MALCOLM PIRNIE

FORMER AMES/HILLS PLAZA SITE

REMEDIAL INVESTIGATION WORK PLAN

Prepared for:

THE KROG CORPORATION

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Submitted by:
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Introduction

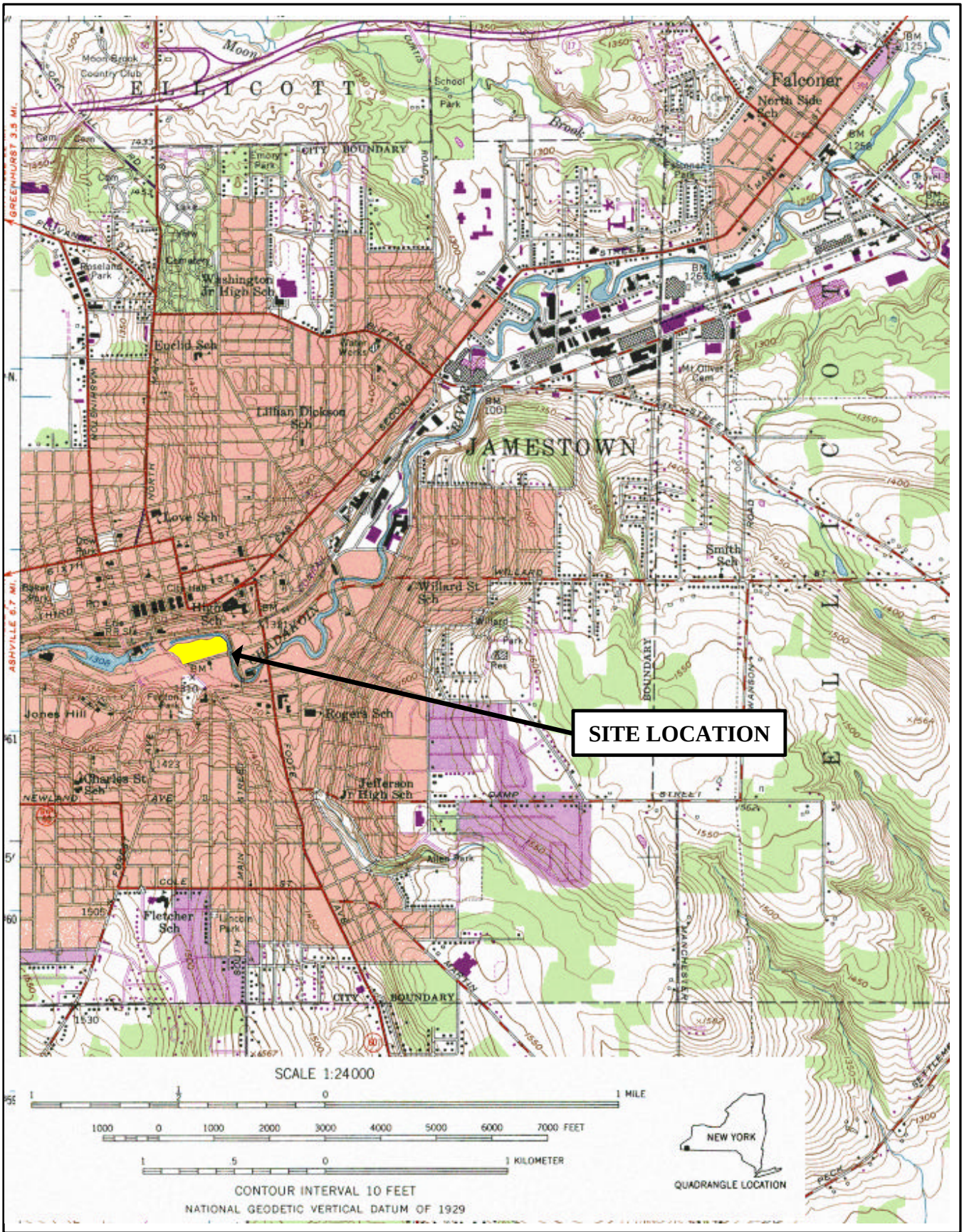
SECTION 1

Malcolm Pirnie, Inc. (Malcolm Pirnie) has prepared this Remedial Investigation Work Plan for a Brownfield Cleanup Program (BCP) supplemental investigation of the former Ames / Hills Plaza (Site) in Jamestown, New York. The Site is located at the intersection of South Main (15 South Main) and Harrison in Jamestown, New York and is shown on Figure 1-1. As part of the proposed commercial redevelopment of the former Ames/Hills Plaza, the Site will be investigated in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) BCP. The Krog Corporation plans to redevelop the Site for future use as a professional office park complex.

1.1 Site History

The Site is a former Ames/Hills Department store plaza situated on approximately 7-acres of land centrally located in the City of Jamestown, Chautauqua County, New York. The Site is located approximately 200-300 feet south of the east-flowing Chadakoin River and is currently surrounded on the south and westernmost sides by developed properties that include restaurants, light retail businesses, and residential properties with associated parking lots. The site is bounded to the north and east by the Chadakoin River.

