PHASE II INVESTIGATION OF THE EAST ROME BUSINESS PARK CORE AREA ROME, NEW YORK

Prepared For:

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
City Hall
Rome, NY 13340

Prepared By:

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RETEC Project No. 3-2294-200

July, 1997

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Certification: All activities that comprised this investigation were performed in full accordance with the approved Work Plan.

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1.0 INTRODUCTION

1.1 Statement of Purpose

This document presents the results of the investigation of site conditions at the core area of the East Rome Business Park, a former 17-acre manufacturing site in the City of Rome, Oneida County, New York. The site is located between East Dominick Street and the New York State (NYS) Barge Canal. The site formerly owned by the General Cable Corporation is currently owned by Mr. Charles A. Gaetano, and is listed by the City of Rome as tax map parcel 242.020-0001-018. The work plan for this investigation was reviewed and approved by the New York State Department of Environmental Conservation (NYSDEC) and included as an attachment to an investigative order on consent (Consent Order) for the site (Order No. D60019611) signed by the City of Rome, Mr. Gaetano, and NYSDEC.

The purpose of this investigation is to determine the need for (and where applicable, the scope of) remediation on various parcels within the site in the context of development for commercial/industrial use. The elements of the work plan are:

- an analysis of existing data; the identification of the area, media, and substances to be investigated; and a description of additional data to be acquired during the performance of the investigation to characterize contaminant sources and impacts to human health and the environment;

- identification of contamination and, if present, potential current and future receptors and exposure pathways;

- the identification of potential remedial alternatives to address contaminant sources and exposure issues identified in the evaluation of site conditions.

This investigation was carried out in accordance with generally accepted professional practices, consistent with the NYSDEC's Preliminary Site Assessment Guidelines, and consistent with the National Contingency Plan (NCP) provisions for removal site evaluation and removal action (Subpart E, Section 300.410 and 300.415). This report of findings of the investigation is submitted in fulfillment of the city's obligations under the terms of the Consent Order. No other warranty, express or implied, is made.

1.2 Scope of Work

The scope of work for this investigation, as defined in the approved work plan, contained the following elements:

- collection of surface soil samples;
- soil borings and collection of soil samples;
- collection of soil gas samples;
- installation of shallow (water table) monitoring wells;
- collection of ground water samples;
- collection of ambient air samples from selected buildings;
- a survey and sampling of subsurface structures and utilities.

The results of this work were used to evaluate the proposed commercial/industrial redevelopment plans for this site using the exposure mechanisms identified in the work plan.

1.3 Report Organization

This investigation report is organized into seven sections. Section 2.0 presents site background information including a site description, site history and a summary of previous investigations. Section 3.0 presents specific field tasks undertaken during the field investigation. Section 4.0 presents the results of the field observations. Section 5.0 presents the results of the chemical analyses. Section 6.0 presents a summary and evaluation of the environmental findings by each of the five proposed major site subdivided parcels, and recommendations for future action necessary for redevelopment of the site. Section 7.0 lists references cited in this report.

2.0 SITE BACKGROUND

2.1 Site Description and History

The study area for this investigation is a 17-acre parcel of land which has been defined by the City of Rome as the "Central Core " of a 200-acre industrial redevelopment area known as the East Rome Business Park (Figure 2-1). The site is generally bounded by Railroad Street to the north, the New York State Barge Canal to the south and by industrial and commercial properties to the east and west. The property has been owned by Mr. Charles A. Gaetano since 1975, and is listed by the City of Rome as tax map parcel 242.020-0001-018.

The history of the site is described in the report titled "Phase I Environmental Site Assessment, City of Rome Industrial Redevelopment Area, Rome, New York" (RETEC, 1995). The site was first developed in the late 1800s when the Rome Tube Company began construction of a casting and pickling facility. In 1904, the Electric Wire Works (later the Rome Wire Company) began construction on the northwest portion of the site. The Rome Wire Company, and its successor, General Cable, operated the facility from 1920 to 1972. During that period, a wide-range of metalworking activities were conducted including machining, stamping and drawing, plating, pickling, and coating with rubber, asbestos, and paints (RETEC, 1995). General Cable ceased operations at the site in 1972 and, with minor exceptions, the site has been unused since then. At present, the site contains abandoned buildings and open areas, most of which are covered with concrete pavement. Demolition to grade of several of the former General Cable buildings at the northern end of the site has been completed by Mr. Gaetano. Figure 2-2 is a current site map providing the location of buildings and other features of the site. Figure 2-3 is an expanded site plan showing these features along with the sampling locations described in later sections of this report.

2.2 Previous Investigations

A number of investigations have been previously performed at the site. This section describes the available documents on the history and conditions of the site, and presents their significant findings.

NYSDEC Spill File #8402290

In 1984 a spill was recorded with NYSDEC for the Revere Copper and Brass facility, located to the north and upgradient of the site. According to the spill file, oil was released into the storm sewer system which allowed it to be conveyed to the central core property. A manhole, located to the south of former Building 38, acted as an oil-water separator and was the location of clean-up efforts by NYSDEC.

NYSDEC Spill File #9006535

A PCB removal action occurred at the central core site in 1991. Environmental Products and Services, Inc., under contract with Mr. Gaetano, completed the removal of several transformers and capacitors containing PCB oils. Mr. Gaetano reported that this equipment was removed from the basement of former General Cable Building 50. The PCB materials were disposed of in a licensed facility. The record shows that the spill file has been closed.

Plumley Engineering P.C.

A Phase I environmental site assessment was completed for the site and its wider setting by Plumley Engineering P.C. on behalf of a potential private developer. The 1992 document "Draft Phase I Environmental Site Assessment of the former Rome Manufacturing Division of Revere Copper and Brass, Inc., and the former General Cable Corporation in the City of Rome, New York" noted a number of environmental concerns on the property. These included the presence or reported presence of underground storage tanks, stained floors and ground surfaces throughout the complex, 55-gallon drums containing liquids and piles of demolition debris. The locations of several underground storage tanks, located from historical Sanborn maps, could not be verified in the field.

Huntingdon/Empire Soils Investigations, Inc.

A number of investigations were performed by Empire Soils Investigations, Inc. in the southern area of the site, adjacent to the Barge Canal. The investigations were conducted to obtain engineering data in support of the construction of a proposed independent power generating facility. A Phase I, Phase II, a contaminant source investigation, and a geotechnical investigation and design were performed between 1990 and 1993 (Empire, 1990; Empire, 1991; Empire, 1993). The subsurface investigations found that chlorinated volatile organic compounds were present in the ground water at concentrations exceeding New York ground water standards. In addition, one soil sample from a set of eight samples obtained from borings at the site exceeded the TCLP limit for lead (100 mg/L as compared to the limit of 5 mg/L). It was believed that this TCLP lead result was either an erroneous laboratory result, or was due to inclusion of metal in the fill at that location. Testing of an additional soil sample from the same boring found that TCLP lead was below the method detection limit. Analysis of soil samples across this area south of the rod mill by Empire Soils found total lead concentrations ranging from non-detect up to a maximum of 553 mg/Kg. Empire performed a soil gas survey over the proposed plant site. The results of the survey indicated that volatile organic compounds were detected in two of 32 samples collected. Toluene and xylene were found at one location in concentrations of 63.6 and 76.4 $\mu g/m^3$, respectively and toluene was found at the detection limit of 50 $\mu g/m^3$ at a second location. The proposed power plant was not constructed due to financial and contractual considerations.

Remediation Technologies, Inc.

RETEC was contracted through the Saratoga Associates by the City of Rome and the Rome Industrial Development Corporation (RIDC) to provide environmental consulting and investigation services in support of the creation and development of the East Rome Business Park. As part of this work RETEC prepared an environmental overview of the entire 200-acre redevelopment area which included both a review of the hydrogeologic setting and the industrial history of the area (RETEC, 1995). This report contained a review of the history of the central core site and summarized the information from the previous investigations discussed above.

A limited Phase II investigation was performed by RETEC in support of the proposed Canterbury expansion project (described in Section 6.3 of this report). The investigation was comprised of a series of test pits where surface soil, subsurface soil and ground water samples were collected and analyzed. Samples were also obtained of sediment located in a tunnel which houses utilities in that area, connecting Building 38 and the Canterbury building to the former General Cable boiler house (Building 9). The results of the investigation were presented in a report to the Saratoga Associates (RETEC, 1996a). The findings were that concentrations of metals in soil in the study area were within typical background concentrations with the exception of copper. No organic compounds were found in ground water samples taken from the excavations for the test pits. A 2,000 gallon gasoline UST was located between Building 38 and Building 11 which was found to have released an unknown quantity of petroleum product to the surrounding soils.

In 1996 RETEC prepared a work plan for conducting a site-wide investigation of the central core site in order to provide the environmental data needed to plan the redevelopment of the site (RETEC, 1996b). This work plan, as discussed above in Section 1.1, was reviewed and approved by NYSDEC, and the field work was performed in December, 1996. The results of this investigation form the basis of the balance of this report.

3.0 INVESTIGATION PROCEDURES

This section provides a description of the methodologies used for conducting the field investigation of the central core area. A work plan, entitled "Work Plan for a Limited Subsurface Investigation To Support Commercial/Industrial Redevelopment of the Former General Cable Manufacturing Site, Rome, New York" (RETEC, 1996b) was prepared by RETEC and approved by NYSDEC to specify the locations to be investigated and the field and laboratory methods to be employed. The investigation included soil borings and soil sampling, monitoring well installation and ground water sampling, ambient air and soil gas sampling, and a survey and sampling of subsurface structures and utilities. The location and number of samples taken, along with the corresponding analytical parameters are presented in the following sections. Descriptions of all field activities conducted during the investigation are included by environmental media.

RETEC completed the field related tasks using two subcontractors. Parratt-Wolff Drilling of Syracuse, New York was contracted to provide drilling services during the soil boring, soil gas and monitoring well installation tasks. FLI Environmental Services of Waverly, New York, was contracted to complete the chemical analyses of the samples. FLI is certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program and the Analytical Services Protocol (ASP) program. To ensure the safety of the workers at the site, a site-specific health and safety plan (HASP) was created for the investigation and submitted to NYSDEC for review prior to initiation of field work.

3.1 Surface Soil Samples

3.1.1 Area Surface Soil Samples

Six area surface soil samples were collected around the periphery of the site. The objective of these samples was to provide information regarding the concentrations of chemicals of interest (COI) in surface soils (defined as the upper three inches of soil) in areas considered to be representative of the urban area surrounding the site. Area surface soil samples SS-1, SS-2, SS-3, SS-4, SS-5 and SS-6 were taken as grab samples from the locations shown in Figure 3-1. The locations of some of the samples differ slightly from the proposed locations shown in Figure 3-1 of the work plan; the revised locations were selected by Bruce Coulombe of RETEC and Peter

Ouderkirk of NYSDEC based on a field inspection of the site. The sampling method used for the surface soil samples is discussed in the following section. The samples were submitted to the laboratory for analysis of priority pollutant metals.

3.1.2 Site Surface Soil Samples

Three surface soil sample locations were strategically located across the site. The objective of these samples was to test for the presence of PCB compounds in areas which were known or suspected to have transformers or substations. Soil from two sample locations, SS7 and SS8, was collected as grab samples from a depth interval of between 0 to 0.3 feet below ground surface (bgs). At sample location SS7, a concrete slab was found under a crushed limestone gravel. The soil sample from this location was taken from the fine grained material associated with the gravel. One surface soil sample, SB-5(1-2), was taken during soil boring activities specifically to test for the presence of PCBs beneath the concrete floor slab at the location of the former machine shop in Building 11. The surface soil sampling locations are shown on Figure 3-1.

Surface soil samples were collected using a stainless-steel trowel. The trowel was used to clear brush, rocks or other debris from the sample area. The surface soil sample was then placed directly into laboratory provided containers, specific for each methodology. Sample jars were added to ice filled coolers and given directly to a representative of the laboratory following standard chain-of-custody procedures. The trowel was decontaminated following each use to prevent cross-contamination between sample locations. Procedures for decontamination are summarized in Section 3-11.

3.2 Soil Boring and Sampling Methods

A total of 22 soil borings were completed during the investigation. The objective of the borings was to provide information on COIs in subsurface soils, soil gas and ground water at former industrial process equipment locations and adjacent to subsurface structures or utilities. As specified in the work plan, the location of soil boring SB-9 was to be determined in the field. SB-9 was located in Building 11 following the discovery of a concrete underground storage tank (UST) containing an oil and water mixture. The soil boring locations are presented in Figure 3-2. Table 3-1 provides summary information related to the soil borings as well as the objective for sample collection at each location.

The soil borings were performed with a drilling rig utilizing the direct push drilling technique. At each of the soil boring locations it was necessary to use a 3-inch diameter air hammer to open a pilot hole through concrete slabs or asphalt pavement. A 2-foot long, 2-inch diameter split-spoon sampler was advanced through the borehole. The split-spoon sampler was pushed in 2-foot depth intervals inside of a temporary, 2.5 inch I.D. casing. Soil samples collected from each split-spoon were logged in the field by the RETEC geologist using the Unified Soil Classification System (USCS) and the Munsell color classification system. Throughout the logging of each boring, visual and olfactory observations of the soil and boring conditions were recorded. Soil samples retrieved from the borings were screened in the field for the presence of volatile organic vapors with a Hnu Model 1000 photo-ionization detector equipped with an 11.7eV calibrated to 100ppm isobutylene bulb using the "jar headspace" method. The results of the classification and field screening are provided on the soil boring logs in Appendix A.

The most impacted depth interval from each soil boring was selected by the RETEC geologist for chemical analysis at the laboratory. This sample selection technique results in a set of samples for analysis which is biased in that the site in reality will be less contaminated than indicated by the test results. The selection was based on visual and olfactory observations and Hnu readings. If no field observations of impacts were determined, the sample from the initial split-spoon sample beneath the concrete was sent to the laboratory for chemical analysis of volatile organic compounds (VOCs), semi-volatile polynuclear aromatic hydrocarbons (PAHs), and priority pollutant metals. Table 3-1 provides a summary of the analyses completed for each boring.

