first five years of building occupancy and annually thereafter. If concentrations of VOCs increase from current levels to levels of potential concern, a vacuum pump and carbon scrubber will be installed on the sub slab piping to mitigate the intrusion of sub slab vapors into the building.

A discussion of the evaluation criteria for this alternative follows.

Excavation of impacted fill materials and subsequent backfilling and re-grading would effectively eliminate the source of the contamination. Short-term risks of exposure to construction personnel could be adequately managed through the appropriate use of personal protective equipment (PPE), and health and safety protocols. Disposal of the removed material at an approved off-site facility would effectively eliminate the human health risks posed by the Site and would thus provide a permanent remedy for the site. This alternative does pose a slight potential risk of exposure to the public during transport to the disposal facility if a truck were to spill its contents.

The time to implement this alternative (i.e., excavate and remove the site's contaminated fill/soil) would be reasonable and is not anticipated to appreciably extend the timeline for site development. Excavation of the Site's fill material could be accomplished using standard construction equipment and techniques. Some time would be required to sample and characterize the soil/fill and obtain appropriate approvals for disposal. This alternative would reduce the mobility of the contaminants, but not the toxicity or volume. Under this alternative SSALs would be achieved and no long-term monitoring or special maintenance of the site would be required.

Table 6-1 presents the capital cost of this alternative. While this alternative is implementable and effective in achieving the remedial action objectives, the transportation and disposal cost of the excavated materials would be approximately $7.9 million dollars.

6.2 Alternative #2 – Limited Excavation Using Soil/Fill Management Plus Cover System

Subsurface soil/fill at the site is nearly completely covered by pavement or the site building foundation slab. Only three relatively small grassed areas exist on the site. This alternative involves installing a cover system over the three grassed areas with either asphalt or concrete pavement or two feet of documented clean soil. Figure 6-1 illustrates the locations of the three grassed areas of interest. Prior to capping, excavation of soil/fill may be necessary to maintain or create a desired grade. Excavation, if performed, will be

Table 6-1
Cost Estimate of Remedial Alternative # 1
Soil/Fill Removal and Replacent Plus Cover System

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED BID AMOUNT
1	Excavation and Off-Site Disposal of Fill Material (1)	89,800	Tons	$60	$5,388,000
2	Off-Site Backfill Material	64,130	yd^3	$12	$769,560
3	Materials for 4" black asphalt parking lot	15,900	yd^2	$20	$318,000
4	24" clean soil cover material (2)	3,800	yd^3	$15	$57,000
5	Misc. Environmental costs (3)	1	LS	$50,000	$50,000
Sub-Total					$6,582,560
20% Contingency					$1,316,512
Total Project Cost					**$7,899,072**

1) Assumes fill contains non-hazardous concentrations of PAHs and metals, above the Site-Specific Action Limits (SSALs)

2) A 6" topsoil layer will make up the top portion of the 24"clean soil barrier layer.

3) Misc costs include PID screening, health and safety plan development, site safety officer, decontamination units, site access control, NYSDEC coordination, and construction certification report preparation.

performed in accordance with the soil/fill management plan (Appendix A). No long-term monitoring is required.

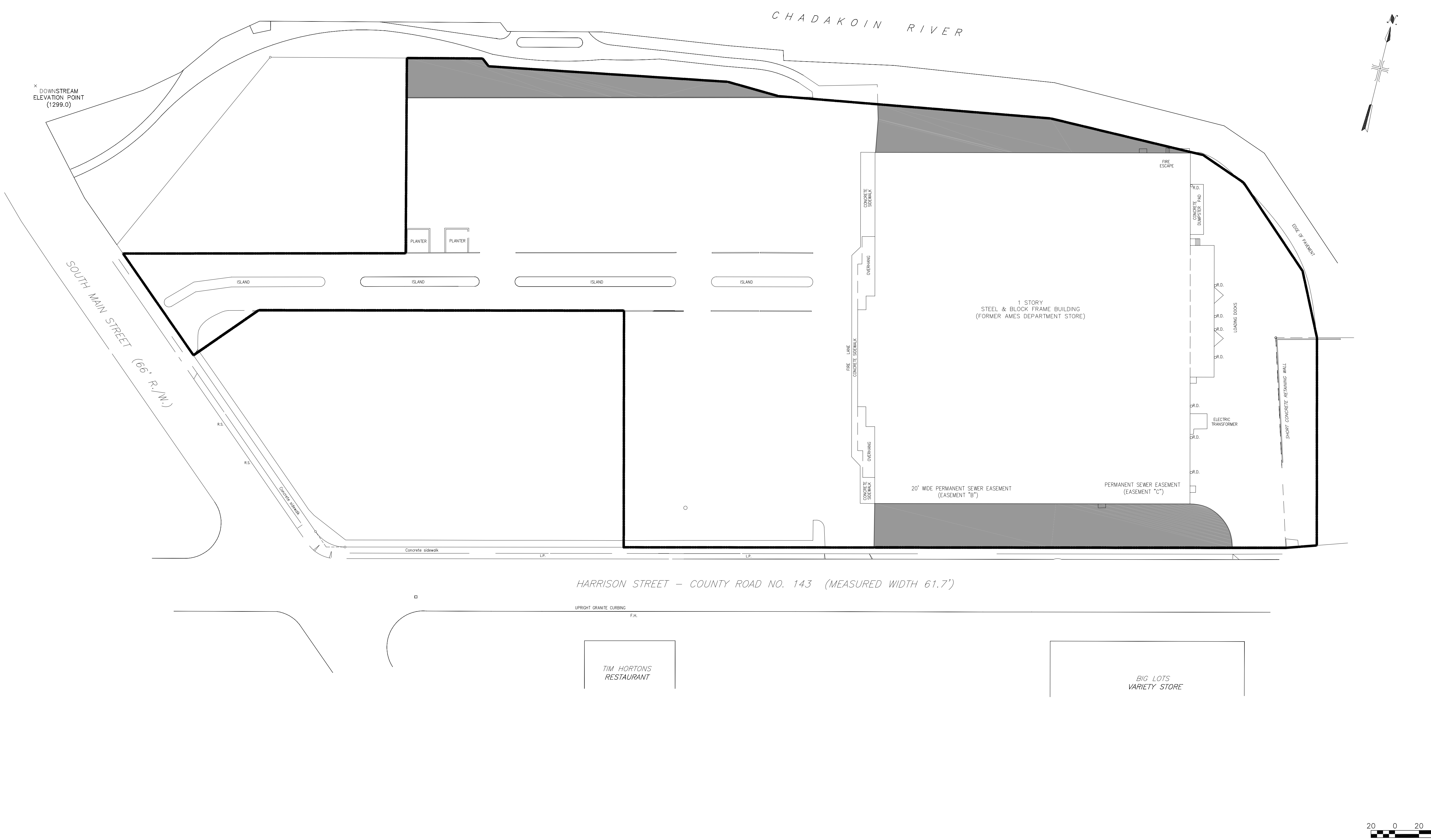
In the case of the two grassed areas between the former Ames/Hills building and the river, there are healthy, relatively young hardwood trees that provide significant aesthetic value to these areas and the adjacent river walk trail. Complete removal of two feet of soil in these areas or placement of two feet of cover over these areas would result in killing of these valuable trees. Therefore, an alternative cover system will be implemented beneath the trees to preserve them while discouraging and hindering direct contact with the underlying soil.

Surrounding each tree, a 6-inch thick layer of hardwood mulch will be placed within a radius equal to the height of each tree, a distance sufficient to protect the full root system. The mulch layer will provide a source of soil enrichment and enhanced soil moisture retainage. To prevent the existing grass under the trees from growing up through the mulch, the grass will be killed prior to placement of the mulch in an environmentally safe manner such as temporarily covering with black plastic sheeting.

The placement of the mulch under the trees will result in an increase in surface elevation of 6 inches under each tree. Therefore, to achieve consistent grade and the required two feet clean soil cover over the remainder of the two grassed areas, 18 inches of soil will be removed and two feet of documented clean soil placed, the upper 6 inches being topsoil.

Also, during renovation of the site building a system of connected perforated pipes will be installed directly beneath the building foundation slab. Sub slab air samples will be collected from the system of perforated pipes to monitor the quality of the sub slab air. This air sampling will be conducted semiannually for the first five years of building occupancy and annually thereafter. If concentrations of VOCs increase from current levels to levels of potential concern, a vacuum pump and carbon scrubber will be installed to the sub slab piping to inhibit sub slab vapors from entering the building breathing air.

A discussion of the evaluation criteria for this alternative follows.



MALCOLM PIRNIE

15 SOUTH MAIN STREET
JAMESTOWN, NY

FORMER AMES/HILLS PLAZA

FIGURE 6–1
LOCATION OF
PROPOSED CAPPING

DATE MARCH 2005

SHEET ____ OF ____

CAD REF. NO. ____

XREFS: IMAGES:None
User:WELSHANS Spec:PIRNIE STANDARD File:F:\Projects\3198004\CADD\Jamestown\CADD\FIGURE 6-1.DWG Scale:1:1 Date:05/05/2005 Time:09:21 Layout:Figure 4-1

Excavation of the soil/fill, if performed, could pose a short-term risk to construction personnel. These short-term risks could be adequately managed through the use of personal protective equipment (PPE) and appropriate health and safety protocols. Short-term risk of exposure to trespassers during construction activities would be addressed through covering stockpiled soil/fill, temporary seeding of graded soil/fill areas and site security. Once the construction is complete and the Site is fully covered, the risk to on-site workers and the public will be eliminated and sustained through adequate protections and maintenance of the cover systems. Exposure risks to future construction workers would be adequately managed through the Soil/Fill Management protocols and appropriate health and safety protocols. The time to implement this alternative does not materially affect the construction schedule and standard readily available construction equipment and techniques would be utilized. This alternative would reduce the mobility and volume of the contaminants, but not their toxicity. The SSAL's would be achieved through implementation of the Soil/Fill Management Plan, since no excavated fill or soils with concentrations in excess of the SSAL's would be returned to the Site. The resulting Site condition would not pose a potential risk to human health provided the cover systems are appropriately maintained. Table 6-2 presents the capital cost of this alternative. The cost to implement this alternative is approximately $400,000 in capital cost.

Table 6-2
Cost Estimate of Remedial Alternative #2
Limited Excavation using Soil/Fill Management Plus a Cover System

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED BID AMOUNT
1	Excavation and Off-Site Disposal of Fill Material (1)	3,800	Tons	$60	$228,000
2	Analytical Soil Sampling (2)	30	Samples	$500	$15,000
3	24" clean soil cover material (3)	2,700	yd^3	$15	$40,500
4	Misc. Environmental costs (4)	1	LS	$50,000	$50,000
Sub-Total					$333,500
20% Contingency					$66,700
Total Project Cost					**$400,200**

1) Assumes 5% of excavated soils contain non hazardous concentrations of PAHs and metals, above the Site-Specific Action Limits (SSALs)

2) 3800 yd^3 of excavated material sampled every 100 cubic yards for TCL VOCs, SVOCs, pesticides and PCBs, metals, and pH

3) A 6" topsoil layer will make up the uppermost portion of the 24"soil barrier layer.

4) Misc costs include polyethylene sheeting for stockpiles/stockpile management, PID screening, health and safety plan development, site safety officer, decontamination units, site access control, NYSDEC coordination, and construction certification report preparation.

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Comparative Analysis of Remedial Alternatives

SECTION 7

This comparison evaluates the relative performance of both alternatives considered with respect to the following seven evaluation criteria:

- Short-term effectiveness and impacts.
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, and volume.
- Implementability.
- Compliance with standards, criteria, and guidelines.
- Overall protection of human health and the environment.
- Cost.

The advantages and disadvantages of the alternatives are identified so that trade-offs between the alternatives can be appropriately evaluated. Tables 6-1 and 6-2 provide the capital costs for each alternative.

Short-term Effectiveness and Impacts – Equivalent levels of potential exposure for workers exist under both alternatives. Short-term exposure risk would be minimal for the public for the excavation and disposal alternative, (Alternative #1).

Long-term Effectiveness and Permanence – Alternative #2 would not remove the contaminant source, but with routine maintenance would be effective in long-term containment of the contaminated soils. Alternative #1 would remove the contamination from the Site and thus be considered a permanent remedy.

Reduction of Toxicity, Mobility, and Volume – Both the alternatives would reduce the mobility of the contaminants. Neither alternative would reduce the toxicity, or volume of the contaminated fill.

Implementability – Both the alternatives are readily implementable with standard construction equipment and techniques.

Compliance with Standards, Criteria, and Guidelines – Both alternatives would be expected to achieve compliance with SSAL's.

Overall Protection of Human Health and the Environment – Both alternatives provide equivalent protection of human health or ecological receptors.

Cost – Capital cost for implementing Alternative #1 is estimated at $7.9 million, as compared to $ 400,000 for Alternative #2.

Recommended Approach

SECTION 8

8.1 Proposed Approach

Both of the restricted use alternatives provide comparable long-term effectiveness and overall protection to human health and the environment, but full excavation and disposal at a properly permitted landfill increases the cost for Site development by approximately $ 9.0 million.

As a result, based on an evaluation of the criteria for each alternative and review of the capital cost impact, Alternative #2 (Limited Excavation using Soil/Fill Management and a Cover System) in addition to removal of visible impacted soil under the IRM would provide the best overall remedy for the Site. This alternative is able to provide effective long-term contaminant containment and be protective of both on-site and off-site potential receptors at a lower overall cost.

8.2 Soil/Fill Management Plan (SFMP)

During construction activities at the site, excavation of selected areas of soil/fill material will be necessary for the construction of utility corridors. Excavation may also be necessary during the construction of footings for structures and for other activities. Although a number of environmental investigations have been conducted at the Site to characterize the nature and extent of contamination, the nature of investigations does not allow for a 100 percent complete or accurate characterization. Therefore, it is possible that some quantity of undocumented contamination may be encountered during redevelopment activities.

Soil management protocols are necessary to limit the potential for exposure of on-site workers to contaminated fill material. The soil handling protocols will also be necessary for assisting with the determination of whether soil/fill removed during excavation activities may be reused on-site or must be disposed off-site. The Soil/Fill Management Protocols are included in Appendix A.

8.3 Health and Safety

Invasive work performed at the Site will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety. The Soil/Fill Management Protocols (Appendix A) describes recommended Health and Safety procedures for intrusive work activities at the Site.

All contractors performing redevelopment or maintenance activities involving intrusive work at the Site will be required to prepare a site-specific, activity-specific Health and Safety Plan. In order to facilitate the creation of an appropriate Health and Safety Plan by the contractor(s) performing work, the ranges of concentrations of contaminants detected in air, soil, and groundwater samples collected during previous site investigations are shown in Tables 2-1 through 2-14.

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SECTION 9

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Soil Fill Management Plan

APPENDIX

A

Soil/Fill Management Protocols

APPENDIX

A

The objective of this Soil/Fill Management Plan (SFMP) is to set guidelines for management of soil material during any activities, which would breach the cover system. The SFMP is a portion of the overall remedy, which addresses disturbance/use of any residually contaminated soil/fill left on the Site, after other elements of the remedy have been implemented. This SFMP addresses environmental concerns related to soil/fill management. This SFMP is not intended to serve as a design document for construction activities related to redevelopment activities. It is the developer's responsibility to prepare a design that incorporates the requirements for cover and soil management as set forth in this SFMP.

A.1 Excavation and Handling of On-Site Soil/Fill

No excavation, grading or disturbance of the final vegetated soil cover or existing subgrade soil/fill shall be initiated prior to a minimum of three working days notification to the NYSDEC Region 9, Division of Environmental Remediation. A Professional Engineer with remedial investigation experience, representing the subject property owner or developer will oversee soil/fill excavations or disturbances. The excavation activities will be conducted in accordance with the protocols detailed in Attachment I and in the sections below.

All on-site soil/fill will be presumed to contain metals and PAHs and will be handled in accordance with the provisions of this SFMP. Although a number of environmental investigations have been conducted at the Site to characterize the nature and extent of contamination, the nature of investigations does not allow for a 100 percent complete or accurate characterization. It is possible that some quantity of unsuspected contamination may be encountered during redevelopment activities. Therefore, as a safeguard for unknown or unsuspected contamination presence, during excavation, all soil/fill will be visually inspected for staining and will be field screened for the presence of volatile organic compounds (VOCs). A photoionization detector (PID) will be used to check for VOCs. Visual observation will be sufficient to identify stained soils. Stained soil is soil that is discolored, tinted, dyed, unnaturally mottled, or contains a sheen. Attachment II (Standard Operating Procedures) contains an SOP for Soil Screening. Excavated soil/fill that is visibly stained or produces elevated PID readings (i.e., sustained 10 PPM or greater) will be considered potentially contaminated and stockpiled separately on-site for further assessment. The potentially contaminated soil/fill will be stockpiled (in maximum 100 cubic yard piles) on polyethylene sheeting and then sampled to determine its ultimate disposition; viz., reuse or off-site disposal. The stockpiled potentially contaminated soil/fill will also be completely covered using polyethylene sheeting to reduce particle runoff and entrain dust. Sampling and analysis will be completed in accordance with the protocols delineated in Section A.2. Soil/fill containing one or more constituents in excess of the site-specific action levels (SSALs) shown in Table A-1 will be transported off-site to a permitted waste management facility. Soil/fill awaiting analytical results or awaiting transportation will be stored continuously on-site under polyethylene sheeting.

Any soil/fill with a pH higher than 12.5 is considered hazardous and therefore must be properly disposed off-site. Additionally, any soil/fill with a pH greater than 9.0 but less than 12.5 may be reused on-site but only to fill in areas below grade. This soil/fill may not be used as backfill in utility trenches or to create berms or other above grade mounds. This soil/fill must also be covered with clean material in accordance with Section 6.2 of the Remedial Action Work Plan.

If buried drums or underground storage tanks are encountered during soil excavation activities, excavation will cease and the NYSDEC will be immediately notified. All drums and/or underground storage tanks encountered will be evaluated and the Owner will submit a removal plan for NYSDEC approval. Appropriately trained personnel will excavate all of the drums and/or underground storage tanks while following all applicable federal, state, and local regulations. Removed drums and underground storage tanks will be properly characterized and disposed off-site. The soil/fill surrounding the buried drums or underground storage tanks will be considered as potentially contaminated and will be stockpiled and characterized.

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TABLE A-1
SITE SPECIFIC ACTION LEVELS
SOIL/FILL MANAGEMENT PLAN
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection D	NYSDEC TAGM 4046(1)	Eastern USA Background Concentrations(2)	Maximum Concentration Detected(3)	Average Concentration Detected	Frequency of Detections	Proposed Site Specific Action Level (SSAL)
TAL Inorganic Analytes (mg/kg)						
Arsenic	7.5 or SB	3 - 12	20.2	9.5	40 / 40	25
Cadmium	1 or SB	0.1 - 1	1.5	0.30	13 / 40	20
Copper	25 or SB	1 - 50	177	41.4	40 / 40	200
Lead	400	NA 5	484	82.0	40 / 40	500
Mercury	0.1	0.001 - 0.2	0.445	0.10	31 / 40	1.0
Nickel	13 or SB	0.5 - 25	28	15.8	40 / 40	35
Zinc	20 or SB	9 - 50	602	112.6	40 / 40	300
Pest/PCBs (mg/kg)						
Total Pesticides	10	NA	335.0	141	3 / 10	10,000
Total PCBs (Surface - 1.0')	1,000	NA	0	0	0 / 0	1,000
Total PCBs (Subsurface > 1.0')	10,000	NA	190	76	4 / 15	10,000
Semi-Volatile Organic Compounds - SVOCs (mg/kg)						
Total SVOCs	500,000	NA	93,000	15,000	31 / 31	500,000
Volatile Organic Compounds - VOCs (mg/kg)						
Total VOCs	10,000	NA	216.0	22.0	23 / 28	10,000

Notes:

(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.

(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.

(3) Maximum concentration detected during subsurface investigation (MPI, April 2004), (LCS July 2004) and the Remedial Investigation (MPI,

NA - Not Avaialable.

ND - Not Detected

All excavations or disturbances must be backfilled as soon as the work allows. Backfilled excavations must be covered with suitable cover material defined in Section 6.2 of the Remedial Action Work Plan within ten working days of backfilling or as otherwise approved by the NYSDEC.

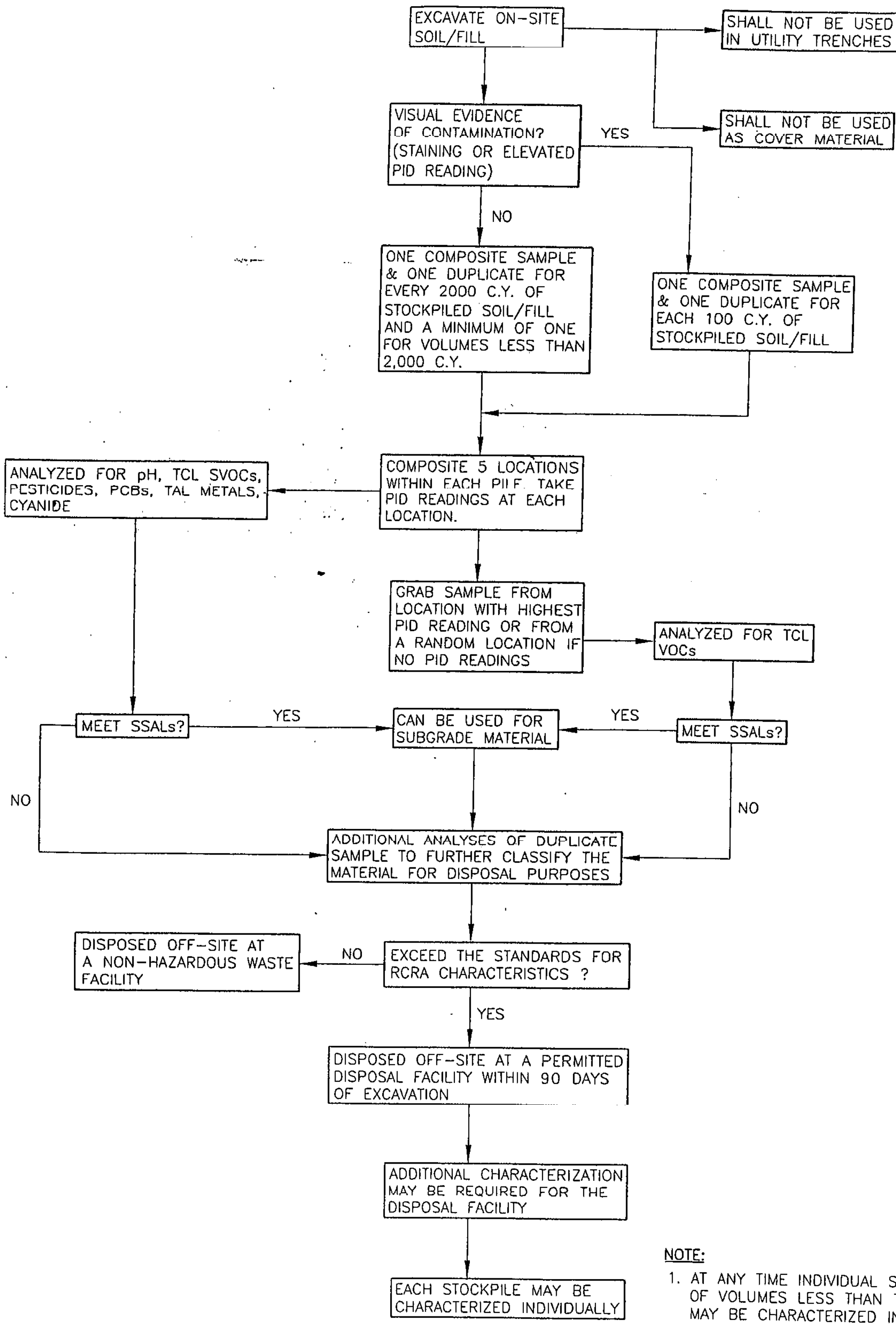
If no evidence of additional contamination is encountered through the screening during excavation activities, the excavated soil fill will be stockpiled as appropriate on site. No special provisions for separate handling are required other than the characterization defined in Section A.2.

Excavated or disturbed backfill may be used as subgrade, excavation backfill or berm construction following characterization performed in accordance with Section A.2 if it meets the SSAL's presented in Table A-1.

A.2 Soil/Fill Sampling and Analysis Protocol

A soil/fill characterization flow chart is provided as Figure A-1. As stated in Section A.1, all excavated soil/fill that exhibits evidence of additional contamination through screening (staining or elevated PID measurements) will be stockpiled separately and sampled and classified for reuse or disposal. One composite soil sample will be collected for each 100 cubic yards of soil. The composite sample will be collected in the manner described in the Standard Operating Procedures (SOPs) included in Attachment II from five locations within each stockpile. PID measurements will be recorded for each of the five composite sample locations, and one grab sample and one duplicate sample will be collected from the location with the highest PID measurement of the five composite locations. The composite sample will be analyzed by a NYSDOH ELAP-certified laboratory for Target Compound List (TCL) semivolatile organic compounds (SVOCs), PCBs and pesticides, and the metals arsenic, cadmium, copper, lead, mercury, nickel and zinc using current NYSDEC Analytical Services Protocols (ASP). Additionally, the grab sample will be analyzed for TCL volatile organic compounds (VOCs).

FIGURE A-1
SOIL/FILL CHARACTERIZATION FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

Excavated soil/fill that exhibits no evidence of additional contamination (staining or elevated PID measurements) will also require characterization prior to use as subgrade or backfill at the site. Characterization samples will be collected and analyzed at a frequency of not less than one sample for 2000 cubic yards of soil/fill, and a minimum of one sample will be collected for volumes less than 2000 cubic yards. The characterization samples will be collected in accordance with the protocols described above; the sampling efforts shall consist of discrete samples for VOCs and composite samples collected from five locations for the remaining analytes.

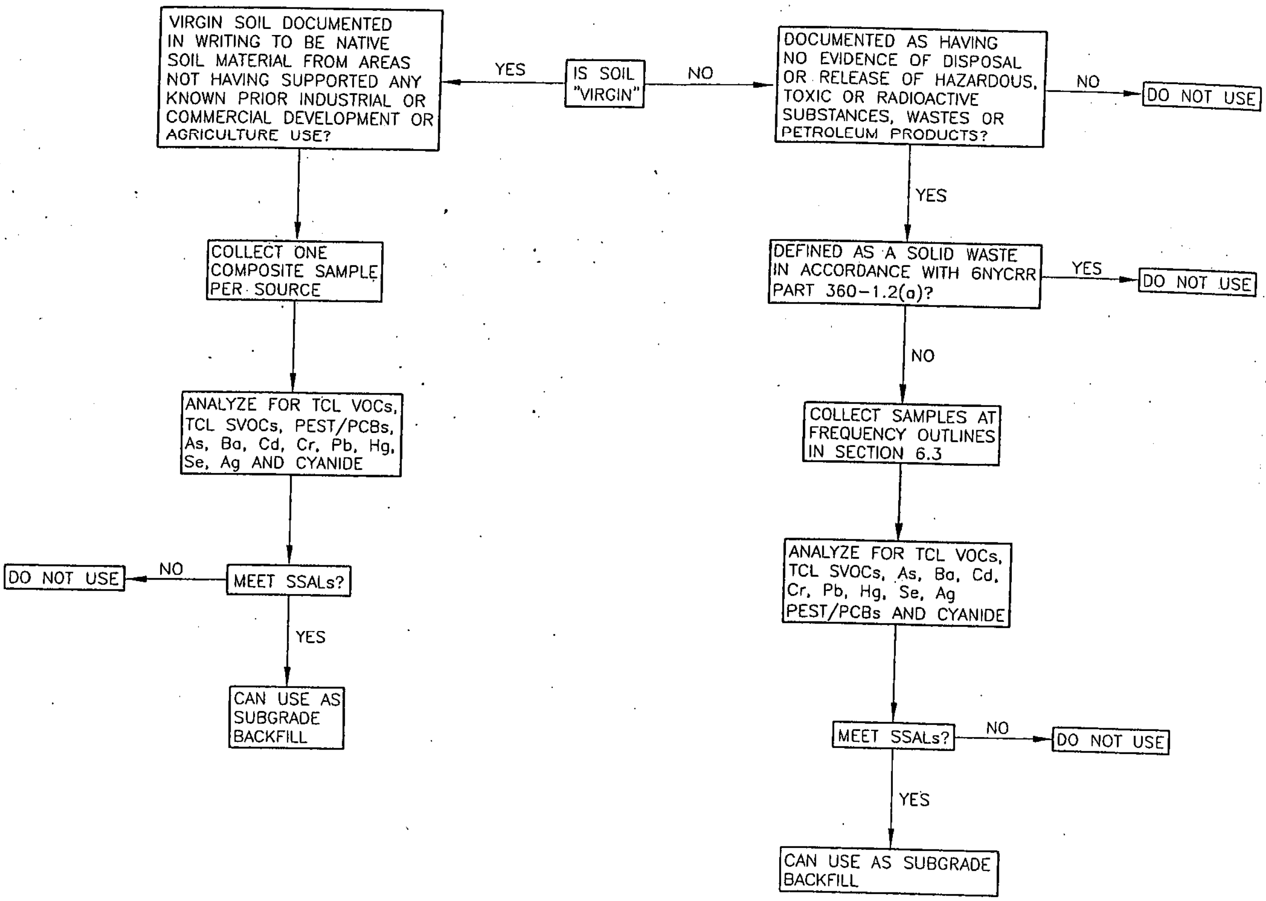
Any soil/fill that has been characterized and found to meet the SSALs may be reused as subgrade, excavation subgrade backfill, or for berm construction. If the analysis of the soil/fill samples reveals unacceptably high levels of any analytes (i.e., greater than one or more SSAL), additional analyses will be necessary to further classify the material for hazardous characteristics for disposal purposes. At a minimum, the duplicate sample will be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for the particular analytes that were detected at concentrations exceeding the SSALs. The duplicate sample may also be analyzed for RCRA Characteristics including reactivity, corrosivity, and ignitability. If the analytical results indicate that concentrations exceed the standards for either TCLP or RCRA Characteristic analysis, the material will be considered a hazardous waste and must be properly disposed off-site at a permitted disposal facility within 90 days of excavation. Additional characterization sampling for off-site disposal may be required by the disposal facility. To potentially reduce off-site disposal requirements/costs, the owner or site developer may also choose to characterize each stockpile individually.

A.3 Subgrade Material

Subgrade material used to backfill excavations or placed to increase site grades or elevation shall meet the following criteria (see Figure A-2):

- Excavated on-site soil/fill shall either exhibit no evidence of contamination (staining and/or elevated PID measurements) or, if evidence of contamination is present,

FIGURE A-2
SUBGRADE MATERIAL FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

analytical results of the soil/fill indicate that the contaminants are present at concentrations below the SSALs.

- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.

- Off-site soils intended for use as site backfill cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).

- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

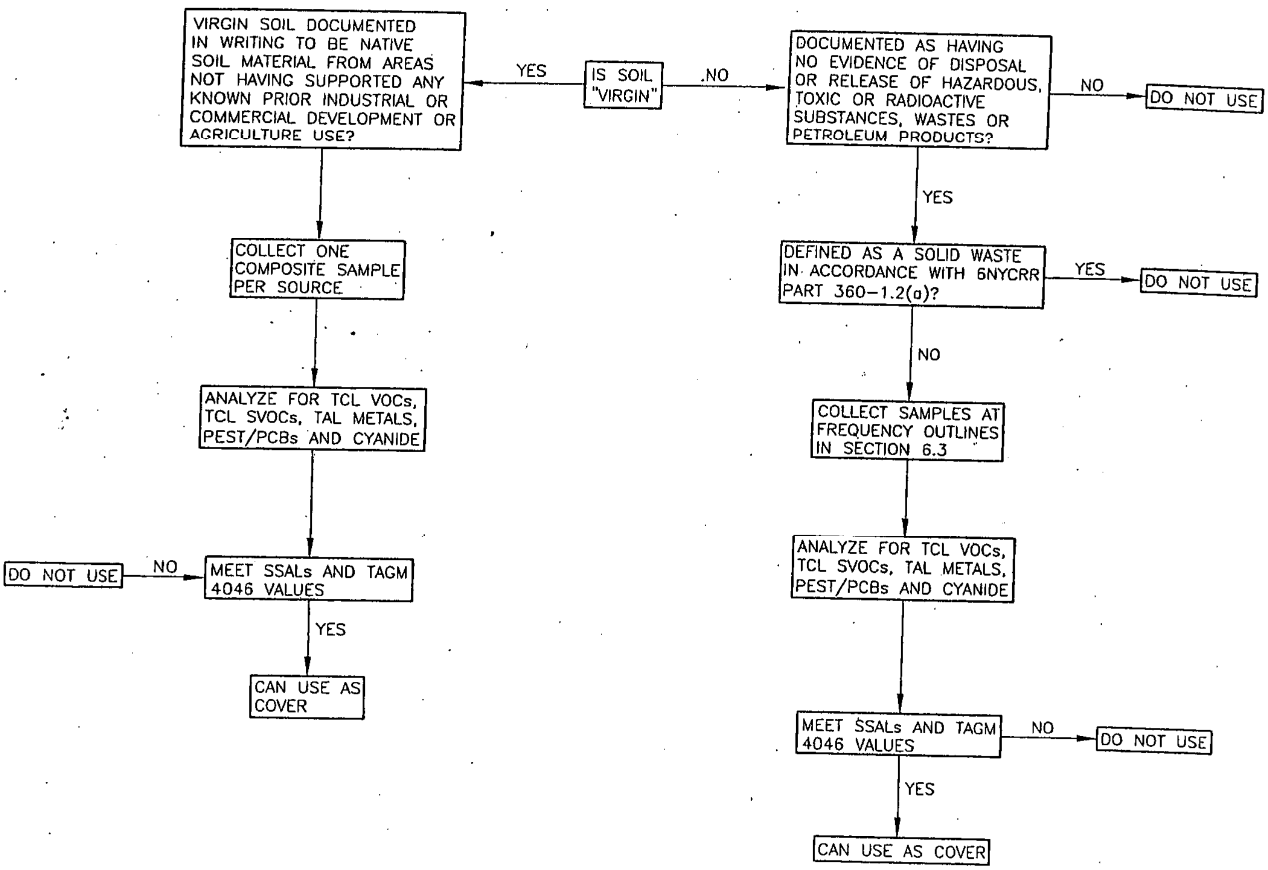
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and the metals arsenic, cadmium, copper, lead, mercury, nickel, and zinc. The soil will be acceptable for use as backfill provided that all parameters meet the SSALs.

- Non-virgin source area soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the SSALs, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the SSALs.

A.4 Final Cover

Surface coverage over the entire redeveloped parcel or subparcels will be required by the developer or owner as a pre-condition of occupancy. The purpose of the surface cover is to eliminate the potential for human contact with fill material. Surface coverage will consist of documented clean soil with vegetative cover, asphalt or concrete paving, or buildings with concrete floors.

FIGURE A-3
FINAL COVER MATERIAL FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

The cover soil material shall meet the following criteria (see Figure A-3):

- Excavated on-site soil/fill shall not be used as cover material.

- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.

- Off-site soils intended for use as site cover cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).

- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and TAL metals plus cyanide. The soil will be acceptable for use as cover material provided that all parameters meet the NYSDEC recommended soil cleanup objectives included in TAGM 4046.

- Non-virgin source area soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the TAGM 4046 criteria, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the TAGM 4046 criteria.

- To reduce the potential for disturbance of the soil cover material, berms or mounds composed of clean soil will be constructed in areas in which trees and shrubs will be planted.

A.5 Erosion Controls

A.5.1 General Guidelines

When site development or remedial actions require the disturbance of more than one acre of land, federal and state laws[1] require that the project obtain coverage under the NYSDEC SPDES General Permit for Storm Water Discharges from Construction Activities that are classified as "Associated with Industrial Activity", Permit #GP-93-06 (Construction Storm Water General Permit). Requirements for coverage under the Construction Storm Water General Permit include the submittal of a Notice of Intent form and the development of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must fulfill all permit requirements and must be prepared in accordance with "Chapter Four: the Storm Water Management and Erosion Control Plan" in Reducing Impacts of Storm Water Runoff from New Development, NYSDEC, 1992. This Storm Water Management and Erosion Control Plan, in accordance with permit requirements, will provide the following information:

- A background discussion of the scope of the construction project.
- A statement of the storm water management objectives.
- An evaluation of post-development runoff conditions.
- A description of proposed storm water control measures.

[1] The Federal Water Pollution Control Act (as amended, 33 U.S.C. 1251 et. Seq.) and the New York State Environmental Conservation Law: Article 17, Titles 7 and 8 and Article 70.

- A description of the type and frequency of maintenance activities required to support the control measure.

The SWPPP will address issues such as erosion prevention, sedimentation control, hydraulic loading, pollutant loading, ecological protection, physical site characteristics that impact design, and site management planning. The SWPP will also include a contingency plan to be implemented in the event of heavy rain events. All descriptions of proposed features and structures at the site will include a description of structure placement, supporting engineering data and calculations, construction scheduling, and references to established detailed design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated in the construction and development plans to mitigate soil erosion damage, off-site sediment migration, and water pollution from erosion. These practices combine vegetative and structural measures. Many of these measures will be permanent in nature and become part of the completed construction project (design features such as drainage channels and grading). Other measures will be temporary and serve only during the construction stage. The contractor will remove temporary measures at the completion of construction. The selection of erosion and sediment control measures will be based on several general principles, including:

- The minimization of erosion through project design (maximum slopes, phased construction, etc.).
- The incorporation of temporary and permanent erosion control measures.
- The removal of sediment from sediment-laden storm water before it leaves the site.

The generic erosion and surface water control plan included in Attachment III details typical methods of erosion control that must be followed during site redevelopment activities. As described in Attachment III, a specific erosion and surface water control plan must be created prior to implementation of redevelopment activities. The use of appropriate temporary erosion control measures such as silt fencing and/or hay bales will be required around all soil/fill stockpiles and unvegetated soil surfaces during redevelopment activities. These methods are described below, and Attachment IV includes details for various erosion control measures that might be used during site redevelopment activities. Stockpiles shall be graded and compacted as necessary for positive surface water runoff and dust control. Stockpiles of soil/fill will be placed a minimum of fifty feet from the boundaries.

A.5.2 Temporary and Permanent Erosion Control Measures

A.5.2.1 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be employed during active construction stages. Prior to any construction activity, temporary erosion and sediment control measures shall be installed and maintained until they are no longer needed, or until such time that permanent erosion control measures are installed and effective. Additional sediment control measures may also be necessary. Structural measures, as described below, will be designed and installed to provide the required sediment and erosion control. The following temporary measures will be incorporated into construction activities:

- Silt fencing.
- Straw bales.
- Temporary vegetation/mulching.

A.5.2.1.1 Silt Fencing

Regrading and capping activities may result in sheet flow to various areas of the site; therefore, silt fencing will be used as the primary sediment control measure. Prior to extensive clearing, grading, excavation, and placement of cover soils, silt fences will be installed along all construction perimeter areas to prevent sedimentation in low areas and drainage areas. The location and orientation of silt fencing to be used during redevelopment operations will be field determined. There may be breaks and overlaps in the silt fencing to allow construction vehicles access to the construction areas.

Intermediate silt fencing will be used upslope of perimeter areas where phased construction activities are occurring. This measure will effectively lower sheet flow velocities and reduce sediment loads to perimeter fencing. In addition, silt fencing around soil stockpiles will be employed.

As sediment collects along the silt fences, they will be cleaned to maintain desired roval performance and prevent structural failure of the fence. Removed sediment will be disposed on-site as general fill in a designated area. The perimeter silt fences will remain in place until construction activities in the area are completed and vegetative cover or other erosion control measures are adequately established. Silt fences will be provided and installed in accordance with the details presented in Attachment IV.

A.5.2.1.2 Straw Bales

Straw bales will be used to intercept sediment-laden runoff from storm water channels as needed during various phases of construction. Additional straw bale dikes may be necessary in some areas during some phases of construction.

Use of straw bales will be limited to swales and/or diversion ditches where the anticipated flow velocity will not be greater than 5 feet per second (fps). Where flows may eventually exceed 5 fps along a swale or diversion ditch, an intermediate straw bale barrier will be installed upgradient of the final bale barrier. The intermediate bale barrier will effectively reduce flow velocities and sediment load to the final barrier.