The Ames/Hills department store occupied the easternmost portion of the property currently scheduled for investigation. Historic development of this tract 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 station.



MALCOLM PIRNIE

OCTOBER 2004 3198-004

FORMER AMES/HILLS SITE
JAMESTOWN, NEW YORK
REMEDIAL WORK PLAN

FIGURE 1-1
SITE LOCATION

A parking lot now encompasses the westernmost potion of the site. Historic use of this tract included businesses associated with metal working i.e., Jamestown Iron Works, the Manor Iron Works, Cast Iron Welding and Brazing Co. with 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.

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.

1.2 Previous Investigations

The following is a general summary of previous environmental investigations performed at the Site. Information for this summary was obtained from copies of reports, or portions of reports, made available by the Krog Corporation. This summary is intended to provide a general idea of the previous and current Site conditions and should not be considered a complete presentation of past environmental activities at the Site. Figure 3-1 illustrates boring and test pit locations.

December 2000 – In December 2000, the NYSDOT excavated and removed four underground storage tanks (USTs) encountered adjacent to the site on South Main Street. As a result of this action, the New York State Department of Environmental Conservation (NYSDEC) listed the site as Spill No. 0075070. Representatives of Center Associates Realty Corporation provided oversight services for the advancement of three confirmatory borings 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 STARS or TAGM 4046 guidance values. The NYSDEC subsequently issued a determination of inactive status for this site during January 2001.

September and October 2003 – On behalf of the Krog Corporation, Lender Consulting Services, Inc. (LCS) completed a Phase 1 Environmental Site Assessment at the Former Ames/Hills Plaza Site. Results of the October 21, 2003 Phase I Site Assessment

generally did not identify evidence of recognized environmental concerns except for the presence of two 55 gallon drums, one of which contained waste oil and was placed in a drum overpack container. A compressed gas cylinder and two small propane tanks were also observed on-site. Based on a review of historic sanborn maps and documented on-site work practices, a limited subsurface investigation was recommended to better characterize existing environmental conditions.

December 2003 **–** LCS, Inc. of Buffalo, New York conducted (for Center Associates Realty Corporation on behalf of Krog) a limited Phase 2 Environmental Site Assessment. The purpose of the investigation was to characterize site soils and to determine the potential contaminant impacts if any, related to historic on-site work practices.

The November 2003 drilling program required advancement of 37 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 TCL VOC and SVOC analysis by Methods 8260 and 8270. Results of the investigation identified low concentrations of BTEX compounds and selected VOCs at eight borehole locations. Concentrations of VOCs detected did not exceed STARS or TAGM guidance values for soils. However, analytical results for soil samples submitted from four borehole locations (BH-5, BH-7, BH-11 and BH-22) identified selected SVOCs and carcinogenic PAHs that exceeded STARS and TAGM guidance criteria. Conclusions of the report suggest that the source of the VOC and SVOC 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 RCRA 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 their 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 12, 2004 – During February 2004 representatives of LCS, Inc. initiated a subsurface drilling investigation on behalf of the Krog Corporation. The purpose of the investigation was 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 approved by the DEC, and temporary piezometers 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 for all but one sample interval, 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 VOC and SVOC STARs list chemical analysis by EPA Methods 8260 and 8270. Results of the groundwater analytical testing generally indicated no significant impacts to the site 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 – LCS Inc. performed a supplemental environmental investigation on behalf of the Krog Corporation in 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 overburden fill material. The boreholes which were designated BH-42 through BH-59 were advanced within confines of the Former Ames building and at selected locations within the parking lot (see Figure 3-1).

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 TAL Metals. One soil sample submitted from test pit location TP-2 was analyzed for the NYSDOH fingerprint analysis by Method 310.13. In addition to soils testing, groundwater samples were collected from 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, significant concentrations of 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 the NYSDEC Class GA groundwater standard 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.

1.3 Summary

Results of environmental investigations completed to date indicate that the site-wide fill material contains elevated concentrations of PAHs at discrete locations that exceed the NYSDEC TAGM soil clean-up objectives. The fill material also contains elevated concentrations of mercury and lead. Arsenic, iron, magnesium, manganese, and sodium and zinc were identified at concentrations that exceed typical background soils concentrations.

Purpose

SECTION 2

Although several environmental investigations have been performed at the Site to characterize the areal extent of petroleum contaminated fill material, a remedial investigation is planned to fulfill the requirements for the BCP. Based on the historical use of the site and historical analytical results of sampling within the site boundaries, Malcolm Pirnie developed an investigation scope to more thoroughly characterize surficial and subsurface conditions to support the site's proposed intended end use as a professional office park facility. This Work Plan details specific investigatory tasks that will better facilitate site characterization and compliance with the NYSDEC BCP requirements. Specifically, when used in concert with results of previous investigations the findings of the remedial investigation will be used to:

- Describe the amount, concentration, persistence, mobility, form (e.g., solid, liquid), and other significant characteristics of the contamination potentially present.
- Define hydrogeological factors (e.g., depth to saturated zone, hydrologic gradients, proximity to a drinking water aquifer, and floodplains and wetlands proximity).
- Define the aerial extent of fill material deposited at the site and characterize the chemical composition of the fill.
- Define the potential extent to which the substances have migrated or are expected to migrate, and whether potential future migration may pose a threat to human health or the environment.
- Determine the extent to which contaminant levels pose an unacceptable risk to public health and the environment.