3.3 Soil Boring Ground Water Samples

A total of 20 ground water samples were collected from the completed soil borings via temporary well points. Each well point consisted of 10 feet of machine-slotted, 1-inch diameter well screen, with 0.010-inch slots, and a solid 1-inch diameter PVC riser. The well points were installed through the temporary casings which were left down-hole following soil sampling to prevent bore hole collapse. Following removal of the casing, a bentonite surface seal was installed around the PVC riser and hydrated to prevent surface water infiltration into the well point. Each well point was purged of at least three volumes of well water with a 3/4-inch PVC bailer and allowed to stabilize for at least four hours. A depth-to-water measurement was taken at each well point prior to sample collection. Samples of ground water were collected with the bailers and sent to the laboratory for analysis of VOCs and polycyclic aromatic hydrocarbons (PAHs).

3.4 Soil Gas Survey Samples

Two soil gas samples were collected in General Cable Building 11 (Figure 3-3). The objective of these samples was to determine whether the area adjacent to the reported subslab concrete process tanks was the source of chlorinated solvents at the site. The samples were collected in a boring advanced with the hydraulic probe drilling rig. The borings were advanced to approximately 2 feet above the water table elevation. A soil gas monitoring probe, constructed of small diameter (1-inch) PVC slotted screen, end caps and Tygon tubing, was placed in a bed of #0 Morie sand. The sand was extended to one foot above the probe. The remaining annular space was filled with hydrated bentonite chips to the ground surface to provide an air seal. One volume of the sample equipment (probe and tube) was purged with a calibrated pump. Each soil gas sample was then drawn into a Tedlar bag, placed in a cooler containing ice, and given directly to a representative of the laboratory following standard chain-of-custody procedures. Analysis of the soil gas for volatile organic compounds was completed according to USEPA Method 18 (modified).

3.5 Monitoring Well Installation

A total of four new monitoring wells (MW-14 to MW-17) were installed in the shallow aquifer at the site to determine the direction of ground water flow and the presence of COIs in the areas of interest. The locations of the wells are shown in Figure 3-2. Table 3-2 provides a construction summary for the wells.

The wells were completed in soil borings which were advanced with a truck-mounted rotary drilling rig. Continuous-flight hollow stem augers, with a 4.25-inch inner diameter advanced the borehole. Continuous samples were taken ahead of the augers with a 2-inch OD, 2-foot long split-spoon sampler. The split-spoon sampler was driven in two foot depth intervals utilizing a 140-pound hammer falling from a standard height of 30 inches. The number of blows per 6-inch increment was recorded according to ASTM D 1586-84 (Standard Penetration Test). The split-spoon sampler was decontaminated following each use according to procedures listed in Section 3-11. One soil sample from the most impacted split-spoon sample was sent to the laboratory for chemical analysis using procedures described in Section 3.2. As discussed before, this selection technique results in biased test results. The sample was analyzed in the laboratory for VOCs, PAHs and priority pollutant metals.

The monitoring well screens were placed to intercept the water table. Each well was constructed using 10 feet of machine-slotted, 2-inch diameter PVC well screen, with 0.010 inch slots. Blank, flush threaded schedule 40 PVC casing was attached to the screen and extended to ground surface. A sand pack was then installed around the length of the screen to 2-feet above the top of the screen. Grain size of the sand pack complemented the screen slot size (#0 Morie sand). A two foot thick, bentonite pellet subsurface seal was installed above the sand filter pack. Potable water was added to the bentonite and the seal was given a minimum of 24 hours to hydrate. A cement-bentonite grout mix was then placed to within 1-foot of ground surface. The wells were completed as flush-mount installations at ground surface with a steel protective cover, set into a cement surface seal. All wells were sealed with air-tight well caps locked with a case-hardened steel lock to provide security. Subsurface drilling logs, which include the well installation and construction diagrams, appear in Appendix A.

3.6 Well Development

All new and four of the existing monitoring wells were developed to remove fine-grained sediment and fluid residue from the sandpack, to create maximum well efficiency, and to increase hydraulic communication between the well and the adjacent soil formation. A surge and pump method was chosen as the most suitable for the wells. A 3-foot long, stainless-steel bailer was used to actively surge and agitate the water column by forcing water back-and-forth through the well screen. Approximately 20 well volumes were bailed from each well. Following surging, the wells were pumped with a submersible pump. A total of 50 well volumes were removed from wells MW-15, MW-17, MW-6S and MW-6D via pumping. Pumping was continued until turbidity was reduced to levels of less than 50 NTU and the field parameters of pH, temperature and conductivity had stabilized. Several well volumes of water were removed from wells MW-14, MW-16, MW-6S and MW-6D; however, subsurface conditions (i.e. slow recharge) made further pumping impractical and the wells were developed by bailing.

3.7 Ground Water Sampling

Following development, the wells were allowed to stabilize for a period of one week. On December 20, 1996, depth to water measurements were taken for both the new and existing wells. The measurements were obtained using an electric water level indicator probe to provide data for a ground water elevation map and to establish the volume of water to purge. The water level indicator was decontaminated following each use to ensure no cross-contamination occurred between wells. The wells were then purged of three volumes of well water using a submersible pump. Tubing used with the pump during purging was dedicated to each well. The field parameters of pH, temperature, conductivity and turbidity were recorded with each well volume purged. The objective of these field measurements was to collect analytical samples when the parameters had stabilized, ensuring a fresh sample of formation ground water. Monitoring wells MW-14, MW-16, MW-6S and MW-6D were found to have slow recharge and went dry during purging with the pump.

Samples of ground water were collected with disposable Teflon bailers. The wells which were purged to dryness were allowed to fully recover to their original depth to water measurement. No more than two hours time was allowed to elapse between purging and sampling to eliminate any potential loss of VOC in the samples. During sampling, turbidity levels for monitoring wells MW-14, MW-16, MW-6S and MW-6D remained in excess of 50 NTU. Samples from these wells were filtered to 0.45 microns for analysis of dissolved metals in addition to the analysis for total metals. All wells were sampled for VOC, PAH and total priority pollutant metals. The sample containers were placed into coolers containing ice and delivered directly to the laboratory by the RETEC geologist using standard chain-of-custody procedures.

3.8 Indoor Ambient Air Sampling

A total of three indoor ambient air samples were collected during the investigation. The objective of the samples was to provide a direct measurement of air quality in buildings which may be reoccupied by commercial workers. The samples were taken from a central location in the basements of the buildings listed below:

- sample A1 - Building 41;
- sample A2 - Building 50; and
- sample A3 - Building 33.

Ambient air sampling and analysis was performed for volatile and halogenated hydrocarbons according to NIOSH Method 1501/1003. The indoor ambient air samples were collected during an eight-hour work shift (one per day). A measured quantity of air was drawn through sample collection media via a pump. At the start of each shift the pump was calibrated by a RETEC environmental technician. The flow rate for the pump was checked periodically throughout the shift. At the conclusion of the shift, the ends of the tubes were sealed and placed in zip-lock bags in a cooler with ice packs and given directly to a representative of the laboratory following standard chain-of-custody procedures.

3.9 Subsurface Structure Survey and Sampling

A survey of subsurface structures and utilities was completed as part of the investigation. The objective of the survey was to identify the location and environmental condition of process related sumps, pits, utility tunnels, and manways associated with the storm water sewer system. The locations of the survey points were determined after a review of historical drawings and an extensive site reconnaissance by RETEC field personnel. A total of 75 locations were surveyed for visual and olfactory evidence of impacts and for the presence of organic vapors using an Hnu photoionization detector and explosive conditions using an explosimeter. Based on the initial field survey, 22 locations were selected by the RETEC field geologist for the collection of analytical samples. These samples were taken as biased samples from locations which had obvious or suspected signs of contamination.

At many of the sampling locations, health and safety practices prohibited the entry of the sampling personnel into confined spaces. When the sampling team could not directly place the samples of water, soil or sludge into the laboratory provided containers, a remote sampling tool was used. The tool consisted of an extendable pole to which a glass beaker was attached. The samples of water, sludge or soil were transferred directly from the beaker into the laboratory provided containers. The glass beaker was decontaminated or discarded between uses as necessary. To document the effectiveness of the decontamination procedures a rinse blank was taken for the glass beaker. The samples of water, sludge and soil were analyzed in the laboratory for VOCs, PAHs, priority pollutant metals and PCBs.

During the survey, the RETEC geologist identified two areas which contained a separate floating layer of light non-aqueous phase liquid (LNAPL). These areas included a utility tunnel adjacent to the former boiler house (Building 9) and a concrete UST in Building 11. Samples of the LNAPL were collected directly into glass jars and sent to RETEC's Pittsburgh Laboratory following standard chain-of custody procedures. The samples were analyzed using an infrared (IR) spectral technique. The objective of this analysis was to identify the LNAPL. The results of the analyses are presented in Section 5.3 and in Appendix D.

3.10 Decontamination Procedures

All downhole drilling equipment was steam-cleaned between borings. The rear of the drilling rig was steam-cleaned when necessary as determined by the field geologist between borings. All soil sampling equipment utilized by the field geologist (split-spoons, knives, glass beakers etc.) was decontaminated in accordance with specifications provided in the work plan. In general, the decontamination sequence consisted of the following steps:

- removal of soil by brushing wiping, etc.;
- potable water and Alconox (detergent) solution wash;
- distilled water rinse;
- nitric acid solution rinse;
- reagent grade methanol rinse;
- reagent grade hexane rinse;
- final distilled water (laboratory provided) rinse.

The field decontamination procedure for monitoring well development, depth to water measurements, well purging, ground water sampling equipment and subsurface utility samplers was similar to the procedures listed above. To demonstrate the efficiency of the decontamination procedures, several rinse blanks were collected. The results of the analyses are presented in Section 6.4.

3.11 Waste Management

Fluids generated during the decontamination of drilling equipment were containerized on a decontamination pad consisting of a bermed area which was lined with a plastic sheeting liner. Well development and well purge water was containerized and temporarily stored on site in 55-gallon drums. All of the water generated during these tasks was examined for visual and olfactory signs of contamination and for the presence of organic vapors using the Hnu. No visual signs of contamination were observed and the fluids were discharged directly to the ground surface.

Drill cuttings generated during the installation of monitoring wells were containerized into 55-gallon drums and temporarily stored on the site. The RETEC geologist completed a characterization of the soils based on visual, olfactory and Hnu measurements. No evidence of contamination was observed in the soil based on these observations or measurements, and with the consent of the on-site NYSDEC representative the soil was spread on the ground surface (adjacent to the south end of Building 38). Personal protective equipment and the plastic sheeting used to construct the decontamination pad were disposed of by double-bagging and landfilling.

3.12 Survey

A survey of the site was completed by LaFave, White & McGivern Surveyors of Booneville, New York under contract to the Saratoga Associates. The results of the survey included reference points with elevations which were tied into the United States Geological Survey Mean Sea Level datum of 1929. These reference points were used by RETEC to obtain the elevations of the ground surface for each soil boring location and the ground surface, top of outer casing and top of inner casing for each of the new and exiting monitoring wells. The survey data generated by the RETEC site survey are presented in Table 3-2 and on the boring logs in Appendix A.

4.0 SITE PHYSICAL CONDITIONS

This section presents a summary of measurements and observations of the physical environment at the central core area of the East Rome Business Park site, including both the geology and hydrogeology of the site and the man-made structures. This evaluation is based on the examination of surface conditions, soil borings, monitoring well installations, and a survey of subsurface structures and utilities.

4.1 General Geologic Overview

The East Rome Business Park is located in the western Mohawk River valley of the Hudson-Mohawk Lowlands physiographic province of New York State. The lowland is formed by the Appalachian Plateau to the south, and by the Adirondack Region to the north. The site is situated in the river valley and floodplain of the Mohawk River, and as such, is characterized by low relief with elevations across the site varying by less than ten feet. The regional drainage pattern in the vicinity of the site has been modified by the diversion of the Mohawk River and the construction of the Barge Canal which is located to the south of the site.

The Business Park is underlain by a sequence of unconsolidated sediment layers, having a total thickness of approximately 100 feet, which fills a shale and siltstone bedrock valley. This material is a combination of glacial outwash sediments and post-glacial alluvial sediments which have filled a trough of the Mohawk River (Casey and Reynolds, 1989). The sediments, from top to bottom, are composed of industrial fill, alluvial deposits, lacustrine sand and a basal till emplaced on the bedrock (RETEC, 1995). Soil boring logs from previous site investigations show that a silt-clay unit is also present at approximately 50-60 feet below the ground surface (Atlantic, 1993; Empire Soils, 1991). Surface water and ground water at the site flows generally to the south to the Barge Canal (Empire Soils, 1993).

4.2 Description of Site Stratigraphy

Two stratigraphic units were identified during this drilling program. The uppermost unit consists of fill which was common to all the soil borings and well installations. In general, the fill was thicker towards the north end of the site, ranging from 2 feet at SB-3 to greater than 13 feet thick in the area of SB18. The fill material varies in composition, but is generally a gray clayey silt containing varying amounts of angular and rounded rock fragments, brick fragments, cinders and slag fragments, wood, glass and other debris. This silt material also comprised the native soil material encountered in many of the borings. The occurrence of this silt in both the fill material and in the native undisturbed soil made a determination of the base of the fill difficult in many instances.

Underlying the fill material was a heterogeneous mixture of fluvial sediments which is comprised of discontinuous beds of near-shore sediments, primarily clayey silt, silty sand and gravel. In the area of the upgradient well MW-17 the sediments are comprised entirely of sand. In several of the soil borings (SB-3, SB-5 and SB-8) the sediments are comprised entirely of clayey silt. In general, most borings contained a mixture of these soil types and as such, show a wide range of grain size. Examination of the boring logs reveal that the only unit which is consistent across the site was the fill unit.

4.3 Site Hydrogeology

Detailed information regarding the site hydrogeology was obtained during the soil boring and monitoring well investigation. The depth to water was defined by four new monitoring wells and four of the existing wells. Depth to water measurements were also taken at all the temporary well points installed in the soil borings. In general, the soil boring measurements confirmed the potentiometric measurements obtained from the wells; however, the soil boring data were not used in the interpretation of water table conditions. A complete round of depth-to-water measurements was collected prior to ground water sampling on December 20, 1996. Similar results were obtained during a second round of measurements collected on January 15, 1997 (Table 3-2). The results of the December 20, 1996 measurements have been used to map the potentiomentic surface of the water table (Figure 4-1). The arrows shown at right angles to the ground water contours represent the inferred direction of the ground water flow at that location.