As with the silt fencing, sediment will be removed to maintain performance and prevent overtopping or failure of the straw bale barrier. Removed sediment will be disposed of on-site as general fill in a designated area. Sediment laden straw bales that have lost their structural integrity and/or effectiveness will be disposed of off-site as a solid waste. Straw bale barriers will remain in place until construction activities contributing sediment to the barrier are complete and vegetative cover or other erosion control measures are adequately established. Straw bales will be provided and installed in accordance with the details presented in Attachment IV.

A.5.2.1.3 Temporary Vegetation and Mulching

As a result of phased construction and split construction schedule, portions of the site may be left in intermediate/incomplete conditions. Intermediate areas may include rough graded areas awaiting finer grading or areas awaiting topsoil placement. Intermediate areas where activities will not resume for a period in excess of two weeks shall be seeded with a quick germinating variety of grass or covered with a layer of straw mulch.

The temporary cover will act to stabilize the soil and reduce erosion. As construction progresses, areas containing temporary vegetation or straw mulch can be covered without removal of the temporary vegetation or mulch.

A.5.2.2 Permanent Control Measures

Permanent erosion control measures and facilities will be incorporated during cover construction and during site redevelopment for long-term erosion protection. Permanent measures and facilities will be installed as early as possible during construction phases. Parking and building systems associated with redevelopment shall not include dry wells or other subsurface injections/disposal piping or facilities.

A.5.2.2.1 Design Features

The remedial construction activities will involve the installation of cover system including asphalt, concrete, or clean fill over the entire site. Permanent erosion control measures incorporate a combination of design features to limit overall erosion and sediment problems to practical design limits, and the placement of permanent facilities during site restoration for long-term erosion protection. The soil cover system will be designed based on the following criteria:

- Maximum slope of 33% (3H: 1V) to limit erosion.
- Minimize the potential contact with, and migration of, waste fill.
- Provide a medium for the growth of vegetation to control erosion.

Design features incorporated into the construction plans to control erosion will include limiting steep slopes, routing runoff to surface water collection channels, limiting flow velocities in the collection channels to the extent practical, and lining collection channels, where appropriate. In areas where flow will be concentrated (i.e; collection channels) the channel slopes and configuration will be designed to maintain channel stability.

A.5.2.2.2 Construction Features

Any final slopes greater than 25 percent will be reinforced or have a demarcation layer under the clean cover to indicate if erosion has extended into the subgrade. Following the placement of final cover soils over regraded areas, a revegetation program will be implemented to establish permanent vegetation. Vegetation serves to reduce erosion, enhance evapotranspiration, and improve runoff water quality. The areas to be grassed will be seeded in stages as construction in is completed with 70 lbs./acre of seed conforming to the mix included in section 4.2. of the Remedial Action Work Plan. In addition to the above seed mixture, mulch, mulch blankets, or synthetic fabric will be placed to prevent erosion during turf establishment. Mulch will be placed on all slopes less than 15% and a mulch blanket on all slopes greater than 15%. Synthetic erosion control fabric will be placed in drainage ditches and swales. As an aid to turf establishment, seeded areas will be fertilized with a starter fertilizer.

A.6 Dust Controls

The surface of unvegetated or disturbed soil/fill areas will be wetted at all times with water or other dust suppressive agents to control dust during construction. There shall be no visible dust generated during redevelopment activities. Any subgrade material left exposed during extended interim periods (greater than 90 days) prior to placement of final cover shall be covered with a temporary cover system (i.e., tarps, spray type cover system, etc.) or planted with vegetation to control fugitive dust to the extent practicable. Particulate monitoring will be performed along the downwind occupied perimeter of parcels during subgrade excavation, grading, and handling activities in accordance with the Community Air Monitoring Plan.

Dust suppression techniques will be employed at the site in accordance with NYSDEC TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites). This TAGM describes guidance for dust monitoring, and includes a list of effective dust suppression techniques. Dust monitoring is more fully described in Section A.12.2 (Community Air Monitoring Program). As per TAGM 4031, dust suppression techniques that may be used at the site include applying water on roadways, wetting equipment, spraying water on buckets during excavation and dumping, hauling materials in properly covered or watertight containers, covering excavated areas and material after excavation activity ceases, establishing vegetative cover immediately after placement of cover soil, and reducing the excavation size and/or number of excavations.

A.7 Construction Water Management

Pumping of water (i.e., groundwater and/or storm water that has accumulated in an excavation) from excavations, if necessary, will be done in such a manner as to prevent the migration of particulates, soil/fill, or unsolidified concrete materials, and to prevent damage to the existing subgrade. Water pumped from excavations will be managed properly in accordance with all applicable regulations so as to prevent endangerment of public health, property, or any portion of the construction.

The groundwater in excavations will be field screened for VOCs and observed for any noticeable sheens. Water in the excavations will not be discharged to the ground surface if:

- Staining or PID measurements above background are observed in the excavation, or
- A sheen is present on the water surface.

If any of these conditions exist, the water pumped from the excavations will be containerized and analyzed in accordance with the Surface Water and Groundwater quality Standards set forth in 6 NYCRR Part 703.5 and the local sewer authority discharge permit. If the water meets the surface water and groundwater quality standards, it may be discharged to the ground surface. If the water does not meet the surface water and groundwater quality standards, it may be discharged to the local sewer authority under a discharge permit. If the water quality is such that the local sewer authority discharge permit requirements will be exceeded, or the local sewer authority will not approve the discharge to a sewer, it will be transported off-site for proper disposal or treated on-site via a treatment system that has been approved by NYSDEC.

Runoff from surface discharges shall be controlled. No discharges shall enter a surface water body without proper permits.

A.8 Fencing And Access Control

Access to soil/fill on the site must be controlled until final cover is placed to prevent direct contact with subgrade materials. To better control site access, obvious access points will be gated. All gates and existing fencing will be posted with “No Trespassing” signs. The majority of the site will be covered with clean fill or vegetated via hydroseeding to limit dust generation.

A.9 Property Use Limitations

The use of the property will be restricted through verbiage in the Brownfield Cleanup Agreement, to which this Remedial Action Work Plan will be attached.

A.10 Notification and Reporting Requirements

The following minimum notification and reporting requirements shall be followed by the property owner prior to and following site development, as appropriate:

- The NYSDEC and NYSDOH will be notified that subgrade activities are being initiated a minimum of five working days in advance of construction.
- A construction certification report stamped by a New York State licensed Professional Engineer, will be prepared and submitted to the NYSDEC and NYSDOH within 90 days after development of each parcel or subparcel. At a minimum, the report will include:

- An area map showing the parcel or subparcel that was developed and the property's tax map number.
- A topographic map of the developed property showing actual building locations and dimensions, roads, parking areas, utility locations, berms, fences, property lines, sidewalks, green areas, contours and other pertinent improvements and features. The topographic map will be stamped by a New York State licensed surveyor.
- Plans showing areas and depth of fill removal.
- Description of erosion control measures.
- A text narrative describing the excavation activities performed, health and safety monitoring performed (both site specified and Community Air Monitoring), quantities and locations of soil/fill excavated, disposal locations for the soil/fill, soil sampling locations and results, a description of any problems encountered, location and acceptability test results for backfill sources, and other pertinent information necessary to document that the site activities were carried out properly.
- Plans showing before and after survey elevations on a 100-foot grid system to document the thickness of the clean soil cover system.
- A certification that all work was performed in conformance with the SFMP.

A.11 Quality Assurance and Quality Control (QA/QC)

A.11.1 Analytical Methods

All site soil/fill characterization samples collected during site redevelopment activities will be analyzed using EPA-approved analytical methods using the most recent edition of the EPA's "Test Methods for Evaluating Solid Waste" (SW-846). Methods for Chemical Analysis of Water and Wastes "(EPA 600/4-79-020), Standard Methods for Examination of Waste and Wastewater" (prepared and published jointly by the American Public Health Association, American Waterworks Association and Water Pollution Control Federation).

A.11.2 Laboratory

The laboratory proposed to perform the analyses will be certified through the New York State Department of Health Environmental Laboratory Approval Program (ELAP) to perform Contract Laboratory Program (CLP) analysis and Solid Waste and Hazardous Waste Analytical testing on all media to be sampled during this investigation. The laboratory will maintain this certification for the duration of the project.

A.11.3 Data Submittal

The laboratory will perform the analysis of samples in accordance with the most recent NYSDEC Analytical Services Protocol (ASP). Analytical data will be submitted in complete ASP Category B data packs including documentation of laboratory QA/QC procedures that will provide legally defensible data in a court of law. If requested, the Category B data packs will be submitted to the NYSDEC.

Procedures for chain of custody, laboratory instrumentation calibration, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed as per SW-846 and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike, matrix spike duplicate shall be performed at a rate of 10% and will be used to assess the quality of the data. The laboratory's in-house QA/QC limits will be utilized whenever they are more stringent than those suggested by the EPA methods.

A.11.4 Data Usability Summary Reports

After receipt of analytical results, the data package will be sent to a qualified, third party, data validation specialist for evaluation. A Data Usability Summary Report (DUSR) will be prepared. The DUSR will provide a determination of whether or not the data meets the project specific criteria for data quality and data use.

A.12 Health and Safety Procedures for Intrusive or Maintenance Activities

A.12.1 Construction Personnel Protection

Contractors engaged in subsurface (invasive) construction or maintenance activities (e.g., foundation and utility workers) will be required to implement appropriate health and safety procedures. These procedures will involve, at a minimum, donning adequate personal protective equipment, performing appropriate air monitoring, and implementing other engineering controls as necessary to mitigate potential ingestion, inhalation and contact with residual constituents in the soils. A site-specific, activity-specific health and safety plan must be prepared by the contractor prior to on-site construction activities. Recommended health and safety procedures include the following:

- While conducting invasive work at the site, the Contractor shall provide working conditions on each operation that shall be as safe and healthful as the nature of that operation permits. The Contractor shall comply with all New York State Department of Labor regulations and published recommendations and regulations promulgated under the Federal Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as amended, and with laws, rules, and regulations of other authorities having jurisdiction. Compliance with governmental requirements is mandated by law and considered only a minimum level of safety performance. The Contractor shall insure that all work is performed in accordance with recognized safe work practices.

- The Contractor shall be responsible for the safety of the Contractor's employees, the public and all other persons at or about the site of the work. The Contractor shall be solely responsible for the adequacy and safety of all construction methods, materials, equipment and the safe prosecution of the work.

- The Contractor shall have a written health and safety plan (HASP) prepared, signed and sealed by a safety professional; a safety professional and/or a trained safety representative(s) active on the job whenever the work is in progress; an effective and documented safety training program; and a safety work method check list system.

- The Contractor shall stop work whenever a work procedure or a condition at a work site is deemed unsafe by the safety professional or his trained safety representative(s).

- The Contractor shall employ a properly qualified safety professional whose duties shall be to initiate, review and implement measures for the protection of health and prevention of accidents. The Contractor shall also employ safety representative(s) whose duties, working under the direct supervision of the safety professional, shall include the implementation the safety program for the work at the site.

- Recognition as a safety professional shall be based on a minimum of certification by the Board of Certified Safety Professionals as a Certified Safety Professional and 5 years of professional safety management experience in the types of construction and conditions expected to be encountered on the site.

- The safety representative(s) who will work under the direction of the safety professional will have appropriate qualifications. The required qualifications shall include a minimum of: five years of relevant construction experience, two years of which were exclusively in construction safety management; successful completion of a 30-hour OSHA Construction Safety and Health training course; 40-hour training as per 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response; and, if confined space entry is required, training as per 29 CFR 1910.146, Permit-Required Confined Spaces.

- The safety professional shall visit and audit all work areas as often as necessary but at least once each week and shall be available for consultation whenever necessary.

- The safety representative(s) must be at the job site full-time (a minimum of 8 hours per working day) whenever intrusive work is in progress. When multiple shift work is in progress more than one safety representative may be required.

- The safety professional and his safety representative(s) shall be responsible for ensuring Contractor compliance with governing laws, rules and regulations as well as of good safety practice.

- The safety staff shall maintain and keep available safety records, up-to-date copies of all pertinent safety rules and regulations, Material Safety Data Sheets, and the Contractors' site specific health and safety plans (HASPs) and the site emergency response plan with emergency and telephone contacts for supportive actions.

- The responsible safety professional shall sign and seal the Contractor's written site-specific HASP and the Plan shall be available to workers on site. The Contractor shall provide copies of the HASP to the Contractors' insurer, if required.

- The HASP will identify and define the following: the hazards anticipated for each major invasive task; the engineering, administrative and/or personal protective equipment control measures that will be implemented; the surveillance methods, and schedules of both walk through surveys and in-depth safety audits to be performed on site; medical monitoring and screening methods; the Contractors' pre-start-up and continuous safety-training program; emergency response equipment, notification, training and procedures; and include copies of safety inspection check-off sheets, specific to the work methods and crews performing work at the various job locations, to be used on a regular basis in evaluating the site and work methods.

- The safety professional and/or his trained safety representative(s) shall as a minimum:

  - Schedule and conduct safety meetings and safety training programs as required by law, the health and safety plan, and good safety practice. A specific schedule of dates of these meetings and an outline of materials to be covered shall be provided with the health and safety plan. All employees shall be instructed on the recognition of hazards, observance of precautions, of the contents of the health and safety plan and the use of protective and emergency equipment.

  - Determine that operators of specific equipment are qualified by training and/or experience before they are allowed to operate such equipment.

  - Develop and implement emergency response procedures. Post the name, address and hours of the nearest medical doctor, name and address of nearby clinics and hospitals, and the telephone numbers of the appropriate ambulance service, fire, and the police department.

  - Post all appropriate notices regarding safety and health regulations at locations that afford maximum exposure to all personnel at the job site.

  - Post appropriate instructions and warning signs in regard to all hazardous areas or conditions that cannot be eliminated. Identification of these areas shall be based on experience, on site surveillance, and severity of hazard. Such signs shall not be used in place of appropriate workplace controls.

- Ascertain by personal inspection that all safety rules and regulations are enforced. Make inspections at least once a shift to ensure that all machines, tools and equipment are in a safe operating condition; and that all work areas are free of hazards. Take necessary and timely corrective actions to eliminate all unsafe acts and/or conditions, and submit to the Engineer each day a copy of his findings on the inspection check list report forms established in the health and safety plan.

- Provide safety training and orientation to authorized visitors to ensure their safety while occupying the job site.

- Perform all related tasks necessary to achieve the highest degree of safety that the nature of the work permits.

- The Contractor shall have proper safety and rescue equipment, adequately maintained and readily available, for foreseeable contingencies. This equipment may include such applicable items as: proper fire extinguishers, first aid supplies, safety ropes and harnesses, stretchers, water safety devices, oxygen breathing apparatus, resuscitators, gas detectors, oxygen deficiency indicators, combustible gas detectors, etc. This equipment should be kept in protected areas and checked at scheduled intervals. A log shall be maintained indicating who checked the equipment, when it was checked, and that it was acceptable. This equipment log shall be updated monthly and be submitted with the monthly report. Equipment that requires calibration shall have copies of dated calibration certificates on site. Substitute safety and rescue equipment must be provided while primary equipment is being serviced or calibrated.

- All personnel employed by the Contractor or his subcontractors or any visitors whenever entering the job site, shall be required to wear appropriate personal protection equipment required for that area. The Contractor may remove from the site any person who fails to comply with this or any other safety requirement.

- Because water with elevated pH may act as a skin irritant, care must be taken to inhibit dermal contact when handling any groundwater at the site. Actions to inhibit contact with groundwater may include the use of latex or other waterproof gloves by on-site workers.

A.12.2 Community Air Monitoring Program

Ambient air monitoring will be conducted by the Professional Engineer monitoring the work on a real-time basis during all subsurface construction activities using a minimum of a photoionization detector and a dust meter. Battery charge level for each instrument will be checked at the beginning and end of each day. The instruments will be calibrated at a frequency recommended by the manufacturer. All air monitoring readings will be recorded in a logbook and will be available for review by the NYSDEC and New York State Department of Health (NYSDOH).

Baseline conditions will be measured at proposed intrusive activity locations prior to commencement of operations. Air quality within the work zone will be monitored in accordance with the site-specific health and safety plan created by the site developer or contractor. In addition to monitoring the work area for worker health and safety, volatile organic compounds will be monitored at the downwind perimeter of the work area every hour. If downwind perimeter organic vapor levels exceed five parts per million (ppm) above the upwind work area perimeter concentrations, the Vapor Emission Response Plan will be implemented.

As described in Section A.6, appropriate dust suppression techniques will be employed at all times during site redevelopment activities. Using a dust meter, particulates will be continuously monitored immediately downwind in the work area and integrated over a period not to exceed 15 minutes. If the downwind particulate level is more than 150 ug/m^3, then upwind (background) levels must be measured immediately. If the downwind levels are more than 100 ug/m^3 above background, additional dust suppression measures must be taken.

A.12.1.1 Vapor Emission Response Plan

If the downwind area perimeter air concentrations of organic vapors exceed the upwind work area perimeter concentration by 5 ppm but less than 25 ppm, the following actions will be taken:

- Every 30 minutes monitor the perimeter work area location.
- Every 30 minutes monitor the organic vapor concentration 200 feet downwind of the work area perimeter or half the distance to the nearest receptor, whichever is less. If this reading exceeds the perimeter work area upwind organic vapor concentration by 5 ppm, all work must halt and monitoring increased to every 15 minutes. If, at any time, this reading exceeds the perimeter work area upwind concentration by 10 ppm, the Major Vapor Emissions Response Plan will be initiated.
- If organic vapor levels 200 feet downwind of the perimeter work area or half the distance to the nearest downwind receptor, whichever is less, exceeds by 5 ppm the work area perimeter upwind concentration persistently, then air quality monitoring must be performed within 20 feet of the nearest downwind receptor (20-foot zone). If the readings in the 20-foot zone exceed the perimeter work area upwind concentration by 5 ppm for more than 30 minutes, then the Major Vapor Emissions Response Plan will be implemented.
- Work activities can resume only after the downwind 200-foot reading and the 20-foot zone reading are less than 5 ppm above the perimeter work area upwind concentration. In addition, the downwind perimeter work area concentration must be less than 25 ppm above the perimeter work area upwind concentration.

A.12.2.2 Major Vapor Emission Response Plan

If the downwind work area perimeter organic vapor concentration exceeds the upwind work area perimeter concentration by more than 25 ppm, then the Major Vapor Emission Response Plan will be activated. Upon activation, the following activities will be undertaken:

1. All work will halt.
2. All Emergency Response Contacts as listed in the Health and Safety Plan will be contacted.

3. The NYSDEC, NYSDOH, and the Chautauqua County Health Department will be notified and advised of the situation.

4. The local police and fire department authorities will immediately be contacted by the Safety Officer and advised of the situation.

5. Frequent air monitoring will be conducted at 30-minute intervals within the 20-Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer and work may resume

ATTACHMENT I

EXCAVATION AND HANDLING OF POTENTIALLY CONTAMINATED SOIL/FILL

EXCAVATION AND HANDLING OF POTENTIALLY CONTAMINATED SOIL/FILL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:
   1. Provide all labor, materials, equipment and incidentals required to perform all excavating, backfilling, filling and grading, and disposing of soil/fill materials as required for construction of structures, manholes, vaults, conduits, pipelines, roads, and other facilities.
   2. Stockpile and characterize soil/fill in which evidence of contamination (staining, odors, and/or elevated photoionization detector measurements) is observed. Stained soil is soil that is discolored, tinted, dyed, unnaturally mottled, or contains a sheen.
   3. Prepare all waste disposal applications and shipping manifests and make all arrangements for transportation and disposal of contaminated material.

1.2 QUALITY ASSURANCE

A. Permits and Regulations:
   1. Obtain all necessary permits for work in roads, rights-of-way, railroads, etc. Also obtain permits as required by local, state and federal agencies for discharging water from excavations.
   2. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Reference Standards: Comply with applicable provisions and recommendations of the following.
   1. OSHA Standard, Title 29, Code of Federal Regulations, Part 1926, Section .650 (Subpart P - Excavations).

1.3 SUBMITTALS

A. No excavation, grading or disturbance of the final vegetated soil over or existing subgrade soil/fill shall be initiated prior to a minimum of five working days written notification to the NYSDEC Region 9, Division of Environmental Remediation. The notification will include a description of planned excavation activities and protective measures, and the name of the site supervisor.

B. Provide waste manifests, bills of lading, certified weight scale tickets, or other transportation records for soil/fill material removed from the site, to the NYSDEC, if requested.

C. Test Reports – Characterization of Soil/Fill and Borrow Materials:
   1. Provide NYSDEC analytical results, if requested, for the following :
      a. Tests of soil/fill with evidence of contamination of material removed during excavation.
      b. Tests, if necessary, of off-site material that will be used as fill or cover material at the site.

1.4 JOB CONDITIONS

A. Subsurface Information: Refer to Remedial Action Work Plan and previous investigation reports on subsurface conditions. Data is not intended as a representation or warranty of continuity of conditions between soil borings nor of groundwater levels at dates and times other than date and time when measured.

B. Existing Structures and Utilities: Due to site history, underground structures and utilities may be present in the area of the site.
   1. CONTRACTOR may need to explore ahead of the required excavation to determine the exact location of all structures and utilities.
   2. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during all operations.
   3. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult piping or utility owner immediately for directions as to procedure. Cooperate with utility owner in keeping services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
   4. Should underground storage tanks or drums be encountered, the CONTRACTOR shall notify the NYSDEC immediately. The CONTRACTOR shall also take appropriate measures to protect the health and safety of on-site workers. Any tanks or drums encountered shall be evaluated to the satisfaction of the NYSDEC and properly closed in place or removed and properly disposed.
   5. Should foundations be encountered, the CONTRACTOR shall either remove the foundation in areas necessary to complete the work or modify the work to accommodate the foundations.

D. Protection of Persons and Property: Barricade open excavations occurring as part of the work and post with warning lights, if necessary. Operate warning lights, if necessary, during hours from dusk to dawn each day and as otherwise required.
   1. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

E. Dust Control: Conduct all operations and maintain areas of activity, including sweeping and sprinkling of roadways, to minimize creation and dispersion of dust.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 -EXECUTION

3.1 INSPECTION

A. Provide NYSDEC with sufficient notice and with means to examine the areas and conditions under which excavating, filling, and grading are occurring.

3.2 SITE PREPARATION

A. Clear all areas to be excavated of all trees, brush, roots, stumps, logs, wood and other materials and debris. All contaminated waste materials shall be removed from site and properly disposed. Burning will not be permitted unless permitted by the appropriate authorities.

B. If cover material was previously placed in the area to be excavated, the cover material may be stripped from the surface and stockpiled separately for reuse.

3.3 TEST PITS

A. CONTRACTOR may, if necessary, excavate and backfill, in advance of construction, test pits to determine conditions or location of existing facilities. The test pit operations will be conducted in accordance with the excavation procedures outlined below.

3.4 EXCAVATION

A. Perform all excavation required to complete the work as necessary. Excavations shall include earth, sand, clay, gravel, hardpan, boulders not requiring drilling and blasting for removal, decomposed rock, pavements, rubbish and all other materials within the excavation limits.

B. All work shall be completed in accordance with all air quality standards as determined by applicable federal, state, and local regulations.

C. Excavations for structures and utilities shall be open excavations. Provide excavation protection system(s) required by ordinances, codes, law and regulations to prevent injury to workmen and to prevent damage to new and existing structures or pipelines. Unless shown or specified otherwise, protection system(s) shall be utilized under the following conditions.

   1. Excavation Less Than 5 Feet Deep: Excavations in stable rock or in soil conditions where there is no potential for a cave-in may be made with vertical sides. Under all other conditions, excavations shall be sloped and benched, shielded, or shored and braced.

2. Excavations More Than 5 Feet Deep: Excavations in stable rock may be made with vertical sides. Under all other conditions, excavations shall be sloped and benched, shielded or shored and braced.
3. All excavations or disturbances must be covered using appropriate cover material within 10 working days of backfilling or as otherwise approved by the NYSDEC.

D. Pumping of water from excavations, if necessary, shall be done in such a manner to prevent the carrying away of particulates, soil/fill, or unsolidified concrete materials, and to prevent damage to the existing subgrade.
1. Water from the excavations will be disposed properly in accordance with all applicable regulations in such a manner as not to endanger public health, property, or any portion of the work under construction or completed.
2. Based on the groundwater analytical results, water in the excavations may be discharged to the ground surface unless staining or elevated PID measurements are observed in the excavation, a sheen is present on the water surface or if pH is less than 6.5 or greater than 8.5. If any of these conditions exist, the water pumped from the excavations will be containerized or may be discharged to the local sewer authority under a discharge permit if the water quality falls within the conditions of the permit. If the water quality is such that the permit requirements will be exceeded, the groundwater removed from the excavation will be containerized and sampled. Containerized water not meeting the Surface Water and Groundwater Quality Standards set forth in 6 NYCRR Part 703.5 will be transported off-site for proper disposal.

E. Utility Trench Preparation:
1. No more than 200 feet of trench may be opened in advance of utility laying.
2. Trench width shall be minimized to greatest extent practical but shall conform to the following:
    a. Sufficient to provide room for installing, jointing and inspecting utilities.
    b. Enlargements at pipe joints may be made if required.
    c. Sufficient for shoring and bracing, or shielding and dewatering.
    d. Sufficient to allow thorough compaction of backfill adjacent to bottom half of utility.
    e. Do not use excavating equipment that requires the trench to be excavated to excessive width or depth.

F. Field Screening of Excavated Materials:

1. The soil/fill removed during excavation will be inspected for staining and will be field screened for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID).
2. Excavated soil/fill with no evidence of contamination (no staining or elevated PID measurements) may be used as subgrade or excavation subgrade backfill. However, soils with high pH (8.5 to 12.5) will not be used as backfill in utility trenches or as subsurface material in the construction of berms.
3. Excavated soil/fill that is visibly stained or produces elevated PID readings (i.e., sustained 10 ppm or greater) will be considered potentially contaminated soil/fill. Potentially contaminated soil/fill will be stockpiled on polyethylene sheeting and then sampled for reuse, treatment or disposal.
   a. Sampling and analysis of soil/fill exhibiting staining and/or elevated PID measurements will be completed in accordance with the protocols delineated in the Soil/Fill Management Plan (S/FMP). Sampling and analysis will also be completed in accordance with the requirements of the disposal facility at which the soil/fill with concentrations of contaminants above the site-specific action levels (SSALs) will be disposed.
   b. Soil/fill containing one or more constituents in excess of SSALs in the S/FMP will be transported off-site to a permitted waste management facility.
   c. Excavated or disturbed soil/fill that has been analyzed and found to meet SSALs may be used as subgrade or excavation subgrade backfill.

G. Material Storage:

1. Stockpile soil/fill with no evidence of contamination (no staining or elevated PID measurements) in approved areas in approximately 50 cubic yard piles, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
   a. Locate and retain soil materials away from edge of excavations.
   b. Dispose of excess soil material and waste materials appropriately.
2. Stockpile soil/fill with evidence of contamination (staining and/or elevated PID measurements) in approved areas in approximately 50 cubic yard piles, until sample analysis is completed. Place, grade and shape stockpiles for proper drainage. Ensure effective weather proofing of potentially contaminate soil stockpiles.
   a. Locate and retain soil materials away from edge of excavations.
   b. The stockpiled soil/fill will be placed on top of and be completely covered using polyethylene sheeting with a minimum thickness of 8-mil to reduce the infiltration of precipitation and the entrainment of dust. A berm wall shall be constructed around the stockpile using uncontaminated material covered with the same sheeting as the stockpiled material. The stockpile area shall be protected from stormwater runoff. Edges of the sheeting shall overlap a minimum of two feet and duct tape shall be applied along all seams to prevent movement of sheeting and infiltration of precipitation into the stockpiled soil. Non-soil weights (e.g. tires) may be necessary to inhibit movement of the cover sheeting by wind.

H. Sample Collection and Analysis:
   1. Collect a minimum of one composite sample, and one duplicate sample using five grab samples per 100 cubic yards of potentially contaminated soil as described in the Soil/Fill Management Plan. The characterization samples should be collected from stockpiled potentially contaminated soil/fill within five days of excavation.
   2. Engage the services of a NYSDOH ELAP certified analytical laboratory to analyze samples in order to determine the proper handling and disposal of potentially contaminated soil/fill material as listed below.
   3. Required Analyses:
      a. Target Compound List (TCL) Volatile Organic Compounds (VOCs) by New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) 95-1.
      b. TCL Semivolatile Organic Compounds (SVOCs) by NYSDEC ASP 95-2.
      c. TCL pesticides and polychlorinated benzenes (PCBs) by NYSDEC ASP (95-3).
      d. Target Analyte List (TAL) metals and cyanide by NYSDEC ASP.
      e. pH by SW-846 Method 9045.
   4. If contaminants are present at concentrations above the SSALs, additional analysis will be required by the disposal facility and will likely include:
      a. Toxicity Leaching Characteristic Procedure (TCLP)
      b. RCRA Characteristics (Ignitability, Corrosivity, and Reactivity).

<u>3.5 LOADING AND TRANSPORTING</u>

A. Furnish all labor, materials, equipment, and incidentals required to load and transport all contaminated soil/fill from the site.

B. Notify the NYSDEC in writing when loading of contaminated soil/fill will occur and include the name and location of the disposal facility to be used. Submit to the NYSDEC, if requested, a full description of the disposal facility, licenses, permits, and compliance status.

C. Do not load and transport contaminated soil and debris until receipt of approval from the disposal facility that the contaminated soil and debris will be disposed in.

D. Conduct all loading and transportation activities in accordance with all applicable federal, state, and local regulations, including but not limited to United States Department of Transportation and USEPA regulations 40 CFR 172-179.

E. Conduct all loading activities to minimize the formation of dust.

F. Obtain and comply with the required permits and authorization for transportation of contaminated soil and debris in accordance with State and local jurisdictions. The contaminated soil and debris shall be transported by a licensed waste hauler.

G. All trucks transporting contaminated soil and debris for off-site disposal shall be lined, covered, and secured in accordance with all federal, State, and local regulations. Any liner that cannot be decontaminated shall be disposed of with the contaminated soil and debris. Trucks used for transportation of contaminated soil and debris shall travel on authorized roads in accordance with all federal, state and local regulations.

H. Contaminated soil and debris shall be transported for disposal in containers that are watertight. Leaking containers shall be unloaded at the site and any leaked liquids cleaned up as spills.

I. Contaminated soil and debris transport containers shall be covered to prevent release of dust and particulates and exposure of the contaminated soil and debris to precipitation.

J. Employ a temporary transport vehicle pad for vehicle loading operations to control and contain contaminated soil and debris spillage.

K. Inspect and clean loaded transport vehicle tires and undercarriage to remove any adhering contaminated soil and debris prior to vehicle departure from the site.

3.6 DISPOSAL OF EXCAVATED MATERIALS

A. Soil/Fill with concentrations of contaminants above the SSALs will be disposed off-site within 90 days of excavation at an appropriate, permitted disposal facility.

B. Prepare all applications for waste disposal at appropriate disposal facilities and waste transportation and disposal manifests and any other documents necessary for the off-site disposal of contaminated soil/fill material. Submit waste transportation and disposal documentation to the NYSDEC, if requested.

C. Prepare a waste transportation and disposal manifest, and all other documents required for waste shipment, for each load of waste material that is transported from the site.

D. Maintain a waste disposal log on-site containing pertinent waste disposal information. If requested, the NYSDEC on-site representative may review the log.

3.7 SOIL/FILL COVER SYSTEM

A. Backfill all excavations as promptly as work permits.

B. Replace cover material within 10 days of backfilling excavations. The cover material shall be consistent with and will be placed in accordance with the Remedial Work Plan.

C. If working conditions require the excavation to remain open for a period greater than ten days, plastic or metal sheeting will be used to cover the entire or portions of the excavation during periods of inactivity.

+ + END OF SECTION + +

ATTACHMENT II

STANDARD OPERATING PROCEDURES

Appendix ____: Item ____ - ____ SCREENING OF SOIL/FILL SAMPLES FOR ORGANIC VAPORS

Applicability: GENERAL

Revision No.: ________ Date: ___________________

Prepared By: PIM Date: ___________ Approved By: __________ Date:

1.0 INTRODUCTION

This guideline presents a method for screening soil samples. During soil/fill excavation activities, a photoionization detection (PID) or flame ionization detector (FID) will be used to monitor the excavated soils. The monitoring results provide criteria for sampling of soil potentially impacted by volatile organic substances.

2.0 METHODOLOGY

1. During excavation, the excavated soil will be examined for visually contaminated (stained) soils. If present, these areas will be sampled first. If no staining is observed, collect samples from each stockpile at random locations.

2. Place the sample in a labeled wide-mouthed glass jar. Seal the jar with aluminum foil and a screw top cap.

   a. Keep these samples at as near to 70^{o}F as possible.
   b. Check head space of each sample for any organic vapor present by inserting the probe of the PID through the aluminum foil seal.
   c. The soil sample from each excavation location will be noted where VOA's were detected and removal of the contaminated soil will be coordinated per project requirements.

3.0 EQUIPMENT REQUIREMENTS

- 40 ml. precleaned and prelabeled glass VOA vials with teflon-lined septum caps.
- Ice and ice chest.
- Wide mouthed glass jars with screw caps
- Aluminum foil.
- Photoionization detector.

024.1

ATTACHMENT III

GENERIC EROSION AND SURFACE WATER CONTROL PLAN

GENERIC EROSION AND SURFACE WATER CONTROL PLAN

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:
   1. Provide all labor, materials, equipment and incidentals required to perform all excavating, backfilling, filling and grading, for construction of structures, manholes, vaults, conduits, pipelines, roads, and other facilities and all related sediment and erosion controls as specified herein.
   2. Provide positive means of erosion control, such as shallow ditches (see "New York Guidelines for Urban Erosion and Sediment Control" Third Printing 10/91 USDA – Soil Conservation Service), around work areas to remove surface drainage water from excavated areas. Pumping of water from excavations, if necessary, shall be done in such a manner to prevent the carrying away of particulates, soil/fill, or unsolidified concrete materials, and to prevent damage to the existing subgrade.
   3. Water from the excavations will be disposed properly in accordance with all applicable regulations in such a manner as not to endanger public health, property, or any portion of the work under construction or completed. Based on groundwater analytical results for samples collected at the Site, water may be discharged to the ground surface unless staining or elevated PID measurements are observed in the excavation or a sheen is present on the water surface. If any of these conditions exist the water removed from the excavation will be containerized and sampled. Any groundwater not meeting NYSDEC Ambient Water Quality and Guidance Values will be transported and disposed off-site.

1.2 QUALITY ASSURANCE

A. Permits and Regulations:
   1. Obtain all necessary permits for work in roads, rights-of-way, railroads, etc. Also obtain permits as required by local, state and federal agencies for discharging water from excavations.
   2. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Reference Standards: Comply with applicable provisions and recommendations of the following.
   1. NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) SPDES General Permit for Storm Water Discharges from Construction Activities (Permit Number GP-93-06).
   2. SOIL AND WATER CONSERVATION SOCIETY (SWCS) - EMPIRE STATE CHAPTER 1991 (or latest version) New York Guidelines for Urban Erosion and Sediment Control.
   3. CODES, RULES, AND REGULATIONS OF THE STATE OF NEW YORK

6 NYCRR Part 700 Definitions, Samples and Tests.

4. 6 NYCRR Part 364 Waste Transporter Permits.
5. OSHA Standard, Title 29, Code of Federal Regulations, Part 1926, Section .650 (Subpart P - Excavations).

1.3 SUBMITTALS

A. The Contractor shall prepare a written Work Plan that details the Contractor's operations and includes all activities that relate to the soil excavation (i.e., excavation plan, sampling plan, etc.). The Work Plan must detail erosion control methods and surface water management procedures that will be implemented by the Contractor throughout the work. The Work Plan shall include:

1. Procedures for excavating, handling, storing and transporting off-site contaminated soils, hazardous soils and concrete debris including a contingency plan detailing procedures and methods to be employed at no additional cost to prevent, contain, and recover spills during the work.
2. Description of equipment to be used on site with appropriate safety devices needed to undertake the remediation of the site.
3. Identification of permits required to conduct the work.
4. Worksite layout showing, at a minimum, equipment and material staging areas, trailers, decontamination station, and staging procedures.
5. Identification of proposed haul routes for wastes and backfill.
6. Detailed construction drawing(s) of the proposed decontamination station.
7. Provisions for control and prevention of surface runoff.
8. Procedures and provisions for control of fugitive air emissions and dust control.
9. Detailed work schedule for all tasks to fulfill the project.
10. Other requirements necessary to provide security, staging, sampling, testing, removal, and disposal of wastes.
11. Procedures and provisions for traffic control on public right of ways and private properties.
12. Procedures and provisions for site winterization, if necessary.
13. Procedures for collecting, storing, and disposing of decontamination water and other contaminated water generated during the work.
14. Methods and equipment to be used for compaction of fill materials backfilled in the excavated areas.

1.3.1. STORM WATER MANAGEMENT AND EROSION CONTROL PLAN (SWECP)

A. A SWECP will be included in the Work Plan. The SWECP shall follow guidelines for structure and content contained in SPDES-GP-93-06, Appendix F. The SWECP shall include:

1. Information regarding site background, description of work, analysis of site limitations for storm water facilities, and potential impact to natural resources.
2. All calculations and assumptions used for the sizing and siting of proposed temporary erosion and sedimentation control facilities.
3. Information regarding maintenance needs and safety considerations of storm water management and erosion and sediment control facilities.

4. Description of the staging of erosion and sedimentation control facilities and construction activities.
5. Description of winterization provisions, if necessary.

1.3.1.1 Storm Water Management Guidelines

A. Control and prevent surface runoff into remediation areas.

B. Control and prevent surface runoff from contaminating a clean area, or recontaminating an area that has been excavated to remove all soil above the cleanup goals. In the event surface runoff is the cause of existing clean areas, or subsequently cleaned areas, becoming contaminated, the affected areas shall be cleaned in accordance with the Remedial Work Plan.

1.3.1.2 Erosion and Sediment Control Guidelines

A. Existing vegetation on the project site shall be retained and protected to minimize soil loss on the project site and to minimize erosion control costs.

B. Sediment control practices and measures, where necessary, shall be designed to protect the natural character of rivers, streams, lakes, coastal waters or other waterbodies in the vicinity of the site and minimize erosion and sedimentation off-site from the start of land disturbance activities to completion of the project.
   1. The off-site impacts of erosion and sedimentation related to land clearing, grading and construction activities shall not be any greater during and following land disturbance activities than under pre-mobilization conditions.
   2. Pursuant to 6NYCRR Part 700.
      a. Toxic and other deleterious substances shall not be discharged in amounts that will adversely affect the taste, color or odor thereof, or impair the waters of the state for their classified usages.
      b. Suspended, colloidal and settleable solids shall not be discharged in amounts that cause substantial visible contrast to natural conditions, or causes deposition or impairs the waters for their classified usages.
   3. Stream reaches downstream of construction areas shall not have substantial visible contrast relative to color, taste, odor, turbidity and sediment deposition from the reaches upstream of the construction area. Impacts such as these which result from construction or developmental activities are a violation of 6 NYCRR Park 700 water quality standards and may be subject to enforcement actions.

C. Erosion and sediment control measures shall be constructed in accordance with an erosion and sediment control plan. The plan shall:
   1. Describe the temporary structural and vegetative measures that will be used to control erosion and sedimentation for each stage of the project from land clearing to the finished stage.
   2. Provide a map showing the location of erosion and sediment control measures.
   3. Provide an implementation schedule for staging temporary and permanent erosion and sediment control facilities.
   4. Provide a maintenance schedule for soil and sediment control facilities and describe maintenance activities to be performed.

D. Erosion and sediment control measures shall be constructed prior to beginning any other land disturbances. The devices shall not be removed until the disturbed land areas are stabilized.

E. Guidance:
   1. Grading: Perimeter grading shall blend with adjoining properties.
   2. Vegetative Protection: Where protection of trees or other vegetation is required, the location of the site to be protected shall be shown on the erosion control plan. The method of protecting vegetation during construction shall conform to the design criteria in SWCS.
   3. Drainage Control:
      a. Surface runoff that is relatively clean and sediment free shall be diverted or otherwise prevented from flowing through areas of construction activity on the project site.
      b. An approved temporary sediment control structure or permanent storm water management structure shall not be created which causes water to pond off-site on adjacent property, without first having obtained ownership or permanent easement for such use from the owner of the off-site or adjacent property.
      c. Natural drainage channels shall not be altered or relocated without the proper approvals. Pursuant to ECL Article 15 a protected stream and the bed and banks thereof shall not be altered or relocated without the approval of the NYSDEC.
      d. Runoff from any land disturbing activity shall not be discharged or have the potential to be discharged off-site or into storm drains or into watercourses unless such discharge is directed through a properly designed, installed and maintained structure, such as a sediment trap, to retain sediment on-site. Accumulated sediment shall be removed when 60 percent of the storage capacity of the sediment retention structure is filled with sediment.
      e. To limit the potential for migration of water with high pH from the site, clay plugs will be installed in the utility corridors at a maximum spacing of 100 feet.
      f. For finished grading, adequate gradients shall be provided so as to prevent water from standing on the surface of lawns for more than 24 hours after the end of a rainfall, except in a swale flow area which may drain as long as 48 hours after the end of rainfall.

g. Permanent swales or other points of concentrated water flow shall be stabilized with sod, rip rap, paving, or covered with an approved erosion control matting as provided for in the design criteria in SWCS.

h. Surface flows over cut and fill slopes shall be controlled as provided for in the design criteria for vegetating waterways in SWCS.