- Provide sufficient information to allow for the preliminary identification of potentially feasible remedial alternatives.

The Remedial Action Objectives (RAOs) for the site will be developed based on the contaminant characterization results, exposure pathways, and risk evaluation data. Based on our knowledge of potential site issues, the RAOs for the site may include the following:

- Prevent direct contact/ingestion of SVOCs and metals-contaminated soils to minimize potential risks to human health and the environment.

MALCOLM PIRNIE

Scope of Work

SECTION 3

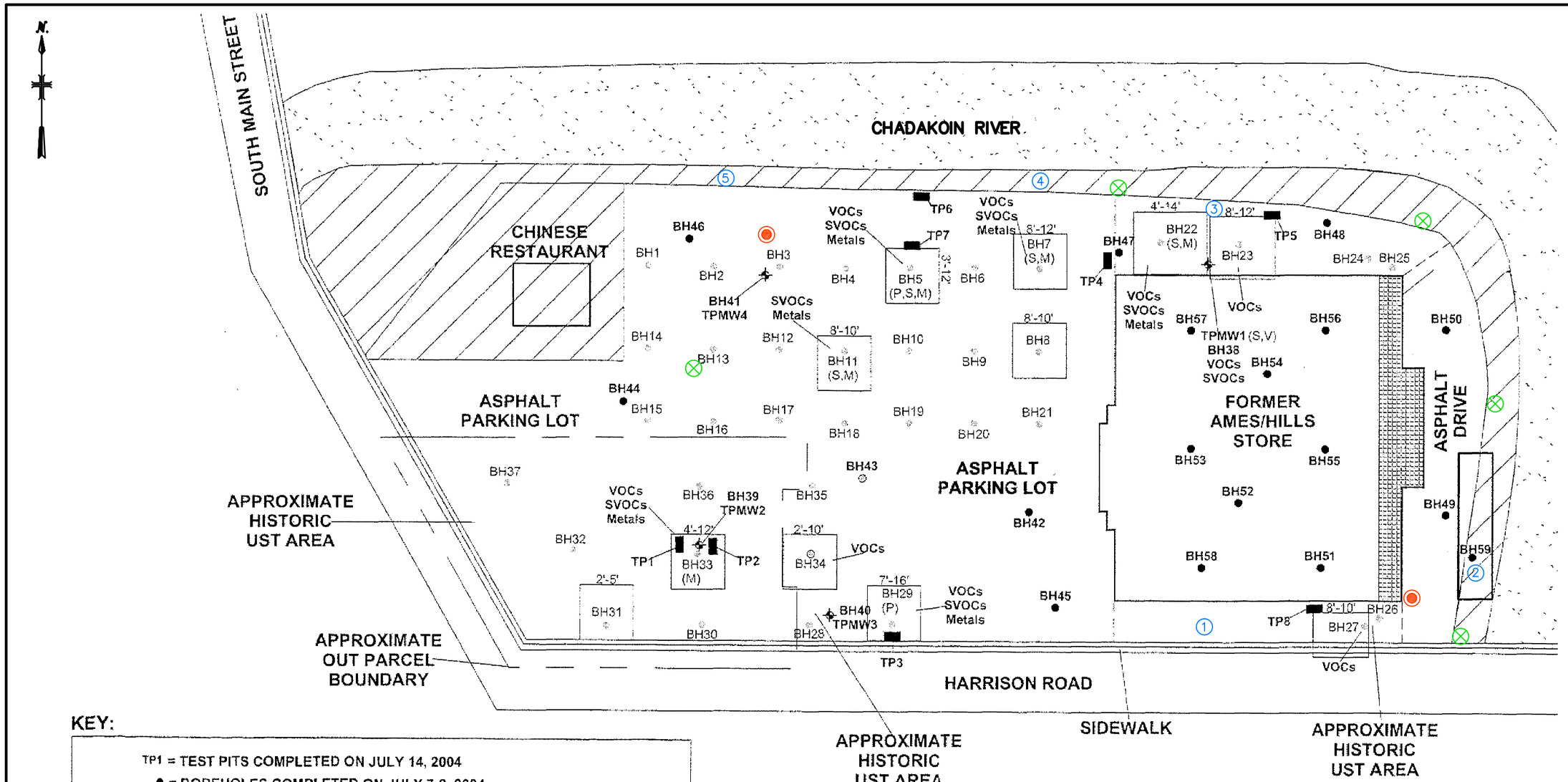
3.1 Subsurface Investigation

3.1.1 Soil Boring Program

The soil boring program will be implemented to better characterize the physical nature of the overburden fill material and chemical attributes of the shallow groundwater regime of the Site. The soil boring program will consist of five shallow soil borings advanced at predetermined locations approved by the NYSDEC. The proposed borehole locations are shown on Figure 3-1.