In most locations it was found that the water table was in the fluvial soils beneath the fill unit. The depth-to-water below the ground surface ranged from 6 feet at well MW-17 along Railroad Street to 16 feet below the ground surface at MW-6S between the rod mill and the canal. The surface of the water table sloped towards the canal at all locations with the site. This direction of flow to the south is consistent with previous site studies conducted by Empire Soils (Empire,1993) and the United States Geologic Survey (Reynolds, 1990). Based on this water table map the average horizontal gradient across the site was calculated to be 0.0065 feet/foot.

Two pairs of monitoring wells from the Empire Soils investigation in the area south of the rod mill were used to assess the vertical hydraulic gradient. Both well pairs MW-6S/MW-6D and MW-13S/MW-13D, show an upward gradient from the deeper wells to the shallow portion of the aquifer. This finding is consistent with the geologic setting of the site and confirms the investigation results of Empire Soils (1993).

4.4 Soil Sampling and Field Observations

During the drilling and soil sampling program the field geologist made several types of observations to characterize the condition of the subsurface materials at the site. The observations recorded included odors, visual staining, sheens and the presence of non-aqueous phase liquids (NAPLs). In addition, jar headspace measurements were taken with a Hnu photo-ionization detector. The field observations and Hnu measurements are recorded on the boring logs which are provided in Appendix A.

Of the 22 direct push soil borings and four monitoring well installation borings, six produced one or more soil samples that had visual or olfactory evidence of impact. Table 4-1 identifies these samples and the generalized depth range over which the impact was noted and the type of odor or impact observed. All six of these borings appeared to be impacted by petroleum products. The impacted soils were generally found below the fill in the heterogenous fluvial soils in each of the borings. The impacts were observed to be slightly above the elevation of the water table in the borings.

4.5 Ground Water Sampling

A field assessment of ground water conditions was made in from samples from each of the soil and monitoring well borings. Visual evidence of contamination was observed in ground water samples collected from five of the temporary well points installed into the soil borings. At boring locations SB-1, SB-2, SB-9, SB-12 and SB-16 an oily sheen was observed during both purging and sample collection. A slight hydrocarbon odor was observed during sampling of SB-8; however, no sheen or other evidence of contamination was observed. No visual or olfactory evidence of impacts was noted for the remaining well points.

A field assessment was also made of the ground water recovered during purging and sampling of the monitoring wells. Of the eight wells that were sampled, only one monitoring well showed evidence of contamination. A slight hydrocarbon odor and sheen was observed during purging of MW-14 prior to ground water sampling; however, the sheen was not observed in the actual sample. No visual or olfactory evidence of contamination was observed in the ground water samples taken from any of the remaining wells.

4.6 Subsurface Structure and Utility Survey Results - Utility Tunnels

Two areas which contain extensive subsurface utility tunnels are present at the site. These areas are designated here as the northern and southern areas. A description of each system, and a summary of the environmental concerns for each is presented in the following sections. Table 4-2 provides a summary of the investigation of the field characteristics and laboratory results for each tunnel sampling point.

4.6.1 Utility Tunnel System - Northern Area

The northern utility tunnel is a subfloor structure which houses active and inactive utility lines in the subfloor of former Buildings 6 and 22 and in the area north of existing Building 50. Active utilities include the storm sewer, former process and floor drain systems. Inactive utilities include water, steam and natural gas supply lines. The main tunnel runs from the basement of Building 39 to the north end of former Building 2. Side branches of the tunnel run to the west to former Building 22 and to the east to the area north of Building 50 (Figure 2-2).

The main tunnel is approximately 5 feet deep (depth of the floor below the ground surface), 8 feet wide, with an overall length of 800 feet. The tunnel is constructed of concrete walls and floors and is capped by the concrete floor slabs of the buildings above. Steel plates or manholes provide access to the tunnel in strategic locations. Where these plates are missing, current demolition activities have filled parts of tunnel with demolition debris. The floor of most of the tunnel system is covered by soil. The soil thickness was found to vary throughout the tunnel; however, an average depth of soil was estimated at 12 inches. Based on visual and olfactory observations, the soil was not grossly contaminated. No standing water was found in the tunnel system. The storm and process drain system is still intact and surface water which collects in the system from precipitation is discharged via an 18 inch pipe into a sump in Building 39 (RETEC sample location U39-3). The water from this sump is discharged by a pipe running to the west from Building 39 which joins the north-south storm sewer system leading to the canal.

Associated with the tunnel system are approximately 800 feet of "feeder" trenches. These trenches house supply lines for inactive utilities (water, steam, etc.) and process drains connecting former equipment locations in Buildings 6, 1, 2, 3 and 22 with the storm sewer in the main branch of the utility tunnel. The size and construction of the trench system varies widely throughout the area. During the investigation, all accessible manholes were opened and inspected. As with the tunnel manholes, recent demolition activities have filled the trench openings where manhole covers were missing. No visible signs of gross contamination was observed; however, a recent fire in the area of former Buildings 1, 2, 3, and 22 made olfactory observations difficult at some locations.

4.6.2 Utility Tunnel System - Southern Area

The utility tunnel system in the southern area consists of three separate tunnels (Figure 3-1). One tunnel connects Building 32 (Canterbury Printing), Building 38 and Building 11 with the boiler house (Building 9). A second tunnel system connects Building 34 (Mosca Brothers Moving and Storage Warehouse), and Building 13 with the boiler house. A third tunnel connects Building 34 directly with Building 33.

The tunnel from Building 32 to Building 9 is approximately 500 feet long, 8 feet wide and 12 feet deep. The walls, floor and ceiling of the tunnel are constructed of poured concrete. The ceiling cap of the tunnel is continuous with the concrete slab that covers ground surface in the area. The tunnel contains piping for several utilities including active water lines for fire protection for Canterbury Printing and inactive water, natural gas and steam lines. Portions of the tunnel contain piping which connects the former oil storage tank adjacent to the canal to the boiler house. The tunnel floor is covered with a petroleum sludge which ranges in thickness up to 1 foot in depth. Water flows in the floor of the tunnel from the direction of Building 32 to the boiler house. The amount of surface water in the tunnel was observed by RETEC field personnel to vary with the amount of precipitation at the site. The water in the tunnel was observed to directly recharge the standing water in the boiler house foundation. During the investigation, LNAPL was observed in the tunnel, adjacent to the boiler house (RETEC sampling location U9-5) and in the standing water in the boiler house foundation.

The tunnel which connects Building 34 and Building 13 to the boiler house is approximately 500 feet long, 12 feet deep and 8 feet wide. The tunnel is currently sealed with concrete blocks where it joins with Building 34. Access to the tunnel was limited to a manhole in Building 13 and a manhole in the tunnel outside of the boiler house. No visual or olfactory evidence of contamination was observed in the tunnel inside of Building 13. A 6 to 12 inch thick hydrocarbon sludge was sampled from the tunnel adjacent to its junction with the boiler house (U9-7). No water was observed in the tunnel at any of the access points located by RETEC.

A separate tunnel connects Building 34 directly to Building 33. This tunnel was constructed for the purpose of moving materials between the buildings and contains no utility piping. The tunnel is approximately 220 feet long, 10 feet wide and 8 feet high. The tunnel is constructed of poured concrete. A concrete block wall has been erected to seal the tunnel where it enters Building 34. At the time of the investigation, approximately 1 foot of water was observed in the tunnel floor. No visual or olfactory evidence of contamination was observed in the water in the tunnel.

4.7 Subsurface Structure and Utility Survey Results - Property Summaries

This section provides a summary of the field observations and testing, and laboratory results for process support features such as tanks, sumps, process vaults and the storm sewer system observed by RETEC during the investigation. The locations for these are shown on Figure 2-3 for the entire site, and on individual maps for each parcel (Figures 4-2 to 4-6). The results, summarized in Table 4-2, are discussed in the following sections by the parcels to be created by subdivision of the site. This discussion addresses the site in five parcels. The actual number of subdivided parcels will be seven because the fifth parcel discussed here, the Railroad Street Site, will be divided into three parcels.

Most of the features found in the subsurface survey could be divided into one of three systems: the tunnel system (described in Section 4.6), the storm sewer system, and discrete or local process support systems (sumps, tanks, etc.). The storm sewer system is the most complex of these systems. This system at the central core area services not only the Gaetano property, but that of the adjacent former General Cable properties and more distant commercial/industrial properties to the north of Railroad Street. Thus, impacts to the storm sewer system observed on the central core property can be due to off-site releases (such as Spill 8402290, described in Section 2.2 above). The storm sewer system can be roughly divided into two parts: the shallow collection system, which includes storm and roof drains, and a deeper transport system which collects the drainage from each area and transfers the water to a set of three outfalls at the Barge Canal. The deeper system may be below the water table at places within the core area and thus have an impact on groundwater flow.

4.7.1 Pecoraro Site

The investigation of subsurface utilities and process structures on the Pecoraro site (Figure 4-2) included the storm sewer system, process test bath structures, and Building 41 floor and roof drain sumps. An active 15-inch storm sewer system beneath Building 41 collects surface water from drains in the north (former Building 37) and from the west (Building 50) and from a surface run-off catch basin outside of Building 41 to the south (U41-2). The storm water system also collects water from the roof drains (U41-4) and floor drain systems in Building 41. The collected water then discharges to a 30-inch line located south of Building 41. Visual and olfactory evidence of contamination in the storm sewer system was found only at sample location U41-1, where a hydrocarbon sheen was observed. The results of the chemical analysis of water in U41-1 indicate that no organics or PCBs were detected; metals detected in this sample were all below surface and drinking water standards.

Three process test baths are located in Building 50. The baths are constructed of poured concrete and are approximately 20 feet long, 16 feet wide and 12 deep. The foundations of the baths are visible in the basement of Building 50. An inspection of the foundations of the test baths indicate that the structures are intact and no signs of leakage were noted. Each of the bath structures is currently filled with construction debris and standing water. A sample of sludge was not available from the test baths. A laboratory sample was collected from the standing water in test bath (U50-6). The results of the analyses indicate that there were no significant concentrations of organic or metal COIs. PCB 1260 was detected in a concentration of 11.2 μg/L.

4.7.2 Canterbury Expansion Site

As shown in Figure 4-3, the Canterbury Expansion site consists of two separate parcels. On the eastern parcel, the most notable subsurface structure is the southern utility tunnel. As previously described, the tunnel contains both active and inactive utilities and a layer of hydrocarbon sludge on the tunnel floor. Chemical analysis of the sludge (U38-6) indicated that PCB 1260 is present in the tunnel at a concentration of 130.0 mg/Kg, a concentration which is greater than the TSCA standard of 50 mg/Kg. Additional subsurface structures include a subsurface utility vault (U38-2) containing inactive gas, water and steam lines which connect Building 38 to 11. No visible or olfactory evidence of contamination was observed at this location.

The western parcel of the site consists of a portion of the Mosca Brothers Moving & Storage Garage grounds. During the investigation, RETEC confirmed the presence of an underground storage tank containing fuel oil. The tank is located immediately to the north of the building garage. According to employees of Mosca Brothers, the tank capacity is 175 gallons of fuel oil. Active utilities located during the underground facilities protection organization (UFPO) meeting held in this area include a water and gas line in the Mill Street right-of-way.

4.7.3 City Roadway Right-of-Way

The proposed City Roadway property is shown in Figure 4-4. RETEC, in conjunction with Niagara Mohawk Power Company and the City of Rome Water and Sewer Department, located several active utilities in the roadway area during a UFPO utility clearance. Active utilities are found at both the north (Railroad Street) and west (Mill Street) ends of the roadway area. At the north end, active gas and water mains and sanitary and storm sewers are present in the Railroad Street right-of-way. In the western end of the roadway, active utilities include gas and water lines which were located on the Mosca Brothers Moving and Storage Garage grounds in the Mill Street right of-way.

One active sanitary sewer line crosses the roadway in the northern portion of the area. RETEC was unable to determine the condition of the sewer system due to the presence of debris in the manhole (U22-1). According to historical drawings, the sanitary sewer flows from the direction of the former Rome Manufacturing Company Building (Rossi Building) to the current building occupied by Serway to the east.

Active storm sewers in the roadway right-of-way are found in two areas. At the southern end of Building 38, the storm sewer system collects surface run-off into a shallow system of storm drains around Building 38 and then discharges water into a deeper (12 feet deep) system of drains. The deeper system also collects water from the north (Canterbury Printing property) and discharges via a 20-inch line which runs beneath Building 11 and then to the canal. An inspection of the environmental condition of this storm sewer system indicated that visual and olfactory evidence of contamination was limited to the shallow system. Samples U38-2 and U38-8 were taken from hydrocarbon impacted sludge/soil which had collected in the shallow manholes. Chemical analysis of sludge from these locations indicate that PCBs were present in concentrations which ranged from 35.0 mg/Kg (U38-2) to 75.0 mg/Kg (U38-8). Elevated lead concentrations were detected in U38-2 (830 mg/Kg) and U38-8 (6290 mg/Kg).

An active storm sewer system was found in the central area of the roadway around the boiler house (Building 9). This system consists of two branches which meet in a manhole at the north end of Building 53 and then flow to the canal. A 24-inch line collects water from the north (Nash Metal Works site) and west (Canterbury property) at sampling point U9-1, and flows to the east to Building 53. During the inspection of this branch, a hydrocarbon sheen was found on the water at sample location U9-1. Chemical analysis of water from this location indicated that no organics or PCBs were detected and that metals were below surface and groundwater standards.

The second branch in this area is found along the east side of the boiler house where a 24 inch storm sewer system line carries water to the manhole at the end of Building 53. This branch collects water from the northern area of the roadway including the area of the Rossi Building and Building 39. No visible or olfactory evidence of contamination was found in the water in this branch of the storm sewer. Chemical analysis of the water in this system was completed at a down stream location (U13-4). The results indicated that no significant concentrations of COIs were detected.