5. Stream protection:

a. The bed and banks of all on-site and off-site streams that may be impacted by land clearing, grading, and construction activities shall be protected to prevent stream, river, lake or coastal sedimentation, streambank erosion, stream enlargement and degradation or loss of fisheries habitat. Measures for protecting the bed and banks of a stream include: riprap, log cribbing, and vegetative measures.

6. Maintenance:

a. An erosion control plan for the project site shall identify maintenance requirements for erosion and sediment control practices utilized, and it shall provide a maintenance schedule. All erosion and sediment control measures shall be inspected periodically and maintained in conformance with the schedule so as to ensure they remain in effective, operating condition until such times as they are removed.

b. All points of construction ingress and egress shall be protected to prevent the deposition of materials onto traversed public thoroughfare, either by installing and maintaining a stabilized construction entrance, or by washing all vehicle wheels in a safe disposal area. All materials deposited onto public thoroughfares shall be removed immediately. Proper precautions shall be taken to ensure that materials deposited onto public thoroughfares are removed so that they do not enter catch basins, storm sewers, or combined sewers.

c. Accumulated sediment shall be removed when 60 percent of the storage capacity of the retention structure is filled with sediment.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 -EXECUTION

A. The Contractor will provide NYSDEC with sufficient notice and means to examine the areas and conditions under which excavating, filling, and grading are occurring.

B. The Contractor shall strictly adhere to the provisions of the Work Plan and shall control and manage surface water in every area where his/her activities take place.

C. The Contractor shall plan and execute construction and earth work by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.

1. Hold the areas of bare soil exposed at one time to a minimum.
2. Provide temporary control measures such as berms, dikes and drains.

D. Construct fills and waste areas by selective placement to eliminate surface silts or clays, which will erode.

E. Periodically inspect earthwork to detect any evidence of the start of erosion, apply corrective measures as required to control erosion.

F. Surface water from known areas of contamination shall be collected prior to leaving those areas and properly disposed following all applicable state and federal regulations.

G. In the event that surface runoff is the cause of existing clean areas, or subsequently cleaned areas, becoming contaminated, the affected areas shall be cleaned in accordance with the Remedial Work Plan.

H. Groundwater that is visibly flowing from the excavation shall be collected at each exit point and properly disposed following all applicable state and federal regulations.

+ + END OF SECTION + +

ATTACHMENT IV

EROSION CONTROL DETAILS

STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE

Definition

A temporary barrier of straw or similar material used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a bale dike is to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes are to be used for no more than three (3) months.

Conditions Where Practice Applies

The straw bale dike is used where:

1. No other practice is feasible.
2. There is no concentration of water in a channel or other drainage way above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed these limits:

Constructed Slope	Percent Slope	Slope Length (feet)
2:1	50	25
2 -1/2:1	40	50
3:1	33	75
3-1/2:1	30	100
4:1	25	125

Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage area in this instance shall be less than one acre and the length of slope above the dike shall be less than 200 feet.

Design Criteria

A design is not required. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 4.3 on page 4.10 or details.

SILT FENCE

Definition

A temporary barrier of geotextile fabric (filter cloth) used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used.

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence are:

Slope Steepness	Maximum Slope Length (Ft)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter than 5:1	200

2. Maximum drainage area for overland flow to a silt fence shall not exceed 1/2 acre per 100 feet of fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required. All silt fences shall be placed as close to the area as possible, and the area below the fence must be undisturbed or stabilized.

A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:

1. The type, size, and spacing of fence posts.
2. The size of woven wire support fences. (OPTIONAL)
3. The type of filter cloth used.
4. The method of anchoring the filter cloth.
5. The method of fastening the filter cloth to the fencing support.

Where ends of filter cloth come together, they shall be over lapped, folded and stapled to prevent sediment bypass. See Figure 4.4 on page 4.12 for details.

Criteria for Silt Fence Materials

1. **Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance. Statewide acceptability shall depend on in field and/or laboratory observations and evaluations.**

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Sizw	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.
3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14-1/2 gage with a maximum 6 in. mesh opening, or as approved. (OPTIONAL)
4. Prefabricated Units: Envirofence or approved equal may be used in lieu of the above method providing the unit is installed per manufacturer's instructions.

STANDARD AND SPECIFICATION FOR TEMPORARY SWALE

Definition

A temporary excavated drainage way.

Purpose

The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device.

Conditions Where Practice Applies

Temporary Swales are constructed:

1. To divert flows from a disturbed area.
2. Intermittently across disturbed areas to shorten overland flow distances.
3. To direct sediment laden water along the base of slopes to a trapping device.
4. To transport offsite flows across disturbed areas such as rights-of-way.

Swales collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 4.5 on page 4.14 for details.

	Swale A	Swale B
Drainage Area	<5 Ac	5-10 Ac
Bottom Width of Flow Channel	4 ft	6 ft
Depth of Flow Channel	1 ft	1 ft
Side Slopes	2:1 or Flatter	2:1 or Flatter
Grade	0.5% Min. 20% Maz.	0.5% Min. 20% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Waterways on page 4.91.

Stabilization

Stabilization of the swale shall be completed within 10 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year. The flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade	FLOW CHANNEL A ≤5 Ac	FLOW CHANNEL B 5-10 Ac
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with Jute or Excelsior; Sod, or lined with 2 in. stone
3	5.1-8.0%	Seed and cover with Jute or Excelsior, Sod line with 2 in. stone	Line with 4-8 in. stone or Recycled Concrete Equivalent
4	8.1-20%	Line with 4-8 in. stone or Recycled Concrete Equivalent[1]	Engineering Design

In highly erodible soils, as defined by local approving agency, refer to the next higher slope grade for type of stabilization.

[1] Recycled Concrete Equivalent shall be concrete broken into the required size, and shall contain no steel reinforcement.

Outlet

Swale shall have an outlet that functions with a minimum of erosion, and dissipates runoff velocity prior to discharge off the site.

Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin until the drainage area above the swale is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet condition.

If swale is used to divert flows from entering a disturbed area, a sediment trapping device may not be needed.

STANDARD AND SPECIFICATIONS FOR PERIMETER DIKE/SWALE

Definition

A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area.

Purpose

The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

Conditions Where Practice Applies

Perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along tops of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.

The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 4.16 on page 4.34 for details.

The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from effected adjacent property owners. A design is not required for perimeter dike/swale. The following criteria shall be used:

<u>Drainage area</u> - Less than 2 acres (for drainage areas larger than 2 acres but less than 10 acres see earth dike; for drainage areas larger than 10 acres, see standard and specifications for diversion).

<u>Height</u> - 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

<u>Bottom width of dike</u> - 2 feet minimum.

<u>Width of swale</u> - 2 feet minimum.

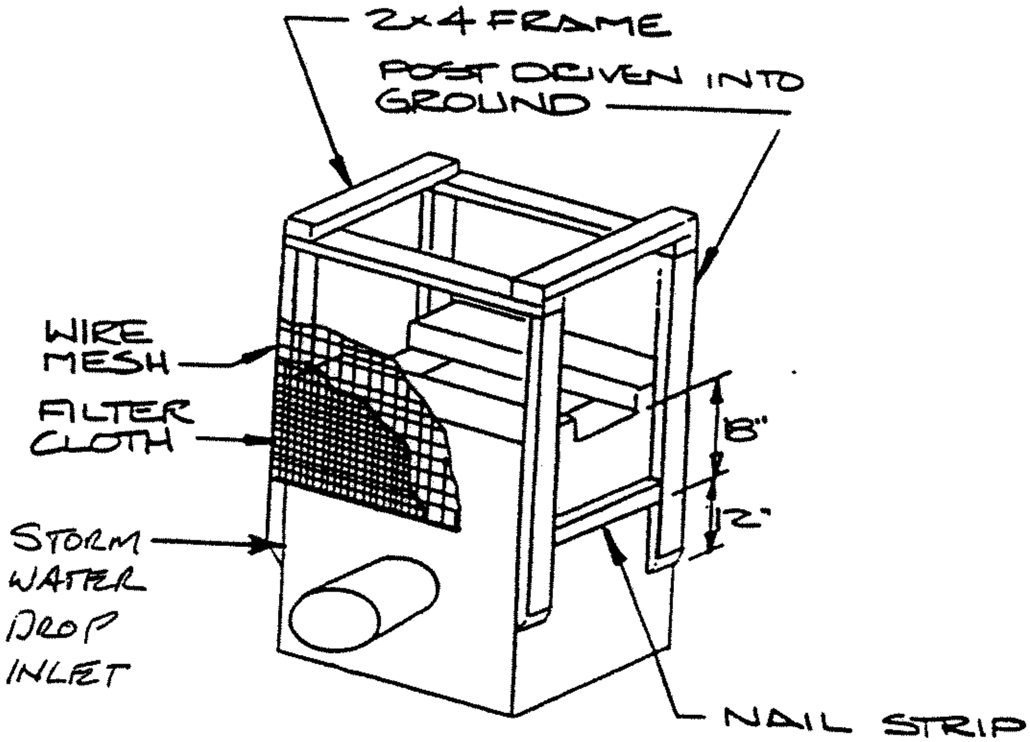
<u>Grade</u> - Dependent upon topography, but shall have positive drainage (sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 20 percent.

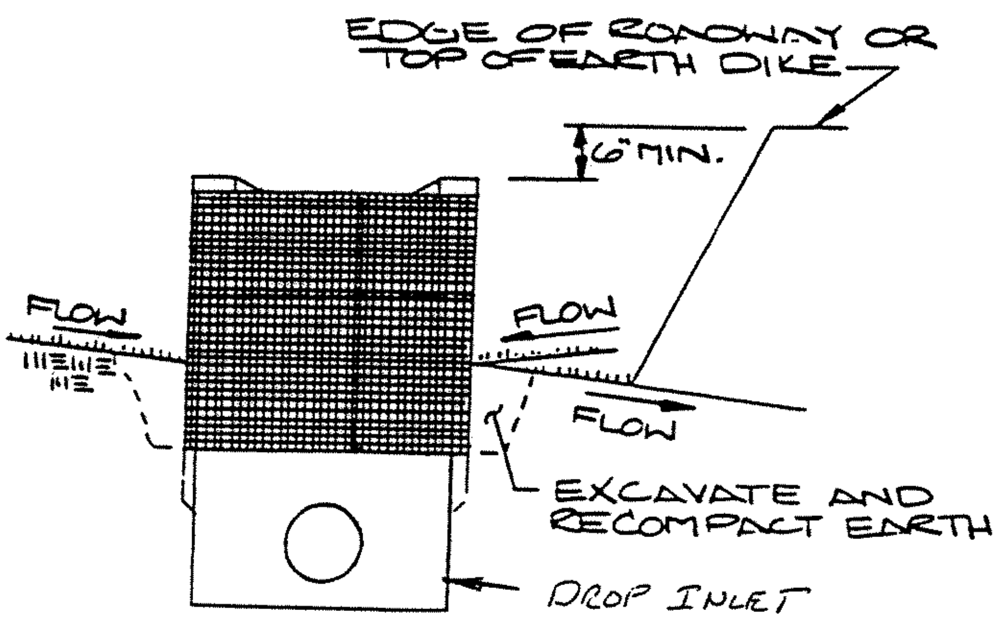
<u>Stabilization</u> - The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in the seeding season.

Outlet

1. Perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.
3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap, sediment basin, or to an area protected by any of these practices.
4. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

SEDIMENT TRAP
FOR
DROP INLETS





ATTACHMENT V

MINIMUM REQUIREMENTS FOR HEALTH AND SAFETY

MINIMUM REQUIREMENTS FOR HEALTH AND SAFETY

1.0 Description

The Contractor is responsible and liable for the health and safety of all on-site personnel and off-site community impacted by the site redevelopment activities.

This section describes the minimum health and safety requirements for this project including the requirements for the development of a written Health and Safety Plan (HASP). All on-site workers must comply with the requirements of the HASP. The Contractor's HASP must comply with all applicable federal and state regulations protecting human health and the environment from the hazards posed by activities during this site remediation.

2.0 References

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

ACGIH TLVs	Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices (Latest Edition)

CODES OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards (Latest Edition)
29CFR 1926	Safety and Health Regulations for Construction (Latest Edition)
40 CFR 262	Standards Applicable to Generators of Hazardous Waste (Latest Edition)
49 CFR 178	Shipping Container Specification (Latest Edition)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 9285.1-30	1992 or latest edition: Standard Operating Safety Guides (Office of Emergency and Remedial Response)
EPA-450	1987 or latest edition: Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)

NATIONAL INSTITUTES FOR SAFETY AND HEALTH (NIOSH)

NIOSH 85-115	1985 or latest edition: Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH, OSHA, USCG, and EPA)
NIOSH 89-127	1989 or latest edition: Manual of Analytical Methods

N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC)

TAGM 4031	1989 Division Technical and Administrative Guidance Memorandum -- Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites

N.Y.S. DEPARTMENT OF LABOR

NYSDOL 28.876	1980 Article 28 Section 876 NYS Labor Law (Right-to-Know Law)

3.0 Basis

The Occupational Safety and Health Administration (OSHA) Standards and Regulations contained in Title 29, Code of Federal Regulations, Parts 1910 and 1926 (20 CFR 1910 and 1926) and subsequent additions and/or modifications, the New York State Labor Law Section 876 (Right-to-Know Law), the Standard Operating Safety Guidelines by the United States Environmental Protection Agency (EPA), Office of Emergency and Remedial Response and the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH, OSHA, USCG, and EPA) provide the basis for the safety and health program. Additional specifications within this section are in addition to OSHA regulations and reflect the positions of both the EPA and the National Institute for Occupation Safety and Health (NIOSH) regarding procedures required to ensure safe operations at abandoned hazardous waste disposal sites.

The safety and health of the public and project personnel and the protection of the environment will take precedence over cost and schedule considerations for all project work. The Contractor will notify the NYSDEC and NYSDOH of conditions which may adversely affect the safety and health of project personnel and the community. The NYSDEC or the NYSDOH may stop work for health and safety reasons. If work is suspended for health and/or safety reasons, it shall not resume until approval is obtained from the NYSDEC or the NYSDOH. The cost of work stoppage due to health and safety is the responsibility of the Contractor.

4.0 Health and Safety Definitions

The following definitions shall apply to the work of the redevelopment of the site:

A. Project Personnel: Project personnel include the Contractor, subcontractor, and Federal, and State, and local Representatives, working or having official business at the Project Site.

B. Authorized Visitor: The Safety Officer has primary responsibility for determining who is qualified and may enter the site. The Site Safety Officer will only allow authorized visitors with written proof that they have been medically certified and trained in accordance with 29 CFR 1910.120 to enter the contamination reduction zone and/or exclusion area.

C. Health and Safety Coordinator (HSC): The HSC shall be a Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) retained by the Contractor. The HSC will be responsible for the development and implementation of the HASP.

D. Safety Officer (SO): The SO will be the Contractor's on-site person who will be responsible for the day-to-day implementation and enforcement of the HASP.

E. Health and Safety Technicians (HST): The HST(s) will be the Contractor's on-site personnel who will assist the SO in the implementations of the HASP, in particular, with air monitoring in active work areas and maintenance of safety equipment.

F. Medical Consultant (MC): The MC is a physician retained by the Contractor who will be responsible for conducting physical exams as specified under the Medical Monitoring Programs in this section.

G. Project Site: The area of the Hanna Furnace Site that is undergoing redevelopment, which includes the Contractor Work Area.

H. Contractor Work Area: An area of the project site including the Support Zone, access road, staging area, and Exclusion Zone.

I. Contractor Support Zone: An area of the Contractor Work Area outside the Exclusion Zone, accessible for deliveries and visitors. No persons, vehicles, or equipment may enter these areas from the Exclusion Zone without having gone through specified decontamination procedures in the adjacent Contamination Reduction Zone.

J. Staging Areas: Areas within the Exclusion Zone for the segregated temporary staging of uncontaminated and contaminated soil and debris.

K. Exclusion Zone: The innermost area within the Contractor Work Area that encloses the area of contamination. Protective clothing and breathing apparatus as specified in the health and safety requirements and in the Contractor's approved HASP must be worn.

L. Contamination Reduction Zone: An area at the Exit Point of the Exclusion Zone through which all personnel, vehicles, and equipment must enter and exit. All decontamination of vehicles and equipment and removal of personal protective clothing and breathing apparatus must take place at the boundary between the Exclusion Zone and the Contamination Reduction Zone.

M. Work: Work includes all labor, materials, and other items that are part of site redevelopment activities.

N. Monitoring: The use of direct reading field instrumentation to provide information regarding the levels of gases and/or vapor, which are present during remedial action. Monitoring shall be conducted to evaluate employee exposures to toxic materials and hazardous conditions.

5.0 Responsibilities

The Contractor shall:

A. Employ an SO who shall be assigned full-time responsibility for all tasks herein described under this HASP. In the event the SO cannot meet his responsibilities, the Contractor shall be responsible for obtaining the services of an "alternate" SO meeting the minimum requirements and qualifications contained herein. No work will proceed on this project in the absence of an approved SO.

B. Ensure that all project personnel have obtained the required physical examination prior to and at the termination of work covered by the contract.

C. Be responsible for the pre-job indoctrination of all project personnel with regard to the HASP and other safety requirements to be observed during work, including but not limited to (a) potential hazards, (b) personal hygiene principles, (c) personal protection equipment, (d) respiratory protection equipment usage and fit testing, and (e) emergency procedures dealing with fire and medical situations.

D. Be responsible for the implementation of this HASP, and the Emergency Contingency and Response Plan.

E. Provide and ensure that all project personnel are properly clothed and equipped and that all equipment is kept clean and properly maintained in accordance with the manufacturer's recommendations or replaced as necessary.

F. Will perform all site redevelopment work in a safe and environmentally acceptable manner. The Contractor will provide for the safety of all project personnel and the community for the duration of the redevelopment activities.

G. Have sole and complete responsibility for safety conditions for the project, including safety of all persons (including employees).

H. Be responsible for protecting the project personnel and the general public from hazards due to the exposure, handling, and transport of contaminated materials. Barricades, warning lights if needed, roped-off areas, and proper signs shall be furnished in sufficient amounts and locations to safeguard the project personnel and public at all times.

I. Ensure all OSHA health and safety requirements are met.

J. Maintain a chronological log of all persons entering the project site. It will include organization, date, and time of entry and exit. Each person must sign in and out.

6.0 Submittals

Health and Safety Plan (HASP)

The HASP is a deliverable product of this project. The Contractor will submit the HASP to the NYSDEC and NYSDOH a minimum of two weeks prior to initiation of redevelopment activities. Agreed upon responses to all comments will be incorporated into the final copy of the HASP. The HASP shall govern all work performed for this contract. The HASP shall address, at a minimum, the following items in accordance with 29 CFR 1910.120(I)(2):

A. Health and Safety Organization.
B. Site Description and Hazard Assessment.
C. Training.
D. Medical Surveillance.
E. Work Areas.
F. Standard Operating Safety Procedures and Engineering Controls.
G. Personal Protective Equipment (PPE).
H. Personnel Hygiene and Decontamination.
I. Equipment Decontamination.
J. Air Monitoring.

K. Emergency Equipment/First Aid Requirements.
L. Emergency Response and Contingency Plan.
M Spill Containment Plan.
N. Heat & Cold Stress.
O. Record Keeping.
P. Community Protection Plan.

The following sections will describe the requirements of each of the above-listed elements of the HASP.

7.0 Health and Safety Organization

The Contractor shall list in the HASP a safety organization with specific names, qualifications, and responsibilities. At a minimum, the Contractor shall provide the services of a Health and Safety Coordinator, SO, and a Medical Consultant.

Health and Safety Coordinator: The Contractor must retain the services of a Health and Safety Coordinator (HSC). The HSC must be an American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH) or a Certified Safety Professional (CSP). The HSC must have a minimum of two years experience in hazardous waste site remediations or related industries and have a working knowledge of federal and state occupational health and safety regulations. The HSC must be familiar with air monitoring techniques and the development of health and safety programs for personnel working in potentially toxic atmospheres.

In addition to meeting the above requirements, the HSC will have the following responsibilities:

A. Responsibility for the overall development and implementation of the HASP.

B. Responsibility for the initial training of on-site workers with respect to the contents of the HASP.

C. Availability during normal business hours for consultation by the Safety Officer.

D. Availability to assist the Safety Officer in follow-up training and if changes in site conditions occur.

Safety Officer: The designated SO must have, at a minimum, two years of experience in the remediation of hazardous waste sites or related field experience. The SO must have formal training in health and safety and be conversant with federal and state regulations governing occupational health and safety. The SO must be certified in CPR and first aid and have experience and training in the implementation of personal protection and air monitoring programs. The SO must have "hands-on" experience with the operation and maintenance of real-time air monitoring equipment. The SO must be thoroughly knowledgeable of the operation and maintenance of air-purifying respirators (APR) and supplied-air respirators (SAR) including SCBA and airline respirators.

In addition to meeting the above qualifications, the SO will be responsible for the following minimum requirements:

A. Responsibility for the implementation, enforcement, and monitoring of the health and safety plan.

B. Responsibility for the pre-construction indoctrination and periodic training of all on-site personnel with regard to this safety plan and other safety requirements to be observed during construction, including:

   (1) Potential hazards.
   (2) Personal hygiene principles.
   (3) PPE.
   (4) Respiratory protection equipment usage and fit testing.
   (5) Emergency procedures dealing with fire and medical situations.
   (6) Conduct daily update meetings in regard to health and safety.

C. Responsibility for alerting any State or Federal on-site representative prior to the Contractor starting any particular hazardous work.

D. Responsibility for informing project personnel of the New York State Labor Law Section 876 (Right-to-Know Law).

E. Responsibility for the maintenance of separation of Exclusion Zone (Dirty) from the Support Zone (Clean) areas as described hereafter.

<u>Health and Safety Technicians</u>: The Health and Safety Technician (HST) must have one year of hazardous waste site or related experience and be knowledgeable of applicable occupational health and safety regulations. The HST must be certified in CPR and first aid. The HST will be under direct supervision of the SO during on-site work. The HST must be familiar with the operations, maintenance and calibration of monitoring equipment used in this remediation. A HST will be assigned to each work crew or task in potentially hazardous areas.

<u>Medical Consultant</u>: The Contractor is required to retain a Medical Consultant (MC) who is a physician, certified in occupational medicine. The physician shall have experience in the occupational health area and shall be familiar with potential site hazards of remedial action

projects. The MC will also be available to provide annual physicals and to provide additional medical evaluations of personnel when necessary.

8.0 Site Description and Hazard Assessment

The Contractor shall perform a hazard assessment to provide information to assist in selection of PPE and establish air monitoring guidelines to protect on-site personnel, the environment, and the public. The Contractor shall provide a general description of the site, its location, past history, previous environmental sampling results, and general background on the conditions present at the site.

A. Chemical Hazards: A qualitative evaluation of chemical hazards shall be based on the following:

- ? Nature of potential contaminants;
- ? Location of potential contaminants at the project site;
- ? Potential for exposure during site activities; and
- ? Effects of potential contaminants on human health.

B. Biological Hazards: A qualitative evaluation of biological hazards consisting of the elements listed for chemical hazards.

C. Physical Hazards: The Contractor shall assess the potential for physical hazards affecting personnel during the performance of on-site work.

The Contractor shall develop a hazard assessment for each site task and operation established in the HASP.

9.0 Training

OSHA Training

The Contractor is responsible to ensure that all project personnel have been trained in accordance with OSHA 1910.120 regulations.

The Contractor shall ensure that all employees are informed of the potential hazards of toxic chemicals to the unborn child and of the risks associated with working at the project site.

The Contractor shall be responsible for, and guarantee that, personnel not successfully completing the required training are not permitted to enter the project site to perform work.

Safety Meetings

At a minimum, the SO will conduct daily safety meetings that will be mandatory for all project personnel. The meetings will provide refresher courses for existing equipment and protocols, and will examine new site conditions as they are encountered.

Additional safety meetings will be held on an as-required basis.

Should any unforeseen or site-peculiar safety-related factor, hazard, or condition become evident during the performance of work at this site, the Contractor will bring such to the attention of the SO in writing as quickly as possible for resolution. In the interim, the Contractor will take prudent action to establish and maintain safe working conditions and to safeguard employees, the public, and the environment.

10.0 Medical Surveillance

The Contractor shall utilize the services of a Physician to provide, at a minimum, the medical examinations and surveillance specified herein. The name of the Physician and evidence of examination of all Contractor and subcontractor on-site personnel shall be kept by the SO.

Contractor and subcontractor project personnel involved in this project shall be provided with medical surveillance prior to onset of work. At any time there is suspected excessive exposure to substances that would be medically detectable, all project personnel will be medically monitored. The costs for these medical exams are to be borne by the Contractor.

Physical examinations are required for:

A. Any and all personnel entering hazardous or transition zones or performing work that required respiratory protection.

B. All Contractor personnel on site who are dedicated or may be used for emergency response purposes in the Exclusion Zone.

C. Contractor supervisors entering hazardous or transition zones, or on site for more than 16 hours during the length of the project.

Physical examinations are not required for people making periodic deliveries provided they do not enter hazardous or transition zones.

In accordance with good medical practice, the examining Physician or other appropriate representative of the Physician shall discuss the results of such medical examination with the individual examined. Such discussion shall include an explanation of any medical condition that the Physician believes required further evaluation or treatment and any medical condition which the Physician believes would be adversely affected by such individual's employment at the project site. A written report of such examination shall be transmitted to the individual's private physician upon written request by the individual.

The examining Physician or Physician group shall notify the SO in writing that the individual has received a medical examination and shall advise the SO as to any specific limitations upon such individual's ability to work at the project site that were identified as a result of the examination. Appropriate action shall be taken in light of the advice given pursuant to this subparagraph.

The physical examination shall also include but not be limited to the following minimum requirements:

A. Complete blood profile;

B. Blood chemistry to include: chloride, CO_2, potassium, sodium, BUN, glucose, globulin, total protein, albumin, calcium, cholesterol, alkaline phosphates, triglycerides, uric acid, creatinine, total bilirubin, phosphorous, lactic dehydrogenase, SGPT, SGOT;

C. Urine analysis;

D. "Hands on" physical examination to include a complete evaluation of all organ systems including any follow-up appointments deemed necessary in the clinical judgement of the examining physician to monitor any chronic conditions or abnormalities;

E. Electrocardiogram;

F. Chest X-ray (if recommended by examining physician in accordance with good medical practice);

G. Pulmonary function;

H. Audiometry - To be performed by a certified technician, audiologist, or physician. The range of 500 to 8,000 hertz should be assessed.

I. Vision screening - Use a battery (TITMUS) instrument to screen the individual's ability to see test targets well at 13 to 16 inches and at 20 feet. Tests should include an assessment of muscle balance, eye coordination, depth perception, peripheral vision, color discrimination, and tonometry.

J. Tetanus booster shot (if no inoculation has been received within the last five years); and

K. Complete medical history.

11.0 Site Control

Security

Security shall be provided and maintained by the Contractor.

Vehicular access to the site, other than to designated parking areas, shall be restricted to authorized vehicles only. Use of on-site designated parking areas shall be restricted to vehicles of the State or Federal on-site representative, Contractor, subcontractor, and service personnel assigned to the site and actually on duty but may also be used on short-term basis for authorized visitors.

The Contractor shall be responsible for maintaining a log of security incidents and visitor access granted.

The Contractor shall require all personnel having access to the project site to sign-in and sign-out, and shall keep a record of all site access.

All approved visitors to the site shall be briefed by the SO on safety and security, provided with temporary identification and safety equipment, and escorted throughout their visit.

Site visitors shall not be permitted to enter the hazardous work zone unless approved by the SO with appropriate site access agreement.

Project sites shall be posted, "Warning Hazardous Work Area, Do Not Enter Unless Authorized," and access restricted by the use of a snow fence or equal at a minimum. Warning signs shall be posted at a minimum of every 500 feet.

Site Control

The Contractor shall provide the following site control procedures as a minimum:

? A site map;
? A map showing site work zones;
? The use of a "buddy system"; and
? Standard operating procedures or safe work practices.

Work Areas

The Contractor will clearly lay out and identify work areas in the field and will limit equipment, operations and personnel in the areas as defined below:

A. Exclusion Zone (EZ) - This will include all areas where potential environmental monitoring has shown or it is suspected that a potential hazard may exist to workers. The level of PPE required in these areas will be determined by the SO after air monitoring and on-site inspection has been conducted. The area will be clearly delineated from the decontamination area. As work within the hazardous zone proceeds, the delineating boundary will be relocated as necessary to prevent the accidental contamination of nearby people and equipment. The Exclusion Zone will be delineated by fencing (e.g., chain link, snow fencing, or orange plastic fencing).

B. Contamination Reduction Zone - This zone will occur at the interface of "Hazardous" and "Clean" areas and will provide for the transfer of equipment and materials from the Support Zone to the Exclusion Zone, the decontamination of personnel and clothing prior to entering the "Clean" area, and for the physical segregation of the "Clean" and "Hazardous" areas. This area will contain all required emergency equipment, etc. This area will be clearly delineated by fencing (e.g., chain link, snow fencing, or orange plastic fencing). It shall also delineate an area that although not contaminated at a particular time may become so at a later date.

C. Support Zone - This area is the remainder of the work site and project site. The Support Zone will be clearly delineated and procedures implemented to prevent active or passive contamination from the work site. The function of the Support Zone includes:

(1) An entry area for personnel, material and equipment to the Exclusion Zone of site operations through the Contamination Reduction Zone;

(2) An exit for decontamination personnel, materials and equipment from the "Decontamination" area of site operations;

(3) The housing of site special services; and

(4) A storage area for clean, safety, and work equipment.

12.0 Standard Operating Safety Procedures (SOP), Engine ering Controls

General SOP

A. The Contractor will ensure that all safety equipment and protective clothing is kept clean and well maintained.

B. All prescription eyeglasses in use on this project will be safety glasses and will be compatible with respirators. No contact lenses shall be allowed on site.

C. All disposable or reusable gloves worn on the site will be approved by the SO.

D. During periods of prolonged respirator usage in contaminated areas, respirator filters will be changed upon breakthrough. Respirator filters will always be changed daily.

E. Footwear used on site will be covered by rubber overboots or booties when entering or working in the Exclusion Zone area or Contamination Reduction Zone. Boots or booties will be washed with water and detergents to remove dirt and contaminated sediment before leaving the Exclusion Zone or Contamination Reduction Zone.

F. All PPE used in the Exclusion Zone or Contamination Reduction Zone will be decontaminated or disposed of at the end of the workday. The SO will be responsible for ensuring decontamination of PPE before reuse.

G. All respirators will be individually assigned and not interchanged between workers without cleaning and sanitizing.

H. Contractor, subcontractor and service personnel unable to pass a fit test as a result of facial hair or facial configuration shall not enter or work in an area that requires respiratory protection.

I. The Contractor will ensure that all project personnel shall have vision or corrected vision to at least 20/40 in one eye.

J. On-site personnel found to be disregarding any provision of this plan will, at the request of the SO, be barred from the project.

K. Used disposable outerwear such as coveralls, gloves, and boots shall not be reused. Used disposable outerwear will be removed upon leaving the hazardous work zone and will be placed inside disposable containers provided for that purpose. These containers will be stored at the site at the designated staging area and the Contractor will be responsible for proper disposal of these materials at the completion of the project.

L. Protective coveralls that become torn or badly soiled will be replaced immediately.

M. Eating, drinking, chewing gum or tobacco, smoking, etc., will be prohibited in the hazardous work zones and neutral zones.

N. All personnel will thoroughly cleanse their hands, face, and forearms and other exposed areas prior to eating, smoking or drinking.

O. Workers who have worked in a hazardous work zone will shower at the completion of the workday.

P. All personnel will wash their hands, face, and forearms before using toilet facilities.

Q. No alcohol, firearms or drugs (without prescriptions) will be allowed on site at any time.

R. All personnel who are on medication should report it to the SO who will make a determination whether or not the individual will be allowed to work and in what capacity. The SO may require a letter from the individual's personal physician stating what limitations (if any) the medication may impose on the individual.

Engineering Controls - Dust and Air Emissions

The Contractor shall provide all equipment and personnel necessary to monitor and control dust and air emissions.

13.0 Personal Protective Equipment

General

The Contractor shall provide all project personnel with the necessary safety equipment and protective clothing, taking into consideration the chemical wastes at the site. At a minimum, the Contractor may supply project personnel with the following:

A. Sufficient disposable coveralls;

B. One pair splash goggles;

C. Chemical-resistant outer and inner gloves;

D. Rubber overshoes (to be washed daily);

E. Hard hat;

F. One full-face mask with appropriate canisters for work requiring Level C protection; and

G. For all project personnel involved with Level B protection, a positive-pressure SCBA or a positive-pressure in-line air respirator. A 5-minute escape bottle must be included with the in-line air apparatus.

Levels of Protection

The following sections described the requirements of each level of protection.

A. Level A Protection

(1) PPE:

a. Supplied-air respirator approved by the Mine Safety and Health Administration (MSHA) and NIOSH. Respirators may be:

? Positive-pressure SCBA; or

? Positive-pressure airline respirator (with escape bottle for Immediately Dangerous to Life and Health [IDLH] or potential for IDLH atmosphere).

b. Fully encapsulating chemical-resistant suit.

c. Coveralls.

d. Cotton long underwear.*

e. Gloves (inner), chemical-resistant.

f. Boots, chemical-resistant, steel toe and shank. (Depending on suit construction, worn over or under suit boot.)

g. Hard hat (under suit).*

h. Disposal gloves and boot covers (worn over fully encapsulating suit).

I. Cooling unit.*

j. Two-way radio communications (inherently safe).*

* Optional

(2) Criteria for Selection:

Meeting any of these criteria warrants use of Level A protection:

a. The chemical substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on:

? Measures (or potential for) high concentration of atmospheric vapors, gases, or particulates, or

- ? Site operations and work functions involves high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates of materials highly toxic to the skin.

b. Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible.

c. Operations must be conducted in confined, poorly ventilated areas until the absence of substances requiring Level A protection is determined.

d. Direct readings on field Flame Ionization Detectors (FID) or Photoionization Detectors (PID) and similar instruments indicate high levels of unidentified vapors and gases in the air.

(3) Guidance on Selection:

a. Fully encapsulating suits are primarily designed to provide a gas- or vapor-tight barrier between the wearer and atmospheric contaminants. Therefore, Level A is generally worn when high concentrations of airborne substances could severely effect the skin. Since Level A requires the use of SCBA, the eyes and respiratory system are also more protected.

Until air surveillance data become available to assist in the selection of the appropriate level of protection, the use of Level A may have to be based on indirect evidence of the potential for atmospheric contamination or other means of skin contact with severe skin affecting substances.

Conditions that may require Level A protection include:

- ? Confined spaces: Enclosed, confined, or poorly ventilated areas are conducive to the buildup of toxic vapors, gases, or particulates. (Explosive or oxygen-deficient atmospheres are also more probable in confined spaces). Confined-space entry does not automatically warrant wearing Level A protection, but should serve as a cue to carefully consider and to justify a lower level of protection.

- ? Suspected/known highly toxic substances: Various substances that are highly toxic, especially skin absorption, for example, fuming corrosives, cyanide compounds, concentrated pesticides, Department of Transportation Poison "A" materials, suspected carcinogens, and infectious substances may be known or suspected to be involved. Field instruments may not be available to detect or quantify air concentrations of these materials. Until these substances are identified and concentrations measured, maximum protection may be necessary.

? Visible emissions: Visible air emissions from leaking containers or railroad/vehicular tank cars, as well as smoke from chemical fires and others, indicate high potential for concentrations of substances that could be extreme respiratory or skin hazards.

? Job Functions: Initial site entries are generally walk-throughs, in which instruments and visual observations are used to make a preliminary evaluation of the hazards.

In initial site entries, Level A should be worn when:

? There is a probability for exposure to high concentrations of vapors, gases, or particulates; and

? Substances are known or suspected of being extremely toxic directly to the skin or by being absorbed.

Subsequent entries are to conduct the many activities needed to reduce the environmental impact of the incident. Levels of protection for later operations are based not only on data obtained from the initial and subsequent environmental monitoring, but also on the probability of contamination and ease of decontamination.

Examples of situations where Level A has been worn are:

? Excavating of soil to sample buried drums suspected of containing high concentrations of dioxin;

? Entering a cloud of chlorine to repair a valve broken in a railroad accident;

? Handling and moving drums known to contain oleum; and

- ? Responding to accidents involving cyanide, arsenic, and undiluted pesticides.

b. The fully encapsulating suit provides the highest degree of protection to skin, eyes, and respiratory system if the suit material resists chemicals during the time the suit is worn. While Level A provides maximum protection, all suit material may be rapidly permeated and degraded by certain chemicals from extremely high air concentrations, splashes, or immersion of boots or gloves in concentrated liquids or sludges. These limitations should be recognized when specifying the type of fully encapsulating suit. Whenever possible, the suit material should be matched with the substance it is used to protect against.

B. Level B Protection

(1) PPE:

a Positive-pressure SCBA (MSHA/NIOSH approved); or

b. Positive-pressure air line respirator (with escape bottle for IDLH or potential for IDLH atmosphere) MSHA/NIOSH approved;

c. Chemical-resistant clothing (overalls and long-sleeved jacket; coveralls or hooded, one- or two-piece chemical-splash suit; disposable chemical-resistant, one-piece suits);

d. Cotton long underwear;*

e. Coveralls;

f. Gloves (outer), chemical-resistant;

g. Gloves (inner), chemical-resistant;

h. Boots (inner), leather work shoe with steel toe and shank;

I. Boots (outer), chemical-resistant, (disposable);

j. Hard hat (face shield*);

k. 2-way radio communication;* and

l. Taping between suit and gloves, and suit and boots.

*Optional

(2) Criteria for Selection:

Any one of the following conditions warrants use of Level B Protection:

a. The type and atmospheric concentration of toxic substances have been identified and require a high level of respiratory protection, but less skin protection than Level A. These atmospheres would:

? Have IDLH concentrations; or

- ? Exceed limits of protection afforded by an air-purifying mask; or
- ? Contain substances for which air-purifying canisters do not exist or have low removal efficiency; or
- ? Contain substances requiring air-supplied equipment, but substances and/or concentrations do not represent a serious skin hazard.

b. The atmosphere contains less than 19.5% oxygen

.

c. Site operations make it highly unlikely that the work being done will generate high concentrations of vapors, gases or particulates, or splashes of material that will affect the skin of personal wearing Level B protection.

d. Working in confined spaces.

e. Total atmospheric concentrations, sustained in the breathing zone, of unidentified vapors or gases range from 5 ppm above background to 500 ppm above background as measured by direct reading instruments such as the FID or PID or similar instruments, but vapors and gases are not suspected of containing high levels of chemicals toxic to skin.

(3) Guidance on Selection Criteria:

Level B equipment provides a reasonable degree of protection against splashes and to lower air contaminant concentrations, but a somewhat lower level of protection to skin than Level A. The chemical-resistant clothing required in Level B is available in a wide variety of styles, materials, construction detail, permeability, etc. Taping joints between the gloves, boots and suit, and between hood and respirator reduces the possibility for splash and vapor or gas penetration. These factors all affect the degree of protection afforded. Therefore, the SO should select the most effective chemical-resistant clothing based on the known or anticipated hazards and/or job function.

Level B does provide a high level of protection to the respiratory tract. Generally, if SCBA is required, Level B clothing rather than a fully encapsulating suit (Level A) is selected based on needing less protection against known or anticipated substances affecting the skin. Level B skin protection is selected by:

a. Comparing the concentrations of known or identified substances in air with skin toxicity data;

b. Determining the presence of substances that are destructive to or readily absorbed through the skin by liquid splashes, unexpected high levels of gases, vapor or particulates, or other means of direct contact; and

c. Assessing the effect of the substance (at its measured air concentrations or splash potential) on the small area of the head and neck left unprotected by chemical-resistant clothing.