Soil samples will be continuously collected from the ground surface to a depth of approximately 10–16 feet bgs using two-inch diameter split spoons two feet in length driven by a 140-pound hammer. To facilitate borehole advancement, 4¼-inch hollow-stem augers will be incrementally advanced following split spoon sample collection. The augers will be decontaminated between borings using a high-pressure hot water (or steam cleaner).

Upon retrieval, the split spoon samples will be screened with a photoionization detector (PID), measurements recorded and the soil described on boring logs by a Malcolm Pirnie geologist. Samples will be collected from the split spoon at a discrete depth interval displaying the greatest evidence of contamination (i.e.: elevated PID readings or visual and olfactory observations). One soil sample will be collected for chemical analysis from each boring based on visual or olfactory observations, or elevated PID measurements. Pending concurrence with the DEC, samples will be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs),



KEY:

TP1 = TEST PITS COMPLETED ON JULY 14, 2004

● = BOREHOLES COMPLETED ON JULY 7-8, 2004

▨ = OFF-SITE PROPERTIES

○ = BOREHOLES FROM LCS' PREVIOUS STUDY (NOVEMBER 10-12, 2003)

SH = BOREHOLES EXHIBITING SHEEN ON GROUNDWATER

M = SAMPLES WITH RCRA METALS CONTAMINATION

S = SAMPLES WITH SVOC CONTAMINATION

P = BOREHOLES CONTAINING FREE PHASE PRODUCT

V = SAMPLES WITH VOCs CONTAMINATION

TPMW = TEMPORARY MONITORING WELLS (FEBRUARY 19, 2004)

① PROPOSED GROUNDWATER MONITORING LOCATION

⊗ PROPOSED SURFACE SOIL SAMPLING LOCATION

◉ PROPOSED TEST PIT LOCATION

SCALE: 1" = 100'

* SITE PLAN OBTAINED FROM LCS INC.

MALCOLM PIRNIE

08/04 3198F001

FORMER AMES/HILLS PLAZA & OUT PARCEL

15 SOUTH MAIN STREET
JAMESTOWN, NEW YORK

FIGURE 3-1

SITE INVESTIGATION PLAN
CONDITIONS AS OF JULY 2004

Target Analyte List (TAL) metals, and cyanide. One soil sample from each boring will be submitted for PCB analysis if visual petroleum contamination is observed.

3.1.2 Groundwater Characterization

To characterize the groundwater quality at the Site, five shallow groundwater monitoring wells will be installed in the borings completed during the drilling program. The five new monitoring wells will be sampled for TCL VOCs, SVOCs, and TAL metals. Figure 3-1 illustrates the locations of the proposed monitoring wells.

3.1.2.1 Monitoring Well Drilling and Installation

Each of the proposed monitoring wells will be advanced using 4-1/4-inch inner diameter (ID) hollow stem augers and continuous split spoon sampling methodology to characterize the fill material, as described in Section 3.1. The well borings will be advanced in the shallow overburden approximately 7-8 feet below water table, which is anticipated to be 5 to 10 feet below grade. Subsequent to reaching total depth, each well will be constructed using 10 feet of 2-inch diameter, Schedule 40 PVC well screen with a 0.01-inch slot size. A bottom plug will be threaded or screwed onto the bottom of PVC screen, and the well completed to grade elevation with flush-threaded PVC riser. A coarse silica sand pack (Morie brand size 0 or equivalent) will be emplaced around the well screen from the bottom of the well to one foot above the top of the well screen. A bentonite pellet seal measuring three feet thick will be placed on top of the sand pack and hydrated. Subsequent to pellet hydration, a finer secondary sandpack layer measuring 6-inches thick will be installed above the pellet seal and a bentonite/cement grout emplaced within the remaining borehole annulus to within one foot below grade. A nine-inch diameter flush-mount protective steel casing with keyed alike lock will be installed within a 2-foot by 2-foot square by 6-inch thick concrete drainage pad to complete the well installation. The wells will be clearly and permanently labeled for identification.

3.1.2.2 Monitoring Well Development

Monitoring well development will be completed after installation of each monitoring well. Prior to development, the initial water level and total depth or the wells will be

measured. The development procedure will require purging groundwater and periodically surging the well to loosen and remove fines from the well screen and sandpack. Measurements of the water volume removed and water quality parameters including temperature, pH/Eh, specific conductivity, dissolved oxygen and turbidity will be recorded at regular intervals throughout the development process. Development will continue until a minimum of 10 well volumes have been removed and water quality measurements stabilize to within 10% of the previous measurement, or when the turbidity of the discharge water reaches 50 Nephelometric Turbidity Units (NTUs) or less.

3.1.2.3 Groundwater Sampling

Groundwater samples will be collected from the five new monitoring wells at the Site and submitted for chemical analysis. A water level indicator will be used to measure the water table elevation from all existing and newly installed groundwater monitoring wells. Groundwater field parameters including pH, specific conductivity, temperature, turbidity, dissolved oxygen, and redox potential will be monitored during well purging prior to sampling. One groundwater sample will be collected from each new well and analyzed for TCL VOCs, SVOCs, and TAL metals plus total cyanide. Appropriate QA/QC samples will be collected and analyzed, including one trip blank, one MS/MSD sample, and one field duplicate sample. Table 3-1 shows the proposed sampling and analysis scheme.