The Roadway area includes the boiler house (Building 9). As previously discussed, the foundation of this building was found to be acting as a sump which collects surface water from the utility tunnel to the west. Approximately ten percent of the standing water in the foundation was covered with LNAPL. Sample U9-8 was taken from the standing water in the foundation. The results of the chemical analysis of this sample indicated that no organics or PCBs were detected, and that metals were below surface and drinking water standards. No outlet for this water could be located in the field or on the historic site plans.

A main subsurface feature in the roadway area is the previously described southern utility tunnel system in the area of the boiler house. During the investigation, RETEC sampled the tunnel system in three places. Sample U9-5 was a water sample in the tunnel immediately adjacent to the boiler house. Results of the chemical analyses of this sample indicate that low levels of PAHs were present. The method detection limits for the analysis of VOCs were elevated due to the presence of a 3-inch layer of LNAPL on the water. The results of IR spectral analysis of the LNAPL, completed by RETEC's Pittsburgh laboratory, indicated that the LNAPL is No. 6 fuel oil or the "heavy ends" of a No. 2 fuel oil. Sample U9-7 was collected from a layer of sludge in the utility tunnel between the boiler house and Building 13. Significant concentrations of COIs in the sample include PCB 1260 in a concentration of 36.0 mg/Kg and lead in concentration of 960 mg/Kg. Sample U9-4 was collected from the sludge in the tunnel at the north end of Building 11. The results of the analyses indicate that concentrations of PCB 1260 (85.0 mg/Kg) were elevated above the TSCA standard of 50 mg/Kg. Concentrations of lead were found at 979 mg/Kg.

Three electrical utility vault access manholes were investigated in the roadway area. Two of the vaults were located in Building 11 (U11-7 and U11-8). A third electrical vault was located outside of the north end of Building 11. All three of the utility vaults were filled with standing water. No visual or olfactory evidence of contamination was found to be associated with the electrical utility tunnel system.

4.7.4 Rod Mill Property

As shown in Figure 4-5, the Rod Mill Property is comprised of sections of Building 11, Building 13 and the area to the south of these buildings up to the Barge Canal right-of-way. Subsurface utilities investigated by RETEC include several process sumps, trenches and tanks and the storm sewer system connecting the site to the canal. Areas of the previously described southern utility tunnel connecting Building 34 and 13 to the boiler house are also included in this area.

The storm sewer system in the Rod Mill Property consists of a series of shallow catch basins, former process drains and roof drains which drain into a deeper (12 to 14 feet deep) sewer system which then discharges to outfalls at the canal. Ten manholes and two canal outfall locations in the storm system inside of Building 11 and to the south and east of Building 13 were located by RETEC during the investigation. Two laboratory samples were collected from the storm sewer system as a result of the field characterization. Water at U13-4 was found to contain a slight hydrocarbon sheen. Water from U11-5 had a slight petroleum odor. Results of the chemical analysis for each of these samples indicate that trace (less than 1 ppb) levels of PCB 1260 were present, and all volatile or semivolatile organics were below the method qualification limits.

The floor in Building 11 contains numerous concrete process vaults. No visual or olfactory evidence of contamination were found in the subfloor vaults in the central area of Building 11 including sample locations U11-10, U11-4 and U11-9. At sample location U11-1, an underground storage sump was found to contain approximately 100 gallons of LNAPL and 700 gallons of water. Infrared (IR) spectral analysis of the LNAPL indicated the presence of a lubricating or cutting oil. At sample location U11-2, a similar sump was found which contained water and traces of a hydrocarbon sheen. A sample of the standing water in the sump was sent to the laboratory for chemical analysis. The results indicated that no significant concentrations of COIs were detected.

A concrete process sump or foundation in Building 13 was located during this investigation (U13-1). No reference to this structure was included in the available historical drawings of the General Cable facility and its function is unknown. The sump is constructed of poured concrete and is approximately 25 feet long, 20 feet wide and 15 feet deep and contains standing water and several feet of sludge at its base. A wood-frame floor which originally covered the sump has partially collapsed into the sump. No visual evidence of contamination was observed in the standing water. The laboratory sample from this location was taken from the sludge at the base of the sump. Results of the chemical analysis indicate that PCB 1260 is present in a concentration of 1,020 mg/Kg; lead was found in concentration of 825 mg/Kg.

4.7.5 Railroad Street Site

This parcel will be divided into three subdivisions during redevelopment. It is discussed as one parcel since the three subdivisions are contiguous and there is no particular defining characteristic of the three with respect to this study.

Subsurface structures and utilities in the Railroad Street site (Figure 4-6) consist of a sanitary sewer line, the northern utility tunnel and trench drain system, process subfloor vaults and basement floor and roof drain sumps. The sanitary sewer line which crosses the site from west to east is a continuation of the sanitary line previously described in the City Roadway summary. A very low flow rate (less than 1 gpm) was observed in the sanitary sewer at the time of the investigation. A laboratory sample was collected from the sample location U37-1 and analyzed for VOCs only. The results of the analysis indicated that no volatile organic COIs were detected.

The storm sewer system in the northern utility tunnel and trench system flows into a sump in the basement of Building 39. At sample location U39-3, the discharge water was observed to have a odor; however, no sheen was detected. The results of the chemical analysis of this sample indicated that no significant concentrations of COIs were detected at this location. From the sump the storm sewer system consists of an 18-inch line beneath the floor of the basement of Buildings 39 with subsequent discharge to the storm sewer adjacent to Building 9. Additional water flows into the sewer system from roof drains and floor sumps in both Building 39 and 33. A portion of this water drains to the sewer line to the west, adjacent to Building 9. The remaining floor drains in Building 33 discharge to the manhole at the north end of Building 53. Black sludge accumulations were found in two of the floor sumps (U33-1 and U33-2). A laboratory sample was collected from the sludge at sample location U33-1. The results of the analyses indicate that there were no significant concentrations of organic COIs. PCB 1260 was detected in an concentration of 30.9 mg/Kg. The results for metal analyses include elevated lead concentrations (3,420 mg/Kg) and the presence of antimony (162 mg/Kg).

A main subsurface feature in the Railroad Street site is the northern utility tunnel. Two laboratory samples were collected from soil in the tunnel floor during the investigation. Samples U1-1 and U6-1 contained lead in concentrations of 1,100 mg/Kg and 610 mg/Kg, respectively. No significant concentrations of organic COIs were detected in the samples. PCB 1260 was found in a concentration of 5.4 mg/Kg in sample U1-1.

In addition to the northern utility tunnel, the concrete floors of former Buildings 1, 2, 3, 6, 37 and 50 contain several subfloor process vaults. Several of these vaults are now filled with recent construction debris. Visual evidence of hydrocarbon contamination was found at sample location U37-2 which was a concrete vault approximately 20 feet long, 10 feet wide and 6 feet deep. A 12 inch thick accumulation of sludge and grease was found on the vault floor. Chemical analysis of the sludge found an elevated lead concentration (5,730 mg/Kg) and the presence of antimony (10.4 mg/Kg). No significant concentrations of PAHs or PCBs were found. The VOCs, toluene and xylene were found at concentrations of 1.4 mg/Kg and 1.9 mg/Kg, respectively. The chemical analysis of soil from the subfloor vault at sample location U50-4 indicate that there were no significant concentrations of COIs detected.

5.0 ANALYTICAL RESULTS

This section presents the analytical results of soil, ground water, soil gas, and building air samples collected during the investigation of the East Rome Business Park central core area. The laboratory reports which provide the results of the analyses are presented as Appendix E, which is bound under a separate cover. Summary tables of the results are presented in Appendix B.

The analytical results for surface and subsurface soil are compared to NYSDEC concentrations listed in TAGM HWR-94-4046 - *Determination of Soil Cleanup Objectives and Cleanup Levels* (January, 1994). This comparison is performed to screen out soil test results that can be considered to be below concern. The TAGM criteria are focused toward residential or pre-development concentration levels. However, the site is intended for "brownfield" industrial/commercial redevelopment rather than residential use, therefore, an additional step of evaluation of risk based on industrial/commercial site use must be made as part of the final selection of remedial alternatives. The results of the analysis of ground water are compared to NYSDEC Division of Water - *Ambient Water Quality Standards and Guidance Values* (October, 1993).

5.1 Surface Soils

A total of nine surface soil samples were collected during the investigation. The sampling locations are shown on Figure 3-1. Six of these were area surface soil samples (SS1 to SS6). Three samples were collected from onsite sample locations including SS7, SS8 and SB5(1-2). The area surface soil samples were submitted to the laboratory for analysis of priority pollutant metals. The onsite surface soil samples were submitted for PCB analysis. Analytical results for the compounds detected in the surface soil samples are presented in Table B-1.

5.1.1 Area Surface Soil - Priority Pollutant Metals Analysis

Six surface soils (SS1 through SS6) were collected as grab samples from the surrounding area outside the site, and submitted to the laboratory for analysis of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc. All of the area surface soils were collected from a depth interval of between 0 and 0.3 feet bgs.

Antimony was detected in four out of six samples, including SS2, SS3, SS4, and SS6. The concentrations ranged from 3.9 mg/Kg to 17.2 mg/Kg in SS6 and SS4, respectively. No level for antimony is listed for eastern USA background concentrations in TAGM 4046.

Arsenic was detected in samples SS1, SS2, SS4, SS5 and SS6 in concentrations that ranged from 2.2 mg/Kg in SS1 and SS5 to 50.7 mg/Kg in sample SS2. Arsenic was not detected in concentrations above the method detection limits at sample location SS3. Only sample SS2 contained arsenic in concentrations greater than the TAGM background range for New York State soil of between 3 and 12 mg/Kg.

Beryllium was detected in samples SS1, SS4, SS5 and SS6 in concentrations which ranged from 0.245 mg/Kg in SS5 to 0.535 mg/Kg in SS6. These values are well within the TAGM background range for eastern USA soils of between 0 to 1.75 mg/Kg.

Cadmium was detected in three out of the six surface soil samples. Concentrations of cadmium ranged from 1.1 mg/Kg (SS2) to 1.8 mg/Kg (SS6). All cadmium detections were slightly elevated over TAGM background levels of between 0.1 to 1.0 mg/Kg.

Chromium was detected in all six of the area surface soil samples. The concentrations ranged from 6.71 mg/Kg in SS5 to 16.2 mg/Kg in SS6. These concentrations fall within the TAGM New York State background range of between 1.5 to 40 mg/Kg.

Copper was detected in all six of the area surface soil samples in concentrations which ranged from 32.2 mg/Kg (SS5) to 2,320 mg/Kg (SS6). Soil from sample locations SS1, SS2, SS3, SS4, and SS6 were elevated above the TAGM background concentrations range for eastern USA soils of between 1 to 50 mg/Kg.

Lead was detected in all six area surface soil samples. The highest lead concentration was 1,190 mg/Kg at sample location SS6. Only SS6 exhibited lead concentrations which were greater than the TAGM background levels for metropolitan or suburban areas or near highways of New York State of between 200-500 mg/Kg.

Concentrations of mercury, nickel, selenium, silver and thallium were found to be below the method detection limits or below the TAGM background ranges for eastern USA soils with one exception. Nickel was found in SS6 in a concentration of 26.9 mg/Kg, a concentration slightly greater than the TAGM background range of 0.5 to 25 mg/Kg.

Zinc was detected in all six area surface soil samples in concentrations greater than the TAGM background ranges for Eastern US soils of between 9 and 50 mg/Kg. Concentrations ranged from 52.5 mg/Kg at SS5 to 1,260 mg/Kg in soil from sample location SS6.

5.1.2 Site Surface Soil - PCB Analysis

No PCB compounds were detected in concentrations greater than the method detection limits at sample location SB5(1-2). This sampling location was selected to test for the presence of PCB compounds in the soil beneath the concrete floor of the machine shop in Building 11. One PCB compound was detected in each of the two additional surface soil samples, taken at former transformer sites: PCB 1260 was detected at a concentration of 1.3 mg/Kg at SS7, a former transformer stand north of the rod mill building, and at a concentration of 7.8 mg/Kg in sample SS8 beneath a substation located between the boiler house and Building 39.

5.2 Subsurface Soils

Subsurface soil samples were obtained from each of the twenty direct push soil borings and from each of the four monitoring well borings completed during the investigation. The results of the soil sampling and analyses are presented in terms of sampling depth. The subsurface soil samples sent to the laboratory represent the most visually impacted samples within the boring as determined by the RETEC geologist. If no evidence of visual contamination was present, the sample represents material immediately below the concrete or asphalt surface which was encountered at all boring locations. All subsurface soil samples were analyzed for VOC, PAH and priority pollutant metals. Seven subsurface soils were analyzed for total organic carbon (TOC). Two subsurface soil samples were analyzed for PCB compounds. The results of the analyses are provided in Table B-2 in Appendix B.

5.2.1 Subsurface Soil - VOC Analysis

Fourteen out of twenty four subsurface soil samples contained detectable levels of volatile organic compounds. The VOCs detected included acetone, methylene chloride, ethylbenzene, xylenes, carbon disulfide, benzene, 1,1-dichloroethene, trichloroethene, toluene, chlorobenzene, and chloroform.

Acetone concentrations were the highest of any of the individual VOCs detected in the subsurface soil samples. Acetone concentrations ranged from 84 µg/Kg to 280 µg/Kg in samples MW16(1-1.3) and SB11(0.5-1), respectively. With the exception of SB11(0.5-1), acetone concentrations were below the TAGM recommended soil cleanup objective concentration of 200 µg/Kg. Acetone is a common laboratory contaminant, and it is believed not to be present at this site.

BTEX compounds were detected in two of the twenty four subsurface soil samples. Benzene was detected in SB3(2-4) in a concentration of 19 µg/Kg. Toluene was detected in SB3(2-4) in a concentration of 22 µg/Kg. Ethylbenzene was detected in SB1(10-12) in a concentration of 110 µg/Kg. Total xylene concentration in SB1(10-12) was 186 µg/Kg. Source of ethylbenzene and xylene at SB1 is attributed to a petroleum spill from the oil storage tank at that location. All concentrations of BTEX compounds in the subsurface soil samples were found to be less than the TAGM recommended soil cleanup objective concentrations.