For initial site entry at an open site, Level B protection should protect site personnel, providing the conditions described in selecting Level A are known or judged to be absent.

C. Level C Protection

(1) PPE

a. Full-face, air-purifying, cartridge- or canister-equipped respirator (MSHA/NIOSH approved) with cartridges appropriate for the respiratory hazards;

b. Chemical-resistant clothing (coveralls, hooded, one-piece or two-piece chemical splash suit; chemical-resistant hood and apron; disposable chemical-resistant coveralls);

c. Coveralls;

d. Cotton long underwear;*

e. Gloves (outer), chemical-resistant;

f. Gloves (inner), chemical-resistant;

g. Boots (inner), leather work shoes with steel toe and shank;

h. Boots (outer), chemical-resistant (disposable);*

I. Hard hat (face shield);*

j. Escape SCBA of at least 5-minute duration;

k. 2-way radio communications (inherently safe);* and

(2) Taping between suit and boots, and suit and gloves.

* Optional

(3) Criteria for Selection

Meeting all of these criteria permits use of Level C protection:

a. Measured air concentrations of identified substances will be reduced by the respirator to, at or below, the substance's Threshold Limit Value (TLV) or appropriate occupational exposure limit and the concentration is within the service limit of the canister.

b. Atmospheric contaminant concentrations do not exceed IDLH levels.

c. Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect the small area of the skin left unprotected by chemical-resistant clothing.

d. Job functions do not require SCBA.

e. Total readings register between background and 5 ppm above background as measured by instruments such as the FID or PID.

f. Oxygen concentrations are not less than 19.5% by volume.

g. Air will be monitored continuously.

(4) Guidance on Selection Criteria

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing air-purifying devices. The air-purifying device must be a full-face mask (MSHA/NIOSH approved) equipped with a cartridge suspended from the chin or on a harness. Cartridges must be able to remove the substances encountered.

A full-face, air-purifying mask can be used only if:

a. Oxygen content of the atmosphere is at least 19.5% by volume;

b. Substance(s) is identified and its concentrations(s) measured;

c. Substance(s) has adequate warning properties;

d. Individual passes a qualitative fit-test for the mask; and

e. Appropriate cartridge is used, and its service limits concentration is not exceeded.

An air monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators (Level C). Continual surveillance using direct-reading instruments and air sampling is needed to detect any changes in air quality necessitating a higher level of respiratory protection. Total unidentified vapor/gas concentrations exceeding 5 ppm above background require Level B.

D. Level D Protection

(1) PPE:

a. Coveralls, chemical resistant;

b. Gloves (outer), chemical resistant;

c. Gloves (inner), chemical resistant;*

d. Boots (inner), leather work shoes with steel toe and shank;

e. Boots (outer), chemical resistant (disposable);*

f. Hard hat;

g. Face shield;*

h. Safety glasses with side shields or chemical splash goggles;* and

i. Taping between suit and boots, and suit and gloves.

* Optional

(2) Criteria for Selection:

a. No atmospheric contaminant is present.

b. Direct reading instruments do not indicate any readings above background.

c. Job functions have been determined not to require respirator protection.

(3) Guidance on Selection Criteria:

Level D protection is distinguished from Level C protection in the requirement for respiratory protection. Level D is used for non-intrusive activities or intrusive activities with continuous air monitoring. It can be worn only in areas where there is no possibility of contact with contamination.

E. Anticipated Levels of Protection

It is anticipated that most of the work shall be performed in Level D. A respirator shall be immediately available in the event that air monitoring indicates an upgrade to Level C is required. The determination of the proper level of protection for each task shall be the responsibility of the Contractor. The task specific levels of protection shall be stated in the Contractor's HASP.

Disposable Coveralls

The Contractor shall provide, as necessary, protective coveralls for all project personnel each day with extra sets provided for authorized visitors. The coveralls shall be of the disposable type made of Tyvek or equivalent material, and shall be manufactured/supplied by Durafab, Koppler, or other appropriate manufacturers. To protect project personnel from exposure to liquids, splash-resistant suits (Saranex suits, from appropriate manufacturers) shall be provided. Ripped suits will be immediately replaced after all necessary decontamination has been completed to the satisfaction of the SO.

Hard Hat

The Contractor shall provide and maintain one hard hat per person on site (authorized visitors included). The hard hats shall comply with OSHA Health and Safety Standards (29 CFR 1910.135).

Face Shields

The Contractor shall provide and maintain one face shield per person on site, if necessary. The face shields shall be of the full face type meeting OSHA Health and Safety Standards (29 CFR 1910.133) and shall have brackets for mounting on hard hats. Hard hats and face shields shall be from the same manufacturer to ensure proper fit and shall be manufactured/supplied by Bullard, Norton, or other appropriate manufacturers.

Full Face Organic Vapor Respirator

The Contractor shall provide and maintain a dedicated air-purifying organic vapor respirator per person working in hazardous work and neutral work zones. The respirator shall be of the full-face canister type with cartridges appropriate for the respiratory hazards. Respirators and cartridges shall be MSHA/NIOSH approved, manufactured/supplied by MSA, Scott, or other appropriate manufacturers. The Contractor shall inspect and maintain respirators and canisters in accordance with OSHA regulations (29 CFR 1910.134) and in accordance with manufacturer's instructions. The Contractor shall ensure that proper fit testing training and medical surveillance of respirator users is in accordance with OSHA regulations (29 CFR 1910.134).

Gloves (outer)

The Contractor shall supply a minimum of one pair of gloves per workman in areas where skin contact with hazardous material is possible. Work gloves shall consist of nitrile (NCR) or Neoprene material. Other gloves may be selected if required based on the potential chemical present. Cotton liners will be provided by the Contractor during cold weather.

Gloves (inner)

The Contractor shall supply Latex or equivalent surgical gloves to be worn inside the outer gloves.

Boots (inner)

The Contractor shall supply one pair of safety shoes or boots per workman and shall be of the safety-toe type meeting the requirements of 29 CFR 1910.136.

Boots (outer)

The Contractor shall provide and maintain one pair of overshoes for each on-site person entering a hazardous work area. The overshoes shall be constructed of rubber and shall be 12 inches high minimum.

14.0 Decontamination

Portable "Boot Wash" Decontamination Equipment

The Contractor shall provide a portable decontamination station, commonly referred to as a "Boot Wash" facility for each hazardous work zone requiring decontamination for project personnel. These facilities shall be constructed to contain spent wash water, contain a reservoir of clean wash water, a power supply to operate a pump for the wash water, a separate entrance and exit to the decontamination platform, with the equipment being mobile, allowing easy transport from one hazardous work zone to the next. An appropriate detergent such as alconox shall be used.

Personnel Decontamination

The Contractor shall provide full decontamination facilities at all hazardous zones. Decontamination facilities must be described in detail in the HASP.

Disposal of Spent Clothing and Material

Contaminated clothing, used respirator cartridges and other disposable items will be put into drums/containers for transport and proper disposal as hazardous waste in accordance with RCRA requirements.

Containers/55-gallon capacity drums shall conform to the requirements of 40 CFR Part 178 for Transportation of Hazardous Materials. The containers containing hazardous material shall be transported by the Contractor to the staging area.

The Contractor is responsible for the proper container packaging, labeling, transporting, and disposal.

15.0 Equipment Decontamination

General

Thoroughly decontaminate all equipment and material used in this project in accordance with established federal and state procedures before it is removed from the project site. With the exception of the excavated materials, all contaminated materials and clothing that cannot be decontaminated shall be disposed of using a method permitted by appropriate regulatory agencies. All vehicles and equipment used will be decontaminated to the satisfaction of the SO in the decontamination area on site prior to leaving the project.

Decontamination shall take place within the designated equipment and materials decontamination area. The decontamination shall consist of degreasing (if required), followed by high-pressure, water cleaning, supplemented by detergents as appropriate. Wash units shall be portable, high-pressure with a self-contained water storage tank and pressurizing system (as required). Each unit shall be capable of providing a nozzle pressure of 150 psi.

If the Contractor cannot or does not satisfactorily decontaminate his tools or equipment at the completion of the project, the Contractor will dispose of any equipment which cannot be decontaminated satisfactorily. At the completion of the project the Contractor shall completely decontaminate and clean the decontamination area.

Decontamination Pad

The Contractor shall construct a decontamination station located on-site. The decontamination station shall be located in the Contamination Reduction Zone and shall be used to clean all vehicles leaving the Exclusion Zone prior to entering the Support Zone or leaving the site. The Contractor shall install at a minimum a 40 mil polyethylene sealed liner decontamination pad in such a manner that is capable of collecting all decontamination waters with a minimum of six foot corrugated splash walls or curtains to prevent overspray. The decontamination pad shall be able to support vehicles without cracking or becoming damaged. The area is to be properly graded and have no deleterious materials. All decontamination water shall be collected and stored in a holding tank. The Contractor shall clean and dismantle the decontamination pad and properly transport and dispose of the materials at the conclusion of the construction.

16.0 Air Monitoring Program

General

The Contractor shall develop, as part of the HASP, an air monitoring program (AMP). The purpose of the AMP is to determine that the proper level of personnel protective equipment is used, to document that the level of worker protection is adequate, and to assess the migration of contaminants to off-site receptors as a result of site work.

The Contractor shall supply all personnel, equipment, facilities, and supplies to develop and implement the air monitoring program described in this section. Equipment shall include at a minimum: an organic vapor analyzer and real-time aerosol monitors, depending on work activities and environmental conditions.

The Contractor's AMP shall include both real-time and documentation air monitoring (personal and area sampling as needed). The purpose of real-time monitoring will be to determine if an upgrade (or downgrade) of PPE is required while performing on-site work and to implement engineering controls, protocols, or emergency procedures if site action levels are encountered.

The Contractor shall also use documentation monitoring to ensure that adequate PPE is being used and to determine if engineering controls are mitigating the migration of contamination to off-site receptors. Documentation monitoring shall include the collection and analysis of samples for total nuisance dust.

To protect the public in the neighboring residential neighborhood, the Contractor must include in the AMP provisions for suspending work and implementing engineering controls based upon detectable odors, as well as upon instrument monitoring results.

During the progress of active remedial work, the Contractor will monitor the quality of the air in and around each active hazardous operation with real-time instrumentation prior to personnel entering these areas. Sampling at the hazardous work site will be conducted on a continuous basis. Any departures from general background will be reported to the SO prior to entering the area. The SO will determine when and if operations should be shut down.

Air monitoring (both real time and documentation monitoring) shall be conducted by a minimum of one dedicated person with communication to the foreman whenever intrusive activities (such as excavation) are performed in an exclusion zone. After completion of intrusive activities involving contaminated materials and removal of the exclusion zone, air monitoring may be discontinued.

Air monitoring equipment will be operated by personnel trained in the use of the specific equipment provided and will be under the control of the SO. A log of the location, time, type and value of each reading and/or sampling will be maintained. The NYSDEC of NYSDOH on-site representative may request copies of daily log sheets.

Real-Time Monitoring

Real-time particulate monitoring shall be conducted using the following equipment:

Photoionization Detectors (PIDs) shall be MiniRAE Plus (PG-76) Professional PIDs as manufactured by RAE Systems Inc., or equal. The Contractor shall provide one PID for each and every hazardous work zone operation, and one site backup PID. Total particulates shall be measured using a real-time aerosol monitor. The instrument shall be calibrated daily according to the procedure in the users manual. The meter shall be capable of measuring concentrations in the size range of less than 0.1 to 10 microns with a sensitivity down to 0.001 mg/m^3. The monitor shall be Miniram model MIEPDM-3, or equal.

Real-time particulate monitoring will be conducted during any excavation, transportation, or other handling of contaminated soil, scarification, and during the relocation of debris.

Action Levels

The following action levels will be established for work area and perimeter monitoring of particulates, organic vapors, and odors. If the following levels are attained at half the distance between the work zone and the property line, then work will cease until engineering controls bring levels down to acceptable limits. These levels are general and shall be used as minimum action levels. The Contractor shall develop site-specific perimeter monitoring action levels based on contaminants found in the work areas.

Monitor the air, using the same equipment, for 10-15 minutes upwind of the work site to establish background level. The background level shall be established before the start of each shift every day. Particulate levels should be integrated over a period not to exceed 15 minutes. In the event that downwind particulates are detected at levels in excess of 150 ug/m^3 or 2.5 times the established background level, whichever is less, at the work site, immediately re-measure the background concentrations upwind of the work zone also using the same equipment. If the measured particulate level at the work zone(s) is 100 ug/m^3 above the background level, monitor the downwind site perimeter and implement additional dust controls in the work zone(s). Continue to take hourly measurements of the upwind background concentrations, and compare such concentrations with the particulate level at the work zone(s), until the downwind level at the work zone is less than 100 ug/m^3 above the upwind level.

If at any time the measured particulate level at the work zone(s) is more than 150 ug/m^3, the Contractor shall immediately suspend work at the remediation site, promptly notify the Safety Officer, and implement suitable corrective action or engineering controls before work resumes. Notify the NYSDEC Division of Air resources in writing within 5 working days including a description of the control measures implemented to prevent further exceedances.

If work activities generate any visible dust in off-site areas, the Contractor shall immediately suspend work, promptly notify the Safety Officer, and implement suitable corrective action or engineering controls before work resumes. This "no visible dust" requirement in off-site areas is in addition to the 100/150 ug/m^3 actions levels given above.

The action level for total organic vapors shall be five parts per million above background as measured on the FID or PID. The action level for odors shall be noticeable odors.

Real-time monitoring will also be conducted at half the distance to the site perimeter including an upwind (background) and a downwind location. A background reading will be established daily at the beginning of the work shift. If the wind direction changes during the course of the day, a new background reading will be made. Downwind readings at half the distance to the site perimeter will be made when site action levels have been exceeded at the work zone, if odors are evident, if complaints are received, during periods of higher activity, or at a minimum of twice per work shift.

If site action levels are exceeded at half the distance to the site perimeter location for fugitive dust, organic vapors, or noticeable odors, work must be suspended and engineering controls must be implemented to bring concentrations back down to acceptable levels.

Ensure the validity of real-time monitoring through appropriate QA/QC procedures. Include periodic instrument calibration, operator training, daily instrument performance checks, and details of the record keeping plan in QA/QC plans.

Documentation Monitoring

Documentation monitoring will be conducted at the site perimeter at four locations (north, south, east and west site perimeter) for total dust. Documentation monitoring will be conducted only during the handling of soil that is potentially contaminated (as per the Remedial Work Plan) or known to be contaminated including excavation, staging, grading, or decontamination activities. Documentation Monitoring will include the following:

A. Total nuisance dust will be collected using a PVC collection filter and personnel sampling pump and analyzed gravimetrically according to NIOSH Method 0500.

B. The perimeter locations will be established and marked with high visibility paint or flagging at approximately equidistant points around the site. Samples will be collected at a height of 6 feet above ground surface.

C. Documentation samples will be collected continuously during excavation, staging, grading, and decontamination activities, during the normal work hours when activities are occurring on site. At the end of the week real-time monitoring data will be reviewed and the four samples from one day will be selected by the Contractor and will be analyzed for lead. A maximum of seven days turnaround time is required for all documentation samples.

D. In addition to perimeter monitoring, particulate documentation samples will be collected on site once a week. On-site samples will be collected by choosing "high risk" workers to wear appropriate collection media for metals and particulates. "High risk" workers are those workers most likely to encounter contamination on a particular task. At a minimum, two high risk workers will be chosen to wear collection media for a particular day each week and the media will be analyzed with the documentation air monitoring samples.

   Install a meteorological station on site that will be capable of recording, at a minimum, outside temperature, wind velocity, and wind direction.

   The documentation sampling submitted shall also identify the "high risk" workers chosen to wear appropriate collection media for contaminants; date media was worn; task involved; analytical results and applicable standards.

Community Air Monitoring (Refer also to: Section 24.0 - Community Protection Plan)

Real-time air monitoring, for particulate levels at the perimeter of the work area is necessary:

A. Particulates should be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations. This requires a minimum of one monitor per station or work zone. If the downwind particulate level is 2.5

times background or 100 ug/m^3 greater than the upwind particulate level, then dust suppression techniques must be employed to reduce the particulates to below these levels. All readings must be recorded and be available for review by NYSDEC and NYSDOH representatives.

As discussed above, the Contractor shall install a meteorological station on site that will be capable of recording, at a minimum, wind velocity, temperature, and direction.

17.0 Emergency Equipment and First Aid Requirements

Communications

The Contractor shall provide telephone communication at the site field office. Emergency numbers, such as police, sheriff, fire, ambulance, hospital, NYSDEC, EPA, NYSDOH, and utilities, applicable to this site shall be prominently posted near the telephone.

The Contractor shall establish a signaling system for emergency purposes.

Emergency Shower and Emergency Eye Wash

The Contractor shall supply and maintain one portable eyewash/body wash facility per active hazardous work zone. The facility shall have a minimum water capacity of 10 gallons and shall conform to OSHA regulations 29 CFR 1910.151. The portable eyewash/body wash facility shall be manufactured/ supplied by Direct Safety Company, Lab Safety Supply Company, or other appropriate suppliers.

Fire Extinguishers

The Contractor shall supply and maintain at least one fire extinguisher in the Contractor's office and one at each hazardous work zone. The fire extinguisher shall be a 20-pound Class ABC dry fire extinguisher with UL-approval per OSHA Safety and Health Training Standards 29 CFR 1910.157. The fire extinguisher shall be manufactured/supplied by Direct Safety Company, Lab Safety Supply Company, or other appropriate suppliers.

First Aid Kit

The Contractor shall supply and locate in his project office and at each and every hazardous work zone one 24-unit (minimum size) "industrial" or "Contractor" first aid kit, required by OSHA requirements 29 CFR 1910.151. The first aid kit shall be manufactured/supplied by Norton, Scott, or other appropriate suppliers.

Emergency Inventory

In addition to those items specified elsewhere, the SO will maintain the following inventory of equipment and protective clothing for use at the site in the event of emergencies.

A. Washable coveralls;

B. Gloves (outer);

C. Gloves (inner);

D. Face shields;

E. Safety glasses;

F. Respirators and appropriate cartridges;

G. Disposable coveralls;

H. Chemical-resistant boots and latex boot covers;

I. Hard hats; and

J. Rain suits.

18.0 Emergency Responses/Contingency Plan and Procedures

Daily Work

During the progress of work, the Contractor will monitor the quality of the air in and around each active hazardous operation prior to personnel entering these areas. Sampling shall be conducted on a continuous basis. Based on the air monitoring data, the proper level of protection will be chosen by the SO.

Emergency Vehicle Access

In the event that emergency services vehicles (police, fire, ambulance) need access to a location which is blocked by the working crew operations, those operations (equipment, materials, etc.) will be immediately moved to allow those vehicles access. Emergency crews will be briefed as to site conditions and hazards by the SO. All vehicles and personnel will be decontaminated prior to leaving the site.

The Contractor shall schedule a site briefing with the local Fire Department at the completion of mobilization to familiarize emergency response personnel with his/her operations and site layout.

Personal Injury Response Plan

In cases of personal injuries, the injured person or the crew personnel in charge will notify the SO. The SO will assess the seriousness of the injury, give first aid treatment if advisable, consult by telephone with a physician if necessary, and arrange for hospitalization if required. The SO will arrange for an ambulance if required.

If soiled clothing cannot be removed, the injured person will be wrapped in blankets for transportation to the hospital.

Personnel, including unauthorized personnel, having skin contact with chemically contaminated liquids or soils shall be flushed with water after any wet or soiled clothing has been removed. These personnel should be observed by the SO to ascertain whether there are any symptoms resulting from the exposure. If there is any visible manifestation of exposure such as skin irritation, the project personnel will refer to a consulting physician to determine whether the symptoms were the result of a delayed or acute exposure, a secondary response to exposure such as skin infection, or occupational dermatitis. All episodes of obvious chemical contamination will be reviewed by the SO in order to determine whether changes are needed in work procedures.

Route to the Hospital

The Contractor shall post in conspicuous places in the Support Zone a map with written directions to the nearest hospital or emergency medical treatment facility.

Fire Service

The Contractor will make arrangements to take immediate fire fighting and fire protection measures with the local Fire Chief. If there is a fire, the crewmen or their person in charge will immediately call the SO. The SO will immediately call the fire personnel.

The air downwind from any fire or explosion will be monitored immediately in order to protect workers and the nearby community. If personal injuries result from any fire or explosion, the procedures outlined in the Personal Injury Response Plan are to be followed.

Master Telephone List

The attached master telephone list will be completed and prominently posted at the field office. The list will have telephone numbers of all project personnel, emergency services including hospital, fire, police, and utilities. In addition, two copies with telephone numbers are to be given to the NYSDEC and NSYDOH for emergency reference purposes.

Emergency Service	Telephone Number
Fire Department (Sloan Fire Dept.)	911
Police Department (Buffalo Police Dept.)	911
Ambulance (Rural Metro)	911
Hospital/Emergency Care Facility (Mercy Hospital)	911/(716) 826-7000
Poison Control Center	(716) 878-7654

Chemical Emergency Advice (CHEMTREC)	(800) 424-9300
Erie County Department of Health	(716) 858-7690 (business hours) (716) 898-4225 (after 5 pm)
NYSDEC Region 9 office (Buffalo)	(716) 851-7220
NYSDEC Division of Environmental Remediation, Albany, NY	(518) 457-9285 (800) 342-9296 (leave a message for next work day response)
NYSDOH Western Regional Office	(716) 847-4385
NYSDOH Headquarters (Albany)	(800)-458-1158
Contractor	

19.0 Confined Space Work

The Contractor will evaluate the work areas and determine if there are any permit-required confined spaces. If the Contractor determines that personnel will not need to enter a permit-required confined space, appropriate measures to prevent personnel from entering such shall be taken. If the Contractor determines that personnel will need to enter a permit-required confined space, develop and implement a written permit-required confined space program.

The written program shall comply with 29 CFR 1910.146 and shall include the following:

A. Implement methods to prevent unauthorized entry;
B. Identify and evaluate the hazards of permit-required confined spaces before personnel entry;
C. Develop and implement procedures for safe permit-required confined space entry;
D. Provide the appropriate equipment to evaluate permit-required confined spaces;
E. Evaluate permit-required confined spaces when entry operations are conducted;
F. Provide at least one attendant outside the permit-required confined space which will be entered;
G. Designate the personnel who will have active roles in entry operations;
H. Develop and implement procedures for obtaining rescue and emergency services;
I. Develop and implement a system for the preparation, issuance, use and collection of entry permits;

J. Develop and implement procedures to coordinate entry operations when personnel from more than one employer are working;
K. Develop and implement procedures for concluding the entry;
L. Review and revise entry operations if measures may not protect personnel; and
M. Review the permit-required confined space program to ensure personnel are protected from the hazards present.

Copies of the permit-required confined space program and employee training certificates shall be included with the HASP.

20.0 On-Site Spill Containment Plan

The Contractor will provide a written on-site spill containment program that includes the following minimum requirements:

A. Procedures to help prevent spills from occurring;
B. Spill reporting procedure;
C. Spill containment equipment list;
D. Hazard assessment for known or unknown spilled materials;
E. Containment techniques;
F. Air monitoring and sampling requirements;
G. Personal protective equipment requirements;
H. Employee training requirements;
I. Decontamination procedures;
J. Cleanup and disposal methods; and
K. Emergency evacuation procedures.

21.0 Heat Stress Monitoring

Site personnel who wear protective clothing allow body heat to be accumulated with an elevation of the body temperature. Heat cramps, heat exhaustion, and heat stroke can be experienced, which, if not remedied, can threaten life or health. Therefore, an American Red Cross Standard First Aid book or equivalent will be maintained on site at all times so that the SO and site personnel will be able to recognize symptoms of heat emergencies and be capable of controlling the problem.

When protective clothing is worn, especially Levels A and B, the suggested guidelines for ambient temperature and maximum wearing time per excursion are:

Ambient Temperature (EF)	**Maximum Wearing Time Per Excursion (Minutes)**

Above 90	15
85 to 90	30
80 to 85	60
70 to 80	90
60 to 70	120
50 to 60	180

One method of measuring the effectiveness of employees' rest-recovery regime is by monitoring the heart rate. The "Brouha guideline" is one such method:

? During a 3-minute period, count the pulse rate for the **last** 30 seconds of the first minute, the **last** 30 seconds of the second minute, and the **last** 30 seconds of the third minute.

? Double each count.

If the recovery pulse rate during the last 30 seconds of the first minute is at 110 beats/minute or less and the deceleration between the first, second, and third minutes is **at least** 10 beats/minute, the work-recovery regime is acceptable. If the employee's rate is above that specified, a longer rest period is required, accompanied by an increased intake of fluids.

In the case of heat cramps or heat exhaustion, "Gatorade" or its equivalent is suggested as part of the treatment regime. The reason for this type of liquid refreshment is that such beverages will return much-needed electrolytes to the system. Without these electrolytes, body systems cannot function properly, thereby increasing the represented health hazard.

This liquid refreshment will be stored in a cooler at the edge of the decontamination zone in plastic squeeze bottles. The plastic bottles will be marked with individual's names. Disposable cups with lids and straws may be used in place of the squeeze bottles. Prior to drinking within the decontamination zone, the project personnel shall follow the following decontamination procedures:

A. Personnel shall wash and rinse their outer gloves and remove them.

B. Personnel shall remove their hard hats and respirators and place on table.

C. Personnel shall remove their inner gloves and place them on table.

D. Personnel shall wash and rinse their face and hands.

E. Personnel shall carefully remove their personal bottle or cup from the cooler to ensure that their outer clothes do not touch any bottles, cups, etc.

F. The used bottle or cups will not be returned to the cooler, but will be placed in a receptacle or container to be cleaned or disposed of.

G. Personnel shall replace their respirators, hard hats, gloves and tape gloves prior to re-entering the hazardous zone.

When personnel are working in situations where the ambient temperatures and humidity are high--and especially in situations where protection Levels A, B, and C are required-the SO must:

? Assure that all employees drink plenty of fluids ("Gatorade" or its equivalent);

? Assure that frequent breaks are scheduled so overheating does not occur; and

? Revise work schedules, when necessary, to take advantage of the cooler parts of the day (i.e., 5:00 a.m. to 1:00 p.m., and 6:00 p.m. to nightfall).

Cold Stress

Whole-body protection shall be provided to all site personnel that have prolonged exposure to cold air. The right kind of protective clothing shall be provided to site personnel to prevent cold stress. The following dry clothing shall be provided by the Contractor as deemed necessary by the SO:

? Appropriate underclothing (wool or other);

? Outer coats that repel wind and moisture;

? Face, head, and ear coverings;

? Extra pair of socks;

? Insulated safety boots; and

? Glove liners (wool) or wind- and water-repellant gloves.

The SO will use the equivalent chill temperature when determining the combined cooling effect of wind and low temperatures on exposed skin or when determining clothing insulation requirements.

Site personnel working continuously in the cold are required to warm themselves on a regular basis in the on-site hygiene facility. Warm, sweet drinks will also be provided to site personnel to prevent dehydration. The SO shall follow the work practices and recommendations for cold stress threshold limit values as stated by the 1991-1992 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices by the American Conference of Governmental Industrial Hygienists or equivalent cold stress prevention methods.

22.0 Logs, Reports and Record Keeping

Security Log

A daily log of security incidents and visitors granted access to the site will be maintained, as well as a log of all personnel entering and exiting the site.

All approved visitors to the site will be briefed by the SO on safety and security, provided with temporary identification and safety equipment, and escorted throughout their visit. Site visitors will not be permitted to enter a hazardous work zone.

Project site shall be posted, "Warning: Hazardous Work Area, Do Not Enter Unless Authorized," and access restricted by the use of a snow fence.

Safety Log

The Contractor's SO will maintain a bound safety logbook. The log will include all health and safety matters on site and include, but not be limited to, the following information:

? Date and weather conditions on site;

? A description of the proposed work for the day;

? Times when site personnel arrive and depart;

? Air monitoring data;

? Heat and/or cold stress monitoring;

? Decontamination procedures;

- Type and calibration of air sampling/monitoring equipment used;
- Safety meeting summaries; and
- Accidents.

Emergency or Accident Report

Any emergency or accident will be reported immediately to the SO. The NYSDEC and NYSDOH will also be notified. The Contractor will submit a written report immediately to the NYSDEC and the NYSDOH, but no later than 24 hours of its concurrence. The report will include, but not be limited to, the nature of the problem, time, location, areas affected, manner and methods used to control the emergency, sampling and/or monitoring data, impact, if any, to the surrounding community, and corrective actions the Contractor will institute to minimize future occurrences. All spills will be treated as emergencies.

Daily Work Report

The Contractor shall maintain a daily work report that summarizes the following:

- Work performed,
- Level of protection,
- Air monitoring results,
- Safety-related problems, and
- Corrective actions implemented.

23.0 Posting Regulations

The Contractor will post signs at the perimeter of the Exclusion Zone that state "Warning, Hazardous Work Area, Do Not Enter Unless Authorized." In addition, a notice directing visitors to sign in will be posted at the project site. Also, the Contractor will post a sign stating that any questions about the site should be directed to the New York State Department of Environmental Conservation.

Safety regulations and safety reminders will be posted at conspicuous locations throughout the project area. The following safety regulations and safety reminders are at a minimum to be posted around the job site.

SAFETY REGULATIONS

(To be Posted for Project Personnel)

The main safety emphasis is on preventing personal **contact** with gases, soils, sludge and water. Towards that end, the following rules have been established.

Regulations

A. Eating on the site is PROHIBITED except in specifically designated areas.

B. All project personnel on the site must wear clean or new gloves daily.

C. If you get wet to the skin, you must wash the affected area with soap and water immediately. If clothes in touch with the skin are wet, these must be changed.

D. You must wash your hands and face before eating, drinking or smoking.

E. Observe regulations on washing and removing boots before entering the dressing room or a clean area and showering before going home.

Recommendations

A. Do not smoke with dirty hands.

B. Check for any personal habit which could introduce soil or water into the body.

Examples: eating food off fingers, wiping face or nose with a dirty hand or running a dirty hand through hair.

C. Check that any regularly worn clothing is clean. Examples include dirty watchbands, neck chains and a dirty liner on your safety helmet.

SAFETY REMINDER FOR TOXIC CHEMICALS

(Post for Project Personnel)

Chemicals can't cause problems unless you breathe them, eat them, or put them on your skin.

Chemicals in Gases, Soils, Sludge, and Water

Don't let chemicals enter mouth, nose, or stay on skin.

Use common personal hygiene.

A. Don't eat or drink on the site.

B. No smoking in the area of work.

C. Wear protective clothing.

D. Glove liners must be **clean**.

E. Wash your hands whenever practical. Wash before eating, drinking, or smoking.

F. Don't carry chemicals home to your family. (For example, on clothing, mud in the car, dirty hands.)

G. Follow strictly the HASP.

24.0 Community Protection Plan

A. Community Protection Plan

The Contractor shall develop, as part of this HASP, a Community Protection Plan (CPP). The CPP shall outline those steps to be implemented to protect the health and safety of surrounding human population and the environment.

B. Air Monitoring

As part of the Air Monitoring Program, use real-time monitoring and documentation sampling as described in the Subpart ?Air Monitoring Program? of this section to determine if off-site emissions, as a result of the site work, poses a threat to the surrounding community.

Provide real-time air monitoring for particulate levels at the perimeter of the work area. Including the following:

1. Particulates shall be continuously monitored at the 4 documentation sampling stations for a total of 4 dust monitors. If the downwind particulate level is 150 ug/m^3 greater than the upwind particulate level, dust suppressing techniques shall be employed. All readings shall be recorded and be available for State (NYSDEC and NYSDOH) personnel to review.

   Coordinate with local officials to arrange for notification and evacuation of the surrounding community in the event that off-site emissions pose a threat.

2. Off-Site Spill Response

   Produce as part of the HASP a Spill Response Plan, also coordinated with local officials, in case of an off-site spill of either liquid or solid wastes. The plan shall include transportation routes and times, as well as the minimum requirements set forth in the Subpart titled ?On-site Spill Containment Plan.? The driver shall be supplied with Material Safety Data Sheets (MSDs), a 24-hour emergency phone number, and instructions for reporting emergencies to local agencies and the project site.

Operation, Monitoring and Maintenance Work Plan

APPENDIX
B

MALCOLM PIRNIE

Operation, Monitoring and Maintenance Work Plan

APPENDIX

B

B.1 Introduction

This Operation, Monitoring and Maintenance (OM&M) Work Plan has been prepared for the former Ames/Hills Plaza Site in Jamestown, New York (the Site). The Site is the subject of a cleanup agreement in accordance with New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program guidance. The Agreement requires that the Site owner maintain the institutional and physical components that shall comprise the completed cleanup. This OM&M Work Plan describes the conditions and procedures for maintaining the physical components of the completed Site voluntary cleanup, and as an appendix to the Remedial Work Plan (RWP), it shall be an enforceable part of the agreement.

The owner (Owner) of the Site (or any portion thereof) should evaluate the criteria presented in this plan and should recommend changes to the NYSDEC, as appropriate, depending on actual post-closure site conditions. As a minimum, this plan should be reviewed annually during the post-closure period and updated when necessary.

Prior to initiation of the OM&M Work Plan, the Owner shall prepare and submit appropriate organizational documents to the NYSDEC for review and approval. The organizational documents shall include:

- An organizational chart outlining the responsible parties personnel (with qualifications) who will be responsible for implementing the post-closure operation, maintenance and monitoring program.
- A health and safety plan.
- Example inspection report forms.
- A schedule for the annual inspections and reporting.

B.2 Background

The Site is a former department store plaza situated on approximately seven acres of land centrally located in the City of Jamestown, Chautauqua County, New York. The geography of the site is characterized as bounded to the north and east by the Chadakoin River and on the south and western sides by developed properties that presently include restaurants, light retail businesses and associated parking lots.

The renovated former department store building now occupies the easternmost portion of the property/site. Historic development of the easternmost portion of the site included: furniture manufacturing and storage facilities (i.e., Jamestown Chair Company, Watson Manufacturing Co., A.P. Olsen & Co. Modern Cabinet Co., and Diamond Furniture Co.) mills including the Brooklyn Mills, and Pearl City Mills, and a tire service center and gasoline filling station.

Historic use of the westernmost potion of the site included businesses associated with metal working, (i.e., Jamestown Iron Works, the Manor Iron Works, Cast Iron Welding and Brazing Co.) associated foundries and machine shops. A furniture factory, shock absorber company, gasoline filling station and a tire and battery service center were also located on the property. Over time, the former mills and iron works building structures were demolished and the properties redeveloped. As an element of the City of Jamestown's urban renewal efforts during the 1970's, surficial fill material was reportedly placed on the property.

Currently, the site is occupied by a recently renovated, formerly vacant, 77,000 square feet single-story brick and steel framed former department store building. The building is now used as a medical office complex. The majority of the site consists of an asphalt paved parking lot that extends from the west facing building front to the western property boundary. The east side of the building consists of an asphalt paved truck entrance and loading docks. Two small open grassy areas are located immediately north and south of the building. A public access river walk adjoining the Chadakoin River is located immediately to the north of the parking lot extends to the eastern side of the site along the river. The riverbank along the easternmost side of the site is wooded. A restaurant is located adjacent to the northwest corner of the site, and a pharmacy was recently constructed adjacent to the southwest corner of the site.

B.3 Remedial Work Plan

The Remedial Work Plan (RWP) for the site was prepared in October 2005 to be implemented during the cleanup of the Former Ames/Hills Plaza Site.

According to the RWP, in order to eliminate potential exposure risks associated with direct contact with site fill material, the entire site will be covered as part of site redevelopment. Where not paved or covered by the site building, the site will be covered with either pavement (asphalt or concrete) a minimum of two feet of documented clean soil cover material, or in areas of mature trees, 6-inches of mulch. Excavation of the soil/fill, if necessary to attain proper grade, will be performed in accordance with the Soil/Fill Management Plan (Appendix A). The cover system may be placed directly on top of the re-graded on-site fill material. Surface coverage over the entire redeveloped parcel or subparcel will be required by the site owner or developer as a pre-condition of occupancy.

The proposed cover system has been designed to be protective of human health and the environment. The primary exposure pathway for contaminants at the site (metals and polycyclic aromatic hydrocarbons) in soil is via direct contact. The proposed plan of covering the on-site fill material will eliminate the potential for direct contact with soil and is therefore protective of human health.

The Qualitative Risk Assessment performed as part of the Remedial Investigation (Malcolm Pirnie, 2005) evaluated the risk posed by chemicals of potential concern ("COPCs") to human health and wildlife. The Risk Assessment also evaluated the adequacy of the cover system planned for placement during site redevelopment and determined that the above-described cover system would protect human health and wildlife from these COPCs.

B.4 Summary of the Remedial Closure Design

B.4.1 Preparation of Site Surface

The Site will require grading prior to cover placement activities, in accordance with the Remedial Work Plan (RWP) and appended Soil/Fill Management Plan (SFMP). Any fill material will be graded to a regular topographic surface as planned for redevelopment. All trees, shrubs, roots, brush, masonry, rubbish, scrap, debris, pavement, curbs, fences and miscellaneous structures will either be removed or disposed of off-site at a permitted disposal facility. Prior to placement of the cover system, all protruding material will be removed from the ground surface. Burning shall not be allowed on the Site.

B.4.2 Cover System

B.4.2.1 Soil

In areas that will not receive significant equipment or vehicular use, the cover system will be composed of soil fill from a NYSDEC-approved borrow source and tested in accordance with the Soil/Fill Management Plan and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The soil cover will be placed in accordance with the RWP.

In the two areas along the northern site boundary where mature trees are present a minimum of 6-inches of wood mulch may be placed as cover. This mulch cover must extend around the base of each tree a distance not less than the height of the tree.

It will be the responsibility of the Owner to annually verify that the soil cover has remained in good condition (e.g., grass or other vegetation is maintained) and sufficiently covers the soil/fill material at the Site (i.e., eroded areas are repaired and the soil cover is maintained). Certification as to this verification is included on the site inspection form on Attachment A.

B.4.2.2 Asphalt

The cover system in areas that will remain as or become roads, sidewalks, and parking lots will consist of a minimum of two inches of asphalt that will be placed over the soil/fill material at the site. The asphalt will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence, in accordance with the RWP. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a regular surface.

It will be the responsibility of the Owner to annually verify that the asphalt has remained in good condition and sufficiently covers the soil/fill material.

B.4.2.3 Concrete

The cover system in areas that will remain as or become structures will consist of a minimum of two inches of concrete that will be placed above the soil/fill material. The concrete will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a sufficient regular surface.

It will be the responsibility of the Owner to annually verify that the concrete has remained in good condition and sufficiently covers the soil/fill material at the Site as per Attachment A.

B.4.3 Erosion Control Measures

In accordance with the SFMP, design and permanent construction features shall be incorporated into the site construction plans to control erosion. It will be the responsibility of the Owner to annually certify that storm water channel slopes, vegetation and any synthetic erosion control fabrics placed in such channels remain in good condition.

B.4.4 Fencing and Access Control

In accordance with the RWP and the SFMP, fencing shall be constructed and signs posted around all areas with exposed soil/fill or areas where excavation will occur. If the entire Site is completely hydroseeded or completely graded and covered at the same time, fencing the entire Site will not be necessary, but gates shall be installed across obvious access points to limit the potential for illegal dumping. It will be the responsibility of the Owner to annually certify that fences, gates and signs are in place and that access is restricted, to the best of the Owner's ability.

B.4.5 Environmental Monitoring

Monitoring of the river bank.

On an annual basis, the southwestern bank of the Chadakoin River will be inspected for visual evidence of petroleum contamination emitting from the subsurface. The entire length of the southwestern bank that is adjacent to the site will be traversed for the annual inspection. The inspection will be performed at a time when snow is not present along the bank to be inspected. If visual evidence of petroleum contamination is observed, the evidence will be noted on the inspection form, photo documented, and reported to the NYSDEC.

Sub-Slab Air Monitoring

On an annual basis, air from beneath the site building will be monitored using a photoionization detector (PID) that is capable of measuring total organic compounds at concentrations as low as 1.0 part per million (PPM). Two subslab networks of four inch diameter slotted pipe were installed beneath the building during site re-development. Each system will be purged of at least three times the calculated volume of the piping system prior to measurement of total VOCs in the system.

Once purged, each subslab air monitoring system will be measured at the northern piping terminus' using the PID. PID measurements will be recorded on the inspection form. If ever the subslab air yields a sustained PID reading above 5PPM, the NYSDEC will be notified and a corrective action plan prepared and implemented.