3.1.2.4 Surface Soil Sampling

One surface soil grab sample will be collected at each of the five proposed sample location shown on Figure 3-1. Each sample will be collected from a depth not to exceed two-inches below ground surface. The surface soil samples will be analyzed for TCL VOCs, SVOCs and TAL metals. The location of each sample will be noted on a site map and marked with a wooden stake for subsequent surveying. Descriptions of the sampled soil and observations of the ground surface will be recorded during sampling.

TABLE 3-1

Analytical Program Summary
Brownfield Cleanup Program Investigation
Former Ames / Hills Plaza Site

Sample Media	Number of Samples				Analyses (Methods)
	Field Samples	**Duplicates**	**MS/MSD Samples**	**Trip Blanks**	
Soil/Fill [(1) (2)]	12	1	1/1	2	TCL VOCs TCL SVOCs TAL Metals + cyanide PCBs
Groundwater	2	1	1/1	1	TCL VOCs TCL SVOCs TAL Metals + cyanide

Notes:

MS	= matrix spike
MSD	= matrix spike duplicate
TCL	= target compound list
TAL	= target analyte list
VOCs	= volatile organic compounds
SVOCs	= semivolatile organic compounds

Note [(1)] = If evidence of petroleum is observed in one or both of the test trench samples, "fingerprint" analysis (method 310.13) will be added to their list of analytical parameters. Oil stained samples will be submitted for PCB analyses.

Note [(2)] = Includes five surface soil samples and 7 subsurface soil/fill samples.

3.1.5 Test Trench Excavation and Sampling

Two test trenches will be excavated to visually characterize the uppermost surficial fill unit at the proposed locations shown on Figure 3-1. The test pits will be located downgradient of known contaminant areas along the northernmost boundary of the site, and in the southeastern corner adjacent to a former underground storage tank (UST) area. Each trench will be excavated to the top of native soil or a depth not to exceed 10 feet. The overburden material (fill) will be placed on poly sheeting during the excavation of each trench. Excavated materials will be screened for VOCs using a PID and visually inspected for the presence of contamination. The on-site geologist will record all observations and sample descriptions on a field stratigraphic log. One soil sample will be collected for chemical analysis from each test pit location. The samples selected for analysis will be grab samples from the portion of the test trench exhibiting the highest PID reading or visual or olfactory evidence of staining. Two samples will be analyzed for TCL VOCs, and SVOCs, TAL metals, and cyanide. If petroleum staining (i.e., motor oil, lubricating oil) is observed, a soil sample will be submitted for PCB analysis and "fingerprint" analysis by Method 310.13. The PCB and "fingerprint" analysis will be a field determination with concurrence from the on-site NYSDEC representative.

The depth to water, dimensions of the test trenches, the vertical and horizontal contact between the fill materials and native soils will also be documented. Prior to backfilling, the trench will be photo documented, and a reference point located at each test trench. The reference point will be located on the base map by the surveyor so that each test pit location can be mapped. The subcontracted drilling firm will perform and provide the necessary equipment for the test pit excavations.

Malcolm Pirnie anticipates that test trench excavation will be conducted in Level D Personal Protective Equipment (PPE).

3.2 Air Quality Characterization

The former Ames/Hills department store occupies the eastern-most portion of the site. Based on the results of previous environmental investigations conducted at the property, subsurface soil and fill material, and to a lesser extent shallow groundwater, in the area of the building has been shown to contain semi volatile organic compounds (SVOCs) including carcinogenic polycyclic aromatic hydrocarbons (PAHs), as well as low concentrations of volatile organic compounds (VOCs). A potential pathway exists whereby these compounds in the vapor phase may migrate from the soil and could affect the quality of air in the existing building, or future buildings constructed at the site. To evaluate the intrusion of vapor originating from soil and/or groundwater underlying the vacant building, as well as current indoor air quality, Malcolm Pirnie will collect and analyze samples of soil vapor beneath the concrete slab of the building, and indoor air of the former Ames building. Since indoor air quality can be effected by not only by subsurface contaminants but also, indoor and ambient sources, it is important to characterize the sub-slab air.

3.2.1 Indoor Air Sampling

To evaluate the presence of VOCs in indoor air of the on-site building, air samples will be collected using a Summa canister sampling train, which consists of a six-liter, stainless steel, Summa canister, a flow controller, particulate filter, pressure gage, and fittings. All canisters will be evacuated by the analytical laboratory prior to use at the Site. A batch certification will be conducted by the laboratory to certify that the canisters are analyte-free. Flow regulators supplied by the analytical laboratory will then be used to collect a continuous sample over an eight-hour period, an assumed exposure time for a worker at the site. Each flow regulator will be equipped with a filter to prevent particulate matter from entering the canister. The sample ports of the canisters will be placed in the buildings breathing zone, which is considered to be five feet above the floor.

Prior to the initiation of indoor air sampling, a confounding sources survey would be conducted for the building. This survey would identify and, if possible, eliminate any potential sources of VOCs present in the building, other than those potentially present due

to vapor intrusion, that may confound the results of the air sampling event. A photo ionization Detector (PID) would be used to screen potential confounding sources. If the survey identifies a confounding source that is unable to be removed, the sampling location would be modified to minimize the effect of the source and the source would be noted.