Ten of twenty four subsurface soil samples contained detectable concentrations of methylene chloride. Concentrations ranged from 6 µg/Kg in SB17(3-5) to 29 µg/Kg in SB14(3-4). All detected concentrations of methylene chloride were found to be below TAGM recommended soil cleanup objective concentrations. The presence of methylene chloride was not detected in the trip blanks, however, methylene chloride is a common laboratory chemical used during sample extraction and analyses. The presence of this compound in the soil samples is attributed to laboratory contamination.

Carbon disulfide was detected in SB3(2-4), SB10(2-4) and SB11(0.5-1). Concentrations of this compound were all well below the TAGM recommended cleanup objective concentration of 2,700 µg/Kg. Carbon disulfide is also a common laboratory chemical and the presence of this compound in the soil samples is also attributed to laboratory contamination.

Subsurface soil sample SB3(2-4) contained concentrations of 1, 1-dichloroethene (21 µg/Kg), trichloroethene (19 µg/Kg) and chlorobenzene (13 µg/Kg). The concentrations of these compounds were below TAGM recommended soil cleanup objective concentrations.

Chloroform was detected in SB13(3-5) in a concentration of 18 µg/Kg. This concentration is below the TAGM recommended cleanup objective concentration of 300 mg/Kg. The presence of this compound is also attributed to laboratory contamination.

5.2.2 Subsurface Soil - PAH Analysis

Twenty six soil samples were submitted for the analyses of PAH compounds. The samples included two field replicates. The results of the PAH analyses are provided in Table B-2, Appendix B. The results indicate that PAHs were detected in nine of the twenty six samples submitted for analyses. Total detected PAH concentration results ranged from 2.12 mg/Kg at sample location SB2(16-18) at the former oil pump house location, to 99.7 mg/Kg for sample MW14(0-0.3) at the underground storage tank adjacent to the rod mill. Concentrations of PAHs exceeding the TAGM recommended cleanup objectives were found at boring locations MW14(0-0.3), MW17(0-0.3), SB12(9-11), SB15(3-5), and SB18(8-10). The maximum PAH concentrations were all found at MW14.

The following table is a summary of the PAH compounds which were detected at the site in concentrations exceeding the TAGM recommended cleanup objectives. Note that the maximums observed all occurred in the soil sample from the boring for MW14, adjacent to the underground petroleum tank along the west side of the rod mill.

Compound	Range and Maximum Concentrations Detected	TAGM 4046 Soil Cleanup Objective	Samples Exceeding Cleanup Objective
Benzo(a)anthracene	<0.25 to 10 mg/Kg	0.224 mg/Kg or method detection limits	5 of 24 samples
Chrysene	<0.25 to 9.8 mg/Kg	0.4 mg/Kg	6 of 24 samples
Benzo(b)fluoranthene	<0.28 to 11.0 mg/Kg	1.1 mg/Kg	3 of 24 samples
Benzo(k)fluoranthene	<0.25 to 3.3 mg/Kg	1.1 mg/Kg	2 of 24 samples
Benzo(a)pyrene	<0.25 to 8.3 mg/Kg	0.061 mg/Kg or method detection limits	4 of 24 samples
Indeno(1,2,3-cd) pyrene	<0.25 to 3.4 mg/Kg	3.2 mg/Kg	1 of 24 samples

Naphthalene, acenapthylene, acenaphthene, fluroene, phenanthrene, anthracene, fluoranthene, pyrene and benzo(ghi)perylene were detected in nine of the samples collected during the soil boring program, however, concentrations of these PAH compounds were found to be below the TAGM recommended cleanup objective concentrations.

5.2.3 Subsurface Soil - PCB Analysis

Subsurface soil from sample locations SB12(9-11) and SB13(3-5), former transformer locations, were analyzed for PCBs. SB12(9-11) contained PCB 1260 at 0.68 mg/Kg, while the sample from SB13 was below the detection limit of 0.1 mg/Kg.

5.2.4 Subsurface Soil - Priority Pollutant Metals Analysis

Twenty four subsurface soil samples were collected during the monitoring well and soil boring program. The samples were submitted to the laboratory for analysis of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc. The results of the analyses are presented in Table B-2, Appendix B

Antimony was detected in four samples, including MW14(0-0.3), MW15(1-1.3), MW17(0-0.3) and SB(1-3). The concentrations ranged from 7.49 mg/Kg to 77.7 mg/Kg in MW14(0-0.3) and MW15(1-1.3) respectively. No level for antimony is currently listed for eastern USA background concentrations in TAGM 4046.

Arsenic was detected in each of the twenty four subsurface samples in concentrations that ranged from 1.7 mg/Kg in SB3(2-4) to 72.6 mg/Kg in sample MW15(1-1.3). Two samples contained arsenic in concentrations greater than the TAGM background range for New York State soil of between 3 and 12 mg/Kg: sample MW15(1-1.3) and SB15(3-5) contained 72.6 mg/Kg and 14.1 mg/Kg of arsenic, respectively.

Beryllium was detected in each of the twenty four subsurface soil samples in concentrations which ranged from 0.273 mg/Kg in sample MW17(0-0.3) to 1.05 mg/Kg in sample SB19. All detected concentrations of beryllium were below the TAGM background range for eastern USA soils of between 0 and 1.75 mg/Kg.

Cadmium was detected in eleven of the subsurface soil samples. Concentrations of cadmium ranged from 0.8 mg/Kg in sample SB9(6-8) to 55.9 mg/Kg in sample SB18(8-10). Ten soil samples had concentrations which were greater than the TAGM background levels for cadmium in eastern USA soils of between 0.1 and 1.0 mg/Kg. Cadmium concentrations exceeding TAGM background concentrations were, in general, found in the northern area of the site.

Chromium was detected in all twenty four of the subsurface soil samples. The concentrations ranged from 7.56 mg/Kg for sample SB13(3-5) to 46.4 mg/Kg for sample MW15(1-1.3). Of these samples, only MW15(1-1.3) had concentrations of chromium over the New York State background range cited in the TAGM of between 1.5 to 40 mg/Kg.

Copper was detected in all of the subsurface soil samples in concentrations which ranged from 36.3 mg/Kg in sample SB5(2-4) to 17,300 mg/Kg in sample SB18(8-10). Soil from nineteen of the twenty four subsurface soil sample locations were greater than the TAGM background concentrations range for Eastern US soils of between 1 and 50 mg/Kg.

Lead was detected in all of the subsurface soil samples. Lead concentrations ranged from 3.4 mg/Kg in SB2(16-18) to 409 mg/Kg in SB13(3-5). The lead concentrations for all the subsurface soil samples were within the TAGM background range of 200 to 500 mg/Kg for metropolitan areas in New York State.

Mercury was detected in all subsurface soil samples except SB13(3-5). Of the twenty three subsurface soil samples which contained detectable mercury, only sample SB15(3-5) at 0.67 mg/Kg exceeded the TAGM background range for Eastern US soils of between 0.001 and 0.2 mg/Kg.

Nickel was detected in all of the subsurface soil samples. Concentrations ranged from 9.14 mg/Kg in SB15(3-5) to 60.0 mg/Kg in SB17(3-5). Thirteen nickel detections were greater than the TAGM background range for Eastern US soils of 0.5 to 25 mg/Kg.

Selenium was detected in four subsurface soil samples. The concentrations ranged from 0.78 mg/Kg in sample SB16(8-10) to 1.5 mg/Kg in MW15(1-1.3). All detected concentrations of selenium were below the TAGM background range of 0.1 to 3.9 mg/Kg.

Silver concentrations in the six soil samples where it was detected ranged from 0.911 to 6.62 mg/Kg. No Eastern US background range is listed for silver in TAGM 4046.

Thallium was detected in subsurface soil sample SB13(3-5) at a concentration of 2.3 mg/Kg. No Eastern US background range is listed for thallium in TAGM 4046.

Zinc was detected in all of the subsurface soil borings. Twenty one of the detected concentrations were greater than the TAGM background ranges for Eastern US soils of between 9 and 50 mg/Kg. Concentrations ranged from 41.7 mg/Kg at SB4(1-3) to 37,300 mg/Kg in soil from sample location SB13(3-5). The levels of zinc from sample locations SB13 (3-5) and SB18(8-10) were found to be approximately one order of magnitude higher than the typical zinc concentration at the site.

5.2.5 Subsurface Soil - TOC Analysis

A total of seven subsurface soil samples were analyzed for total organic carbon (TOC) using the Walkley Black method of analysis. TOC results, and the respective soil type from which this subsurface soil was collected, are summarized as follows:

- SB13(3-5) 0.65 percent industrial fill material
- MW15(12-14) 0.07 percent well sorted sand
- MW16(18-20) 0.08 percent poorly sorted gravel
- SB9(10-12) 0.46 percent clayey silt
- SB4(10-12) 0.60 percent silty clay
- SB8(12-14) 0.41 percent clayey silt (hydrocarbon impacted)
- SB12(3-5) 2.33 percent typical soil/fill from beneath concrete floor

These results indicate that the soil at the site is dominated by granular fill materials low in organic carbon. Samples with higher carbon content tend to be those containing silt and clay, which appears to be the native site soil. The organic carbon content of the soil determines, in part, the availability of the organic contaminants to leach from the soils. The NYSDEC TAGM cleanup levels assume a one percent carbon content of the soil, however, the distribution of organic contaminants in soil at the site was limited to discrete locations associated with petroleum storage and handling. The distribution and concentration of organic contaminants at the site outside these areas is minor; no further assessment of the leachability of organics from site soils is necessary.

5.3 Ground Water Analysis

A total of twenty eight samples of ground water were collected during the investigation.. Eight samples were collected from monitoring wells and twenty samples were collected from temporary well points installed in the soil borings. All ground water samples were submitted for the analysis of VOCs and PAHs. Samples from the well points were not submitted for the analysis of metals. For monitoring wells, where turbidity could not be reduced to acceptable levels (less than 50 NTU) samples were submitted to the laboratory for both total and dissolved metals analysis. The locations of the samples are presented in Figure 3-3. A summary of the results of the ground water analyses are provided in Table B-3 in Appendix B.

5.3.1 VOC Analysis

Volatile organic compounds were detected in ten out of the twenty eight ground water samples taken during the investigation. BTEX compounds were found only in the sample from SB1: ethylbenzene was detected in SB1 at a concentration of 60 μg/L. This concentration exceeds the NYSDEC ground water standard of 5 μg/L. Xylenes (sum of isomers) were detected in SB1 at a concentration of 56 μg/L, also exceeding the ground water standard of 5 μg/L.

Chloroform was detected in SB17 at a concentration of 14 μg/L, a concentration greater than the ground water standard of 7 μg/L. Acetone was detected in SB16, however the detected concentration of 42 μg/L was found to be below the NYSDEC guidance value of 50 μg/L. The presence of both these compounds is attributed to laboratory contamination.

Several chlorinated organic compounds were detected in ground water from six sample locations, all at the Rod Mill Property. Trichloroethane was most frequently detected chlorinated compound, being detected in four locations (two monitoring well water samples, two soil boring water samples) in concentrations greater than the ground water standard of 5 μg/L. These locations and their respective concentrations are MW6S (130 μg/L), MW6D (130 μg/L), SB17(11 μg/L) and SB6(6 μg/L). Cis-1,2-dichloroethene was detected in concentrations greater than the ground water standard of 5 μg/L in MW6S(480 μg/L), MW6D(740 μg/L) and MW13S (26 μg/L). Trans-1,2-dichloroethene were found in samples MW6S and MW6D in concentrations of 180 μg/L and 160 μg/L, respectively. These concentrations are greater than the ground water standard of 5 μg/L. One sample, SB9, contained 1-1,1-trichloroethane in a concentration of 6 μg/L, a concentration slightly elevated over the ground water standard of 5 μg/L.

5.3.2 PAH Analysis - Ground Water

Of the twenty eight ground water samples collected during the investigation, three samples contained detectable amounts of PAHs. The results of the PAH analyses are provided in Table B-3 in Appendix B.

The highest total PAH concentrations were found in samples SB1 and SB2, the borings associated with the former oil tank and pump house near the southern boundary of the Rod Mill Property. Naphthalene was detected in SB1 at a concentration of 1,400 µg/L. This concentration is greater than the NYSDEC guidance value of 10 µg/L. Acenaphthene was detected in a concentration of 340 µg/L in sample SB2, a concentration greater than the guidance value of 20 µg/L. Fluorene was detected in SB2, in a concentration of 390 µg/L, a concentration which is greater than the guidance value of 50 µg/L. Phenanthrene was detected in both SB1 and SB2 in concentrations of 520 and 780 µg/L, respectively. These concentrations were found to be greater than guidance value of 50 µg/L.

Analysis of the ground water sample from SB13 detected most of the PAH compounds, four of which were above their respective ground water guidance or standard values: benzo(a)anthracene, chrysene, and benzo(b)fluoranthene all ranged from 8.2 to 8.8 µg/L, exceeding the drinking water guidance of 0.002 µg/L. Benzo(a)pyrene, at 7.3 µg/l, exceeded the standard of non-detectable.

5.3.3 Ground Water -Metals Analyses

A total of seven ground water samples were submitted to the laboratory for analysis of priority pollutant metals. No metals samples were collected from the well points installed in the soil borings. Where turbidity could not be adequately controlled during monitoring well sampling to less than 50 NTU ground water was collected for the analysis of both total and dissolved metals (MW6S, MW6D, MW14 and MW16). The results of the metal analyses are presented in Table B-3, Appendix B.

Antimony, arsenic, chromium, copper, lead, nickel, selenium and zinc were detected in the ground water samples at concentrations below the drinking water standard. Lead was the most frequently detected metal in the ground water samples. The concentrations of lead, which ranged from 0.001 mg/L (MW15) to 0.019 mg/L (MW16), were below the NYSDEC ground water standard of 0.025 mg/L. Copper was detected in six of the ground water samples. The highest copper concentration was found in MW16 (0.055 mg/L), a level which was below the ground water standard of 0.200 mg/L. Concentrations of selenium and zinc, detected in three ground water samples, were found to be below the ground water standards of 0.010 mg/L and 0.300 mg/L respectively. At the time of this report, no ground water standard is listed for nickel.