Such a Corrective Action Plan would include sampling of the subslab air for laboratory analysis and evaluation with possible construction of an active subslab air ventilation and treatment system.

B.5 Inspection Procedures

The physical components of the cover system shall be inspected annually by a representative of Owner (or its delegated agent) qualified to carry out such inspections. The inspector should be, at minimum, a certified industrial hygienist or a person with a four-year college degree in environmental sciences. The inspection will be coordinated with facility personnel at least one week prior to ensure that most, if not all, of the paved areas will be accessible for inspection. Indoors, in office spaces with floor coverings, the inspection should at minimum make note of areas with settled or uneven surfaces, seepage or flooding. Arrangements to repair those areas that the inspector requires to be maintained, if any, will be initiated as may be required by the inspector.

The annual inspection shall include, but not be limited to, those matters set forth on the Environmental Inspection Form, attached hereto as Attachment B. These inspection reports, which shall include a map that shows areas of damage or required maintenance, shall be kept on file by the Owner. If the inspections reveal that maintenance is necessary, then the Owner shall notify the NYSDEC, and arrange to complete the repairs. The NYSDEC shall be informed by Owner when repairs are complete.

B.6 Final Cover System Condition

The final cover system shall be observed by traversing the cover on foot and making appropriate observations, notes and photographic records as necessary, for inclusion with the report. It is anticipated that some maintenance activities will be necessary during the closure period. The following characteristics shall be looked for during the observation of the cover system, fencing and signs, and erosion control features:

- Sloughing.
- Cracks.
- Settlement (depression and puddles).
- Erosion features.
- Distressed vegetation/turf.
- Damaged fencing, gates and signs.

The following paragraphs describe actions that should be taken to address the conditions described above. Maintenance and repairs that are typically necessary during the closure period are also described.

B.6.1 Sloughing

Sloughing of the soil cover may occur. Areas where sloughing has occurred shall be repaired. Cover soil shall be placed in accordance with the requirements of the Remedial Work Plan (RWP), and of the Soil/Fill Management Plan (SFMP).

B.6.2 Cracks

The locations of any cracks in the soil, asphalt or concrete cover should be noted on the inspection log and site map, including width, length and depth of the crack. The appropriate maintenance procedure will be determined by the inspector. Small willow cracks in the soil cover can be repaired by minor re-grading of the cracked area and re-seeding the area. Larger cracks that appear to extend into the fill material shall be filled with soil similar to that used for construction of the cover soil layer prior to re-seeding, in accordance with the RWP. Repairs to the asphalt and/or concrete will be completed when and in the fashion deemed necessary by the inspector.

B.6.3 Settlement

Settlement features such as depressions or areas of ponding water shall be re-graded by placing additional soil cover so that surface water drains in the appropriate direction.

B.6.4 Erosion Features

Erosion features shall be repaired by backfilling to the original grade with soil and re-seeding. Torn or displaced synthetic erosion control fabric in storm water channels shall be repaired or replaced as directed by the inspector.

B.6.5 Distressed Vegetation/Turf

Areas of distressed turf shall be re-seeded and a starter fertilizer applied. Large-root growth may also compromise the integrity of the soil cover and shall be discouraged with regular mowing. Reasonable efforts shall be taken to avoid damage to the turf from traffic and other unintended uses.

B.6.6 Fencing And Access Control

To the best of owner's ability, physical discontinuities in fence material shall be repaired; fence posts and foundations that show evidence of structural weakness shall be repaired or replaced as necessary; gates and locks shall be maintained to deter unauthorized entry; and warning signs shall be kept secured in place and trees shall be trimmed to ensure the signs are visible.

B.7 Inspection Reporting

Annual inspection reports shall be forwarded by the Owner to the NYSDEC. If the inspection finds that corrective action is required, a followup inspection will be made after the repairs have been completed. If the inspector determines that corrective action is required, the Corrective Action Form (Attachment C) will be included with the inspection report, confirming that the repairs were completed, and in accordance with the Remedial Work Plan.

Any analytical data that may be gathered during the course of the inspection or corrective action shall also be included with the inspection report and submitted to the NYSDEC within 21 days of the inspection. The inspection reports will be submitted by the Site Owner with an attached Annual Certification form, signed and notarized by the Site Owner, certifying that the specified engineering and institutional controls are in place and functioning.

ATTACHMENTS

**A.	Environmental Inspection Form**

**B.	Annual Certification of Institutional/Engineering Controls**

**C.	Correction Action Form**

ATTACHMENT A

ENVIRONMENTAL INSPECTION FORM

Former Ames/Hills Plaza Site, Jamestown, New York

Property Name: ________________________________ Inspection Date: ________________________

Property Address: ____

City: _______________________________________ State: ____________ Zip Code: ___________

Property ID: (Tax Assessment Map)

Section:________ Block:_________ Lot(s):___________

Total Acreage: ____________________

Weather (during inspection): Temperature: ______ Conditions:

SIGNATURE:

The findings of this inspection were discussed with appropriate personnel, corrective actions were identified and implementation was mutually agreed upon:

Inspector: ____ Date: __________________

Next Scheduled Inspection Date: _____________________

SECURITY AND ACCESS

	Yes	No
1. Access controlled by perimeter fencing?	_____	_____
Are there sections of the fence material damaged or missing?	_____	_____
Are the fence or gate post foundations structurally sound?	_____	_____
2. “No Trespass” signs posted in appropriate languages?	_____	_____
Are the signs securely attached to the fencing or posts?	_____	_____
Are there sufficient signs; are the signs adequately spaced around the perimeter of the property?	_____	_____
3. Is there evidence of trespassing?	_____	_____
Is there evidence of illegal dumping?	_____	_____

COVER & VEGETATION

	Yes	No
4. Final cover in acceptable condition?	_____	_____
Is there evidence of sloughing, erosion, ponding or settlement?	_____	_____
Is there evidence of unintended traffic; rutting?	_____	_____
Is there evidence of distressed vegetation/turf?	_____	_____

	Yes	No
5. Final cover sufficiently covers soil/fill material?	_____	_____
Are there cracks visible in the soil, mulch or pavement?	_____	_____
Is there evidence of erosion in the storm water channels or swales?	_____	_____
Is there damage to the synthetic erosion control fabric in the channels or swales?	_____	_____

ACTIVITY ON SITE

6. Any activity on site that mechanically disturbed soil or mulch cover?	_____	_____

ENVIRONMENTAL MONITORING

7. Is there evidence of petroleum contamination emanating from the Southwestern bank of the Chadakoin River.	_____	_____
8. Is there elevated measurements (>5 ppm) of total volatile organic Compounds from the subslab air monitoring system?	_____	_____

ADDITIONAL FACILITY INFORMATION

Development on or near the site? (Specify size and type: e.g., residential, 40 acres, well and septic)

COMMENTS

Item #

____
____
____
____
____
____
____
____
____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

ATTACHMENT B

Annual Certification of Institutional/Engineering Controls

Jamestown, NY – Former Ames/Hills Plaza Site

Property Name:
Property Address:

County: Chautauqua
City/Town: Jamestown
Property ID: (Tax Assessment Map)
Section:________ Block:_________ Lot(s):___________

I (name) ________________ , residing at (address) __________________________, as owner of the property(ies) listed above which are located wholly or partially within the boundaries of the Brownfields Cleanup Program Site named above; do certify that the engineering and/or institutional controls, as specified in the Declaration of Covenants and Restrictions for the BCP Site are in-place and functioning as designed within the property(ies) listed above.

Signature:________________________

(This area for notary public)

ATTACHMENT C

<u>CORRECTIVE ACTION FORM</u>
Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name: ________________________________

Property Address:

City: __________________________________ State: ____________ Zip Code: ___________

Property ID: (Tax Assessment Map)

Section:________ Block:_________ Lot(s):___________

Total Acreage: ____________________

Weather (during inspection): Temperature: ______ Conditions:

An inspection of the subject property on (date) identified the need for corrective action.

<u>CORRECTIVE ACTION TAKEN</u>

Description: (attach site sketch and photographs)

Date Completed:

SIGNATURE:

The corrective action described above was completed in accordance with all relevant requirements of the Remedial Action Work Plan.

Inspector: ______________________________________Date: __________________

<u>ATTACHMENTS</u>

1. Site Sketch
2. Photographs

3. Laboratory Report (s)

Interim Remedial Measure – Scope and Approval

APPENDIX
C

- **Scope of Work**
- **Scope Clarification Memo**
- **NYSDEC Approval Letter**
- **November 15, 2005 Letter describing additional IRM Soil Removal Plans**
- **Completion Report**

July 21, 2005

Mr. Jaspal Walia, P.E.
Environmental Engineer II
NY State Dept. of Environmental Conservation
270 Michigan Ave.
Buffalo, New York 14203-2999

**Re: Proposed Scope of Interim Remedial Measure (IRM)
Former Ames/Hills Plaza Site, Jamestown, New York**

Dear Mr. Walia:

On behalf of the Krog Corporation, Malcolm Pirnie, Inc. has completed a Remedial Investigation (RI) of the Former Ames/Hills Plaza Site in Jamestown, New York. The RI was performed under the Brownfield Cleanup Program (BCP) in accordance with the NYSDEC-approved Work Plan dated October 2004. Results of the RI indicate that the site is suitable for re-development as a professional office park complex if certain protective measures are implemented and precautions followed. These include reducing the potential for exposure to constituents in the on-site soil/fill material by covering it with pavement or clean soil, monitoring building sub-slab soil vapors to confirm continued safe conditions, and implementing a Soil/Fill Management Plan with a site Health and Safety Plan for use during possible future soil/fill disturbance.

In addition to the above long-term protective measures, the Department has requested that Krog remediate an area of petroleum-impacted soil/fill located near the northwest corner of the building at the western end of the grassy area, see attached Figure 1. During the soil boring and test pit excavation tasks of the RI, the soil/fill in this area exhibited a black oil-like staining that extended from approximately four feet below ground surface to a maximum depth of 12-13 feet. The lateral extent of the impacted area is not completely delineated and may extend under the asphalt paved parking lot located toward the west. The remediation of the impacted soil will be completed as an Interim Remedial Measure (IRM).

The following is a description of the proposed approach of the IRM

IRM Approach

OBJECTIVE

The objective of the IRM is to remove as much of the visually impacted soil/fill material as possible to prevent future impacts to the nearby Chadakoin River.

The IRM will involve the following tasks:

1. Delineation of extent and removal of non-impacted Soil/Fill
2. Removal and stockpiling of impacted Soil/Fill
3. Water handling and disposal
4. Evaluation of alternatives:
   - 4.1 Off-site disposal
   - 4.2 Land farming
5. Site safety and monitoring

Each of these tasks is briefly described below:

1. Delineation of Extent and Removal of Non-Impacted Soil/Fill

Observations made during the RI and subsequent test pit excavations on May 20, 2005 indicate that petroleum impacted soil is covered by approximately four feet of non-impacted soil/fill material. The eastern extent of the impacted soil/fill was generally delineated but the lateral extent in other directions remains undetermined. The first task will require excavation of the overlying non-impacted soil to expose the petroleum stained soil. The excavation will be extended laterally in all directions until the edges of visually impacted soil are delineated.

The overlying non-impacted soil/fill will be removed using a backhoe and/or bulldozer. The non-impacted soil/fill will be stockpiled adjacent to the excavation, see Figure 1. The volume of non-impacted soil/fill to be temporarily stockpiled is estimated to be approximately 1,000 cubic yards. See calculation on Attachment A. The area of the parking lot needed for the stockpile was calculated assuming that the pile will be a rectangular box shape with a maximum height of 8 feet and with 3/1 side slopes. The soil pile foot print is calculated to be approximately 100 feet long by 65 feet wide. See calculation on Attachment A. The soil/fill to be removed is expected to be above the water table and therefore unsaturated. The stockpile is planned for use as backfill in the excavation immediately after the impacted soil/fill is removed. However, to prevent possible runoff from the site in the event of rain or high winds, the soil pile will be covered with 6 mm (mil) polyethylene sheeting to keep it dry. A perimeter of hay bales will be positioned around the base of the soil pile to control runoff.

2. Removal and Stockpiling of Impacted Soil/Fill

Subsequent to excavation of the non-impacted soil materials required to delineate the lateral extent of petroleum stained soils, the impacted soil/fill will be removed and stockpiled. A backhoe and/or bulldozer will be used to excavate the visually impacted soil/fill to the maximum extent practicable. Limiting factors impacting the excavation are anticipated including; groundwater infiltration, mature trees, buried concrete foundations, the foundation footer of the existing building, buried utilities, and the proximity to the river. The extent of the excavation(s) nearing the existing building foundation and/or River will be limited by a horizontal factor of not less than twice the vertical depth of the excavation, e.g. if visually impacted soils are excavated to a depth of 8 feet, the edge or lateral extent will not extend closer than 16 feet to either foundation or River. Potential excavation limitations may require some of the impacted soil/fill remain in place, but all reasonable attempts will be made to remove the visually impacted soil/fill. The impacted soil/fill will be stockpiled at the northwest area of the paved parking lot, between the Chinese restaurant and the former Ames building. The volume of excavated material is estimated at 2000 cubic yards, see Attachment A. This material will be placed on and under 6 mil plastic sheeting that is surrounded by hay bales to form a berm to control runoff. The area of the parking lot needed for the stockpile of impacted soil/fill was calculated assuming that the pile will be a rectangular box shape and a maximum height of 8 feet. The estimated size of the soil pile foot print, assuming 3/1 side slopes is approximately 140' long by 80' wide. See calculation on Attachment A.

3. Water Handling and Disposal

If groundwater infiltration impedes the progress of identification and/or excavation of the impacted soil/fill, the water will be pumped from the excavation and temporarily stored in water-tight "Baker" tanks for subsequent characterization and disposal. Is has been assumed that one 21,000 gallon tank will be required. This tank will be placed on the parking lot to the west of the northwest corner of the site building, south of the excavation area. After excavation operations are complete, the water in the tank will be sampled for disposal. Based on the characterization results the water will be either shipped off-site to a treatment plant yet to be determined or discharged on site to the municipal sanitary sewer with permission of the local waste water treatment facility.

4. Evaluation of Alternatives

The extent of the impacted soil/fill is not currently known therefore the volume to be removed is also unknown. The fate of this material will be determined after material removal is completed and the volume is known. Discussions between Krog, Malcolm Pirnie, and the NYSDEC have resulted in a consensus that the material will either be disposed of off site at a permitted treatment/disposal facility or treated ex-situ on site by land farming. Additional pre-remedial characterization of the material may be necessary to evaluate the suitability of the material for land farming. Each of these two alternatives is discussed below:

4.1 *Off-Site Disposal*

If, after excavation, stockpiling, and additional characterization, it is determined that off site disposal is the best approach, then the impacted soil/fill will be transported to an off-site treatment/disposal facility. If the impacted material is disposed of off site, the excavation will be backfilled using a combination of site soil/fill, site construction rubble and demonstrated clean soil from off-site source(s). Material selection, backfilling and final capping will be completed in accordance with the site-specific Soil/Fill Management Plan.

4.2 *Land Farming*

Impacted soil material will be remediated on site using a land farming process if a determination is made that the bulk volume and physical characteristics of the material are suitable. Using this alternative, the stockpiled material will be spread out on the northwest portion of the paved parking area to a depth of approximately two feet. The estimated footprint of the soil field is a rectangle approximately 250 long by 110 wide. See Attachment A. The soil "field" will be surrounded by hay bales to mitigate and control silt runoff. The material will be periodically tilled to aerate and promote biological breakdown and volatilization of petroleum constituents. Tilling will be performed once every two weeks during the months from July to October 2005 and once per month (when possible) during months between November 2005 and April 2006. The material will be covered with 6 mil plastic sheeting to keep the soil dry and to mitigate runoff. Land farming will be considered complete based on a sensory (visual and olfactory) determination by the NYSDEC. Pending a determination of no further action from the DEC, the remediated material will be returned to the original excavation and capped with pavement or clean soil in accordance with the site-specific Soil/Fill Management Plan.

5. Site Safety and Monitoring

A safety plan will be prepared and implemented during the IRM. Air within the breathing zone will be monitored for volatile organic vapors using a PID and for airborne dust using a random aerosol monitor both at the work site and periodically downwind. The work site will be surrounded by temporary construction fencing and appropriate warning signage to keep the public away from potential physical hazards of the work site. If land farming is implemented, volatile organics will be monitored at the property boundary during tilling activities. After backfilling the excavation, long-term visual monitoring of the adjacent River bank will be performed to identify potential impacts, if any, should petroleum stained soils remain in place within the excavation. Monitoring of the River bank nearest the work site will be performed quarterly for a period of two years after completion of the IRM. If no impact is observed, monitoring would continue

MALCOLM PIRNIE

annually for another three years. If petroleum impacts are observed after 5 years the NYSDEC will be petitioned to suspend the monitoring program.

Krog plans to implement the IRM as soon as possible to take advantage of the summer weather and construction season and hopes to have site disturbances covered in time for occupancy of the building later this year.

Please respond with written approval or comments on this proposed plan at your earliest convenience. If you have any questions or require further information please call me at 716/667-6607.

Very truly yours,

MALCOLM PIRNIE, INC.

Kent McManus

Kent R. McManus, P.E., DEE
Senior Associate

w/ 2 Attachments
cc: P. Krog, Krog Corp.
P. Sheedy, Krog Corp.
R. Moore, MaGavern, MaGavern & Grimm
M. Doster, NYSDEC
J. Richert, MPI
File: CC/3198-004/krm072105.nysdec.ames.irm

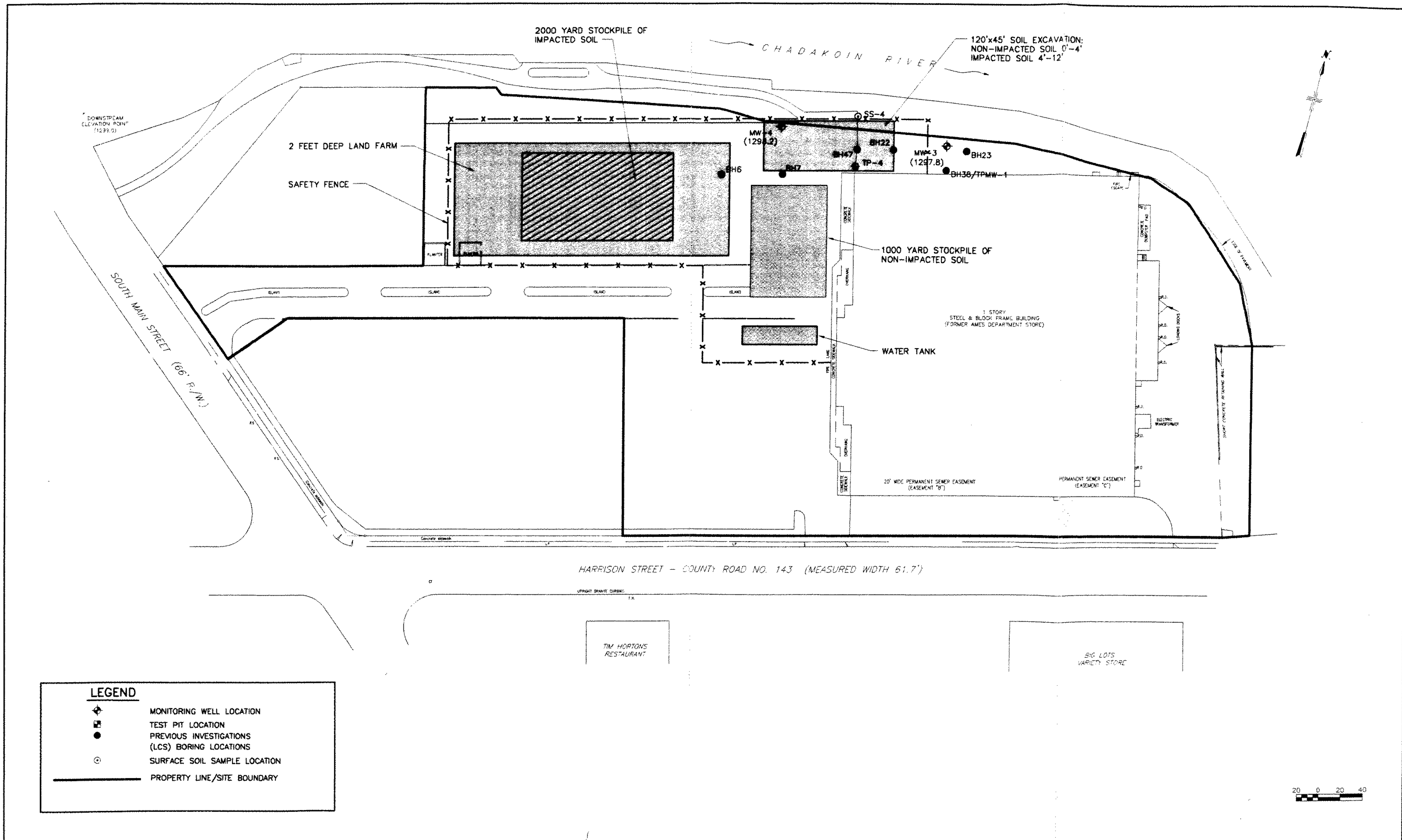
ATTACHMENT A

SOIL HANDLING CALCULATIONS

FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

CALCULATION	DIMENSIONS OF EXCAVATION (feet)			VOL. TO BE EXCAVATED (CY)	VOL. WITH FLUFF OF 25% (CY)	PLANNED PILE HEIGHT	Length [1]	Width [1]
	Length	Width	Depth					
Volume of non-impacted soil removed	120	45	4	800	1000	-		
Footprint of Pile of non-impacted soil	-	-	-	-	-	8	100	65
Volume of Impacted soil removed	120	45	8	1600	2000	-	-	-
Footprint of Pile of impacted soil	-	-	-	-	-	8	140	80
Footprint of soil field	-	-	-	-	-	2	250	108

[1] Assumes 3/1 side slopes
jjr 060605



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15 SOUTH MAIN STREET
JAMESTOWN, NY

FORMER AMES/HILLS PLAZA

FIGURE 1
IRM SOIL HANDLING LAYOUT

DATE MARCH 2005

SHEET ____ OF ____

CAD REF. NO. FIGURE 1

Richert, James

From: Richert, James

Sent: Friday, July 29, 2005 3:06 PM

To: 'Jaspal Walia'

Cc: 'psheedy@krogcorp.com'; McManus, Kent; Walker, Brad; Richert, James

Subject: IRM - Former Ames/Hill Plaza Site - Jamestown

Jaspal:

Thank you for your expedited review and approval of the proposed Interim Remedial Measure (IRM) planned for the Former Ames/Hills Plaza Site in Jamestown, New York. A Fact Sheet was prepared and revised to address your comments verbalized to me yesterday. Copies of the Fact Sheet were mailed out yesterday to the approved list of recipients.

Per our discussion yesterday, this e-mail will document two clarifications to the IRM scope as presented in the July 21, 2005 letter to you. The two clarifications are as follows:

1. The IRM scope as written in the July 21st letter, includes two possible fates for the impacted soil after excavation. These two possible fates are a) on-site land farming and b) off-site disposal to a permitted treatment/disposal facility. Since the submittal of the IRM scope letter, Krog has decided that the excavated impacted soil will be disposed of off-site and that on-site treatment is no longer being considered.

2. As stated in the IRM scope, the removal of the impacted soil will be driven based on visual identification of contamination as will the determination of the IRM completeness be based on visual delineation of the impacted soil. However, sampling and off-site analysis will be performed per the procedures of the Soil/Fill Management Plan of the Draft Remedial Work Plan. As such, samples will be collected of the upper, non-impacted, soil and of any soils planned for use as excavation backfill or cover soil.

Krog is planning to initiate the IRM work as early as next week and you will be notified as soon as a start date is determined.

Thank you,

Jim Richert

New York State Department of Environmental Conservation
Division of Environmental Remediation, 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
Acting
Commissioner

July 27, 2005

Mr. Kent McManus
Malcolm Pirnie, Inc.
P.O. Box 1938
Buffalo, NY 14219

Dear Mr. McManus:

Interim Remedial Measure
Former Ames/Hills Plaza site
Jamestown, New York
(Site #C907029)

The Proposed Scope of Interim Remedial Measure for the Former Ames/Hills Plaza site, dated July 21, 2005, has been reviewed by this Department. The IRM Plan is acceptable and is approved.

As discussed earlier, a Fact Sheet must be sent out before start of IRM.

If you have any questions, please call me at (716) 851-7220.

Sincerely,

Jaspal S. Walia, P.E.
Environmental Engineer

cc: Mr. Martin Doster, NYSDEC
Mr. Cameron O'Connor, NYSDOH
Mr. Peter Krog, Krog Corp.
Mr. Jim Richert, Malcolm Pirnie

MALCOLM PIRNIE

MALCOLM PIRNIE, INC.
INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS & CONSULTANTS

November 15, 2005

Mr. Jaspal Walia
Division of Environmental Remediation
NY State Dept. of Environmental Conservation
270 Michigan Ave.
Buffalo, New York 14203

Re: Draft Remedial Work Plan and Draft Environmental Easement
Former Ames/Hill Plaza Site, Jamestown, New York
Brownfield Cleanup Program Site #C8907029

Dear Mr. Walia:

Per our conversation of November 9, 2005 and as a condition of the Department's approval of the Draft Remedial Work Plan (RWP) and Draft Environmental Easement, the following modifications will be made to the above two documents at the time of finalization:

1. Appendix C of the RWP (IRM Completion Report, Section 3) will be revised to more clearly describe how the lateral limits of the IRM excavation were determined with regard to physical obstacles such as the river and the site building.

2. Part 2A (Institutional and Engineering Controls) of the Environmental Easement will be revised to specifically list each of the institutional and engineering controls detailed in the Soil/Fill Management Plan and the Operation, Monitoring, and Maintenance Work Plan.

3. At the request of the Department, additional IRM soil/fill removal will be completed at a triangular area located between the northern extent of the area excavated during the August IRM and the northern Krog property line. A post-excavation sample collected from the northern sidewall of the IRM excavation contained elevated concentrations of PAHs such that the Department requested remediation of the PAHs at that location. Krog will remediate this area similar to the IRM by removal and off-site disposal of this impacted soil/fill. The objective of the additional IRM soil/fill removal is to remove the remainder of the impacted soil/fill that remains to the north of the initial IRM excavation. Determination of the extent of the remaining impacted soil/fill will be made using visual, olfactory, and PID methods. Once the northern extent of excavation is reached, a composite confirmation sample of the soil/fill material will be collected from the northern excavation wall and analyzed for PAHs. The excavation will be backfilled with documented clean soil and covered with non-impacted soil. The proposed excavation is assumed to be bounded as follows:

   - To the north - the approximate Krog/City of Jamestown property line
   - To the south – the northern extent of the August 2005 IRM excavation
   - To the west – the northerly projection of the western line of the August 2005 IRM excavation

PO BOX 1938 BUFFALO, NY 14219-0138 716-667-0900 fax 716-667-0279 http://www.pirnie.com

Monitoring well MW-4 is located within the proposed excavation and will therefore be removed.

We trust that this letter sufficiently addresses the Department's concerns in the above matters such the approval of the Draft Remedial Work Plan and Draft Environmental Easement will now be granted and the RWP can be made available to the public for review and comment over the required 45-day period. Please provide written approval to begin this public review and comment period. Upon receipt of the Departments approval, we will place the Draft Remedial Work Plan in the public repository and send out a Fact Sheet that announces the availability of the draft RWP and provides a project update. Thank you in advance for your prompt attention to this matter.

If you have any questions, feel free to contact me at 716/667-6654.

Very truly yours,

MALCOLM PIRNIE, INC.

Jim Richert

James J. Richert, CPG
Senior Project Hydrogeologist

Enclosures
cc: C. O'Conner NYSDOH
P. Krog
P. Sheedy, Krog
R. Moore, McGavern & McGavern
K. McManus, Malcolm Pirnie

3198-004/JJR111505nysdec.jamestown.ltr

COMPLETION REPORT FOR INTERIM REMEDIAL MEASURES

Former Ames/Hills Plaza Site
Jamestown, NY

FEBRUARY 2006

MALCOLM PIRNIE, INC.

P. O. Box 1938
Buffalo, New York 14219

3198-004

TABLE OF CONTENTS

1.0 Introduction

As part of the redevelopment of the Former Ames/Hills Plaza Site in Jamestown, New York, a two phased Interim Remedial Measure (IRM) involving the removal and disposal of petroleum-impacted soil/fill was competed. The first phase of the IRM was completed between August 15 and 19, 2005, the second phase of the IRM was completed on November 16, 2005. Both phases were completed by the site developer (The Krog Corporation) under the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). The IRM was completed under the direction of Krog's environmental consultant (Malcolm Pirnie, Inc.) with approval and oversight by the NYSDEC. Phase 1 IRM work was performed in accordance with the scope of work submitted to the NYSDEC by Malcolm Pirnie, Inc. on July 21, 2005 and amended on November 15, 2005. The initial work scope and amended scope were approved by the NYSDEC on July 27, 2005. The Phase 2 IRM was completed per the July 21st scope and a modification of November 15, 2005. The IRM was recommended based on the results of a Remedial Investigation (RI) completed at the site between September 2004 and January 2005 which revealed an area of the site that contained significant of petroleum impact in the subsurface soil/fill. The general location of the impacted soil/fill was to the north and northwest of the site building. The approximate lateral and vertical extent of the impacted soil/fill was delineated via soil borings drilled as part of the RI and previous studies.

2.0 Objective

The objective of the IRM was to reduce the potential for the petroleum-impacted soil to impact the groundwater beneath the site and the surface water and sediments in the nearby Chadakoin River. This objective was met by the removal and off-site disposal of the majority of the impacted soil/fill.

3.0 IRM Methods

A large backhoe and multiple dump trucks were used to complete the IRM. A top layer of non-impacted soil was characterized, removed, and set aside for later use as backfill. The impacted soil/fill was identified by visible black staining, distinct petroleum odor, and elevated readings of total volatile organic compounds in the air immediately above the soil/fill as measured on a Photoionization Detector (PID). Once identified, the impacted soil/fill was excavated and loaded into dump trucks and then transported to the nearby Ellery Landfill.

The lateral extent of excavation was limited by site features including the site building and the Chadakoin River. The entire thickness of impacted material was removed within the lateral limits of the excavation. The excavation was terminated in the west, south, and eastern directions at the point where no further evidence of petroleum-impacted soil was observed. The northern evacuation boundary, as well as the eastern portion of the southern evacuation boundary was limited by the Chadakoin River and the site building respectively. Per the NYSDEC- approved IRM Work Plan, the integrity of the river bank and the building were preserved by limiting the excavation to the point where the distance between the excavation and the river or building was not less than twice the depth of the excavation. Photographs of the IRM activities are provided in Attachment C-1.

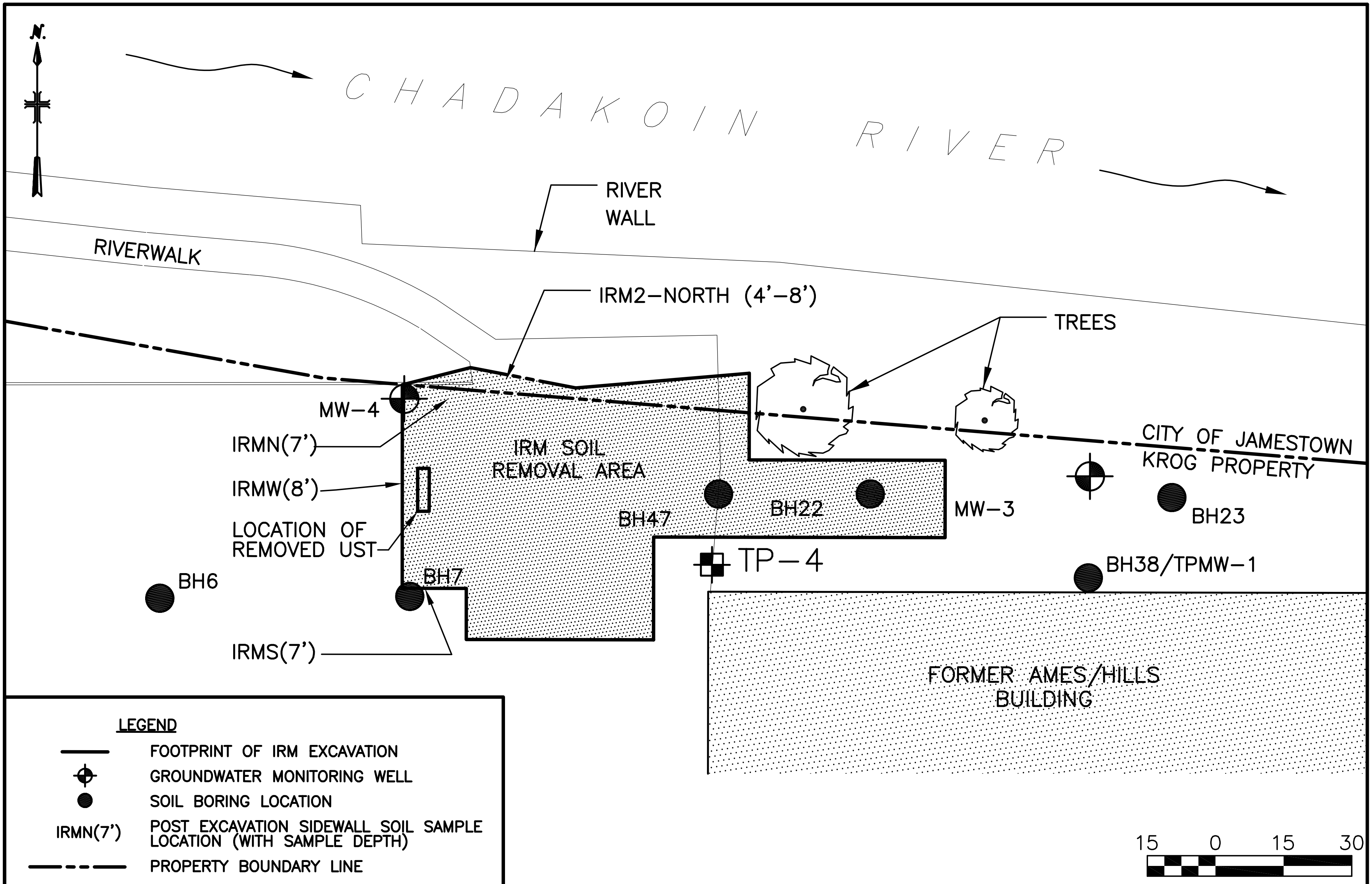
4.0 Volume Removed

The footprint of the area in which the impacted soil/fill was removed is calculated to be approximately 3,300 square feet, see Figure C-1. The thickness of the impacted soil/fill removed varied from one to seven feet. North of the building, the material was relatively thin at approximately two feet and appeared less impacted than the material removed in the central area of the excavation. In this central area, the impacted soil/fill was as much as seven feet thick between the six and 13 foot depth. The maximum depth excavated was 13 feet below grade, below which no impacted soil was observed. The thickness of the impacted soil/fill decreased in a southward direction over a short distance until the southern "pinch-out" was found. The calculated volume of impacted soil/fill removed is estimated at approximately 450 cubic yards. Total weight removed and disposed was 760 tons as tallied from the landfill scale tickets, see Attachment C-2.

5.0 UST Removal

During performance of the IRM, the likely source of the petroleum in the soil/fill, a 1000 gallon steel underground storage tank was discovered. A representative of the NYSDEC (i.e., Tom Biel) was on site at the time and the tank investigation and removal

User: WELSHANS Spec: PIRNIE STANDARD File: F:\Projects\3198004\CADD\Jamestown\CADD\FIGURE C-1.DWG Scale: 1:1 Date: 01/31/2006 Time: 09:23 Layout: Figure 4-1



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01/06 3198004

FORMER AMES/HILLS PLAZA

15 SOUTH MAIN STREET
JAMESTOWN, NY

FIGURE C-1

IRM SOIL REMOVAL AREA

was completed that same day under NYSDEC direction. The tank was found to be approximately half full of water and contained petroleum vapors in the head space. The tank was pumped of its liquid contents to a nearby Baker storage tank until essentially dry. The UST was then filled with clean water from the Chadakoin River to displace the vapors in the headspace. Several small holes were observed in the sides of the tank, allowing water to leak out during filling. Once filled with water, a 1-foot square hole was cut in the top of the UST to prevent further vapor buildup in the headspace. Water in the UST was again pumped into the nearby Baker® tank until essentially dry. Once empty and confirmed free of measurable organic vapors, the tank was removed from the excavation site and placed on bermed plastic sheeting. The tank was later decontaminated using high pressure water and Simple Green® soap. The decontamination wastes (water and sediments) were pumped to the baker tank, and later discharged to the local municipal sanitary sewer system along with the other water removed from the UST. The tank was ultimately cut, crushed, and disposed of in an on-site dumpster along with other non-hazardous construction-related solid waste. Photographs of the UST removal process are provided in Attachment C-1.

Once the UST had been removed, the IRM soil/fill removal resumed. Impacted soil was removed from the area that was under and adjacent to the UST and the southern and western extents of the impacted soil were soon reached and the impacted soil/fill removed. The northern extent of impacted soil was not reached. This extent could not be safely reached because of the close proximity of the river. As specified in the approved scope of work, the excavation was terminated near the river and the site building at the distance equal to twice the excavation depth.

6.0 Post Excavation Sampling

At the completion of the first phase of the IRM, three post- excavation samples were collected to characterize the soil/fill that was not removed at the face of the excavation. One sample was collected from each north, west, and south sidewalls of the excavation. These samples were collected from elevations at which impacted soil remained (north sample) or at which impacted soils had been removed nearby (south and west samples). Each of the three soil/fill samples were analyzed for Target Compound List (TLC) volatile organic compounds, semivolatile organic compounds, pesticides, PCBs, and Target Analyte List (TAL) metals and cyanide.

Based in part on the results of the Phase 1 IRM post excavation samples, the Phase 2 IRM were performed to remove additional soil/fill by extending the excavation to the North. One post excavation sample (IRM2-North) was collected from the Northern excavation face and analyzed for SVOCs.

7.0 Sample Results

Table C-1 provides a summary of the analytical results of the four IRM post excavation samples. As expected, the sample collected from the north face of the excavation (IRM-North), of the impacted soil that was left in place, after the first phase of the IRM contained elevated concentrations of PAHs and metals. The PAH concentrations in the sample were generally higher than those detected in other subsurface soil/fill samples collected at the site in the past because it was collected directly from the visibly impacted material whereas previous subsurface soil/fill samples were composite samples of the fill thickness. It is assumed that if the sample from the north wall was collected in the manner of the other subsurface soil/fill samples collected on site (composites of the fill thickness), the results would be much lower and similar to previous sample results. The metals detected in the IRM- North sample were at concentrations similar to those detected in the soil/fill throughout the site. Analytical results of the other two Phase 1 IRM post excavations samples were similar to those of samples collected of the subsurface soil/fill during the RI. No PAHs were detected above detection limits in the sample collected from the west excavation face. The sample collected from the north excavation face after the second phase of the excavation contained very low concentrations of PAHs. Attachment C-3 contains the sample results as provided by the analytical laboratory on form 1s.

8.0 Backfilling

After the UST had been removed, the western and southern extents of the impacted soil identified, and all impacted soil removed per the scope of work, the excavation was backfilled. The upper layer of soil/fill that was removed at the start of the IRM was placed into the excavation as was other non-impacted soil/fill from other areas of the site.

With the exception of a small area to the north of the site building that will be covered with mulch, all of the area affected by the IRM excavation was covered with new blacktop pavement for use as parking facilities for the medical complex.