It is estimated that three samples will be collected to assess the presence of VOCs in the building. This estimate assumes that the building floor plan consists primarily of open floor space and/or unconfined, interconnected rooms. Two samples will be collected from this main portion of the building and one sample will be collected from a smaller, more confined space if present (i.e. offices, employee lounge, etc.). Sample locations will be selected based on the anticipated development of the building to characterize areas most likely occupied throughout a typical work day. Two additional Summa canisters one of which would be placed in an outdoor location upwind of the building, and one placed in an outdoor location downwind of the building will be used to determine background concentrations of VOCs for the area.

The air samples will be analyzed for VOCs by Severn Trent Laboratories using USEPA Compendium Method TO-15. The list of compounds analyzed by method TO-15 as well as the method reporting limits is provided in Table 3-2.

3.2.2 Sub-Slab Soil Vapor Sampling

Sub-slab soil vapor samples will be collected by drilling through the concrete slab floor of the building using a rotary hammer drilling device. Once through the slab, the borehole will be extended to approximately one foot below the slab to allow for the installation of the sampling device. A six-inch long stainless steel vapor sampling point (KVA Shield Point® or similar device) will be connected to Teflon-lined tubing and placed in the borehole. Clean silica sand will be poured around and approximately four-inches above the sampling point. A hydrated bentonite powder will be used to seal the point at the surface.

Prior to sampling, an electric peristaltic pump capable of producing a vacuum of at least 20 inches of mercury, will be used to purge air from the vapor sampling point. During

TABLE 3-2

TO015 Target Compounds[1], RLs
Brownfield Cleanup Program Investigation
Former Ames / Hills Plaza Site

Compound	CAS Number	Proposed RL ppbv	NJTO15	Full TO15
Acetone (2-propanone)	67-64-1	5.0	X	X
Benzene	71-43-2	0.20	X	X
Bromodichloromethane	75-27-4	0.20	X	X
Bromoethene	593-60-2	0.20	X	X
Bromoform	75-25-2	0.20	X	X
Bromomethane (Methyl bromide)	74-83-9	0.20	X	X
1,3-Butadiene	106-99-0	0.20	X	X
2-Butanone (methyl ethyl ketone)	78-93-3	0.50	X	X
Carbon disulfide	75-15-0	0.50	X	X
Carbon tetrachloide	56-23-5	0.20	X	X
Chlorobenzene	108-90-7	0.20	X	X
Chloroethane	75-00-3	0.20	X	X
Chloroform	87-66-3	0.20	X	X
Chloromethane (methyl chloride)	74-87-3	0.20	X	X
3-chloropropene (allyl chloride	107-05-1	0.20	X	X
2-chlorotoluene (o-chlorotoluene)	95-49-8	0.20	X	X
Cyclohexane	110-82-7	0.20	X	X
Dibromochloromethane	124-48-1	0.20	X	X
1,2-dibromoethane	106-93-4	0.20	X	X
1,2-dichlorobenzene	95-50-1	0.20	X	X
1,3-dichlorobenzene	541-73-1	0.20	X	X
1,4-dichlorobenzene	106-46-7	0.20	X	X
dichlorodifluoromethane	75-71-8	0.20	X	X
1,1-dichloroethane	75-34-3	0.20	X	X
1,2-dichlorethane	107-06-2	0.20	X	X
1,1-dichloroethene	75-35-4	0.20	X	X
1,2-dichloroethene (cis)	155-59-2	0.20	X	X
1,2-dichloroethene (trans)	156-605	0.20	X	X
1,2-dichloropropane	78-87-5	0.20	X	X
Cis-1,3-dichloropropene	10061-01-5	0.20	X	X
Trans-1,3-dichloropropene	10061-02-6	0.20	X	X
1,2-dichlorotetrafluoroethane (Freon 114)	76-14-2	0.20	X	X
Ethylbenzene	100-41-4	0.20	X	X
4-Ethyltoluene (p-ethyltoluene)	622-96-8	0.20	X	X
n-heptane	142-82-5	0.20	X	X
hexachlorobutadiene	87-68-3	0.20	X	X
n-hexane	110-54-3	0.20	X	X
methylene chloride	75-09-2	0.50	X	X
4-methyl-2-pentanone (MIBK)	108-10-1	0.50	X	X
MTBE (methyl tert-butyl ether)	1634-04-4	0.50	X	X
Styrene	100-42-5	5.0	X	X
Tertiary butyl alcohol (TBA)	75065-0	0.20	X	X
1,1,2,2-tetrachloroethane	79-34-5	0.20	X	X
Tetrachloroethene (PCE)	127-18-4	0.20	X	X
Toluene	108-88-3	0.50	X	X
1,2,4-trichlorobenzene	120-82-1	0.20	X	X
1,1,1-trichloroethane	71-55-6	0.20	X	X

TABLE 3-2 (continued)

TO015 Target Compounds[1], RLs
Brownfield Cleanup Program Investigation
Former Ames / Hills Plaza Site

1,1,2-trichloroethane	79-00-5	0.20	X	X
1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF)	76-13-1	0.20	X	X
Trichloroethene (TCE)	79-01-6	0.20	X	X
Trichlorofluoromethane (Freon 11)	75-69-4	0.20	X	X
1,2,4-trimethylbenzene	95-63-6	0.20	X	X
1,3,5-trimethylbenzene	108-67-8	0.20	X	X
2,2,4-trimethylpentane	540-84-1	0.20	X	X
Vinyl chloride	75-01-4	0.20	X	X
Xylenes (m&p)	1330-20-7	0.20	X	X
Xylenes (o)	95-47-6	0.20	X	X
1,2-dichlorethene (total)	540-59-0	0.20		X
1,4-dioxane	123-91-1	5.		X
Isopropyl alcohol	67-63-0	5.0		X
Methyl butyl ketone	591-78-6	0.50		X
Methyl methacrylate	80-62-6	0.50		X
Naphthalene (upon request only)	91-20-3	0.50		X
tetrahydrofuran	109-99-9	5.0		X

[1]NJ compounds have NJ-assigned compound names.

purging, a PID would be used to measure concentrations of VOCs in the purged air. Following purging, the grab sample would be collected at a rate of 100 milliliters per minute.

It is estimated that six sub-slab vapor samples, including one duplicate sample, would be collected from five sub-slab vapor sampling points and analyzed for VOCs by Severn Trent Laboratories using USEPA Compendium Method TO-15. The lists of compounds analyzed by method TO-15 as well as the method reporting limits are provided in Table 3-2.

3.3 Site Base Map Survey

A topographic base map of the site will be prepared at a scale of one-inch equals 100 feet, with a two-foot contour interval. For purposes of the survey, the site is defined by the area bounded by Harrison Road (south), South Main Street (west), and the Chadakoin River (north and east). The map will be used to locate all current and proposed work.

The base map will be prepared by a New York State licensed surveyor as a subcontractor to Malcolm Pirnie. All mapping will conform to specifications for size, distribution and content as established by the USGS National Mapping division. Digital mapping will be supplied on an AutoCADD 3D Drawing. The surveyor will establish the horizontal location and vertical elevations using the New York State Plane Coordinate System and most recent vertical datum. Elevations of the ground surface, top of PVC riser and outer steel protective casing will be measured and recorded for each monitoring well.

3.4 Geophysical Survey

A non-intrusive geophysical magnetometer survey will be conducted along the southernmost site boundary to investigate two potential underground storage tank areas. The two areas shown on Figure 3-1 are located adjacent to Harrison Road in the asphalt parking lot and on the south side of the Former Ames/Hills store.

3.5 Qualitative Risk Assessment

3.5.1 Ecological Risk Assessment

A qualitative ecological risk assessment will be prepared to characterize the site with regard to natural resources and ecological receptors existing or potentially existing on the site. This assessment will integrate information gathered from all on Site Investigations with toxological information to determine whether contamination presents potential risks to ecological receptors. The baseline ecological risk assessment for the Site will be performed in accordance with applicable New York State and USEPA guidance for ecological assessments at hazardous waste sites, including the NYSDEC's Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA). The baseline ecological risk assessment will be comprised of the following six components:

- Ecological characterization.
- Identification of chemicals of concern.
- Exposure and effects assessment.
- Ecological risk characterization.
- Summary and conclusions.
- Assessment of uncertainties and limitations.

3.5.2 Human Health Risk Assessment

A qualitative assessment will be conducted to determine if the presence and concentrations of chemicals in the various environmental media investigated pose human health concerns. The results of the exposure analysis will be one of the criteria used to determine the most appropriate future actions at the site. These may range from no further action, to additional data collection, to site-specific health risk assessment and the establishment of risk-based action levels. The assessment will begin with the construction of a conceptual site model, a graphic illustration that outlines chemical

source areas, possible chemical release mechanisms, environmental media that currently show or may show in the future the presence of chemicals, possible exposure pathways, possible points of exposure for human receptors, possible exposure routes, and possible human receptors. The conceptual model will be based on current site conditions and surrounding land use as well as the planned future site and surrounding land uses. For environmental media that may be of concern, qualitative evaluations will be made for the four components that typically comprise a health risk assessment: data evaluation; exposure assessment; toxicity assessment; and risk characterization/uncertainty analysis. In the data evaluation, chemical concentrations in the various media will be compared to appropriate NYSDEC risk-based standards and criteria (e.g., NYSDEC Soil Cleanup Objective and Cleanup Levels, Water Quality Standards, etc.). Chemicals detected in concentrations greater than these standards and criteria will be identified as chemicals of potential concern. In the exposure assessment, an evaluation will be made of the likelihood and magnitude of exposure to the chemicals of potential concern in environmental media of concern. This will involve outlining possible exposure routes and plausible exposure times, frequencies, and durations. In the toxicity assessment, the toxicity of the chemicals of concern will be outlined. This will include identifying known or suspected carcinogens and/or the target organ/system of concern for noncarcinogenic effects. In the risk characterization, information from the three components will be integrated, to estimate the likelihood and magnitude of possible health risks.