Levels of antimony, arsenic and chromium were found to exceed the standards in several of the monitoring wells. Antimony was detected in MW13S (0.029 mg/L), MW14 (0.029 mg/L), MW15 (0.065 mg/L), and MW16 (0.035 mg/L) in concentrations which were greater than the ground water standard of 0.003 mg/L. From these results it appears that the background antimony concentration for the entire area is approximately 0.030 µg/L. Arsenic was detected in monitoring well MW14 (0.040 mg/L) in a concentration which is greater than the drinking water standard of 0.025 mg/L, though this may be due to the high turbidity of the water sample obtained (200 NTU). Chromium was detected in the sample from MW14 (0.078 mg/L) in a concentration which was greater than the ground water standard of 0.050 mg/L.

5.4 Ambient Air Sample Analysis

A total of three ambient air samples were taken during the investigation. The air samples were analyzed according to NIOSH Method 1003 for halogenated hydrocarbons and by NIOSH Method 1501 for aromatic hydrocarbons. The results of the analyses, presented in Table B-4, Appendix B, indicate that there were no detected compounds in concentrations greater than the method detection limits of 0.3 milligrams per cubic meter of air.

5.5 Soil Gas Survey Analysis

Two soil gas samples were collected during the soil boring program to help in identification of the source of the chlorinated solvents observed in ground water south of the rod mill. The samples were analyzed according to USEPA Method 18 (modified). The results of the analyses are presented in Table B-4, Appendix B. In summary, there were no detected compounds in concentrations greater than the method detection limits in the samples. (The detection limits ranged from 0.097 to 2.108 ppm, depending on the analyte.) No volatile organic compounds were detected in the quality control sample taken with the soil gas samples.

5.6 Infrared Spectroscopy Analyses

Two samples of LNAPL were collected during the investigation. These samples were submitted to RETEC's Pittsburgh laboratory for analysis by infrared (IR) spectral technique for characterization of the oil phases of each sample. The results of the IR Spectroscopy analyses are provided in Appendix D.

Sample U11-1 was collected from the sump in Building 11. The results of the IR analysis indicate that the sample is characteristic of a high boiling, highly paraffinic petroleum oil. These results are typical of a lubricating oil, cutting oil or related product.

Sample U9-5 was collected from the southern area utility tunnel at the point where it enters Building 9. The sample was found to be a mixture of water and petroleum; therefore a carbon disulfide and anhydrous sodium sulfate extraction was performed prior to the IR analysis. The results of the analysis indicate the LNAPL sample is a slightly oxidized (weathered) high boiling point petroleum oil. These characteristics are consistent for a No. 6 fuel oil (Bunker C) or the "heavy ends" of a No. 2 fuel oil.

6.0 SIGNIFICANCE OF FINDINGS AND RECOMMENDED REMEDIAL ACTIONS

The investigation of the central core area of the proposed East Rome Business Park in Rome, New York, examined the condition of soil, soil gas, and ground water, and the contents of utility and industrial process systems in order to assess the current environmental conditions at the site. The data generated has been evaluated and used to a) assess the potential impact of the current conditions on commercial/industrial redevelopment of the site, and b) prepare recommendations for site management and remediation which would be protective of human health and the environment.

The central core area is presently undergoing the process of being divided for redevelopment into a minimum of seven subdivisions. As set forth in the Development Agreement signed by the City of Rome and Charles Gaetano, Mr. Gaetano has entered into purchase and sale agreements for two of the parcels (Pecoraro Dairy Products, Inc. - "Pecoraro" and Canterbury Printing - "Canterbury"). The Roadway Property is proposed to be conveyed to the City at the same time as the closing on the two private real estate transactions. The Rod Mill and Railroad Street Properties are in the process of being marketed. The Railroad Street Property is in the process of being divided into three subdivisions, one of them is referred to in the Development Agreement as the "Bldgs. 33/39 Property." To facilitate the evaluation of reuse of the site, five of the redevelopment areas (i.e., Pecoraro, Canterbury, Roadway Property, Railroad Street made up of three subdivided parcels, and the Rod Mill) are described in the sections below along with a consolidated description of environmental findings. It is proposed that environmental issues be addressed on a parcel by parcel basis.

The entire site is addressed in the five subdivided parcels descriptions below. Recommended remedial actions which cut across one or more real estate parcels are discussed in the section where the greatest impact will be rather than in a piecemeal fashion.

6.1 Criteria for Evaluation of Chemical Results and Risk Evaluation Framework

Since the soil sampling was performed in a biased manner, it should be emphasized that there is already a degree of protection present in the analysis of impact. Soils were not randomly sampled;

instead, soils samples were collected for analysis if they appeared impacted. Hence, on average, conditions at the site will be better than discussed here.

The results of soil and ground water chemical analysis in New York have been typically compared with NYSDEC ground water (drinking water) standards and guidance values, and with NYSDEC's recommended soil clean-up target levels published in TAGM 4046 for remediation to residential or pre-development conditions. (Standards and guidance values chemicals in soil and ground water are listed in Appendix B.) Our evaluation of environmental impacts and remedies for the central core area is based on the known current site use and conditions and the planned commercial/industrial future use of the site along with the applicable SCGs.

In all areas of the site it was found that ground water does not pose a risk to human health under current or planned site use. Ground water impacts at the site consisted of metals exceeding drinking water standards in limited areas, hydrocarbons in the vicinity of petroleum leaks or spills, and low levels of chlorinated solvents in an area of ground water upwelling. There are no current or proposed uses for ground water at the site, so there will be no exposure of current or future site workers to ground water. There are no known ground water extraction wells at the site or in the vicinity of the site. The entire area is serviced by the City of Rome municipal water supply system; therefore the installation and use of such wells for drinking water is prohibited by the New York State Uniform Fire Prevention and Building Code (9NYCRR 902.1(a)). Ground water was found to be as shallow as six feet below the ground surface at the upgradient side of the site, but it should not be encountered during typical site reconstruction activities in areas where impacts were observed. Prevention of exposure of utility line workers to ground water will be addressed by the health and safety plans governing future site development.

The influence of ground water on off-site ecological receptors was not evaluated in this investigation. The potential for off-site migration of contaminants is found at two locations: Ground water containing three chlorinated solvent compounds at low concentrations (each compound less than 0.8 ppm each) was detected at the Rod Mill Property. Ground water in the vicinity of the former above ground oil storage tank and oil pump house at the southeast side of the site contains total BTEX and PAHs at less than 0.2 ppm and 2 ppm, respectively.

6.2 Proposed Pecoraro Site

A 2.6 acre parcel in the north-central portion of the site has been proposed for reuse as a cheese making plant (Figure 6-1). This parcel contains former General Cable Building 41, which would be rehabilitated for this operation. The parcel also includes Building 50 which will be rehabilitated or demolished as part of site redevelopment. The key environmental findings and their significance for the proposed 2.6 acre project are as follows:

- No volatile organic compounds were detected in the basements of Building 41 or 50. This is consistent with the findings that there are little or no BTEX compounds at the site, and that the presence of chlorinated volatile organic compounds is limited to the south end of the Rod Mill Property. Because there is no impact on these buildings, their proposed reuse for manufacturing can go forward without any engineering controls or building use restrictions.

- Elevated concentrations of copper, zinc, nickel, and cadmium were measured in SB-18 at a depth of 8 to 10 feet below a 1-foot thick concrete slab. These metals are likely to be present as a result of filling at the site, with the metals present as a result of the onsite industrial operations. There are no human or ecological receptors of this contamination as the concrete prevents exposure, thereby eliminating potential exposure and risk which might be posed by the soil. The concrete also limits the exposure of the soils to stormwater infiltration, thus reducing the potential for ground water impact.

- Six PAH compounds were detected in the soil sample from SB-18, each at concentrations of less than 7 ppm. As with the metals, no exposure or ground water impact from these compounds is expected due to the concrete cap above the soils.

- No elements or compounds were detected in ground water at concentrations exceeding NYSDEC drinking water standards and guidelines except for antimony at MW16. The concentration of antimony (0.035 ppm) is consistent with the average concentration across the site. Based on the direction of groundwater flow it is possible that the antimony is related to elevated levels of antimony in the soil near the boiler house and at the adjacent Nash Metalware site. The downgradient extent of antimony impact is has not been determined; ground water flow at this location is off-site towards the Serway property. There is no ground water use or exposure in this area. It is unknown whether ground water impacted by antimony is reaching the Mohawk River further downgradient of the site.

- Trace concentrations of PCB 1260, zinc, arsenic, antimony, and lead were found in one of the three test baths located in Building 50. These structures are filled with site debris (concrete, brick, etc.) and should be cleaned-out and the contents properly disposed of in the course of site reconstruction. There was no evidence of leakage to soils or ground water from the three test baths. The source of these analyses may be from the debris or from surface water filling the baths after migrating through the building above.

The concentration of metals in the soil and ground water are acceptable for use at a commercial/industrial site provided that a cover or cap is maintained to prevent exposure at the ground surface. Note that, under both the current site conditions and the proposed future use, cover of the native soil and fill will be maintained as part of normal site use. To ensure that increased exposure to the soils does not occur without proper review, a deed restriction should be placed on the site to specify the allowable future uses.

6.3 Proposed Canterbury Expansion Site

A portion of the southwest side of the central core area has been proposed for use in a building expansion project by Canterbury Printing (Figure 6-2). This expansion will require demolition of Building 38 (the former metals reclaiming building) and the northernmost portion of the former rod mill (Building 11). The use of a portion of the central core area for the Canterbury expansion will require addressing the following issues:

- An abandoned 2,000 gallon underground gasoline storage tank located in the driveway between General Cable Buildings 11 and 38 should be excavated and the associated petroleum-impacted soil removed and properly disposed of. Note that no impact to ground water from this tank was detected at monitoring well MW-14, located on the down gradient side of the tank.

- A utility tunnel which crosses this area contains sediment impacted by petroleum hydrocarbons and PCB 1260. The concentration of this PCB congener was measured to be 130 ppm in the Canterbury development area, which is above the hazardous waste definition of 50 ppm. Based on visual observations, the sediment was found to extend in both directions from this segment of the tunnel. The concentration of PCB decreases towards the boiler house. The impacted sediments have the potential to migrate towards the boiler house with stormwater which was observed to be present in the tunnel. The source of the PCB is unknown. It is presumed that stormwater being conveyed by the tunnel reaches the storm sewer system and therefore will discharge to the Mohawk River. To prevent this the sediment in the tunnel should be cleaned-out and properly disposed of. The complete characterization of the sediment in the tunnel prior to removal and disposal will be specified in the remedial work plan for the site. This action should be coordinated with other site remedial activities.

- No hydrocarbon impact was detected to the soil or ground water from the contents of the tunnel. No PCBs were detected in the proposed Canterbury expansion area except for 4.47 ppm of PCB 1260 in an accumulation of soil in a small sump inside of Building 38. During demolition of this building accumulated sediments and other potentially contaminated debris should be removed from the site for disposal.

- No sources for the chlorinated solvent ground water plume at the south end of the Rod Mill Property were found at the rod mill or the central core area in this investigation or in the previously conducted Phase II investigation of this area (a copy of this report was submitted to NYSDEC with the draft investigation work plan). Ground water from soil boring SB-6 contained a trace of TCE; however, samples from borings surrounding this location did not detect the compound. Further investigation of the source of the TCE and its potential migration pathways will be conducted during the roadway investigation and remedial investigations for the Gaetano property under a voluntary remedial program under negotiation.

- The concentration of antimony, arsenic, and chromium in ground water at well MW-14 slightly exceeded the NYSDEC drinking water standard and guidance values. This may be due to the high turbidity of the water sample which was obtained (200 NTU). Based on the groundwater flow direction it is possible that these metals may be present due to past or present operations at the adjacent Nash Metalware site. There are no exposures to this groundwater within the site; the flow of impacted groundwater is mapped to be towards the rod mill building.

Remedial actions within this site are associated with the discrete sources described above (removal of sediments in the tunnel, removal of the underground storage tank and associated impacted soils, and removal of PCB impacted materials from Building 38). No additional remedial action is necessary beyond maintenance of a cover over the soils and restriction of the site to commercial/industrial use.

6.4 Proposed City of Rome Right-of-Way and Industrial Access Road

In order to provide access to the new subdivisions within the East Rome Business Park the City of Rome has proposed to build an access road from the intersection of Railroad Street and Fifth Avenue at the north side of the site to the intersection of Mill Street and East Whitesboro Street at the south (Figure 6-3). The right-of-way for this road passes through the former locations of General Cable buildings 1, 2, 3, 22, 9 (the boiler house), 13, 11, 38, and the adjacent Mosca Moving Company garage. Future connecting roads to the east and west to access additional areas within the Business Park are planned to intersect this road south of the boiler house. Redevelopment of this parcel will consist of installation of a full set of modern underground utilities, construction of the commercial access road, and construction and landscaping of a pedestrian sidewalk to connect the commercial/residential neighborhood along East Dominick Street with the City of Rome marina park at the former barge canal terminal. This area can be broken into three areas of concern based on the investigation findings:

- The northern area of the proposed right-of-way, from Railroad Street to the boiler house, is characterized by elevated metals in both the soil and in the utility tunnel system. Low levels of PAHs were found in the soil in borings SB-12 (each compound at less than 2 ppb), and in the ground water at boring SB-13 (each compound less than 16 ppb). No other organic compounds were found in this area. Exposure to this soil is currently controlled by the concrete capping of the site. Future exposure will be controlled by the construction and maintenance of the roadway.

- The soil and ground water near the boiler house were found to be impacted by antimony. The direction of ground water flow, from the northwest at this location, points to an off-site source for this ground water impact. There is no exposure of the soil to human receptors or to stormwater in this area as it is covered by concrete paving and buildings. Soil at the site which might contribute to the concentration of antimony in the ground water should be removed or otherwise remediated. The extent of antimony impact in soil and groundwater will be defined by the investigation of the roadway property for site remediation and redevelopment.