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TABLE C-1
SUMMARY OF ANALYTICAL RESULTS - IRM POST EXCAVATION SAMPLES
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046(1)	Urban Background Concentrations(2)(3)	IRM-North 7.0' 08/18/2005	IRM-South 7.0' 08/18/05	IRM-West 8.0' 08/18/05	IRM2-North 4.0'-8.0' 11/16/06
Volatile Organic Compounds - VOCs (ug/kg)						
2-butanone	300	NA		27 J	12 J	--
Acetone	200	NA	30	130	60	--
Benzene	60	NA		47		--
cyclohexane	NA	NA		92		--
ethylbenzene	5,500	NA		130	2 J	--
isopropylbenzene	NA	NA		56		--
methylcyclohexane	NA	NA		52		--
methylene chloride	100	NA		7		--
toluene	1,500	NA			3 J	--
total xylenes	1,200	NA		150	14 J	--
Total VOCs	10,000	NA	30	691	91	--
Semi-Volatile Organic Compounds - SVOCs (ug/kg)						
Acenaphthene	50,000***	NA	7,100			28 J
Acenaphthylene			320 J			
Anthracene	50,000***	NA	14,000	26 J		23 J
Benzo(A)Anthracene	224or MDL	169 -59,000	25,000	330 J		77 J
Benzo(A)Pyrene	61	165 - 220	***20,000***	***400 J***		51 J
Benzo(B)Fluoranthene	1,100	15,000 - 62,000	23,000	940		97 J
Benzo(G,H,I)Perylene	50,000***	900 - 47,000	13,000	500		37 J
Benzo(K)Fluoranthene	1,100	300 - 26,000	9,200	1,000		99 J
Biphenyl	NA	NA	600 J			
Bis(2-Ethylhexyl) Phthalate	50,000***	NA	740 BJ	43 BJ		
Carbazole	NA	NA	7,800			
Chrysene	400	251 - 640	***23,000***	430 J		62 J
Dibenz(A,H)Anthracene	14or MDL	NA	4,000	92 J		
Dibenzofuran	6,200	NA	5,700			
Di-N-Butyl Phthalate	810	NA				
Fluoranthene	50,000***	200 - 166,000	67,000 E	300 J		160 J
Fluorene	50,000***	NA	8,100			24 J
Indeno(1,2,3-C,D)Pyrene	NA	8,000 - 61,000	12,000	380 J		
2-Methylnaphthalene	36,400	NA	1,900 J			
Naphthalene	13,000	NA	3,600			
Phenanthrene	50,000***	NA	70,000 E	80 J		120 J
Phenol	30or MDL	NA				
Pyrene	50,000***	145 - 147,000	47,000	310 J		140 J
Total SVOCs	500,000***	NA	363,060	4,831		
TCL Pesticides (ug/kg)						
4,4'-DDT	2,100		7			--
Endrin	100		4			--
TCL PCBs (ug/kg)						
Aroclor 1248	10,000		29			--
Aroclor 1254	10,000		22			--

Created by: BW Date: 01/31/2006
Checked by: JR Date: 01/31/2006

TABLE C-1 (cont'd)
SUMMARY OF ANALYTICAL RESULTS - IRM POST EXCAVATION SAMPLES
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046(1)	Urban Background Concentrations(2)(3)	IRM-North 7.0' 08/18/2005	IRM-South 7.0' 08/18/05	IRM-West 8.0' 08/18/05	IRM2-North 4.0'-8.0' 11/16/06
Aluminum	SB	33,000	8,810	11,000	8,160	--
Arsenic	7.5 or SB	3-12 **	***25.6***	***35.7***	7.3	--
Barium	300 or SB	15-600	409	422	147	--
Beryllium	0.16 or SB	0-1.75	***1.9***	1.7	***37***	--
Cadmium	1 or SB	0.1-1	0.91	***2.6***		--
Calcium	SB	130 - 35,000 ***	8,910	19,800	2,600	--
Chromium, Total	10 or SB	1.5 - 40 **	15.6	***377***	12.3	--
Cobalt	30 or SB	2.5 - 60 **	7.7	10.6	7.4	--
Copper	25 or SB	1 - 50	***217***	***1,430***	22.4	--
Iron	2,000 or SB	2,000 - 550,000	18,000	24,800	17,900	--
Lead	400 (4)	****	209	164	14.1	--
Magnesium	SB	100 - 5,000	1,370	***5,010***	2,630	--
Manganese	SB	50 - 5,000	175	520	527	--
Nickel	13 or SB	0.5 -25	18.3	***42.2***	17.5	--
Potassium	SB	8,500 - 43,000 **	879	1,210	1,350	--
Sodium			255	369	557	--
Vanadium	150 or SB	1-300	29	33.7	16.4	--
Zinc	20 or SB	9-50	***247***	***1210***	***55.2***	--
Mercury	0.1 or SB	0.001 - 0.2	0.18	***0.21***		--
Total Cyanide			1.2			--

Notes:

Only those analytes detected at a minimum of one location and greater than the reporting limit are shown.
Blank space indicates analyte was not detected.
Shaded and framed concentrations exceed TAGM values.
Bold/Italic values exceed upper limits of urban background concentrations.
-- Indicates sample was not analyzed for this parameter.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
2000.
(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.
(4) USEPA Region 3 Soil Screening Level.
*** New York State background concentration.*
**** - The Soil Cleanup Objective refers to the sum of these compounds.*
J - Indicates an estimated value.
NA - Not Applicable or Not Available.

Created by: BW Date: 01/31/2006
Checked by: JR Date: 01/31/2006

9.0 Conclusions

The IRM was successful in removing the majority of known petroleum impacted soil/fill from the site. The likely source of the petroleum was discovered and removed. The IRM excavation has been backfilled with non-petroleum impacted soil/fill and has been covered with pavement for parking. Long-term plans for the site include regular visual monitoring of the southern stream bank in the area of the IRM to confirm the presumed success of the IRM into the future.

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Attachment C-1

Photographs

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0001	8/15/2005

Direction Photo Taken:

Northwest

Description:

Green Baker tank, prior to excavation

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0007	8/15/2005

Direction Photo Taken:

West

Description:

East/West trench along the north edge of building

PHOTOGRAPHIC LOG		
Project: Interim Remedial Measure	**Location:** Former Ames/Hills Plaza Site in Jamestown, NY	**Project No.** 3198-004

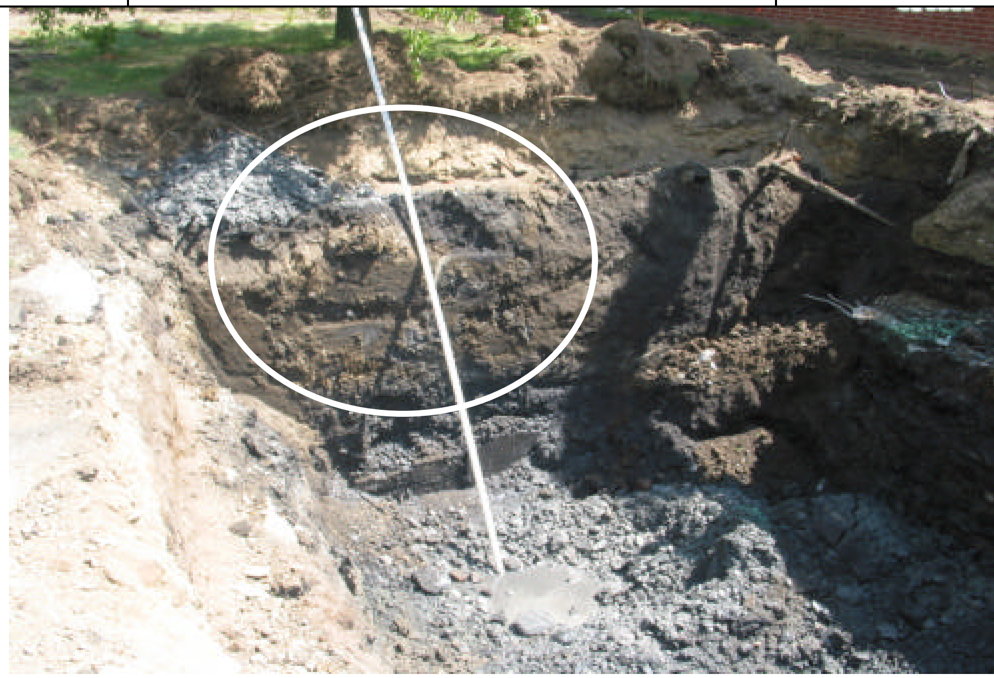
Photo No.	**Date:**
0012	8/15/2005

Direction Photo Taken:

Southeast

Description:

NE corner of excavation, 13 feet deep on river gravel, note massive concrete foundation under tree



PHOTOGRAPHIC LOG		
Project: Interim Remedial Measure	**Location:** Former Ames/Hills Plaza Site in Jamestown, NY	**Project No.** 3198-004

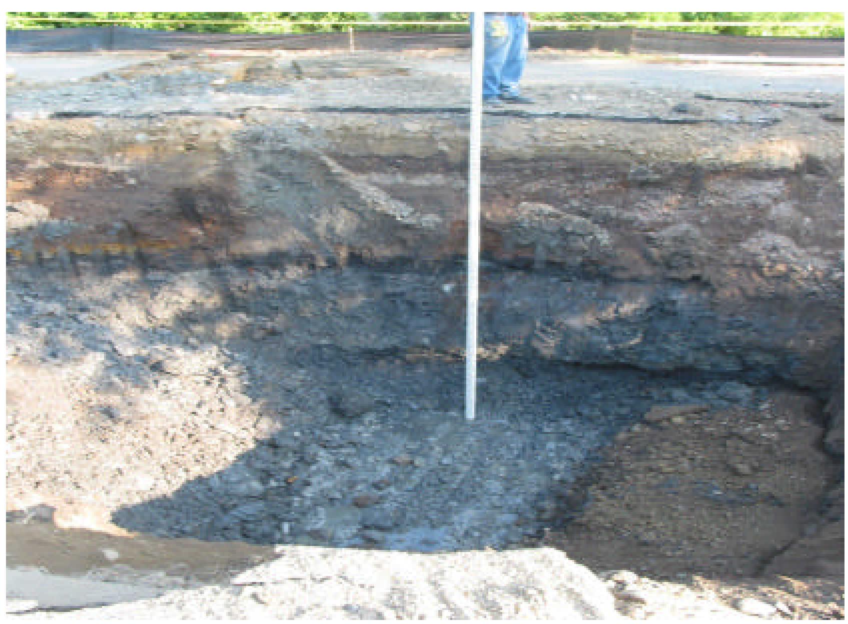
Photo No.	**Date:**
0013	8/17/2005

Direction Photo Taken:

North

Description:

View of northern face of excavation, waste removed from 6 to 11 feet.



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PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0017	8/17/2005

Direction Photo Taken:

Southwest

Description:

Excavation of impacted soil at center of work area.

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PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0018	8/17/2005

Direction Photo Taken:

Southwest

Description:

Excavating impacted soil, note offset from building corner.

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PHOTOGRAPHIC LOG

Project:	**Location:**	**Project No.**
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	**Date:**
0021	8/17/2005

Direction Photo Taken:

Southwest

Description:

South face being excavated. Note that impacted (black) soil layer which thinned to the south.

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PHOTOGRAPHIC LOG

Project:	**Location:**	**Project No.**
Interim Remedial Meas ure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	**Date:**
0023	8/18/2005

Direction Photo Taken:

Southwest

Description:

Steel UST being uncovered. Note impacted soil under tank.

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0024	8/18/2005

Direction Photo Taken:

South

Description:

UST being lifted from excavation.

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0025	8/18/2005

Direction Photo Taken:

Northwest

Description:

View of steel tank removed from ground. Note holes rusted through tank.

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0028	8/18/2005

Direction Photo Taken:

Northwest

Description:

View of NW corner of excavation after impacted soil removed. Partially backfilled to stop water infiltration

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
0032	8/18/2005

Direction Photo Taken:

East

Description:

Excavation being backfilled and compacted after completion of IRM.

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No. 0014 **Date:** 8/22/2005

Direction Photo Taken:

Northwest

Description:

Cleaning of tank prior to offsite disposal.

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No. 2025 **Date:** 11/16/05

Direction Photo Taken:

East

Description:

Phase II IRM excavation with MW-4 in foreground at edge of pavement.

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
2032	11/16/05

Direction Photo Taken:

West / Southwest

Description:

West face of Phase II IRM excavation

PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
2033	11/16/05

Direction Photo Taken:

West

Description:

Phase II IRM excavation with red ribbon indicating property line.

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PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
2034	11/16/05

Direction Photo Taken:

South

Description:

South face of Phase II IRM excavation

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PHOTOGRAPHIC LOG

Project:	Location:	Project No.
Interim Remedial Measure	Former Ames/Hills Plaza Site in Jamestown, NY	3198-004

Photo No.	Date:
2035	11/16/05

Direction Photo Taken:

East

Description:

Phase II IRM excavation with red ribbon indicating property line

PHOTOGRAPHIC LOG

Project: Interim Remedial Measure	**Location:** Former Ames/Hills Plaza Site in Jamestown, NY	**Project No.** 3198-004

Photo No. 2037	**Date:** 11/16/05
Direction Photo Taken: North	
Description: North face of Phase II IRM excavation	

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Attachment C-2

Landfill Scale Tickets

Summary of Soil Quantity Removed
IRM Soil Removal
Former Ames/Hills Plaza Site

Jamestown, New York

Date	Tons	Truck Loads	Tons/Day
15-Aug	17.66	8	127.67
15-Aug	18.28		
15-Aug	14.04		
15-Aug	17.32		
15-Aug	13.7		
15-Aug	16.08		
15-Aug	18.35		
15-Aug	12.24		
17-Aug	10.72	14	219.4
17-Aug	19.92		
17-Aug	20.82		
17-Aug	14.11		
17-Aug	20.25		
17-Aug	14.28		
17-Aug	21.11		
17-Aug	15.65		
17-Aug	19.02		
17-Aug	13.88		
17-Aug	19.75		
17-Aug	12.34		
17-Aug	17.55		
18-Aug	21.62	7	132.78
18-Aug	16.56		
18-Aug	17.25		
18-Aug	20.22		
18-Aug	14.17		
18-Aug	16.85		
18-Aug	26.11		
19-Aug	14.32	4	60.86
19-Aug	14.97		
19-Aug	15.69		
19-Aug	15.88		
16-Nov	19.15	10	219.66
16-Nov	18.34		
16-Nov	24.33		
16-Nov	26.07		
16-Nov	20.18		
16-Nov	24.75		
16-Nov	24.2		
16-Nov	20.72		
16-Nov	19.09		
16-Nov	22.83		
Totals	**760.37**	**43**	

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET	GRID	WEIGHMASTER
02	070600	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/15/05	08/15/05	09:44	09:44	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	63860	LB
Stored Tare Wt.	28540	LB
Net Weight	35320	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
17.66	TON	SOIL CONT COVER D-4	15.00	264.90	0.00	264.90

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT
264.90
TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET	GRID	
02	070626	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/15/05	08/15/05	10:48	10:48	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	65100	LB
Stored Tare Wt.	28540	LB
Net Weight	36560	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
18.28	TON	SOIL CONT COVER D-4				

~~perating hours 7:30 AM to 4 PM Monday thru Friday.~~
his is to certify that this load does not contain any
zardous materials, medical waste or liquids of any
pe. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

uler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET		
02	070634	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/15/05	08/15/05	11:09	11:09	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	55600	LB
Stored Tare Wt.	27520	LB
Net Weight	28080	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
14.04	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET	GRID		WEIGHMASTER
02	070648	7		KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/15/05	08/15/05	11:46	11:46	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	63180	LB
Stored Tare Wt.	28540	LB
Net Weight	34640	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
17.32	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET	GRID	
02	070681	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/15/05	08/15/05	13:14	13:14	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	54920	LB
Stored Tare Wt.	27520	LB
Net Weight	27400	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
13.70	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO

Hauler JAMESTOWN BPU

KRD. h

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET	GRID	WEIGHMASTER
02	070683	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE
08/15/05	08/15/05	13:18	13:18	JW40

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	60700	LB
Stored Tare Wt.	28540	LB
Net Weight	32160	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
16.08	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

SITE	TICKET	GRID	WEIGHMASTER
02	070703	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	
08/15/05	08/15/05	14:15	14:15	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	65240	LB
Stored Tare Wt.	28540	LB
Net Weight	36700	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
18.35	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 KROG CORP

02	070705	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE #	
08/15/05	08/15/05	14:18	14:18	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	52000	LB
Stored Tare Wt.	27520	LB
Net Weight	24480	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
12.24	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

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CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070854	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	07:42	07:42	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	48960	LB
Stored Tare Wt.	27520	LB
Net Weight	21440	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
10.72	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070856	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	07:45	07:45	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt. 68380 LB
Stored Tare Wt. 28540 LB
Net Weight 39840 LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
19.92	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any
hazardous materials, medical waste or liquids of any
type.

Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3689 Towerville Road
Jamestown, New York 14701

02	070869	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	08:43	08:43	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

Scale 1 Gross Wt.	70180	LB
Stored Tare Wt.	28540	LB
Net Weight	41640	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
20.82	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler JAMESTOWN WWTP

SIGNATURE

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070872	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	08:48	08:48	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	55740	LB
Stored Tare Wt.	27520	LB
Net Weight	28220	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
14.11	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070892	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	09:43	09:43	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Inbound - Charge ticket

Scale 1 Gross Wt.	69040	LB
Stored Tare Wt.	28540	LB
Net Weight	40500	LB

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
20.25	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070899	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	10:04	10:04	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	56080	LB
Stored Tare Wt.	27520	LB
Net Weight	28560	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
14.28	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM~~ to 4 ~~PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET		
02	070911	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	10:43	10:43	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	70760	LB
Stored Tare Wt.	28540	LB
Net Weight	42220	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
21.11	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	
02	070921	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	
08/17/05	08/17/05	11:10	11:10	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	58820	LB
Stored Tare Wt.	27520	LB
Net Weight	31300	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
15.65	TON	SOIL CONT COVER D-4				

perating hours 7:30 AM to 4 PM Monday thru Friday.
his is to certify that this load does not contain any
azardous materials, medical waste or liquids of any
pe. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO

auler JAMESTOWN BPU

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CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070932	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	11:43	11:43	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	66580	LB
Stored Tare Wt.	28540	LB
Net Weight	38040	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
19.02	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	
02	070955	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	13:12	13:12	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	55280	LB
Stored Tare Wt.	27520	LB
Net Weight	27760	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
13.88	TON	SOIL CONT COVER D 4				

Operating hours 7:30 AM to 4 PM Monday thru Friday
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

SIGNATURE RR D-li

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070960	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	13:21	13:21	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	68040	LB
Stored Tare Wt.	28540	LB
Net Weight	39500	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
19.75	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	
02	070971	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	14:07	14:07	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	52200	LB
Stored Tare Wt.	27520	LB
Net Weight	24680	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
12.34	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

RR D 9-1

SITE	TICKET	GRID	
02	070974	7	KATE HILL

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/17/05	08/17/05	14:28	14:28	JW40	

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	63640	LB
Stored Tare Wt.	28540	LB
Net Weight	35100	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
17.55	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	070996	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	07:45	07:45	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	69140	LB
Stored Tare Wt.	25900	LB
Net Weight	43240	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
21.62	TON	SOIL CONT COVER D 4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.

Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler ST. GEORGE ENTERPRISES

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	071000	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	07:51	07:51	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	61660	LB
Stored Tare Wt.	28540	LB
Net Weight	33120	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
~~16.56~~	~~TON~~	~~SOIL CONT COVER D-4~~				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	071003	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	07:56	07:56	JW63	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	63760	LB
Stored Tare Wt.	29260	LB
Net Weight	34500	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
17.25	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

SITE	TICKET	GRID	WEIGHMASTER
02	071016	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	08:44	08:44	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

Scale 1 Gross Wt.	66340	LB
Stored Tare Wt.	25900	LB
Net Weight	40440	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
20.22	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler ST. GEORGE ENTERPRISES

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	071017	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	08:50	08:50	JW40	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	56680	LB
Stored Tare Wt.	28540	LB
Net Weight	28140	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
14.07	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO

Hauler JAMESTOWN WWTP

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	071034	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	09:47	09:47	JW63	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	62960	LB
Stored Tare Wt.	29260	LB
Net Weight	33700	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
16.85	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN WWTP

Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

	GRID	WEIGHMASTER
02 071050	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/18/05	08/18/05	10:47	10:47	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	78120	LB
Stored Tare Wt.	25900	LB
Net Weight	52220	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
26.11	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler ST. GEORGE ENTERPRISES

TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE ____________

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET		
02	071129	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/19/05	08/19/05	07:42	07:42	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	56160	LB
Stored Tare Wt.	27520	LB
Net Weight	28640	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
14.32	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET		
02	071142	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/19/05	08/19/05	08:40	08:40	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	57460	LB
Stored Tare Wt.	27520	LB
Net Weight	29940	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
14.97	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	
02	071152	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/19/05	08/19/05	09:10	09:10	JW36	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	54800	LB	Inbound - Charge ticket
Stored Tare Wt.	23420	LB	
Net Weight	31380	LB	

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
~~15.69~~	~~TON~~	~~SOIL CONT COVER D-4~~				

Operating hours 7:30 AM to 4 PM Monday thru Friday
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler JAMESTOWN BPU

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET		GRID	WEIGHMASTER
02	071161	7		KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/19/05	08/19/05	09:41	09:41	JW35	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	59280	LB
Stored Tare Wt.	27520	LB
Net Weight	31760	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
15.88	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.

Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

Hauler JAMESTOWN BPU

Attn: Jim Richert
267-0279
6 pages

CHAUTAUQUA COUNTY LANDFILL
3880 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079417	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	10:36	10:36	STG20	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	64540	LB	Inbound - Charge ticket
Stored Tare Wt.	26240	LB	
Net Weight	38300	LB	

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
19.15	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.
Telephone (716) 985-4785
Generator CC0814.05S1

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler ST. GEORGE ENTERPRISES

WW6T1 TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767

SIGNATURE Chas

CHAUTAUQUA COUNTY LANDFILL
3880 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079412	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	10:21	10:21	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	62580	LB	Inbound - Charge ticket
Stored Tare Wt.	25900	LB	
Net Weight	36680	LB	

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
18.34	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type Telephone (716) 985-4785
Generator CC0814.05S1

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler ST. GEORGE ENTERPRISES

WW6TI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE Dennis A Stuart

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079398	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	09:31	09:31	STG20	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	74900	LB	Inbound - Charge ticket
Stored Tare Wt.	26240	LB	
Net Weight	48660	LB	

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
24.33	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785
Generator CC0814.05S1

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler ST. GEORGE ENTERPRISES

Chris Pope

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079395	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	09:23	09:23	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	78040	LB
Stored Tare Wt.	25900	LB
Net Weight	52140	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
26.07	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785
Generator CC0814.05S1

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler ST. GEORGE ENTERPRISES

WWGTI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE Dennis DeShurst

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079428	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	11:18	11:18	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	66260	LB
Stored Tare Wt.	25900	LB
Net Weight	40360	LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
20.18	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785
Generator CC0814.05S1

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

Hauler ST. GEORGE ENTERPRISES

D. . all e

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079429	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	11:38	11:38	STG20	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt. 75740 LB
Stored Tare Wt. 26240 LB
Net Weight 49500 LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
24.75	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785
Generator CC0814.05S1

Hauler ST. GEORGE ENTERPRISES

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

WW6TI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE Chris

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079449	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	12:37	12:37	STG20	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt. 74640 LB
Stored Tare Wt. 26240 LB
Net Weight 48400 LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
24.20	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785
Generator CC0814.05S1

Hauler ST. GEORGE ENTERPRISES

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

SITE	TICKET	GRID	WEIGHMASTER
02	079442	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	12:24	12:24	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

Scale 1 Gross Wt.	67340	LB	Inbound - Charge ticket
Stored Tare Wt.	25900	LB	
Net Weight	41440	LB	

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
20.72	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785
Generator CC0814.05S1

Hauler ST. GEORGE ENTERPRISES

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

WW6T1 TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767

SIGNATURE Dennis A Shuart

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

SITE	TICKET	GRID	WEIGHMASTER
02	079460	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	13:34	13:34	STG22	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

Scale 1 Gross Wt.	64080	LB	Inbound - Charge ticket
Stored Tare Wt.	25900	LB	
Net Weight	38180	LB	

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
19.09	TON	SOIL CONT COVER D-4				

~~Operating hours 7:30 AM to 4 PM Monday thru Friday.~~
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

Hauler ST. GEORGE ENTERPRISES

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

CHAUTAUQUA COUNTY LANDFILL
3889 Towerville Road
Jamestown, New York 14701

000226 THE KROG CORPORATION
4 CENTRE DRIVE
ORCHARD PARK NY 14127

SITE	TICKET	GRID	WEIGHMASTER
02	079459	7	KATE HILL

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
11/16/05	11/16/05	13:32	13:32	DF261	

REFERENCE	ORIGIN
	CHAUTAUQUA COUNTY

Scale 1 Gross Wt.	72060	LB
Stored Tare Wt.	26400	LB
Net Weight	45660	LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
22.83	TON	SOIL CONT COVER D-4				

Operating hours 7:30 AM to 4 PM Monday thru Friday.
This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Telephone (716) 985-4785

NET AMOUNT

TENDERED

CHANGE

CHECK NO.

Hauler DON FRAME TRUCKING, INC.

WW671 TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767

SIGNATURE

MALCOLM PIRNIE

Attachment C-3

Laboratory Data Forms

SEVERN TRENT **STL**

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228

Tel: 716 691 2600 Fax: 716 691 7991
www.stl-inc.com

ANALYTICAL REPORT

Job#: A05-8992

STL Project#: NY4A9197.3
Site Name: Malcolm Pirnie - Krog Corporation, Jamestown, NY
Task: Soil Sampling

Jim Richert
Malcolm Pirnie
40 Center Drive
Buffalo, NY 14219-0138

STL Buffalo

Amy Lynn Haag
Project Manager

09/13/2005

RECEIVED
SEP 15 2005
MALCOLM PIRNIE
BUFFALO
ROUTE:
JOB #
FILE:

STL Buffalo
Current Certifications

STATE	Program	Cert # / Lab ID
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP SDWA, CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP RCRA	E87672
Georgia	SDWA	956
Illinois	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA	10026
North Carolina	CWA	411
North Dakota	SDWA, CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Pennsylvania	Env. Lab Reg.	68-281
South Carolina	RCRA	91013
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington	CWA	C254
West Virginia	CWA	252
Wisconsin	CWA	998310390

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A5899203	IRMN 7.0	SOIL	08/18/2005	14:50	08/19/2005	11:40
A5899201	IRMS 7.0	SOIL	08/18/2005	14:20	08/19/2005	11:40
A5899202	IRMW 8.0	SOIL	08/18/2005	14:45	08/19/2005	11:40
A5899204	TRIP BLANK	WATER	08/18/2005		08/19/2005	11:40

METHODS SUMMARY

Job#: A05-8992

STL Project#: NY4A9197.3
Site Name: Malcolm Pirnie - Krog Corporation, Jamestown, NY

PARAMETER	ANALYTICAL METHOD
METHOD 8260 - TCL VOLATILE ORGANICS	SW8463 8260
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS	SW8463 8270
METHOD 8081 - TCL PESTICIDES	SW8463 8081
METHOD 8082 - POLYCHLORINATED BIPHENYLS	SW8463 8082
Aluminum - Total	SW8463 6010
Antimony - Total	SW8463 6010
Arsenic - Total	SW8463 6010
Barium - Total	SW8463 6010
Beryllium - Total	SW8463 6010
Cadmium - Total	SW8463 6010
Calcium - Total	SW8463 6010
Chromium - Total	SW8463 6010
Cobalt - Total	SW8463 6010
Copper - Total	SW8463 6010
Iron - Total	SW8463 6010
Lead - Total	SW8463 6010
Magnesium - Total	SW8463 6010
Manganese - Total	SW8463 6010
Mercury - Total	SW8463 7471
Nickel - Total	SW8463 6010
Potassium - Total	SW8463 6010
Selenium - Total	SW8463 6010
Silver - Total	SW8463 6010
Sodium - Total	SW8463 6010
Thallium - Total	SW8463 6010
Vanadium - Total	SW8463 6010
Zinc - Total	SW8463 6010
Cyanide - Total	SW8463 9012

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

NON-CONFORMANCE SUMMARY

Job#: A05-8992

STL Project#: NY4A9197.3
Site Name: Malcolm Pirnie - Krog Corporation, Jamestown, NY

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A05-8992
Sample Cooler(s) were received at the following temperature(s); 3.8 °C
All samples were received in good condition.

GC/MS Volatile Data

All aqueous, field generated, Quality Control samples were associated with soil samples. Therefore, all aqueous samples were analyzed as soils.

GC/MS Semivolatile Data

The analyte Bis(2-ethylhexyl) phthalate was detected in the Method Blank A5B1319702 at a level below the project established reporting limit. No corrective action is necessary for any values in Method Blanks that are below the requested reporting limits.

GC Extractable Data

For method 8081, the recoveries and the relative percent difference for sample IRMS 7.0 Matrix Spike and Matrix Spike Duplicate are outside of quality control limits for several compounds due to sample matrix effects. The associated Matrix Spike Blank recoveries are compliant with quality control criteria; no corrective action is necessary.

For method 8081, the recovery of surrogate Decachlorobiphenyl in samples IRMS 7.0, IRMS 7.0 Matrix Spike, IRMS 7.0 Matrix Spike Duplicate, IRMW 8.0, and IRMN 7.0 is outside of established quality control limits due to the sample matrix. The recovery of surrogate Tetrachloro-m-xylene is within quality control limits; no corrective action is required.

Metals Data

The LCS (Lot D045540) A5B1278001 recovery for Mercury fell outside of the quality control limits, however, the LCS value was within the manufacturer's recommended acceptance limits of 68-132 percent. No corrective action was taken.

The LCS (Lot D046540) recoveries for Aluminum and Iron fell outside of the quality control limits, however, the LCS values were within the manufacturer's recommended acceptance limits of 58-142 and 50-150 percent, respectively. No corrective action was taken.

Wet Chemistry Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

e: 09/13/2005
e: 15:10:46

Dilution Log w/Code Information
For Job A05-8992

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
IRMN 7.0	A5899203	8270	10.00	008
IRMN 7.0 DL	A5899203DL	8270	20.00	008

lution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U Indicates compound was analyzed for, but not detected at or above the reporting limit.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the associated blank, as well as in the sample.

E This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D This flag identifies all compounds identified in an analysis at the secondary dilution factor.

N Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.

P This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the data page and flagged with a "P".

A This flag indicates that a TIC is a suspected aldol-condensation product.

1 Indicates coelution.

* Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U Indicates element was analyzed for, but not detected at or above the reporting limit.

J or B Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

N Indicates spike sample recovery is not within the quality control limits.

K Indicates the post digestion spike recovery is not within the quality control limits.

S Indicates value determined by the Method of Standard Addition.

M Indicates duplicate injection results exceeded quality control limits.

W Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.

E Indicates a value estimated or not reported due to the presence of interferences.

H Indicates analytical holding time exceedance. The value obtained should be considered an estimate.

* Indicates analysis is not within the quality control limits.

+ Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

Client ID / Job No / Sample Date	Lab ID	IRMN 7.0 / A05-8992 / 08/18/2005	A5899203	IRMS 7.0 / A05-8992 / 08/18/2005	A5899201	IRMW 8.0 / A05-8992 / 08/18/2005	A5899202		
Analyte	**Units**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**
Acetone	UG/KG	30	30	130	30	60	33	NA	
Benzene	UG/KG	ND	6	47	6	ND	6	NA	
Bromodichloromethane	UG/KG	ND	6	ND	6	ND	6	NA	
Bromoform	UG/KG	ND	6	ND	6	ND	6	NA	
Bromomethane	UG/KG	ND	6	ND	6	ND	6	NA	
2-Butanone	UG/KG	ND	30	27 J	30	12 J	33	NA	
Carbon Disulfide	UG/KG	ND	6	ND	6	ND	6	NA	
Carbon Tetrachloride	UG/KG	ND	6	ND	6	ND	6	NA	
Chlorobenzene	UG/KG	ND	6	ND	6	ND	6	NA	
Chloroethane	UG/KG	ND	6	ND	6	ND	6	NA	
Chloroform	UG/KG	ND	6	ND	6	ND	6	NA	
Chloromethane	UG/KG	ND	6	ND	6	ND	6	NA	
Cyclohexane	UG/KG	ND	6	92	6	ND	6	NA	
1,2-Dibromoethane	UG/KG	ND	6	ND	6	ND	6	NA	
Dibromochloromethane	UG/KG	ND	6	ND	6	ND	6	NA	
1,2-Dibromo-3-chloropropane	UG/KG	ND	6	ND	6	ND	6	NA	
1,2-Dichlorobenzene	UG/KG	ND	6	ND	6	ND	6	NA	
1,3-Dichlorobenzene	UG/KG	ND	6	ND	6	ND	6	NA	
1,4-Dichlorobenzene	UG/KG	ND	6	ND	6	ND	6	NA	
Dichlorodifluoromethane	UG/KG	ND	6	ND	6	ND	6	NA	
1,1-Dichloroethane	UG/KG	ND	6	ND	6	ND	6	NA	
1,2-Dichloroethane	UG/KG	ND	6	ND	6	ND	6	NA	
1,1-Dichloroethene	UG/KG	ND	6	ND	6	ND	6	NA	
cis-1,2-Dichloroethene	UG/KG	ND	6	ND	6	ND	6	NA	
trans-1,2-Dichloroethene	UG/KG	ND	6	ND	6	ND	6	NA	
1,2-Dichloropropane	UG/KG	ND	6	ND	6	ND	6	NA	
cis-1,3-Dichloropropene	UG/KG	ND	6	ND	6	ND	6	NA	
trans-1,3-Dichloropropene	UG/KG	ND	6	ND	6	ND	6	NA	
Ethylbenzene	UG/KG	ND	6	130	6	2 J	6	NA	
2-Hexanone	UG/KG	ND	30	ND	30	ND	33	NA	
Isopropylbenzene	UG/KG	ND	6	56	6	ND	6	NA	
Methyl acetate	UG/KG	ND	6	ND	6	ND	6	NA	
Methylcyclohexane	UG/KG	ND	6	52	6	ND	6	NA	
Methylene chloride	UG/KG	ND	6	7	6	ND	6	NA	
4-Methyl-2-pentanone	UG/KG	ND	30	ND	30	ND	33	NA	
Methyl-t-Butyl Ether (MTBE)	UG/KG	ND	6	ND	6	ND	6	NA	
Styrene	UG/KG	ND	6	ND	6	ND	6	NA	
1,1,2,2-Tetrachloroethane	UG/KG	ND	6	ND	6	ND	6	NA	
Tetrachloroethene	UG/KG	ND	6	ND	6	ND	6	NA	
Toluene	UG/KG	ND	6	ND	6	3 J	6	NA	
1,2,4-Trichlorobenzene	UG/KG	ND	6	ND	6	ND	6	NA	
1,1,1-Trichloroethane	UG/KG	ND	6	ND	6	ND	6	NA	
1,1,2-Trichloroethane	UG/KG	ND	6	ND	6	ND	6	NA	

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NA = Not Applicable   ND = Not Detected

Malcolm Pirnie - Krog Corporation, Jamestown, NY
Soil Sampling (Level 2 package)
METHOD 8260 - TCL VOLATILE ORGANICS

Client ID / Job No / Sample Date	Lab ID	IRMN 7.0 / A05-8992 / 08/18/2005	A5899203	IRMS 7.0 / A05-8992 / 08/18/2005	A5899201	IRMW 8.0 / A05-8992 / 08/18/2005	A5899202		
Analyte	**Units**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**
1,1,2-Trichloro-1,2,2-trifluor	UG/KG	ND	6	ND	6	ND	6	NA	
Trichlorofluoromethane	UG/KG	ND	6	ND	6	ND	6	NA	
Trichloroethene	UG/KG	ND	6	ND	6	ND	6	NA	
Vinyl acetate	UG/KG	ND	30	ND	30	ND	33	NA	
Vinyl chloride	UG/KG	ND	12	ND	12	ND	13	NA	
Total Xylenes	UG/KG	ND	18	150	18	14 J	20	NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	76	50-200	81	50-200	75	50-200	NA	
1,4-Difluorobenzene	%	75	50-200	80	50-200	76	50-200	NA	
1,4-Dichlorobenzene-D4	%	68	50-200	79	50-200	69	50-200	NA	
Toluene-D8	%	100	71-125	101	71-125	103	71-125	NA	
p-Bromofluorobenzene	%	91	68-124	94	68-124	96	68-124	NA	
1,2-Dichloroethane-D4	%	100	61-136	98	61-136	100	61-136	NA	

= Not Applicable   ND = Not Detected

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

IRMN 7.0

ıb Name: STL Buffalo Contract: ______

ıb Code: RECNY Case No.: ____ SAS No.: ____ SDG No.: ____

ıtrix: (soil/water) SOIL Lab Sample ID: A5899203

ımple wt/vol: 5.13 (g/mL) G Lab File ID: F5529.RR

evel: (low/med) LOW Date Samp/Recv: 08/18/2005 08/19/2005

Moisture: not dec. 17.9 Date Analyzed: 08/23/2005

C Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

oil Extract Volume: ____ (uL) Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

umber TICs found: 9

CAS NO.	Compound Name	RT	Est. Conc.	Q
1.	ALKYLCYCLOHEXANE DER.	6.34	37	J
2.	ALKYLCYCLOHEXANE DER.	6.55	20	J
3.	ALKYLCYCLOHEXANE DER.	7.08	30	J
4.	ALKYLCYCLOHEXANE DER.	7.37	27	J
5.	UNKNOWN	7.64	14	J
6.	UNKNOWN	7.74	26	J
7.	UNKNOWN	7.90	15	J
8.	UNKNOWN	8.18	24	J
9.	UNKNOWN	9.04	21	J

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

IRMS 7.0

Lab Name: STL Buffalo Contract: ____________

Lab Code: RECNY Case No.: _____ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: A5899201

Sample wt/vol: 5.13 (g/mL) G Lab File ID: F5527.RR

Level: (low/med) LOW Date Samp/Recv: 08/18/2005 08/19/2005

% Moisture: not dec. 17.8 Date Analyzed: 08/23/2005

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: ________ (uL)

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	Compound Name	RT	Est. Conc.	Q
1.	SATURATED HYDROCARBON	3.80	52	J
2.	SATURATED HYDROCARBON	5.22	38	J
3.	ETHYLMETHYLBENZENE DER.	8.38	72	J
4.	TRIMETHYLBENZENE ISOMER	9.33	86	J
5.	UNKNOWN	9.54	220	J
6.	ALKYLBENZENE DERIVATIVE	9.99	180	J
7.	AROMATIC DERIVATIVE	10.09	56	J
8.	TETRAMETHYLBENZENE ISOMER	10.36	88	J
9.	UNKNOWN	10.77	110	J

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

IRMW 8.0

ab Name: STL Buffalo   Contract: ______

ab Code: RECNY   Case No.: ____   SAS No.: ____   SDG No.: ____

atrix: (soil/water) SOIL   Lab Sample ID: A5899202

ample wt/vol: 5.15 (g/mL) G   Lab File ID: F5528.RR

evel: (low/med) LOW   Date Samp/Recv: 08/18/2005 08/19/2005

Moisture: not dec. 25.9   Date Analyzed: 08/23/2005

C Column: DB-624   ID: 0.53 (mm)   Dilution Factor: 1.00

Soil Extract Volume: ____ (uL)   Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	Compound Name	RT	Est. Conc.	Q

Malcolm Pirnie - Krog Corporation, Jamestown, NY
Soil Sampling (Level 2 package)
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS

Rept: AN1246

Client ID / Job No / Sample Date	Lab ID	IRMN 7.0 A05-8992 08/18/2005	A5899203	IRMN 7.0 DL A05-8992 08/18/2005	A5899203DL	IRMS 7.0 A05-8992 08/18/2005	A5899201	IRMW 8.0 A05-8992 08/18/2005	A5899202
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Acenaphthene	UG/KG	7100	3500	7200 D	6900	ND	460	ND	380
Acenaphthylene	UG/KG	320 J	3500	ND	6900	ND	460	ND	380
Acetophenone	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Anthracene	UG/KG	14000	3500	14000 D	6900	26 J	460	ND	380
Atrazine	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Benzaldehyde	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Benzo(a)anthracene	UG/KG	25000	3500	23000 D	6900	330 J	460	ND	380
Benzo(b)fluoranthene	UG/KG	23000	3500	33000 D	6900	940	460	ND	380
Benzo(k)fluoranthene	UG/KG	9200	3500	34000 D	6900	1000	460	ND	380
Benzo(ghi)perylene	UG/KG	13000	3500	14000 D	6900	500	460	ND	380
Benzo(a)pyrene	UG/KG	20000	3500	20000 D	6900	400 J	460	ND	380
Benzoic acid	UG/KG	ND	50000	ND	100000	ND	6800	ND	5600
Benzyl alcohol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Biphenyl	UG/KG	600 J	3500	ND	6900	ND	460	ND	380
Bis(2-chloroethoxy) methane	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Bis(2-chloroethyl) ether	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2,2'-Oxybis(1-Chloropropane)	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Bis(2-ethylhexyl) phthalate	UG/KG	740 BJ	3500	ND	6900	43 BJ	460	ND	380
4-Bromophenyl phenyl ether	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Butyl benzyl phthalate	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Caprolactam	UG/KG	ND	3500	ND	6900	ND	460	ND	380
4-Chloroaniline	UG/KG	ND	3500	ND	6900	ND	460	ND	380
4-Chloro-3-methylphenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2-Chloronaphthalene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2-Chlorophenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
4-Chlorophenyl phenyl ether	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Carbazole	UG/KG	7800	3500	7200 D	6900	ND	460	ND	380
Chrysene	UG/KG	23000	3500	23000 D	6900	430 J	460	ND	380
Dibenzo(a,h)anthracene	UG/KG	4000	3500	2900 DJ	6900	92 J	460	ND	380
Dibenzofuran	UG/KG	5700	3500	5800 DJ	6900	ND	460	ND	380
Di-n-butyl phthalate	UG/KG	ND	3500	ND	6900	ND	460	ND	380
3,3'-Dichlorobenzidine	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2,4-Dichlorophenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Diethyl phthalate	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2,4-Dimethylphenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Dimethyl phthalate	UG/KG	ND	3500	ND	6900	ND	460	ND	380
4,6-Dinitro-2-methylphenol	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
2,4-Dinitrophenol	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
2,4-Dinitrotoluene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2,6-Dinitrotoluene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Di-n-octyl phthalate	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Fluoranthene	UG/KG	67000 E	3500	63000 D	6900	300 J	460	ND	380
Fluorene	UG/KG	8100	3500	8100 D	6900	ND	460	ND	380