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Quality Assurance/Quality Control (QA/QC)

SECTION 4

4.1 Analytical Methods

All samples collected during the supplemental investigation will be analyzed using EPA-approved analytical methods that follow 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), and Standard Methods for Examination of Water and Wastewater" (prepared and published jointly by the American Public Health Association, American Waterworks Association and Water Pollution Control Federation).

4.2 Laboratory

The subcontracted laboratory will be certified by the New York State Department of Health to perform Contract Laboratory Program (CLP) analysis on all media to be sampled during this investigation. The laboratory will perform the sample analysis in accordance with the most recent NYSDEC Analytical Services Protocol (ASP).

4.3 Data Submittal

Analytical data will be submitted in complete ASP category B data packs. 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 5% 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.

4.4 Data Usability Summary Reports

The data package will be sent to a qualified, independent, data validation specialist for evaluation of the accuracy and precision of the analytical results. A Data Usability Summary Report (DUSR) will be prepared to describe the compliance of the analyses with the analytical method protocols detailed in the NYSDEC Analytical Services Protocol (ASP). The DUSR will provide a determination of whether the data meets the project specific criteria for data quality and data use. The validation effort will be completed in accordance with NYSDEC Division of Environmental Remediation DUSR guidelines.

4.5 Health and Safety

All field tasks will be performed using industry standard health and safety procedures. A site-specific Health and Safety Plan (HASP) has been prepared for use by the field team during all field activities. This plan details known and potential hazards of the site and field tasks as well as air monitoring and emergency procedures.

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Project Organization

SECTION 5

Malcolm Pirnie has established a project team for the former Ames/Hills Plaza site whose collective qualifications and experience are strongly suited for successful completion of the project. The proposed responsibilities of the key staff are summarized below:

Kent McManus, P.E., will be the Project Manager for the work. In this capacity Mr. McManus will be responsible for the successful completion of each task including coordination and supervision of engineers and scientists, and adherence to the work plan, schedule and budget.

John P. Hilton, C.P.G., will be the Deputy Project Manager, responsible for the development of the work plan, coordination of subcontractors, direction of the field program including maintaining quality assurance policies that pertain to all aspects of sampling, well drilling and development.

Brad Walker, will be the field hydrogeologist responsible for implementing the field effort. Responsibilities will include directing Malcolm Pirnie's drilling subcontractors, and ensuring the successful completion of all field activities.

Shi Ng, will be the Quality Assurance Officer (QAO). Mr. Ng will assist the project manager in the development of the work plan, interface with the laboratory to make requests and resolve problems and interface with the data validator during development of Data Usability Summary Reports**.**

Reporting

SECTION 6

Following receipt of the validated analytical results, Malcolm Pirnie will prepare a Remedial Investigation Report and a Remedial Action Work Plan (RAWP) with an attached Soil Fill Management Plan (SFMP). The report will summarize fieldwork performed to date; data collected, and will include data tables, soil boring and well construction logs, analytical results, photos, and maps. The report will also include Malcolm Pirnie's recommendations for further characterization of the Site, if necessary. If no additional characterization is required as anticipated, the RI report will include a Qualitative Risk Assessment. If additional investigation is required, the Qualitative Risk Assessment will be completed following the receipt of validated results of the additional characterization.

The Remedial Action Work Plan will include an evaluation of remedial alternatives. Data obtained during previous investigations will be utilized along with the planned end use to identify, select and evaluate remedial action alternatives for the site. Potential site constituents and migration pathways will be categorized as follows:

- Air and airborne dust.
- Soil/Fill.
- Groundwater.

Once the degree of contamination associated with these media and other site characteristics are quantified, General Response Actions for site remediation will be defined. The General Response Alternatives that are considered will include the "no action" measure as a baseline against which other remedial measures, if necessary, can be compared.

The RAWP will also include a SFMP, which will describe a plan for characterization and handling of excavated soil/fill based on site-specific action levels (SSALs)

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Project Schedule

SECTION 7

A schedule showing the planned remedial investigation activities and assessment of remedial alternatives is included in Figure 7-1.

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FIGURE 7-1

SCHEDULE FOR PLANNED INVESTIGATION ACTIVITIES
FORMER AMES/HILLS PLAZA SITE
JAMESTOWN, NEW YORK
BCP REMEDIAL INVESTIGATION

	October			November					December				January					February				March				April				May				
	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	7	14	21	28	4	11	18	25	2	9	16	23	30
Remedial Investigation Tasks																																		
Submittal of Draft RI Work Plan (10/11/04)	◆																																	
Thirty day public comment period on Draft RI Work Plan																																		
NYSDEC Review and Approval of WP/CPP and Execution of BCP Agreement																																		
Mobilization for Field Investigation																																		
Field activities completed to collect soil and groundwater samples																																		
Chemical Analysis of Soil and Groundwater Samples																																		
Survey Well Locations																																		
Third Party Data Validation																																		
Prepare Qualitative Risk Assessments																																		
Prepare RI Report / Remedial Action Work Plan / Soil Fill Management Plan																																		
Submit reports to NYSDEC for review and public comment (04/11/05)																										◆								
Forty-five day comment period on Remedial Measures Work Plan																																		