- Free petroleum, identified as the "heavy end" of number 2 fuel oil or as number 6 fuel oil was found in one of the tunnels joining the south side of the boiler house. Spots of oil were also observed floating on the surface of the water filling the substructure of the boiler house. This water has the potential to migrate through the storm sewer system to the Mohawk River, though a direct connection to the sewer system was not found. This free product should be recovered and any impacted water in the boiler house and associated tunnels should be properly disposed of. The underground storage tank located adjacent to the boiler house should also be removed. Due to the association of impacted water with asbestos containing materials in the boiler house it is likely that remediation for petroleum and for asbestos would occur during the same remedial program.

- The utility tunnel extending from the courtyard area south of the boiler house to the Canterbury building contains PCB-impacted sediments, though at lower concentrations than in the proposed Canterbury expansion area. As discussed in Section 6.3, these sediments have the potential for being carried by stormwater to the Mohawk River. The sediment in this section of the tunnel should therefore be removed prior to abandonment of the system. No evidence of impact to the surrounding soil and ground water by the contents of the tunnel was detected.

6.5 Rod Mill Area

The redevelopment plan for this area of the site calls for preserving the southern third of General Cable Building 11 (the former rod mill) for reuse by a future site owner or tenant, with potential building expansion taking place in stages to the south. The northern portion of the existing rod mill building will be demolished to make way for the construction of the city access road and parking. Significant environmental findings and remedial issues for this portion of the central core area are as follows:

- No significant soil contamination by volatile organic compounds was detected inside the rod mill building. Low levels of benzene, toluene, TCE, and 1,1 dichloroethene (each less than 25 ppb) were detected in the soil at SB-3, but were not present in the ground water or in the two soil gas samples at this location.

- Two storm sewer sumps contain sediments with PCB 1260 above 50 ppm. This sediment should therefore be cleaned-out. Any sediment in the associated storm sewer system should also be removed from this area prior to abandonment of the system as the sewer lines discharge to the Mohawk River. One process area sump in Building 13 (U13-1) contains sludge with PCB 1260 above 50 ppm and should also be cleaned-out.

- A concrete sump was found to contain water and lubricating oil at the southwest side of the rod mill building (Building 11). Petroleum in the sump and its associated piping should be removed. Petroleum impacted soil associated with this sump, which is identified in boring SB-9, should be excavated and removed during site renovation activities.

- Ground water containing chlorinated solvent compounds which exceed NYSDEC drinking water standards is located beneath the paved yard at the south end of the rod mill property. Although the source and migration pathway for the solvent has not been completely defined, this investigation has shown that the source of this contamination was not in the Rod Mill Property or elsewhere within the central core area. This will be confirmed by the investigation associated with the roadway property. A previous study performed by Empire Soils/Huntingdon [1993] found that the impacted ground water at the south end of the Rod Mill Property did not generate detectable concentrations of volatile chlorinated compounds in the soil gas at the sampling depth of three feet below the ground surface, therefore no human exposure to the impacted soil gas vapors is anticipated for site reconstruction and reoccupation. A site-specific health and safety plan should be developed for controlling exposure of utility and construction workers to the impacted ground water. Redevelopment of this area should leave some access for purposes of installing ground water wells in the future for testing or remediation, should they become necessary to address the impacted ground water.

- Fuel oil has impacted the soil and ground water in the vicinity of the former above ground storage tank and pump house at the southeast side of this parcel. The extent of soil and water impact has not been defined, though the maximum total concentration of BTEX and PAHs in ground water at this location was measured to be less than 0.2 ppm and 2 ppm, respectively. Based on the proximity of this area to the Mohawk River, there is a potential for impacted ground water to reach surface water. The presence of the petroleum contamination should be addressed under applicable NYSDEC Division of Spills Management guidelines (such as STARS MEMO #1).

6.6 Railroad Street Area

The remaining portion of the site, which fronts Railroad Street at the north end of the Central Core area and the northeastern segment of the city access road, will be redeveloped as a whole or in up to three separate subdivisions, depending on the property needs of new owners or tenants. All of the structures have been removed except for Building 33/39 and a portion of Building 51. Building 33/39 will be either rebuilt or removed prior to reuse of the site.

- No volatile organic compounds were detected in the basement of Building 33.

- Concentrations of metals were found to be elevated in soil samples from the soil borings. No impact by metals on ground water was detected. There is no exposure of the soil to human receptors due to the concrete cover. No remedial action is necessary beyond restriction of the impacted parcel to commercial or industrial use and maintenance of a cover to prevent exposure of the soil. Redevelopment plans for this area will assess the remediation or management needs for soils which exceed cleanup guidelines listed in TAGM 4046 (soil excavation, capping, etc.).

- Trace levels of PAHs were detected in the soil at SB-15. Ground water from boring SB-16 showed impact by hydrocarbons which elevated the detection limits for volatile and semi-volatile compounds; however, no compounds were detected about the elevated detection limits.

- One concrete pit was found (U37-2) which contained grease with a high lead concentration. The contents of this contained structure should be removed. No evidence of impacts from this structure were observed.

- A storm sewer sump in the basement of Building 33 (U33-1) contained a sludge which was impacted by lead and PCB 1260. The associated storm sewer lines discharge to the Mohawk River. The sludge in this sump and in the associated storm sewer system should be removed. No evidence of leakage from this structure was observed.

6.7 Implementation of the Remedial Recommendations

The remedial measures outlined above will be formalized in work plans to accompany remedial consent orders. Each of the parcels to be developed will have its own work plan (where applicable) and remedial agreements under the NYSDEC Voluntary Remedial Program. The schedule for remediation will be set forth in these documents. Any remedial action which involves two or more of the parcels (such as tunnel cleaning) will be coordinated so that the work can be performed efficiently over the entire length or area affected.

Future construction activities or utility line maintenance may expose workers to site contaminants. A health and safety plan (HASP) should be prepared which will address excavation or disturbance of surface and subsurface soils. This plan will discuss measures which must be taken to protect workers, site visitors, neighboring businesses, and nearby residents from exposure to site contaminants.

7.0 REFERENCES

Atlantic Environmental Services, Inc., 1993, *Final Preliminary Site Assessment/Interim Remedial Measure Study, Rome (Kingsley Avenue) Manufactured Gas Plant Site,* Prepared for Niagara Mohawk Power Corporation, June, 1993.

Casey, G.D., and Reynolds, R.J., 1989, *Hydrogeology of the Stratified-Drift Aquifers in the Rome Area, Oneida County, New York,* U.S. Geological Survey Water-Resources Investigations Report 88-4155.

Empire Soils Investigations, 1990, *Environmental Site Assessment, Mill Street, Rome, New York,* August 1990, Atlantic Energy Systems, Inc.

Empire Soils Investigations, 1991, *Phase II Environmental Site Assessment for Independent Power Plant, Rome, New York,* September, 1991, Atlantic Energy Systems, Inc.

Empire Soils Investigations, 1993, *Contaminant Source Investigation, Proposed Independent Power Plant, Rome New York*, Empire Soils Project No. GTA-91-40D, January.

NYSDEC, 1994. Revised TAGM - Determination of Soil Cleanup Objectives and Cleanup Levels, memo from Michael J. O'Toole, HWR-94-4046, January.

Plumley Engineering, 1992, *Draft Phase I Environmental Site Assessment of the former Rome Manufacturing Division of Revere Copper and Brass, Inc., and the former General Cable Corporation in the City of Rome, New York.* Confidential client.

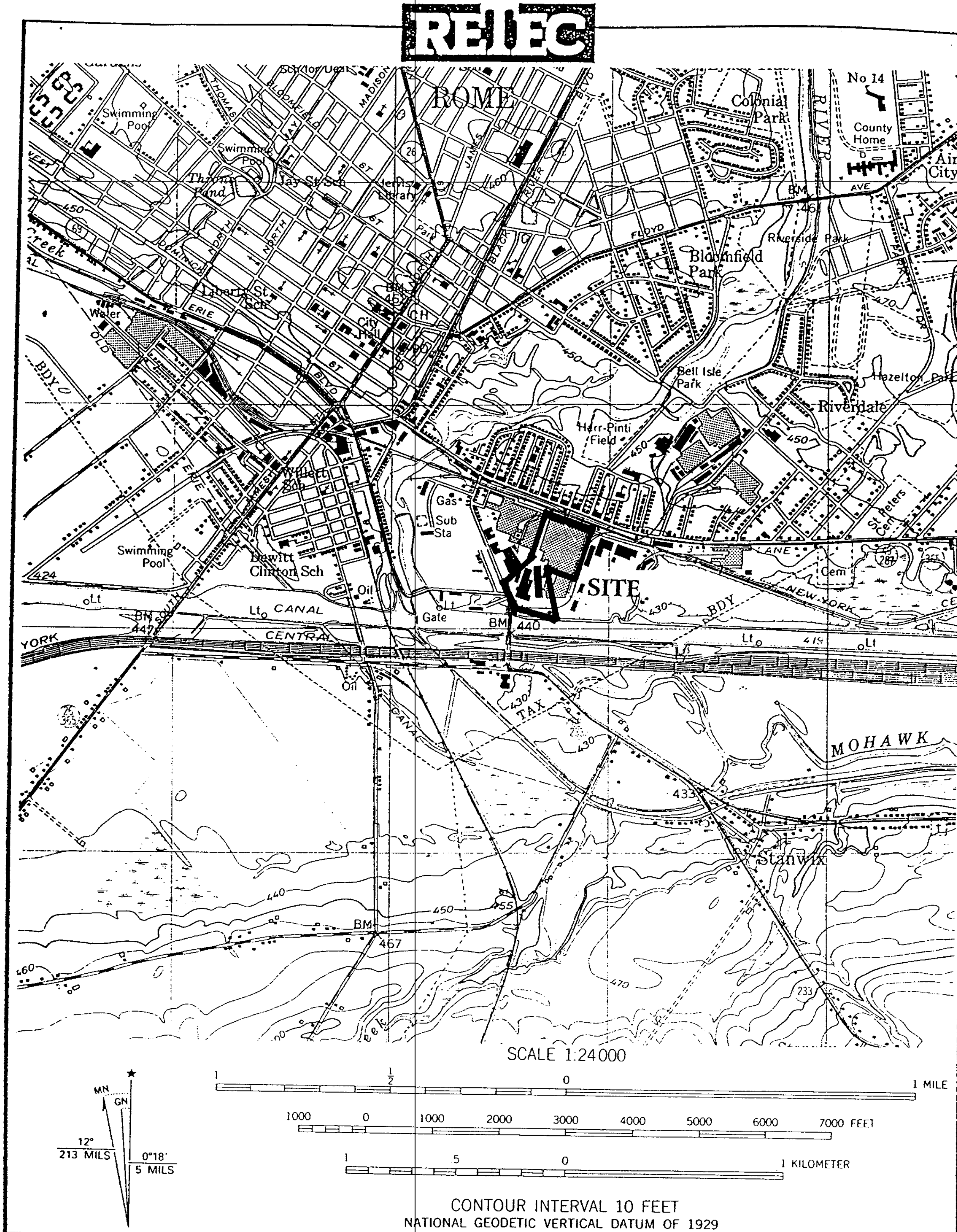
RETEC, 1995, *Phase I Environmental Site Assessment, City of Rome Industrial Redevelopment* Area, Rome, New York, Department of Planning and Community Development, City of Rome New York, October, 1995.

RETEC, 1996a, *Limited Phase II Environmental Investigation of the Former General Cable Property, Rome, New York*, The Saratoga Associates, Saratoga Springs, New York, February, 1996.

RETEC, 1996b, *Work Plan for a Limited Subsurface Investigation to Support Commercial/Industrial Redevelopment of the Former General Cable Manufacturing Site, Rome, New York*, Rome, New York, Department of Planning and Community Development, City of Rome New York, November 1996.

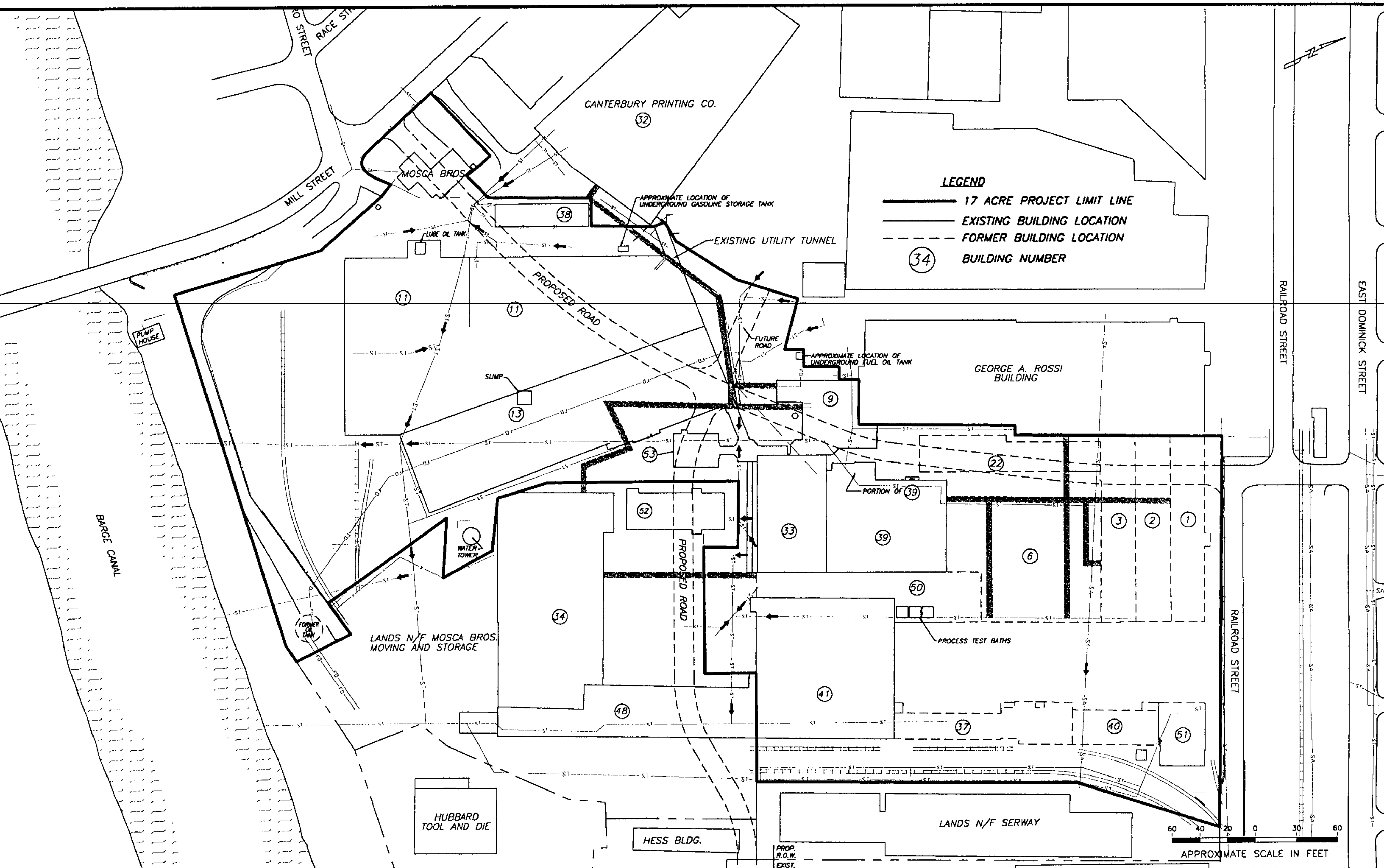
Reynolds, R.J., 1990, *Availability of Groundwater from Unconsolidated Deposits in the Mohawk River Basin, New York*, U.S. Geological Survey Water-Resources Investigations Report 33-4091.

FIGURES



SITE LOCATION MAP

FIGURE 2-1



PLANNING DEPARTMENT
ROME, NEW YORK
3-2294-200

FIGURE 2-2
CURRENT SITE LAYOUT
ROME, NEW YORK

RETEC
PITTSBURGH PENNSYLVANIA
DRAWING NUMBER 2294SA17 REV 2

NO	DRWN	DATE	REVISION
2	ERK	3/3/97	SECOND ISSUE
1	ERK	2/20/97	INITIAL ISSUE

CURRENT DATE: 3/3/97 CAD FILE: 2294SA17

47-15-19(8/88)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INSPECTOR'S DAILY REPORT

File 4840
Rome
ROW

Site Code No. 633037	Date 9-2-98	I.R. No. 16	
Site Name: Old General Cable	Sheet 1 of 2	AM	PM
Location: East Dominick St., Rome, NY	Weather	light rain	
Engineer: ReTec / TSA	Temperature	69°F	
Contractor: Bianchi Trison	Wind (Dir./Vel.)	SW-4	
Job Phone: ( )			

Health & Safety:

Level of protective clothing used: normal this date

Is the level of protection in conformance with the approved Health & Safety Plan?

Yes____ No____ If no, list the deviations under Items of Concern.

Are atmospheric monitoring results at acceptable levels? Yes____ No____

Attach a copy of the monitoring log.

Description of work performed during this report period:

- attend weekly job meeting:
  - as regards remediation of tunnel; specs. estimate 5 tons of sludge to be removed, after inspection by contr. the estimate is revised to 100 tons and contr. wants assurances of payment – sludge is up to 3 feet thick under Canterbury Press building
  - * during tunnel inspection a 2" Ø pipe was seen under the Canterbury Press building discharging wastewater and a red liquid into the tunnel at a rate of 25 to 30 gallons every 7 to 8 minutes intermittantly – final receiving water is unknown, however, red staining is evident 350 feet away in the tunnel, near the boiler house
- the Mosca Bros. building near Mill St. is being demolished

Site Visitors	Representing	Entered exclusion zone
Darrell Sweredoski	NYSDEC	n.a.
Peter Ouderkirk	"	"

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INSPECTOR'S DAILY REPORT

Subcontractor A: Buck worked from to

Subcontractor B: worked from to

Contractors' Equipment	Prime	A	B	Not Used
Bakker tank	1			
backhoe				1

Work Force	Prime	A	B
supt.	1	1	
laborer	2		

Prime Contractor worked from 7:00A to 3:30P

Comments: Per Jim Doie, DOW; he spoke with Canterbury Press V.P re: wastewater discharge to tunnel and was told that C.P. had contacted Rome (C) and received approval to discharge to sewer, arrangements have been made to increase pipe ⌀ and make connection.

Items of concern:

Attachments to this report:

Inspector's Name (Print): Tom Higginbotham

Inspector's Signature: Tom Higginbotham Date: 9-8-98

Reviewed by: Date:

File
4840
Rome ROW

THE SARATOGA ASSOCIATES

MEETING NOTES

DATE: September 9, 1998

PROJECT: East Rome Business Park
City R.O.W. Demolition - Phase 1
TSA No. 95-043.76P

LOCATION: Construction Site

PRESENT: Gregg Ursprung, TSA
Brian Thomas, City of Rome
Bruce Coulombe, RETEC
Dan Shearer, RETEC
Brian Jones, Buck
Peter Ouderkirk, DEC
Steve Dixon, Bianchi Trison

725-1259

PURPOSE: Weekly Project Meeting

If the meeting notes are not complete, accurate, or in context, please notify The Saratoga Associates of such discrepancy within ten days following receipt of this record.

ITEMS:

1. Coulombe reported that the x-ray equipment is not from Griffiss. Bianchi is to pull out and set aside for future disposal. RETEC is to contact the Health Department to have them check for radiation.
2. RETEC has submitted an application to the EPA for a waste I.D. number for disposal of the waste from Tunnel A.
3. Bianchi Trison has been authorized to proceed with additional work as defined in RETEC's letter dated 9/4/98. It was noted, however, that the overall project budget must not be exceeded. RETEC is to keep a daily tally of work performed and provide a summary to TSA and the City daily.
4. There are currently discharges into the tunnel beneath the Canterbury building. The discharges are apparently periodic and appear to be water and red sludge. Brian Thomas is to discuss with Ron Conover and contact Canterbury to address this issue. DEC would like a response from Canterbury by Friday (9/11). Canterbury claims they have re-plumbed to direct the discharge to the sanitary sewer, however, water is still coming from the Canterbury

end of the tunnel. Ouderkirk stated that Canterbury should also contact the waste treatment facility to determine if there are pre-treatment requirements prior to discharging to the sanitary sewer. Ouderkirk also recommended that the City also contact the waste treatment facility to make them aware of the discharge from Canterbury.

5. Bianchi Trison is to provide estimates on quantities of water and sludge in the tunnel under Canterbury and also costs to obtain samples. Then they will provide a price for clean-up of Canterbury's portion of the tunnel. Canterbury needs to decide ASAP if they want Bianchi to do the clean-up.
6. Bianchi is awaiting approval from the disposal facility for disposal of the sludge from the tunnel. Bianchi doesn't expect the approval until Thursday or Friday (9/10 or 9/11). Therefore the sludge removal will probably begin on Monday (9/14).
7. The UST removal is to begin on 9/10.
8. The Bldg 13 sump clean-out is complete and it has been backfilled. The hazardous asbestos previously removed from the sump is to be taken off-site today.
9. Consolidation of the drums and containers into the boiler house is complete. The drums remaining at the north end of Gaetano's property contain plastic trash and are Gaetano's responsibility.
10. It was noted that the wood block flooring remaining in the concrete slab of the former Rossi bldg is saturated with oil. Ouderkirk stated that this could be tested as part of the Nash/Rossi investigation.
11. Asbestos air monitoring is continuing in accordance with DOL regulations, although no asbestos work is being performed.
12. TSA to contact Ciminelli to see if they want the existing chain link fence at a cost of 5$/ft.
13. Bianchi is to provide chain link fencing at the boiler house to protect the drums now stored there. In addition, signage is to be provided that identifies the area as containing hazardous waste.

Submitted By: Gregg E. Ursprung, P.E.

Date: September 15, 1998

cc: Ron Conover, City of Rome
David Bianchi, Bianchi Trison
Dan Sitler, TSA
Phil Shaffner, Buck
All Meeting Attendees

THE SARATOGA ASSOCIATES

FAX COVER SHEET

DATE: November 1, 1999 **TIME:** 2:36 PM

TO: **PETER OUDERKIRK** **PHONE:** **315-785-2513**

FAX: **315-785-2422**

FROM: **GREGG URSPRUNG** **PHONE:** (518) 587-2550

FAX: (518) 587-2564

SUBJECT: EAST ROME BUSINESS PARK
CITY R.O.W. DEMOLITION
TSA PROJECT NO. 95-043.76P

CC:

Number of pages transmitted including this cover sheet: 3

Message:

As per Bianchi Trison's final payment request (copy attached), the costs associated with the tunnel clean-up (excluding Canterbury portion) are as follows:

Item No	Description	Units	Unit Cost	Total Cost
27	Clean Tunnel A	n/a	n/a	7,590.00
38	Dispose of Hazardous Sludge	104.21 tons	$462/ton	48,145.00
39	Tunnel Inspection	n/a	n/a	6,158.00
40	Tunnel Work (crust removal)	n/a	n/a	14,740.41
41	Transite Pipe Removal	n/a	n/a	7,707.63
42	Water Disposal	n/a	n/a	3,825.00
43	Oily Water Disposal	40,231 gal	$1.75/gal	70,404.25
44	Sludge Disposal	47.32 tons	$462/ton	21,861.84
			Total	**$180,432.13**

CONTINUATION SHEET

AIA DOCUMENT G703 (Instructions on reverse side)

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification, is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO.: 6.00
APPLICATION DATE: 3-03-99
PERIOD TO: 3-03-99
ARCHITECT'S PROJECT NO.: 9801

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C – G)	RETAINAGE (IF VARIABLE) RATE)
1	MOBILIZATION	38,500.00	38,500.00			38,500.00	100		
2	BONDS	16,500.00	16,500.00			16,500.00	100		
3	INSURANCE	27,500.00	27,500.00			27,500.00	100		
4	ASBESTOS BULDING 11 NORTH	11,700.00	11,700.00			11,700.00	100		
5	DEMOLITION BUILDING 11 NO	54,600.00	54,600.00			54,600.00	100		
6	ASBESTOS BUILDING 11 SOUT	15,600.00	15,600.00			15,600.00	100		
7	DEMOLITION BUILDING 11 SO	1,170.00	1,170.00			1,170.00	100		
8	ASBESTOS OFFICE AREA	2,730.00	2,730.00			2,730.00	100		
9	ASBESTOS BUILDING 13	2,730.00	2,730.00			2,730.00	100		
10	DEMOLITION BUILDING 13	79,014.00	79,014.00			79,014.00	100		
11	ASBESTOS BUILDING 38	2,730.00	2,730.00			2,730.00	100		
12	DEMOLITION BUILDING 38	2,964.00	2,964.00			2,964.00	100		
13	ASBESTOS BUILDING 53	15,600.00	15,600.00			15,600.00	100		
14	DEMOLITION BUILDING 53	3,354.00	3,354.00			3,354.00	100		
15	ASBESTOS MASCA GARAGE	5,070.00	5,070.00			5,070.00	100		
16	DEMOLITION MASCA GARAGE	2,964.00	2,964.00			2,964.00	100		
17	ASBESTOS SOUTH TUNNEL (A								
18	ASBESTOS DEBRIS PILES	11,700.00	11,700.00			11,700.00	100		
19	ASBESTOS ROSSI BUILDING	21,060.00	21,060.00			21,060.00	100		
20	DEMOLITION ROSSI BUILDING	79,014.00	79,014.00			79,014.00	100		
21	ENVIRONMENTAL REMEDIATION								
22	REMOVAL, T&D UST MOSCA BR	1,000.00	1,000.00			1,000.00	100		
23	REMOVAL, T&D CONTAMINATED	4,415.60	4,415.60			4,415.60	100		
24	REMOVAL, T&D, FUEL OIL PI	3,750.00	3,750.00			3,750.00	100		
25	REMOVAL, T&D, SEDIMENT -								
26	REMOVAL, T&D,SEDIMENT - N								
	Totals	403,665.60	403,665.60	.00	.00	403,665.60	100	.00	.00

CONTINUATION SHEET

AIA DOCUMENT G703 (Instructions on reverse side)

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification, is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO.: 6.00
APPLICATION DATE: 3-03-99
PERIOD TO: 3-03-99
ARCHITECT'S PROJECT NO.: 9801

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C − G)	RETAINAGE (IF VARIABLE RATE)
27	CLEANOUT OF UTILITY TUNNE	7,590.00	7,590.00			7,590.00	100		
28	CLEANOUT OF STORM SEWER	6,380.00	6,380.00			6,380.00	100		
29	CLEANOUT OF SUMP BUILDING	9,400.00	9,400.00			9,400.00	100		
30	REMOVAL, T&D STORM SEWER	1,020.00	1,020.00			1,020.00	100		
31	CHANGE ORDER #1								
32	DRUM HANDLING & PACKAGING	5,967.84	5,967.84			5,967.84	100		
33	CONTAMINATED DEBRIS PILE	6,637.64	6,637.64			6,637.64	100		
34	PCB CONTAMINATED ASBESTOS	6,243.75	6,243.75			6,243.75	100		
35	ASBESTOS REMOVAL FROM SUM	1,524.05	1,524.05			1,524.05	100		
36	LOAD FLYASH & PCB ASBESTO	1,596.90	1,596.90			1,596.90	100		
37	OILY WATER	23,271.50	23,271.50			23,271.50	100		
38	DISPOSAL OF HAZARDOUS SLU	48,145.00	48,145.00			48,145.00	100		
39	TUNNEL INSPECTION	6,158.00	6,158.00			6,158.00	100		
40	TUNNEL WORK	14,740.41	14,740.41			14,740.41	100		
41	TRANSITE PIPE REMOVAL	7,707.63	7,707.63			7,707.63	100		
42	WATER DISPOSAL	3,825.00	3,825.00			3,825.00	100		
43	OILY WATER (TUNNEL)	70,404.25	70,404.25			70,404.25	100		
44	SLUDGE DISPOSAL	21,861.84	21,861.84			21,861.84	100		
45	OTHER MATERIAL DISPOSAL	4,504.40	4,504.40			4,504.40	100		
46	CANTERBURY PROPERTY WORK	22,318.11	22,318.11			22,318.11	100		
	Totals	672,961.92	672,961.92	.00	.00	672,961.92	100	.00	.00