* Not Applicable ND = Not Detected

Malcolm Pirnie - Krog Corporation, Jamestown, NY
Soil Sampling (Level 2 package)
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS

Client ID / Job No / Sample Date	Lab ID	IRMN 7.0 A05-8992 08/18/2005	A5899203	IRMN 7.0 DL A05-8992 08/18/2005	A5899203DL	IRMS 7.0 A05-8992 08/18/2005	A5899201	IRMW 8.0 A05-8992 08/18/2005	A5899202
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
exachlorobenzene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
lexachlorobutadiene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
lexachlorocyclopentadiene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
lexachloroethane	UG/KG	ND	3500	ND	6900	ND	460	ND	380
ndeno(1,2,3-cd)pyrene	UG/KG	12000	3500	11000 D	6900	380 J	460	ND	380
sophorone	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2-Methylnaphthalene	UG/KG	1900 J	3500	1900 DJ	6900	ND	460	ND	380
2-Methylphenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
4-Methylphenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Naphthalene	UG/KG	3600	3500	3600 DJ	6900	ND	460	ND	380
2-Nitroaniline	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
3-Nitroaniline	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
4-Nitroaniline	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
Nitrobenzene	UG/KG	ND	3500	ND	6900	ND	460	ND	380
2-Nitrophenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
4-Nitrophenol	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
N-nitrosodiphenylamine	UG/KG	ND	3500	ND	6900	ND	460	ND	380
N-Nitroso-Di-n-propylamine	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Pentachlorophenol	UG/KG	ND	17000	ND	34000	ND	2200	ND	1800
Phenanthrene	UG/KG	70000 E	3500	72000 D	6900	80 J	460	ND	380
Phenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
Pyrene	UG/KG	47000	3500	49000 D	6900	310 J	460	ND	380
2,4,5-Trichlorophenol	UG/KG	ND	8400	ND	17000	ND	1100	ND	930
2,4,6-Trichlorophenol	UG/KG	ND	3500	ND	6900	ND	460	ND	380
IS/SURROGATE(S)									
1,4-Dichlorobenzene-D4	%	106	50-200	86	50-200	111	50-200	103	50-200
Naphthalene-D8	%	105	50-200	85	50-200	110	50-200	104	50-200
Acenaphthene-D10	%	107	50-200	84	50-200	111	50-200	105	50-200
Phenanthrene-D10	%	110	50-200	86	50-200	113	50-200	107	50-200
Chrysene-D12	%	115	50-200	86	50-200	113	50-200	105	50-200
Perylene-D12	%	130	50-200	90	50-200	126	50-200	117	50-200
Nitrobenzene-D5	%	63	41-120	65	41-120	75	41-120	65	41-120
2-Fluorobiphenyl	%	68	50-120	73	50-120	81	50-120	72	50-120
p-Terphenyl-d14	%	75	53-137	77	53-137	94	53-137	93	53-137
Phenol-D5	%	68	41-120	65	41-120	77	41-120	70	41-120
2-Fluorophenol	%	64	33-120	57	33-120	69	33-120	64	33-120
2,4,6-Tribromophenol	%	73	53-132	63	53-132	92	53-132	91	53-132

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NA = Not Applicable   ND = Not Detected

Client ID Job No / Lab ID Sample Date		IRMN 7.0 A05-8992 / A5899203 08/18/2005		IRMS 7.0 A05-8992 / A5899201 08/18/2005		IRMW 8.0 A05-8992 / A5899202 08/18/2005			
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aldrin	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
alpha-BHC	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
beta-BHC	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
gamma-BHC (Lindane)	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
delta-BHC	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Chlordane	UG/KG	ND	18	ND	23	ND	19	NA	
4,4'-DDD	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
4,4'-DDE	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
4,4'-DDT	UG/KG	7.0	1.8	ND	2.3	ND	1.9	NA	
Dieldrin	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Endosulfan I	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Endosulfan II	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Endosulfan Sulfate	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Endrin	UG/KG	3.8	1.8	ND	2.3	ND	1.9	NA	
Endrin ketone	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Endrin aldehyde	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Heptachlor	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Heptachlor epoxide	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Methoxychlor	UG/KG	ND	1.8	ND	2.3	ND	1.9	NA	
Toxaphene	UG/KG	ND	36	ND	46	ND	38	NA	
SURROGATE(S)									
Tetrachloro-m-xylene	%	45	38-132	73	38-132	39	38-132	NA	
Decachlorobiphenyl	%	615 *	46-151	182 *	46-151	34 *	46-151	NA	

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NA = Not Applicable ND = Not Detected

Client ID / Job No / Lab ID / Sample Date		IRMN 7.0 A05-8992 A5899203 08/18/2005		IRMS 7.0 A05-8992 A5899201 08/18/2005		IRMW 8.0 A05-8992 A5899202 08/18/2005			
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aroclor 1016	UG/KG	ND	18	ND	23	ND	19	NA	
Aroclor 1221	UG/KG	ND	18	ND	23	ND	19	NA	
Aroclor 1232	UG/KG	ND	18	ND	23	ND	19	NA	
Aroclor 1242	UG/KG	ND	18	ND	23	ND	19	NA	
Aroclor 1248	UG/KG	29	18	ND	23	ND	19	NA	
Aroclor 1254	UG/KG	22	18	ND	23	ND	19	NA	
Aroclor 1260	UG/KG	ND	18	ND	23	ND	19	NA	
SURROGATE(S)									
Tetrachloro-m-xylene	%	86	32-148	67	32-148	86	32-148	NA	
Decachlorobiphenyl	%	48	36-153	104	36-153	90	36-153	NA	

NA = Not Applicable   ND = Not Detected

Client ID / Job No / Sample Date	Lab ID	IRMN 7.0 / A05-8992 / 08/18/2005	A5899203	IRMS 7.0 / A05-8992 / 08/18/2005	A5899201	IRMW 8.0 / A05-8992 / 08/18/2005	A5899202		
Analyte	**Units**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**
luminum - Total	MG/KG	8810	10.8	11000	13.3	8160	9.9	NA	
ntimony - Total	MG/KG	ND	16.2	ND	19.9	ND	14.9	NA	
rsenic - Total	MG/KG	25.6	2.2	35.7	2.6	7.3	2.0	NA	
arium - Total	MG/KG	409	0.54	422	0.66	147	0.50	NA	
eryllium - Total	MG/KG	1.9	0.22	1.7	0.26	0.37	0.20	NA	
admium - Total	MG/KG	0.91	0.22	2.6	0.26	ND	0.20	NA	
alcium - Total	MG/KG	8910	54.2	19800	66.3	2600	49.7	NA	
hromium - Total	MG/KG	15.6	0.54	377	0.66	12.3	0.50	NA	
obalt - Total	MG/KG	7.7	0.54	10.6	0.66	7.4	0.50	NA	
opper - Total	MG/KG	217	1.1	1430	1.3	22.4	0.99	NA	
ron - Total	MG/KG	18000	10.8	24800	13.3	17900	9.9	NA	
ead - Total	MG/KG	209	1.1	164	1.3	14.1	0.99	NA	
agnesium - Total	MG/KG	1370	21.7	5010	26.5	2630	19.9	NA	
anganese - Total	MG/KG	175	0.22	520	0.26	527	0.20	NA	
ercury - Total	MG/KG	0.18	0.023	0.21	0.029	ND	0.025	NA	
ickel - Total	MG/KG	18.3	0.54	42.2	0.66	17.5	0.50	NA	
otassium - Total	MG/KG	879	32.5	1210	39.8	1350	29.8	NA	
elenium - Total	MG/KG	ND	4.3	ND	5.3	ND	4.0	NA	
ilver - Total	MG/KG	ND	0.54	ND	0.66	ND	0.50	NA	
odium - Total	MG/KG	255	152	369	186	557	139	NA	
hallium - Total	MG/KG	ND	6.5	ND	8.0	ND	6.0	NA	
anadium - Total	MG/KG	29.0	0.54	33.7	0.66	16.4	0.50	NA	
inc - Total	MG/KG	247	2.2	1210	2.6	55.2	2.0	NA	

18/63

= Not Applicable   ND = Not Detected

Malcolm Pirnie - Krog Corporation, Jamestown, NY
Soil Sampling (Level 2 package)
WET CHEMISTRY ANALYSIS

:lient ID / lob No / Lab ID / ;ample Date		IRMN 7.0 A05-8992 A5899203 08/18/2005		IRMS 7.0 A05-8992 A5899201 08/18/2005		IRMW 8.0 A05-8992 A5899202 08/18/2005			
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
yanide - Total	UG/G	1.2	1.0	ND	1.4	ND	1.2	NA	

NA = Not Applicable ND = Not Detected

STL Buffalo

Batch Quality Control Data

Lab Sample ID: A5888302 A5888302MS A5888302SD

Analyte	Units of Measure	Concentration Sample	Concentration Matrix Spike	Concentration Spike Duplicate	Spike Amount MS	Spike Amount MSD	% Recovery MS	% Recovery MSD	% Recovery Avg	% RPD	QC LIMITS RPD	QC LIMITS REC.
WET CHEMISTRY ANALYSIS												
ALLIED - METHOD 9012 - TOTAL CYANIDE -	MG/L	0	0.105	0.105	0.100	0.100	106	105	106	0.	15.0	85-115

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

Batch No: A5B12726

MS/MSD Batch QC Results

Rept: AN1392

Lab Sample ID: A5888410 A5888410MS A5888410SD

Analyte	Units of Measure	Concentration			Spike Amount		% Recovery			% RPD	QC LIMITS	
		Sample	Matrix Spike	Spike Duplicate	MS	MSD	MS	MSD	Avg		RPD	REC.
WET CHEMISTRY ANALYSIS												
ALLIED - METHOD 9012 - TOTAL CYANIDE -	MG/L	0.0226	0.0291	0.0286	0.100	0.100	6 *	6 *	6	0	15.0	85-115

22/63

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

Lab Sample ID: A5898005 A5898005MS

Analyte	Units of Measure	Concentration Sample	Concentration Matrix Spike	Spike Amount	% Recovery MS	QC LIMITS
IET CHEMISTRY ANALYSIS						
METHOD 9012 - TOTAL CYANIDE 0.005 MG/L	MG/L	0	0.126	0.100	127 *	85-115

23/63

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

Chronology and QC Summary Package

lient ID / ob No / ample Date	Lab ID	VBLK54 A05-8992	A5B1294607						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
:etone	UG/L	ND	25	NA		NA		NA	
:nzene	UG/L	ND	5.0	NA		NA		NA	
romodichloromethane	UG/L	ND	5.0	NA		NA		NA	
romoform	UG/L	ND	5.0	NA		NA		NA	
romomethane	UG/L	ND	5.0	NA		NA		NA	
-Butanone	UG/L	ND	25	NA		NA		NA	
arbon Disulfide	UG/L	ND	5.0	NA		NA		NA	
arbon Tetrachloride	UG/L	ND	5.0	NA		NA		NA	
hlorobenzene	UG/L	ND	5.0	NA		NA		NA	
hloroethane	UG/L	ND	5.0	NA		NA		NA	
hloroform	UG/L	ND	5.0	NA		NA		NA	
hloromethane	UG/L	ND	5.0	NA		NA		NA	
:yclohexane	UG/L	ND	5.0	NA		NA		NA	
,2-Dibromoethane	UG/L	ND	5.0	NA		NA		NA	
ibromochloromethane	UG/L	ND	5.0	NA		NA		NA	
,2-Dibromo-3-chloropropane	UG/L	ND	5.0	NA		NA		NA	
,2-Dichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
,3-Dichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
,4-Dichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
ichlorodifluoromethane	UG/L	ND	5.0	NA		NA		NA	
1,1-Dichloroethane	UG/L	ND	5.0	NA		NA		NA	
1,2-Dichloroethane	UG/L	ND	5.0	NA		NA		NA	
1,1-Dichloroethene	UG/L	ND	5.0	NA		NA		NA	
cis-1,2-Dichloroethene	UG/L	ND	5.0	NA		NA		NA	
trans-1,2-Dichloroethene	UG/L	ND	5.0	NA		NA		NA	
1,2-Dichloropropane	UG/L	ND	5.0	NA		NA		NA	
cis-1,3-Dichloropropene	UG/L	ND	5.0	NA		NA		NA	
trans-1,3-Dichloropropene	UG/L	ND	5.0	NA		NA		NA	
Ethylbenzene	UG/L	ND	5.0	NA		NA		NA	
2-Hexanone	UG/L	ND	25	NA		NA		NA	
Isopropylbenzene	UG/L	ND	5.0	NA		NA		NA	
Methyl acetate	UG/L	ND	5.0	NA		NA		NA	
Methylcyclohexane	UG/L	ND	5.0	NA		NA		NA	
Methylene chloride	UG/L	ND	5.0	NA		NA		NA	
4-Methyl-2-pentanone	UG/L	ND	25	NA		NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	5.0	NA		NA		NA	
Styrene	UG/L	ND	5.0	NA		NA		NA	
1,1,2,2-Tetrachloroethane	UG/L	ND	5.0	NA		NA		NA	
Tetrachloroethene	UG/L	ND	5.0	NA		NA		NA	
Toluene	UG/L	ND	5.0	NA		NA		NA	
1,2,4-Trichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
1,1,1-Trichloroethane	UG/L	ND	5.0	NA		NA		NA	
1,1,2-Trichloroethane	UG/L	ND	5.0	NA		NA		NA	

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NA = Not Applicable ND = Not Detected

Client ID / Job No / Lab ID / Sample Date		VBLK54 A05-8992	A5B1294607						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	5.0	NA		NA		NA	
Trichlorofluoromethane	UG/L	ND	5.0	NA		NA		NA	
Trichloroethene	UG/L	ND	5.0	NA		NA		NA	
Vinyl chloride	UG/L	ND	5.0	NA		NA		NA	
Total Xylenes	UG/L	ND	15	NA		NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	73	50-200	NA		NA		NA	
1,4-Difluorobenzene	%	76	50-200	NA		NA		NA	
1,4-Dichlorobenzene-D4	%	66	50-200	NA		NA		NA	
Toluene-D8	%	107	76-122	NA		NA		NA	
p-Bromofluorobenzene	%	97	73-120	NA		NA		NA	
1,2-Dichloroethane-D4	%	98	72-143	NA		NA		NA	

NA = Not Applicable ND = Not Detected

Malcolm Pirnie - Krog Corporation, Jamestown, NY
Soil Sampling (Level 2 package)
METHOD 8260 - TCL VOLATILE ORGANICS

Client ID / Job No / Lab ID / Sample Date		VBLK54 A05-8992 A5B1294603		VBLK55 A05-8992 A5B1294604					
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Acetone	UG/KG	ND	25	ND	25	NA		NA	
Benzene	UG/KG	ND	5	ND	5	NA		NA	
Bromodichloromethane	UG/KG	ND	5	ND	5	NA		NA	
Bromoform	UG/KG	ND	5	ND	5	NA		NA	
Bromomethane	UG/KG	ND	5	ND	5	NA		NA	
2-Butanone	UG/KG	ND	25	ND	25	NA		NA	
Carbon Disulfide	UG/KG	ND	5	ND	5	NA		NA	
Carbon Tetrachloride	UG/KG	ND	5	ND	5	NA		NA	
Chlorobenzene	UG/KG	ND	5	ND	5	NA		NA	
Chloroethane	UG/KG	ND	5	ND	5	NA		NA	
Chloroform	UG/KG	ND	5	ND	5	NA		NA	
Chloromethane	UG/KG	ND	5	ND	5	NA		NA	
Cyclohexane	UG/KG	ND	5	ND	5	NA		NA	
1,2-Dibromoethane	UG/KG	ND	5	ND	5	NA		NA	
Dibromochloromethane	UG/KG	ND	5	ND	5	NA		NA	
1,2-Dibromo-3-chloropropane	UG/KG	ND	5	ND	5	NA		NA	
1,2-Dichlorobenzene	UG/KG	ND	5	ND	5	NA		NA	
1,3-Dichlorobenzene	UG/KG	ND	5	ND	5	NA		NA	
1,4-Dichlorobenzene	UG/KG	ND	5	ND	5	NA		NA	
Dichlorodifluoromethane	UG/KG	ND	5	ND	5	NA		NA	
1,1-Dichloroethane	UG/KG	ND	5	ND	5	NA		NA	
1,2-Dichloroethane	UG/KG	ND	5	ND	5	NA		NA	
1,1-Dichloroethene	UG/KG	ND	5	ND	5	NA		NA	
cis-1,2-Dichloroethene	UG/KG	ND	5	ND	5	NA		NA	
trans-1,2-Dichloroethene	UG/KG	ND	5	ND	5	NA		NA	
1,2-Dichloropropane	UG/KG	ND	5	ND	5	NA		NA	
cis-1,3-Dichloropropene	UG/KG	ND	5	ND	5	NA		NA	
trans-1,3-Dichloropropene	UG/KG	ND	5	ND	5	NA		NA	
Ethylbenzene	UG/KG	ND	5	ND	5	NA		NA	
2-Hexanone	UG/KG	ND	25	ND	25	NA		NA	
Isopropylbenzene	UG/KG	ND	5	ND	5	NA		NA	
Methyl acetate	UG/KG	ND	5	ND	5	NA		NA	
Methylcyclohexane	UG/KG	ND	5	ND	5	NA		NA	
Methylene chloride	UG/KG	ND	5	ND	5	NA		NA	
4-Methyl-2-pentanone	UG/KG	ND	25	ND	25	NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/KG	ND	5	ND	5	NA		NA	
Styrene	UG/KG	ND	5	ND	5	NA		NA	
1,1,2,2-Tetrachloroethane	UG/KG	ND	5	ND	5	NA		NA	
Tetrachloroethene	UG/KG	ND	5	ND	5	NA		NA	
Toluene	UG/KG	ND	5	ND	5	NA		NA	
1,2,4-Trichlorobenzene	UG/KG	ND	5	ND	5	NA		NA	
1,1,1-Trichloroethane	UG/KG	ND	5	ND	5	NA		NA	
1,1,2-Trichloroethane	UG/KG	ND	5	ND	5	NA		NA	

NA = Not Applicable ND = Not Detected

Client ID Job No / Lab ID Sample Date		VBLK54 A05-8992	A5B1294603	VBLK55 A05-8992	A5B1294604				
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,1,2-Trichloro-1,2,2-trifluor	UG/KG	ND	5	ND	5	NA		NA	
Trichlorofluoromethane	UG/KG	ND	5	ND	5	NA		NA	
Trichloroethene	UG/KG	ND	5	ND	5	NA		NA	
Vinyl acetate	UG/KG	ND	25	ND	25	NA		NA	
Vinyl chloride	UG/KG	ND	10	ND	10	NA		NA	
Total Xylenes	UG/KG	ND	15	ND	15	NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	73	50-200	85	50-200	NA		NA	
1,4-Difluorobenzene	%	76	50-200	86	50-200	NA		NA	
1,4-Dichlorobenzene-D4	%	66	50-200	75	50-200	NA		NA	
Toluene-D8	%	107	71-125	99	71-125	NA		NA	
p-Bromofluorobenzene	%	97	68-124	90	68-124	NA		NA	
1,2-Dichloroethane-D4	%	98	61-136	94	61-136	NA		NA	

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NA = Not Applicable   ND = Not Detected

Client ID / Job No / Lab ID / Sample Date		TRIP BLANK A05-8992 A5899204 08/18/2005							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Acetone	UG/L	ND	25	NA		NA		NA	
Benzene	UG/L	ND	5.0	NA		NA		NA	
Bromodichloromethane	UG/L	ND	5.0	NA		NA		NA	
Bromoform	UG/L	ND	5.0	NA		NA		NA	
Bromomethane	UG/L	ND	5.0	NA		NA		NA	
2-Butanone	UG/L	ND	25	NA		NA		NA	
Carbon Disulfide	UG/L	ND	5.0	NA		NA		NA	
Carbon Tetrachloride	UG/L	ND	5.0	NA		NA		NA	
Chlorobenzene	UG/L	ND	5.0	NA		NA		NA	
Chloroethane	UG/L	ND	5.0	NA		NA		NA	
Chloroform	UG/L	ND	5.0	NA		NA		NA	
Chloromethane	UG/L	ND	5.0	NA		NA		NA	
Cyclohexane	UG/L	ND	5.0	NA		NA		NA	
1,2-Dibromoethane	UG/L	ND	5.0	NA		NA		NA	
Dibromochloromethane	UG/L	ND	5.0	NA		NA		NA	
1,2-Dibromo-3-chloropropane	UG/L	ND	5.0	NA		NA		NA	
1,2-Dichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
1,3-Dichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
1,4-Dichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
Dichlorodifluoromethane	UG/L	ND	5.0	NA		NA		NA	
1,1-Dichloroethane	UG/L	ND	5.0	NA		NA		NA	
1,2-Dichloroethane	UG/L	ND	5.0	NA		NA		NA	
1,1-Dichloroethene	UG/L	ND	5.0	NA		NA		NA	
cis-1,2-Dichloroethene	UG/L	ND	5.0	NA		NA		NA	
trans-1,2-Dichloroethene	UG/L	ND	5.0	NA		NA		NA	
1,2-Dichloropropane	UG/L	ND	5.0	NA		NA		NA	
cis-1,3-Dichloropropene	UG/L	ND	5.0	NA		NA		NA	
trans-1,3-Dichloropropene	UG/L	ND	5.0	NA		NA		NA	
Ethylbenzene	UG/L	ND	5.0	NA		NA		NA	
2-Hexanone	UG/L	ND	25	NA		NA		NA	
Isopropylbenzene	UG/L	ND	5.0	NA		NA		NA	
Methyl acetate	UG/L	ND	5.0	NA		NA		NA	
Methylcyclohexane	UG/L	ND	5.0	NA		NA		NA	
Methylene chloride	UG/L	ND	5.0	NA		NA		NA	
4-Methyl-2-pentanone	UG/L	ND	25	NA		NA		NA	
Methyl-t-Butyl Ether (MTBE)	UG/L	ND	5.0	NA		NA		NA	
Styrene	UG/L	ND	5.0	NA		NA		NA	
1,1,2,2-Tetrachloroethane	UG/L	ND	5.0	NA		NA		NA	
Tetrachloroethene	UG/L	ND	5.0	NA		NA		NA	
Toluene	UG/L	ND	5.0	NA		NA		NA	
1,2,4-Trichlorobenzene	UG/L	ND	5.0	NA		NA		NA	
1,1,1-Trichloroethane	UG/L	ND	5.0	NA		NA		NA	
1,1,2-Trichloroethane	UG/L	ND	5.0	NA		NA		NA	

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NA = Not Applicable ND = Not Detected

Client ID / Job No / Lab ID / Sample Date		TRIP BLANK A05-8992 A5899204 08/18/2005							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
1,1,2-Trichloro-1,2,2-trifluor	UG/L	ND	5.0	NA		NA		NA	
Trichlorofluoromethane	UG/L	ND	5.0	NA		NA		NA	
Trichloroethene	UG/L	ND	5.0	NA		NA		NA	
Vinyl chloride	UG/L	ND	5.0	NA		NA		NA	
Total Xylenes	UG/L	ND	15	NA		NA		NA	
IS/SURROGATE(S)									
Chlorobenzene-D5	%	78	50-200	NA		NA		NA	
1,4-Difluorobenzene	%	79	50-200	NA		NA		NA	
1,4-Dichlorobenzene-D4	%	71	50-200	NA		NA		NA	
Toluene-D8	%	98	76-122	NA		NA		NA	
p-Bromofluorobenzene	%	91	73-120	NA		NA		NA	
1,2-Dichloroethane-D4	%	95	72-143	NA		NA		NA	

30/63

\ = Not Applicable ND = Not Detected

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

TRIP BLANK

ab Name: STL Buffalo Contract: ____________

ab Code: RECNY Case No.: _____ SAS No.: ______ SDG No.: ______

atrix: (soil/water) WATER Lab Sample ID: A5899204

ample wt/vol: 5.00 (g/mL) ML Lab File ID: F5510.RR

evel: (low/med) LOW Date Samp/Recv: 08/18/2005 08/19/2005

Moisture: not dec. ______ Date Analyzed: 08/23/2005

C Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

oil Extract Volume: _____ (uL) Soil Aliquot Volume: ________ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

umber TICs found: 0

CAS NO.	Compound Name	RT	Est. Conc.	Q

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

VBLK54

ab Name: STL Buffalo Contract: ______

ab Code: RECNY Case No.: ______ SAS No.: ______ SDG No.: ______

atrix: (soil/water) SOIL Lab Sample ID: A5B1294603

ample wt/vol: 5.00 (g/mL) G Lab File ID: F5508.RR

evel: (low/med) LOW Date Samp/Recv: ______ ______

Moisture: not dec. ______ Date Analyzed: 08/23/2005

C Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

oil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

umber TICs found: 0

CAS NO.	Compound Name	RT	Est. Conc.	Q

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

VBLK54

ab Name: STL Buffalo   Contract: ______

ab Code: RECNY   Case No.: ____   SAS No.: ____   SDG No.: ____

atrix: (soil/water) WATER   Lab Sample ID: A5B1294607

ample wt/vol: 5.00 (g/mL) ML   Lab File ID: F5508.RR

evel: (low/med) LOW   Date Samp/Recv: ______ ______

Moisture: not dec. ____   Date Analyzed: 08/23/2005

C Column: DB-624   ID: 0.53 (mm)   Dilution Factor: 1.00

oil Extract Volume: ____ (uL)   Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

umber TICs found: 0

CAS NO.	Compound Name	RT	Est. Conc.	Q

METHOD 8260 - TCL VOLATILE ORGANICS
TENTATIVELY IDENTIFIED COMPOUNDS

Client No.

VBLK55

ab Name: STL Buffalo Contract: ______

ab Code: RECNY Case No.: ____ SAS No.: ____ SDG No.: ____

atrix: (soil/water) SOIL Lab Sample ID: A5B1294604

ample wt/vol: 5.00 (g/mL) G Lab File ID: F5509.RR

evel: (low/med) LOW Date Samp/Recv: ____ ____

Moisture: not dec. ____ Date Analyzed: 08/23/2005

C Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

oil Extract Volume: ____ (uL) Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS:

umber TICs found: 0 (ug/L or ug/Kg) UG/KG

CAS NO.	Compound Name	RT	Est. Conc.	Q

Client ID Job No / Lab ID Sample Date		S Blank A05-8992	A5B1319702						
Analyte	**Units**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**	**Sample Value**	**Reporting Limit**
Acenaphthene	UG/KG	ND	320	NA		NA		NA	
Acenaphthylene	UG/KG	ND	320	NA		NA		NA	
Acetophenone	UG/KG	ND	320	NA		NA		NA	
Anthracene	UG/KG	ND	320	NA		NA		NA	
Atrazine	UG/KG	ND	320	NA		NA		NA	
Benzaldehyde	UG/KG	ND	320	NA		NA		NA	
Benzo(a)anthracene	UG/KG	ND	320	NA		NA		NA	
Benzo(b)fluoranthene	UG/KG	ND	320	NA		NA		NA	
Benzo(k)fluoranthene	UG/KG	ND	320	NA		NA		NA	
Benzo(ghi)perylene	UG/KG	ND	320	NA		NA		NA	
Benzo(a)pyrene	UG/KG	ND	320	NA		NA		NA	
Benzoic acid	UG/KG	ND	4700	NA		NA		NA	
Benzyl alcohol	UG/KG	ND	320	NA		NA		NA	
Biphenyl	UG/KG	ND	320	NA		NA		NA	
Bis(2-chloroethoxy) methane	UG/KG	ND	320	NA		NA		NA	
Bis(2-chloroethyl) ether	UG/KG	ND	320	NA		NA		NA	
2,2'-Oxybis(1-Chloropropane)	UG/KG	ND	320	NA		NA		NA	
Bis(2-ethylhexyl) phthalate	UG/KG	39 J	320	NA		NA		NA	
4-Bromophenyl phenyl ether	UG/KG	ND	320	NA		NA		NA	
Butyl benzyl phthalate	UG/KG	ND	320	NA		NA		NA	
Caprolactam	UG/KG	ND	320	NA		NA		NA	
4-Chloroaniline	UG/KG	ND	320	NA		NA		NA	
4-Chloro-3-methylphenol	UG/KG	ND	320	NA		NA		NA	
2-Chloronaphthalene	UG/KG	ND	320	NA		NA		NA	
2-Chlorophenol	UG/KG	ND	320	NA		NA		NA	
4-Chlorophenyl phenyl ether	UG/KG	ND	320	NA		NA		NA	
Carbazole	UG/KG	ND	320	NA		NA		NA	
Chrysene	UG/KG	ND	320	NA		NA		NA	
Dibenzo(a,h)anthracene	UG/KG	ND	320	NA		NA		NA	
Dibenzofuran	UG/KG	ND	320	NA		NA		NA	
Di-n-butyl phthalate	UG/KG	ND	320	NA		NA		NA	
3,3'-Dichlorobenzidine	UG/KG	ND	320	NA		NA		NA	
2,4-Dichlorophenol	UG/KG	ND	320	NA		NA		NA	
Diethyl phthalate	UG/KG	ND	320	NA		NA		NA	
2,4-Dimethylphenol	UG/KG	ND	320	NA		NA		NA	
Dimethyl phthalate	UG/KG	ND	320	NA		NA		NA	
4,6-Dinitro-2-methylphenol	UG/KG	ND	1600	NA		NA		NA	
2,4-Dinitrophenol	UG/KG	ND	1600	NA		NA		NA	
2,4-Dinitrotoluene	UG/KG	ND	320	NA		NA		NA	
2,6-Dinitrotoluene	UG/KG	ND	320	NA		NA		NA	
Di-n-octyl phthalate	UG/KG	ND	320	NA		NA		NA	
Fluoranthene	UG/KG	ND	320	NA		NA		NA	
Fluorene	UG/KG	ND	320	NA		NA		NA	

NA = Not Applicable   ND = Not Detected

Client ID Job No / Lab ID Sample Date		S Blank A05-8992	A5B1319702						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Hexachlorobenzene	UG/KG	ND	320	NA		NA		NA	
Hexachlorobutadiene	UG/KG	ND	320	NA		NA		NA	
Hexachlorocyclopentadiene	UG/KG	ND	320	NA		NA		NA	
Hexachloroethane	UG/KG	ND	320	NA		NA		NA	
Indeno(1,2,3-cd)pyrene	UG/KG	ND	320	NA		NA		NA	
Isophorone	UG/KG	ND	320	NA		NA		NA	
2-Methylnaphthalene	UG/KG	ND	320	NA		NA		NA	
2-Methylphenol	UG/KG	ND	320	NA		NA		NA	
4-Methylphenol	UG/KG	ND	320	NA		NA		NA	
Naphthalene	UG/KG	ND	320	NA		NA		NA	
2-Nitroaniline	UG/KG	ND	1600	NA		NA		NA	
3-Nitroaniline	UG/KG	ND	1600	NA		NA		NA	
4-Nitroaniline	UG/KG	ND	1600	NA		NA		NA	
Nitrobenzene	UG/KG	ND	320	NA		NA		NA	
2-Nitrophenol	UG/KG	ND	320	NA		NA		NA	
4-Nitrophenol	UG/KG	ND	1600	NA		NA		NA	
N-nitrosodiphenylamine	UG/KG	ND	320	NA		NA		NA	
N-Nitroso-Di-n-propylamine	UG/KG	ND	320	NA		NA		NA	
Pentachlorophenol	UG/KG	ND	1600	NA		NA		NA	
Phenanthrene	UG/KG	ND	320	NA		NA		NA	
Phenol	UG/KG	ND	320	NA		NA		NA	
Pyrene	UG/KG	ND	320	NA		NA		NA	
2,4,5-Trichlorophenol	UG/KG	ND	780	NA		NA		NA	
2,4,6-Trichlorophenol	UG/KG	ND	320	NA		NA		NA	
IS/SURROGATE(S)									
1,4-Dichlorobenzene-D4	%	111	50-200	NA		NA		NA	
Naphthalene-D8	%	110	50-200	NA		NA		NA	
Acenaphthene-D10	%	110	50-200	NA		NA		NA	
Phenanthrene-D10	%	111	50-200	NA		NA		NA	
Chrysene-D12	%	104	50-200	NA		NA		NA	
Perylene-D12	%	110	50-200	NA		NA		NA	
Nitrobenzene-D5	%	66	41-120	NA		NA		NA	
2-Fluorobiphenyl	%	69	50-120	NA		NA		NA	
p-Terphenyl-d14	%	82	53-137	NA		NA		NA	
Phenol-D5	%	70	41-120	NA		NA		NA	
2-Fluorophenol	%	66	33-120	NA		NA		NA	
2,4,6-Tribromophenol	%	78	53-132	NA		NA		NA	

NA = Not Applicable   ND = Not Detected

Client ID Job No Lab ID Sample Date		Method Blank A05-8992 A5B1271202							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aldrin	UG/KG	ND	1.6	NA		NA		NA	
alpha-BHC	UG/KG	ND	1.6	NA		NA		NA	
beta-BHC	UG/KG	ND	1.6	NA		NA		NA	
gamma-BHC (Lindane)	UG/KG	ND	1.6	NA		NA		NA	
delta-BHC	UG/KG	ND	1.6	NA		NA		NA	
Chlordane	UG/KG	ND	16	NA		NA		NA	
4,4'-DDD	UG/KG	ND	1.6	NA		NA		NA	
4,4'-DDE	UG/KG	ND	1.6	NA		NA		NA	
4,4'-DDT	UG/KG	ND	1.6	NA		NA		NA	
Dieldrin	UG/KG	ND	1.6	NA		NA		NA	
Endosulfan I	UG/KG	ND	1.6	NA		NA		NA	
Endosulfan II	UG/KG	ND	1.6	NA		NA		NA	
Endosulfan Sulfate	UG/KG	ND	1.6	NA		NA		NA	
Endrin	UG/KG	ND	1.6	NA		NA		NA	
Endrin ketone	UG/KG	ND	1.6	NA		NA		NA	
Endrin aldehyde	UG/KG	ND	1.6	NA		NA		NA	
Heptachlor	UG/KG	ND	1.6	NA		NA		NA	
Heptachlor epoxide	UG/KG	ND	1.6	NA		NA		NA	
Methoxychlor	UG/KG	ND	1.6	NA		NA		NA	
Toxaphene	UG/KG	ND	32	NA		NA		NA	
SURROGATE(S)									
Tetrachloro-m-xylene	%	82	38-132	NA		NA		NA	
Decachlorobiphenyl	%	96	46-151	NA		NA		NA	

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Client ID / Job No / Lab ID / Sample Date		Method Blank A05-8992 A5B1306102							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aroclor 1016	UG/KG	ND	16	NA		NA		NA	
Aroclor 1221	UG/KG	ND	16	NA		NA		NA	
Aroclor 1232	UG/KG	ND	16	NA		NA		NA	
Aroclor 1242	UG/KG	ND	16	NA		NA		NA	
Aroclor 1248	UG/KG	ND	16	NA		NA		NA	
Aroclor 1254	UG/KG	ND	16	NA		NA		NA	
Aroclor 1260	UG/KG	ND	16	NA		NA		NA	
SURROGATE(S)									
Tetrachloro-m-xylene	%	90	32-148	NA		NA		NA	
Decachlorobiphenyl	%	103	36-153	NA		NA		NA	

NA = Not Applicable ND = Not Detected

Client ID / Job No / Sample Date	Lab ID	Method Blank A05-8992	A5B1272702	Method Blank A05-8992	A5B1278002				
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Aluminum - Total	MG/KG	ND	10	NA		NA		NA	
Antimony - Total	MG/KG	ND	15.0	NA		NA		NA	
Iron - Total	MG/KG	ND	10	NA		NA		NA	
Magnesium - Total	MG/KG	ND	20.0	NA		NA		NA	
Zinc - Total	MG/KG	ND	2.0	NA		NA		NA	
Vanadium - Total	MG/KG	ND	0.50	NA		NA		NA	
Thallium - Total	MG/KG	ND	6.0	NA		NA		NA	
Nickel - Total	MG/KG	ND	0.50	NA		NA		NA	
Lead - Total	MG/KG	ND	1.0	NA		NA		NA	
Cobalt - Total	MG/KG	ND	0.50	NA		NA		NA	
Arsenic - Total	MG/KG	ND	2.0	NA		NA		NA	
Barium - Total	MG/KG	ND	0.50	NA		NA		NA	
Cadmium - Total	MG/KG	ND	0.20	NA		NA		NA	
Beryllium - Total	MG/KG	ND	0.20	NA		NA		NA	
Mercury - Total	MG/KG	NA		ND	0.020	NA		NA	
Calcium - Total	MG/KG	ND	50.0	NA		NA		NA	
Silver - Total	MG/KG	ND	0.50	NA		NA		NA	
Chromium - Total	MG/KG	ND	0.50	NA		NA		NA	
Copper - Total	MG/KG	ND	1.0	NA		NA		NA	
Manganese - Total	MG/KG	ND	0.20	NA		NA		NA	
Potassium - Total	MG/KG	ND	30.0	NA		NA		NA	
Selenium - Total	MG/KG	ND	4.0	NA		NA		NA	
Sodium - Total	MG/KG	ND	140	NA		NA		NA	

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NA = Not Applicable ND = Not Detected

Client ID Job No Lab ID Sample Date		Method Blank A05-8992 A5B1272604							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
Cyanide - Total	UG/G	ND	1.0	NA		NA		NA	

NA = Not Applicable ND = Not Detected

Client Sample ID: VBLK54 MSB54
Lab Sample ID: A5B1294603 A5B1294601

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
METHOD 8260 - TCL VOLATILE ORGANICS					
1,1-Dichloroethene	UG/KG	44.0	50.0	88	65-146
Trichloroethene	UG/KG	42.7	50.0	86	74-127
Benzene	UG/KG	43.0	50.0	86	74-128
Toluene	UG/KG	43.3	50.0	87	74-123
Chlorobenzene	UG/KG	45.0	50.0	90	76-124

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

lient Sample ID: VBLK54 MSB54
Lab Sample ID: A5B1294607 A5B1294605

Analyte	Units of Measure	Concentration Blank Spike	Spike Amount	% Recovery Blank Spike	QC LIMITS
METHOD 8260 - TCL VOLATILE ORGANICS					
1,1-Dichloroethene	UG/L	44.0	50.0	88	65-142
Trichloroethene	UG/L	42.7	50.0	86	71-120
Benzene	UG/L	43.0	50.0	86	67-126
Toluene	UG/L	43.3	50.0	87	69-120
Chlorobenzene	UG/L	45.0	50.0	90	73-120

Indicates Result is outside QC Limits
= Not Calculated ND = Not Detected

ent Sample ID: VBLK55 MSB55
Lab Sample ID: A5B1294604 A5B1294602

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
:THOD 8260 - TCL VOLATILE ORGANICS					
1,1-Dichloroethene	UG/KG	41.9	50.0	84	65-146
Trichloroethene	UG/KG	48.3	50.0	97	74-127
Benzene	UG/KG	47.2	50.0	94	74-128
Toluene	UG/KG	47.6	50.0	95	74-123
Chlorobenzene	UG/KG	48.6	50.0	97	76-124

* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

Client Sample ID: S Blank   Matrix Spike Blank
Lab Sample ID: A5B1319702   A5B1319701

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS					
Phenol	UG/KG	2140	3249	66	35-120
2-Chlorophenol	UG/KG	2243	3249	69	34-118
N-Nitroso-Di-n-propylamine	UG/KG	2460	3249	76	52-120
4-Chloro-3-methylphenol	UG/KG	2398	3249	74	45-135
Acenaphthene	UG/KG	2384	3249	73	57-120
4-Nitrophenol	UG/KG	2457	3249	76	42-137
2,4-Dinitrotoluene	UG/KG	2463	3249	76	51-126
Pentachlorophenol	UG/KG	2571	3249	79	37-143
Pyrene	UG/KG	2697	3249	83	56-155

* Indicates Result is outside QC Limits
NC = Not Calculated   ND = Not Detected

ient Sample ID: IRMS 7.0 IRMS 7.0 IRMS 7.0
Lab Sample ID: A5899201 A5899201MS A5899201SD

Analyte	Units of Measure	Concentration: Sample	Concentration: Matrix Spike	Concentration: Spike Duplicate	Spike Amount: MS	Spike Amount: MSD	% Recovery: MS	% Recovery: MSD	% Recovery: Avg	% RPD	QC LIMITS: RPD	QC LIMITS: REC.
IETHOD 8081 - TCL PESTICIDES												
Aldrin	UG/KG	0	19.8	14.4	23.4	23.1	84	62	73	30	30.0	48-128
alpha-BHC	UG/KG	0	18.3	14.6	23.4	23.1	78	63	71	21	30.0	47-123
beta-BHC	UG/KG	0	19.8	15.1	23.4	23.1	84	65	75	26	30.0	39-129
delta-BHC	UG/KG	0	20.0	15.7	23.4	23.1	86	68	77	23	30.0	42-127
gamma-BHC (Lindane)	UG/KG	0	20.2	15.1	23.4	23.1	86	65	76	28	30.0	42-136
4,4'-DDD	UG/KG	0	30.7	17.0	23.4	23.1	131	74	103	56 *	30.0	42-133
4,4'-DDE	UG/KG	0	24.1	18.4	23.4	23.1	103	80	92	25	30.0	44-136
4,4'-DDT	UG/KG	0	19.4	15.6	23.4	23.1	83	68	76	20	30.0	49-148
Dieldrin	UG/KG	0	21.2	18.8	23.4	23.1	90	81	86	10	30.0	51-132
Endosulfan I	UG/KG	0	18.5	14.2	23.4	23.1	79	61	70	26	30.0	33-136
Endosulfan II	UG/KG	0	24.0	15.9	23.4	23.1	103	69	86	40 *	30.0	44-135
Endosulfan Sulfate	UG/KG	0	33.1	17.4	23.4	23.1	141 *	75	108	61 *	30.0	42-136
Endrin aldehyde	UG/KG	0	17.7	10.1	23.4	23.1	76	44	60	53 *	30.0	37-123
Endrin	UG/KG	0	20.1	14.6	23.4	23.1	86	63	75	31 *	30.0	41-132
Heptachlor	UG/KG	0	19.4	15.1	23.4	23.1	83	65	74	24	30.0	43-127
Heptachlor epoxide	UG/KG	0	19.4	14.5	23.4	23.1	83	62	73	29	30.0	45-128
Methoxychlor	UG/KG	0	128	38.5	23.4	23.1	550 *	166 *	358	107 *	30.0	42-140
Endrin ketone	UG/KG	0	44.1	24.3	23.4	23.1	188 *	105	147	57 *	30.0	50-150

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* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

:lient Sample ID: Method Blank
Lab Sample ID: A5B1271202

Matrix Spike Blank
A5B1271201

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
METHOD 8081 - TCL PESTICIDES					
Aldrin	UG/KG	12.7	16.2	79	48-128
alpha-BHC	UG/KG	12.0	16.2	74	47-123
beta-BHC	UG/KG	14.3	16.2	88	39-129
delta-BHC	UG/KG	12.0	16.2	74	42-127
gamma-BHC (Lindane)	UG/KG	12.4	16.2	76	42-136
4,4'-DDD	UG/KG	13.0	16.2	80	42-133
4,4'-DDE	UG/KG	14.4	16.2	89	44-136
4,4'-DDT	UG/KG	14.8	16.2	91	49-148
Dieldrin	UG/KG	13.5	16.2	84	51-132
Endosulfan I	UG/KG	14.3	16.2	88	33-136
Endosulfan II	UG/KG	14.2	16.2	87	44-135
Endosulfan Sulfate	UG/KG	12.8	16.2	79	42-136
Endrin aldehyde	UG/KG	11.5	16.2	71	37-123
Endrin	UG/KG	13.9	16.2	86	41-132
Heptachlor	UG/KG	13.7	16.2	84	43-127
Heptachlor epoxide	UG/KG	14.4	16.2	89	45-128
Methoxychlor	UG/KG	14.3	16.2	88	42-140
Endrin ketone	UG/KG	13.1	16.2	81	50-150

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* Indicates Result is outside QC Limits
NC = Not Calculated   ND = Not Detected

Client Sample ID: Method Blank   Matrix Spike Blank
Lab Sample ID: A5B1306102   A5B1306101

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
METHOD 8082 - POLYCHLORINATED BIPHENYLS					
Aroclor 1260	UG/KG	171	161	106	41-139
Aroclor 1016	UG/KG	157	161	98	39-131

* Indicates Result is outside QC Limits
NC = Not Calculated   ND = Not Detected

Client Sample ID: Method Blank   LCS CLP Soils
Lab Sample ID: A5B1272702   A5B1272701

Analyte	Units of Measure	Concentration Blank Spike	Concentration Spike Amount	% Recovery Blank Spike	QC LIMITS
TOTAL TAL METALS					
TOTAL ALUMINUM	MG/KG	5449	7370	74 *	80-120
TOTAL ANTIMONY	MG/KG	64.25	76.20	84	80-120
TOTAL ARSENIC	MG/KG	81.55	90.70	90	80-120
TOTAL BARIUM	MG/KG	241.5	262.0	92	80-120
TOTAL BERYLLIUM	MG/KG	55.55	61.40	90	80-120
TOTAL CADMIUM	MG/KG	64.66	71.60	90	80-120
TOTAL CALCIUM	MG/KG	3330	3700	90	80-120
TOTAL CHROMIUM	MG/KG	73.16	85.00	86	80-120
TOTAL COBALT	MG/KG	102.3	111.0	92	80-120
TOTAL COPPER	MG/KG	64.88	67.20	96	80-120
TOTAL IRON	MG/KG	8970	14400	62 *	80-120
TOTAL LEAD	MG/KG	106.6	118.0	90	80-120
TOTAL MAGNESIUM	MG/KG	1916	2270	84	80-120
TOTAL MANGANESE	MG/KG	187.1	214.0	87	80-120
TOTAL NICKEL	MG/KG	79.93	87.40	91	80-120
TOTAL POTASSIUM	MG/KG	2127	2480	86	80-120
TOTAL SELENIUM	MG/KG	114.7	128.0	90	80-120
TOTAL SILVER	MG/KG	110.9	112.0	99	80-120
TOTAL SODIUM	MG/KG	211.0	241.0	85	80-120
TOTAL THALLIUM	MG/KG	133.8	139.0	96	80-120
TOTAL VANADIUM	MG/KG	88.19	104.0	85	80-120
TOTAL ZINC	MG/KG	258.3	289.0	89	80-120

* Indicates Result is outside QC Limits
NC = Not Calculated   ND = Not Detected

Lient Sample ID: Method Blank LCS
Lab Sample ID: A5B1278002 A5B1278001

Analyte	Units of Measure	Concentration Blank Spike	Spike Amount	% Recovery Blank Spike	QC LIMITS
TOTAL TAL METALS					
TOTAL MERCURY	MG/KG	1.32	1.80	73 *	80-120

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* Indicates Result is outside QC Limits
NC = Not Calculated ND = Not Detected

Client Sample ID: Method Blank   LCS
Lab Sample ID: A5B1272604   A5B1272603

Analyte	Units of Measure	Concentration Blank Spike	Spike Amount	% Recovery Blank Spike	QC LIMITS
WET CHEMISTRY ANALYSIS					
METHOD 9012 - TOTAL CYANIDE	UG/G	230.2	277.0	83	60-118

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* Indicates Result is outside QC Limits
NC = Not Calculated   ND = Not Detected

METHOD 8260 - TCL VOLATILE ORGANICS

Client Sample ID Job No & Lab Sample ID	IRMN 7.0 A05-8992 A5899203	IRMS 7.0 A05-8992 A5899201	IRMW 8.0 A05-8992 A5899202		
Sample Date	08/18/2005 14:50	08/18/2005 14:20	08/18/2005 14:45		
Received Date	08/19/2005 11:40	08/19/2005 11:40	08/19/2005 11:40		
Extraction Date					
Analysis Date	08/23/2005 19:18	08/23/2005 18:43	08/23/2005 19:00		
Extraction HT Met?	-	-	-		
Analytical HT Met?	YES	YES	YES		
Sample Matrix	SOIL LOW	SOIL LOW	SOIL LOW		
Dilution Factor	1.0	1.0	1.0		
Sample wt/vol	5.13 GRAMS	5.13 GRAMS	5.15 GRAMS		
% Dry	82.06	82.21	74.14		

NA = Not Applicable

METHOD 8260 - TCL VOLATILE ORGANICS

Client Sample ID / Job No & Lab Sample ID	TRIP BLANK A05-8992 A5899204				
Sample Date	08/18/2005				
Received Date	08/19/2005 11:40				
Extraction Date					
Analysis Date	08/23/2005 13:44				
Extraction HT Met?	-				
Analytical HT Met?	YES				
Sample Matrix	WATER				
Dilution Factor	1.0				
Sample wt/vol	0.005 LITERS				
% Dry					

NA = Not Applicable

METHOD 8260 - TCL VOLATILE ORGANICS

Client Sample ID Job No & Lab Sample ID	VBLK54 A05-8992 A5B1294603	VBLK54 A05-8992 A5B1294607	VBLK55 A05-8992 A5B1294604		
Sample Date					
Received Date					
Extraction Date					
Analysis Date		08/23/2005 12:43			
Extraction HT Met?	NA	-	NA		
Analytical HT Met?		-			
Sample Matrix		WATER			
Dilution Factor		1.0			
Sample wt/vol		0.005 LITERS			
% Dry					

METHOD 8260 - TCL VOLATILE ORGANICS

Client Sample ID Job No & Lab Sample ID	VBLK54 A05-8992 A5B1294603	VBLK54 A05-8992 A5B1294607	VBLK55 A05-8992 A5B1294604		
Sample Date					
Received Date					
Extraction Date					
Analysis Date	08/23/2005 12:43		08/23/2005 13:00		
Extraction HT Met?	-	NA	-		
Analytical HT Met?	-		-		
Sample Matrix	SOIL LOW		SOIL LOW		
Dilution Factor	1.0		1.0		
Sample wt/vol	5.0 GRAMS		5.0 GRAMS		
% Dry	100.00		100.00		

NA = Not Applicable

METHOD 8270 - TCL SEMI-VOLATILE ORGANICS

Client Sample ID / Job No & Lab Sample ID	IRMN 7.0 A05-8992 A5899203	IRMN 7.0 DL A05-8992 A5899203DL	IRMS 7.0 A05-8992 A5899201	IRMW 8.0 A05-8992 A5899202	
Sample Date	08/18/2005 14:50	08/18/2005 14:50	08/18/2005 14:20	08/18/2005 14:45	
Received Date	08/19/2005 11:40	08/19/2005 11:40	08/19/2005 11:40	08/19/2005 11:40	
Extraction Date	08/30/2005 07:00	08/30/2005 07:00	08/30/2005 07:00	08/30/2005 07:00	
Analysis Date	09/01/2005 21:38	09/03/2005 21:38	09/01/2005 20:45	09/01/2005 21:11	
Extraction HT Met?	YES	YES	YES	YES	
Analytical HT Met?	YES	YES	YES	YES	
Sample Matrix	SOIL LOW	SOIL LOW	SOIL LOW	SOIL LOW	
Dilution Factor	10.0	20.0	1.0	1.0	
Sample wt/vol	30.94 GRAMS	30.94 GRAMS	30.15 GRAMS	30.66 GRAMS	
% Dry	92.29	92.29	70.56	84.36	

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A = Not Applicable

ETHOD 8270 - TCL SEMI-VOLATILE ORGANICS

Client Sample ID Job No & Lab Sample ID	S Blank A05-8992 A5B1319702				
mple Date					
ceived Date					
traction Date	08/30/2005 07:00				
alysis Date	09/01/2005 18:08				
traction HT Met?	-				
alytical HT Met?	-				
mple Matrix	SOIL LOW				
ilution Factor	1.0				
mple wt/vol	30.58 GRAMS				
Dry	100.00				

NA = Not Applicable

METHOD 8081 - TCL PESTICIDES

Client Sample ID / Job No & Lab Sample ID	IRMN 7.0 A05-8992 A5899203	IRMS 7.0 A05-8992 A5899201	IRMW 8.0 A05-8992 A5899202		
Sample Date	08/18/2005 14:50	08/18/2005 14:20	08/18/2005 14:45		
Received Date	08/19/2005 11:40	08/19/2005 11:40	08/19/2005 11:40		
Extraction Date	08/20/2005 08:00	08/20/2005 08:00	08/20/2005 08:00		
Analysis Date	09/01/2005 17:57	09/01/2005 12:42	09/01/2005 16:39		
Extraction HT Met?	YES	YES	YES		
Analytical HT Met?	YES	YES	YES		
Sample Matrix	SOIL LOW	SOIL LOW	SOIL LOW		
Dilution Factor	1.0	1.0	1.0		
Sample wt/vol	30.04 GRAMS	30.68 GRAMS	30.5 GRAMS		
% Dry	92.29	70.56	84.36		

METHOD 8082 - POLYCHLORINATED BIPHENYLS

Client Sample ID / Job No & Lab Sample ID	IRMN 7.0 A05-8992 A5899203	IRMS 7.0 A05-8992 A5899201	IRMW 8.0 A05-8992 A5899202		
Sample Date	08/18/2005 14:50	08/18/2005 14:20	08/18/2005 14:45		
Received Date	08/19/2005 11:40	08/19/2005 11:40	08/19/2005 11:40		
Extraction Date	08/26/2005 15:00	08/26/2005 15:00	08/26/2005 15:00		
Analysis Date	08/30/2005 04:35	08/30/2005 03:59	08/30/2005 04:17		
Extraction HT Met?	YES	YES	YES		
Analytical HT Met?	YES	YES	YES		
Sample Matrix	SOIL LOW	SOIL LOW	SOIL LOW		
Dilution Factor	1.0	1.0	1.0		
Sample wt/vol	30.27 GRAMS	30.64 GRAMS	30.6 GRAMS		
% Dry	92.29	70.56	84.36		

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NA = Not Applicable

METHOD 8081 - TCL PESTICIDES

Client Sample ID Job No & Lab Sample ID	Method Blank A05-8992 A5B1271202	Method Blank A05-8992 A5B1306102			
Sample Date					
Received Date					
Extraction Date	08/20/2005 08:00				
Analysis Date	08/22/2005 23:45				
Extraction HT Met?	-	NA			
Analytical HT Met?	-				
Sample Matrix	SOIL LOW				
Dilution Factor	1.0				
Sample wt/vol	30.88 GRAMS				
% Dry	100.00				

METHOD 8082 - POLYCHLORINATED BIPHENYLS

Client Sample ID Job No & Lab Sample ID	Method Blank A05-8992 A5B1271202	Method Blank A05-8992 A5B1306102			
Sample Date					
Received Date					
Extraction Date		08/26/2005 15:00			
Analysis Date		08/29/2005 21:23			
Extraction HT Met?	NA	-			
Analytical HT Met?		-			
Sample Matrix		SOIL LOW			
Dilution Factor		1.0			
Sample wt/vol		30.97 GRAMS			
% Dry		100.00			

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NA = Not Applicable

Lab ID	Sample ID	Lab	Analyte	Method	DF	% Dry	Sample wt/vol	g/L	Sample Date	Receive Date	Analysis Date	ANL INI	A H	Matrix
5899203	IRMN 7.0	RECNY	Aluminum - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Antimony - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Arsenic - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Barium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Beryllium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Cadmium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Calcium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Chromium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Cobalt - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Copper - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Iron - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Lead - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Magnesium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Manganese - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Mercury - Total	7471	1.0	92.29	0.5699	g	08/18/2005 14:50	08/19 11:40	08/22 14:34	AJY	Y	SOIL
		RECNY	Nickel - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Potassium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Selenium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Silver - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Sodium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Thallium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Vanadium - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
		RECNY	Zinc - Total	6010	1.0	92.29	0.5	g	08/18/2005 14:50	08/19 11:40	08/22 16:31	BKL	Y	SOIL
5899201	IRMS 7.0	RECNY	Aluminum - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Antimony - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Arsenic - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Barium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Beryllium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Cadmium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Calcium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Chromium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Cobalt - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Copper - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Iron - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Lead - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Magnesium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Manganese - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Mercury - Total	7471	1.0	70.56	0.5781	g	08/18/2005 14:20	08/19 11:40	08/22 14:31	AJY	Y	SOIL
		RECNY	Nickel - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Potassium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Selenium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Silver - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Sodium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Thallium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Vanadium - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
		RECNY	Zinc - Total	6010	1.0	70.56	0.534	g	08/18/2005 14:20	08/19 11:40	08/22 16:12	BKL	Y	SOIL
5899202	IRMW 8.0	RECNY	Aluminum - Total	6010	1.0	84.36	0.596	g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Antimony - Total	6010	1.0	84.36	0.596	g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Arsenic - Total	6010	1.0	84.36	0.596	g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL

= Analysis Holding Time Met
= TCLP Holding Time Met
= Not Applicable

ANL INI = Analyst Initials
DF = Dilution Factor

Lab ID	Sample ID	Lab	Analyte	Method	DF	% Dry	Sample wt/vol g/L	Sample Date	Receive Date	Analysis Date	ANL INI	A H	Matrix
5899202	IRMW 8.0	RECNY	Barium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Beryllium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Cadmium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Calcium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Chromium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Cobalt - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Copper - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Iron - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Lead - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Magnesium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Manganese - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Mercury - Total	7471	1.0	84.36	0.5727 g	08/18/2005 14:45	08/19 11:40	08/22 14:33	AJY	Y	SOIL
		RECNY	Nickel - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Potassium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Selenium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Silver - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Sodium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Thallium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Vanadium - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL
		RECNY	Zinc - Total	6010	1.0	84.36	0.596 g	08/18/2005 14:45	08/19 11:40	08/22 16:27	BKL	Y	SOIL

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AH = Analysis Holding Time Met
TH = TCLP Holding Time Met
NA = Not Applicable

ANL INI = Analyst Initials
DF = Dilution Factor

Lab ID	Sample ID	Lab	Analyte	Method	DF	% Dry	Sample wt/vol	g/L	Sample Date	Receive Date	Analysis Date	ANL INI	A H	Matrix
A5B1272702	Method Blank	RECNY	Aluminum - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Antimony - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Arsenic - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Barium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Beryllium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Cadmium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Calcium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Chromium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Cobalt - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Copper - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Iron - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Lead - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Magnesium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Manganese - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Nickel - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Potassium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Selenium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Silver - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Sodium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Thallium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Vanadium - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
		RECNY	Zinc - Total	6010	1.0	100.00	0.5	g	-	-	08/22 14:22	BKL	Y	SOIL
A5B1278002	Method Blank	RECNY	Mercury - Total	7471	1.0	100.00	0.6	g	-	-	08/22 14:45	AJY	Y	SOIL

AH = Analysis Holding Time Met
TH = TCLP Holding Time Met
NA = Not Applicable

ANL INI = Analyst Initials
DF = Dilution Factor

SOIL SAMPLING (LEVEL 2 PACKAGE)
SAMPLE CHRONOLOGY

Lab ID	Sample ID	Lab	Analyte	Method	DF	% Dry	Sample wt/vol g/L	Sample Date	Receive Date	Analysis Date	ANL INI	A H	Matrix
A5899203	IRMN 7.0	RECNY	Cyanide - Total	9012	1.0	92.29		08/18/2005 14:50	08/19 11:40	08/22 12:31	LRM	Y	SOIL
A5899201	IRMS 7.0	RECNY	Cyanide - Total	9012	1.0	70.56		08/18/2005 14:20	08/19 11:40	08/22 12:31	LRM	Y	SOIL
A5899202	IRMW 8.0	RECNY	Cyanide - Total	9012	1.0	84.36		08/18/2005 14:45	08/19 11:40	08/22 12:31	LRM	Y	SOIL

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AH = Analysis Holding Time Met
TH = TCLP Holding Time Met
NA = Not Applicable

ANL INI = Analyst Initials
DF = Dilution Factor

Lab ID	Sample ID	Lab	Analyte	Method	DF	% Dry	Sample wt/vol g/L	Sample Date	Receive Date	Analysis Date	ANL INI	A H	Matrix
A5B1272604	Method Blank	RECNY	Cyanide - Total	9012	1.0	100.00	0.5 g	-	-	08/22 12:31	LRM	Y	SOIL

H = Analysis Holding Time Met
H = TCLP Holding Time Met
A = Not Applicable

ANL INI = Analyst Initials
DF = Dilution Factor

Chain of Custody Record

STL-4124 (0901)

SEVERN TRENT STL
Severn Trent Laboratories, Inc.

Client	Project Manager	Date	Chain of Custody Number
MALCOLM PIRNIE, INC	JIM RICHERT	8/18/05	243428
Address: 40 CENTRE DR	Telephone Number (Area Code)/Fax Number: (716) 667-6654 / 667-0279	Lab Number:	Page 1 of 1
City: ORCHARD PARK; State: NY; Zip Code: 14127	Site Contact: Jim Richert; Lab Contact: Amy Haas		
Project Name and Location (State): Krog - Jamestown (JAMA SITE)	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCL VOCs	TCL SVOCs	PCB	Pest	TAL Metals	T. Cn	Special Instructions/ Conditions of Receipt
IRMS (7.0')	8/18/05	1420				X	4						X	X	X	X	X	X	
IRMW (8.0')	↓	1445				X	4						X	X	X	X	X	X	
IRMN (7.0')	↓	1450				X	4						X	X	X	X	X	X	
Trip Blank	—	—		X			1						X						

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other ____

QC Requirements (Specify) Level II Pkg

	Date	Time			Date	Time
1. Relinquished By: Randy Wall	8/18/05	1730	1. Received By: [signature]	STL	8-19-05	11:40
2. Relinquished By			2. Received By			
3. Relinquished By			3. Received By			

Comments

3.8°C

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DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

ANALYTICAL REPORT

Job#: A05-D156

STL Project#: NY4A9197.3
Site Name: Malcolm Pirnie - Krog Corporation, Jamestown, NY
Task: Soil Sampling

Jim Richert
Malcolm Pirnie
40 Centre Drive
Buffalo, NY 14127-4102

STL Buffalo

Amy Lynn Haag
Project Manager

12/06/2005

STL Buffalo
Current Certifications

As of 11/29/2005

STATE	Program	Cert # / Lab ID
AFCEE	AFCEE	
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP CWA, RCRA	E87672
Georgia	SDWA	956
Illinois	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania	Env. Lab Reg.	68-281
South Carolina	RCRA	91013
Tennessee	SDWA	02970
USACE	USACE	
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington	CWA,RCRA	C254
West Virginia	CWA,RCRA	252
Wisconsin	CWA	998310390

SAMPLE SUMMARY

			SAMPLED		RECEIVED	
LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE	TIME	DATE	TIME
A5D15601	IRM2-NORTH	SOIL	11/16/2005	13:20	11/17/2005	17:00

METHODS SUMMARY

Job#: A05-D156

STL Project#: NY4A9197.3
Site Name: Malcolm Pirnie - Krog Corporation, Jamestown, NY

PARAMETER	ANALYTICAL METHOD
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS	SW8463 8270

SW8463 "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, 9/86; Update I, 7/92; Update IIA, 8/93; Update II, 9/94; Update IIB, 1/95; Update III, 12/96.

NON-CONFORMANCE SUMMARY

Job#: A05-D156

STL Project#: NY4A9197.3
Site Name: Malcolm Pirnie - Krog Corporation, Jamestown, NY

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A05-D156
Sample Cooler(s) were received at the following temperature(s); 3.0 °C
All samples were received in good condition.

GC/MS Semivolatile Data

No deviations from protocol were encountered during the analytical procedures.

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SEVERN TRENT STL

DATA QUALIFIER PAGE

These definitions are provided in the event the data in this report requires the use of one or more of the qualifiers. Not all qualifiers defined below are necessarily used in the accompanying data package.

ORGANIC DATA QUALIFIERS

ND or U Indicates compound was analyzed for, but not detected.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B This flag is used when the analyte is found in the associated blank, as well as in the sample.

E This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D This flag identifies all compounds identified in an analysis at the secondary dilution factor.

N Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.

P This flag is used for CLP methodology only. For Pesticide/Aroclor target analytes, when a difference for detected concentrations between the two GC columns is greater than 25%, the lower of the two values is reported on the data page and flagged with a "P".

A This flag indicates that a TIC is a suspected aldol-condensation product.

[1] Indicates coelution.

* Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U Indicates element was analyzed for, but not detected. Report with the detection limit value.

J or B Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

N Indicates spike sample recovery is not within the quality control limits.

S Indicates value determined by the Method of Standard Addition.

E Indicates a value estimated or not reported due to the presence of interferences.

H Indicates analytical holding time exceedance. The value obtained should be considered an estimate.

* Indicates the spike or duplicate analysis is not within the quality control limits.

+ Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

lient ID ob No Lab ID ample Date		IRM2-NORTH A05-D156 A5D15601 11/16/2005							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
enaphthene	UG/KG	28 J	460	NA		NA		NA	
enaphthylene	UG/KG	ND	460	NA		NA		NA	
etophenone	UG/KG	ND	460	NA		NA		NA	
thracene	UG/KG	23 J	460	NA		NA		NA	
razine	UG/KG	ND	460	NA		NA		NA	
nzaldehyde	UG/KG	ND	460	NA		NA		NA	
nzo(a)anthracene	UG/KG	77 J	460	NA		NA		NA	
nzo(b)fluoranthene	UG/KG	97 J	460	NA		NA		NA	
nzo(k)fluoranthene	UG/KG	99 J	460	NA		NA		NA	
nzo(ghi)perylene	UG/KG	37 J	460	NA		NA		NA	
nzo(a)pyrene	UG/KG	51 J	460	NA		NA		NA	
phenyl	UG/KG	ND	460	NA		NA		NA	
s(2-chloroethoxy) methane	UG/KG	ND	460	NA		NA		NA	
s(2-chloroethyl) ether	UG/KG	ND	460	NA		NA		NA	
2'-Oxybis(1-Chloropropane)	UG/KG	ND	460	NA		NA		NA	
s(2-ethylhexyl) phthalate	UG/KG	ND	460	NA		NA		NA	
Bromophenyl phenyl ether	UG/KG	ND	460	NA		NA		NA	
tyl benzyl phthalate	UG/KG	ND	460	NA		NA		NA	
prolactam	UG/KG	ND	460	NA		NA		NA	
Chloroaniline	UG/KG	ND	460	NA		NA		NA	
Chloro-3-methylphenol	UG/KG	ND	460	NA		NA		NA	
Chloronaphthalene	UG/KG	ND	460	NA		NA		NA	
Chlorophenol	UG/KG	ND	460	NA		NA		NA	
Chlorophenyl phenyl ether	UG/KG	ND	460	NA		NA		NA	
rbazole	UG/KG	ND	460	NA		NA		NA	
rysene	UG/KG	62 J	460	NA		NA		NA	
benzo(a,h)anthracene	UG/KG	ND	460	NA		NA		NA	
benzofuran	UG/KG	ND	460	NA		NA		NA	
n-butyl phthalate	UG/KG	ND	460	NA		NA		NA	
3'-Dichlorobenzidine	UG/KG	ND	460	NA		NA		NA	
4-Dichlorophenol	UG/KG	ND	460	NA		NA		NA	
ethyl phthalate	UG/KG	ND	460	NA		NA		NA	
4-Dimethylphenol	UG/KG	ND	460	NA		NA		NA	
methyl phthalate	UG/KG	ND	460	NA		NA		NA	
6-Dinitro-2-methylphenol	UG/KG	ND	2200	NA		NA		NA	
4-Dinitrophenol	UG/KG	ND	2200	NA		NA		NA	
4-Dinitrotoluene	UG/KG	ND	460	NA		NA		NA	
6-Dinitrotoluene	UG/KG	ND	460	NA		NA		NA	
n-octyl phthalate	UG/KG	ND	460	NA		NA		NA	
uoranthene	UG/KG	160 J	460	NA		NA		NA	
uorene	UG/KG	24 J	460	NA		NA		NA	
xachlorobenzene	UG/KG	ND	460	NA		NA		NA	
xachlorobutadiene	UG/KG	ND	460	NA		NA		NA	

= Not Applicable ND = Not Detected

lient ID ob No Lab ID ample Date		IRM2-NORTH A05-D156	A5D15601 11/16/2005						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
xachlorocyclopentadiene	UG/KG	ND	460	NA		NA		NA	
xachloroethane	UG/KG	ND	460	NA		NA		NA	
deno(1,2,3-cd)pyrene	UG/KG	ND	460	NA		NA		NA	
ophorone	UG/KG	ND	460	NA		NA		NA	
Methylnaphthalene	UG/KG	ND	460	NA		NA		NA	
Methylphenol	UG/KG	ND	460	NA		NA		NA	
Methylphenol	UG/KG	ND	460	NA		NA		NA	
phthalene	UG/KG	ND	460	NA		NA		NA	
Nitroaniline	UG/KG	ND	2200	NA		NA		NA	
Nitroaniline	UG/KG	ND	2200	NA		NA		NA	
Nitroaniline	UG/KG	ND	2200	NA		NA		NA	
trobenzene	UG/KG	ND	460	NA		NA		NA	
Nitrophenol	UG/KG	ND	460	NA		NA		NA	
Nitrophenol	UG/KG	ND	2200	NA		NA		NA	
nitrosodiphenylamine	UG/KG	ND	460	NA		NA		NA	
Nitroso-Di-n-propylamine	UG/KG	ND	460	NA		NA		NA	
ntachlorophenol	UG/KG	ND	2200	NA		NA		NA	
enanthrene	UG/KG	120 J	460	NA		NA		NA	
enol	UG/KG	ND	460	NA		NA		NA	
rene	UG/KG	140 J	460	NA		NA		NA	
4,5-Trichlorophenol	UG/KG	ND	1100	NA		NA		NA	
4,6-Trichlorophenol	UG/KG	ND	460	NA		NA		NA	
IS/SURROGATE(S)									
4-Dichlorobenzene-D4	%	87	50-200	NA		NA		NA	
phthalene-D8	%	90	50-200	NA		NA		NA	
enaphthene-D10	%	91	50-200	NA		NA		NA	
enanthrene-D10	%	91	50-200	NA		NA		NA	
rysene-D12	%	90	50-200	NA		NA		NA	
rylene-D12	%	95	50-200	NA		NA		NA	
trobenzene-D5	%	55	41-120	NA		NA		NA	
Fluorobiphenyl	%	59	50-120	NA		NA		NA	
Terphenyl-d14	%	96	53-137	NA		NA		NA	
enol-D5	%	60	41-120	NA		NA		NA	
Fluorophenol	%	52	33-120	NA		NA		NA	
4,6-Tribromophenol	%	82	53-132	NA		NA		NA	

8/15

= Not Applicable ND = Not Detected

Chronology and QC Summary Package

lient ID / ob No / ample Date	Lab ID	S Blank A05-D156	A5B1810002						
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
enaphthene	UG/KG	ND	330	NA		NA		NA	
enaphthylene	UG/KG	ND	330	NA		NA		NA	
etophenone	UG/KG	ND	330	NA		NA		NA	
thracene	UG/KG	ND	330	NA		NA		NA	
razine	UG/KG	ND	330	NA		NA		NA	
nzaldehyde	UG/KG	ND	330	NA		NA		NA	
nzo(a)anthracene	UG/KG	ND	330	NA		NA		NA	
nzo(b)fluoranthene	UG/KG	ND	330	NA		NA		NA	
nzo(k)fluoranthene	UG/KG	ND	330	NA		NA		NA	
nzo(ghi)perylene	UG/KG	ND	330	NA		NA		NA	
nzo(a)pyrene	UG/KG	ND	330	NA		NA		NA	
phenyl	UG/KG	ND	330	NA		NA		NA	
s(2-chloroethoxy) methane	UG/KG	ND	330	NA		NA		NA	
s(2-chloroethyl) ether	UG/KG	ND	330	NA		NA		NA	
2'-Oxybis(1-Chloropropane)	UG/KG	ND	330	NA		NA		NA	
s(2-ethylhexyl) phthalate	UG/KG	ND	330	NA		NA		NA	
Bromophenyl phenyl ether	UG/KG	ND	330	NA		NA		NA	
tyl benzyl phthalate	UG/KG	ND	330	NA		NA		NA	
prolactam	UG/KG	ND	330	NA		NA		NA	
Chloroaniline	UG/KG	ND	330	NA		NA		NA	
Chloro-3-methylphenol	UG/KG	ND	330	NA		NA		NA	
Chloronaphthalene	UG/KG	ND	330	NA		NA		NA	
Chlorophenol	UG/KG	ND	330	NA		NA		NA	
Chlorophenyl phenyl ether	UG/KG	ND	330	NA		NA		NA	
rbazole	UG/KG	ND	330	NA		NA		NA	
rysene	UG/KG	ND	330	NA		NA		NA	
benzo(a,h)anthracene	UG/KG	ND	330	NA		NA		NA	
benzofuran	UG/KG	ND	330	NA		NA		NA	
-n-butyl phthalate	UG/KG	ND	330	NA		NA		NA	
3'-Dichlorobenzidine	UG/KG	ND	330	NA		NA		NA	
4-Dichlorophenol	UG/KG	ND	330	NA		NA		NA	
ethyl phthalate	UG/KG	ND	330	NA		NA		NA	
4-Dimethylphenol	UG/KG	ND	330	NA		NA		NA	
methyl phthalate	UG/KG	ND	330	NA		NA		NA	
6-Dinitro-2-methylphenol	UG/KG	ND	1600	NA		NA		NA	
4-Dinitrophenol	UG/KG	ND	1600	NA		NA		NA	
4-Dinitrotoluene	UG/KG	ND	330	NA		NA		NA	
6-Dinitrotoluene	UG/KG	ND	330	NA		NA		NA	
-n-octyl phthalate	UG/KG	ND	330	NA		NA		NA	
uoranthene	UG/KG	ND	330	NA		NA		NA	
uorene	UG/KG	ND	330	NA		NA		NA	
xachlorobenzene	UG/KG	ND	330	NA		NA		NA	
xachlorobutadiene	UG/KG	ND	330	NA		NA		NA	

= Not Applicable   ND = Not Detected

lient ID ob No Lab ID ample Date		S Blank A05-D156 A5B1810002							
Analyte	Units	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit	Sample Value	Reporting Limit
xachlorocyclopentadiene	UG/KG	ND	330	NA		NA		NA	
xachloroethane	UG/KG	ND	330	NA		NA		NA	
deno(1,2,3-cd)pyrene	UG/KG	ND	330	NA		NA		NA	
ophorone	UG/KG	ND	330	NA		NA		NA	
Methylnaphthalene	UG/KG	ND	330	NA		NA		NA	
Methylphenol	UG/KG	ND	330	NA		NA		NA	
Methylphenol	UG/KG	ND	330	NA		NA		NA	
phthalene	UG/KG	ND	330	NA		NA		NA	
Nitroaniline	UG/KG	ND	1600	NA		NA		NA	
Nitroaniline	UG/KG	ND	1600	NA		NA		NA	
Nitroaniline	UG/KG	ND	1600	NA		NA		NA	
trobenzene	UG/KG	ND	330	NA		NA		NA	
Nitrophenol	UG/KG	ND	330	NA		NA		NA	
Nitrophenol	UG/KG	ND	1600	NA		NA		NA	
nitrosodiphenylamine	UG/KG	ND	330	NA		NA		NA	
Nitroso-Di-n-propylamine	UG/KG	ND	330	NA		NA		NA	
ntachlorophenol	UG/KG	ND	1600	NA		NA		NA	
enanthrene	UG/KG	ND	330	NA		NA		NA	
enol	UG/KG	ND	330	NA		NA		NA	
rene	UG/KG	ND	330	NA		NA		NA	
4,5-Trichlorophenol	UG/KG	ND	790	NA		NA		NA	
4,6-Trichlorophenol	UG/KG	ND	330	NA		NA		NA	
IS/SURROGATE(S)									
4-Dichlorobenzene-D4	%	102	50-200	NA		NA		NA	
phthalene-D8	%	106	50-200	NA		NA		NA	
enaphthene-D10	%	103	50-200	NA		NA		NA	
enanthrene-D10	%	103	50-200	NA		NA		NA	
rysene-D12	%	97	50-200	NA		NA		NA	
rylene-D12	%	104	50-200	NA		NA		NA	
trobenzene-D5	%	61	41-120	NA		NA		NA	
Fluorobiphenyl	%	73	50-120	NA		NA		NA	
Terphenyl-d14	%	119	53-137	NA		NA		NA	
enol-D5	%	64	41-120	NA		NA		NA	
Fluorophenol	%	54	33-120	NA		NA		NA	
4,6-Tribromophenol	%	81	53-132	NA		NA		NA	

11/15

= Not Applicable ND = Not Detected

ent Sample ID: S Blank Matrix Spike Blank
Lab Sample ID: A5B1810002 A5B1810001

Analyte	Units of Measure	Concentration Blank Spike	Spike Amount	% Recovery Blank Spike	QC LIMITS
THOD 8270 - TCL SEMI-VOLATILE ORGANICS					
Phenol	UG/KG	2320	3272	71	35-120
2-Chlorophenol	UG/KG	2374	3272	72	34-118
N-Nitroso-Di-n-propylamine	UG/KG	2992	3272	91	52-120
4-Chloro-3-methylphenol	UG/KG	2913	3272	89	45-135
Acenaphthene	UG/KG	3011	3272	92	57-120
4-Nitrophenol	UG/KG	2730	3272	83	42-137
2,4-Dinitrotoluene	UG/KG	3040	3272	93	51-126
Pentachlorophenol	UG/KG	2912	3272	89	37-143
Pyrene	UG/KG	3546	3272	108	56-155

12/15

Indicates Result is outside QC Limits
= Not Calculated ND = Not Detected

ETHOD 8270 - TCL SEMI-VOLATILE ORGANICS

Client Sample ID Job No & Lab Sample ID	IRM2-NORTH A05-D156 A5D15601				
mple Date	11/16/2005 13:20				
ceived Date	11/17/2005 17:00				
traction Date	11/21/2005 07:00				
alysis Date	11/29/2005 17:32				
traction HT Met?	YES				
alytical HT Met?	YES				
mple Matrix	SOIL LOW				
lution Factor	1.0				
mple wt/vol	30.76 GRAMS				
)ry	70.24				

= Not Applicable

ETHOD 8270 - TCL SEMI-VOLATILE ORGANICS

Client Sample ID Job No & Lab Sample ID	S Blank A05-D156 A5B1810002				
mple Date					
ceived Date					
traction Date	11/21/2005 07:00				
alysis Date	11/29/2005 02:55				
traction HT Met?	-				
alytical HT Met?	-				
mple Matrix	SOIL LOW				
lution Factor	1.0				
mple wt/vol	30.23 GRAMS				
Dry	100.00				

= Not Applicable

Chain of Custody Record

STL-4124 (0901)

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

Client: Malcolm Pirnie, Inc	Project Manager: Jim Richert	Date: 11/16/05	Chain of Custody Number: 250843
Address: 40 Centre Drive	Telephone Number (Area Code)/Fax Number: 716/667-6654	Lab Number:	Page 1 of 1
City: Orchard Park State: NY Zip Code: 14127	Site Contact: Jim Richert	Lab Contact:	
Project Name and Location (State): KROG – JAMESTOWN	Carrier/Waybill Number: hand Picked		
Contract/Purchase Order/Quote No.: 3198-224			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	PAH's	Special Instructions/Conditions of Receipt
IRM2 – NORTH	11/16/05	1320				X							X	

Jim Richert 11/16/05

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Jim Richert	11/16/05	1600	1. Received By: J [illegible]	11/17/05	1:00
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: 3.0°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy