



THE SEAR-BROWN GROUP
FULL-SERVICE DESIGN PROFESSIONALS

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ROCHESTER, NEW YORK 14623-2674

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February 23, 1999

Mr. Joseph Biondolillo
City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614-1278

RE: Phase II Environmental Investigation Report
180-182 Exchange Street
Rochester, New York

15155.02

Dear Joe:

Pursuant to our contractual agreement with The City of Rochester, The Sear-Brown Group (Sear-Brown) has conducted a Phase II Investigation of 180-182 Exchange Street, located in the City of Rochester, Monroe County, New York (Figure 1).

Background

A Phase I Environmental Site Assessment (ESA) of the subject property, which is a 1.67 acre parcel improved with a quonset hut and a commercially-operated parking lot, was conducted by Day Environmental, Inc. (Day) in September 1998. As of the writing of this report, it is understood that the subject property is owned by Monroe County. It is understood that the City of Rochester will eventually take ownership of the subject property.

Day's report included the following findings, conclusions and recommendations:

Phase I Findings and Conclusions

- Information obtained from the City of Rochester Building Department and Fire Department indicated that as many as 11 tanks may have been permitted for the 180 Exchange Street portion of the subject property. However some of the listings may have been permit renewals for existing tanks.

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- Information obtained by Day indicated that part of a Mill Race (i.e. a below grade conduit for flowing water) formerly occupied a portion of the property. It was not determined what materials were used to fill in the former Mill Race.
- Historical information reviewed also indicated that a building was formerly located on the west side of the subject property and was used as the Monroe County Jail and Monroe County Garage. In addition, the quonset hut currently located on the subject property was formerly used as the Monroe County Sheriff's Garage. The exact operations conducted in conjunction with the former garages was not determined.
- Three sediment traps/floor drains were observed inside the quonset hut located on the subject property. One of the trap covers was removed by Day during their site visit, but the other two covers could not be removed. The trap that was uncovered was observed to be filled to near the top with sediments, and the top of a drain pipe was visible. It could not be determined if the traps had solid bottoms. In addition, the integrity of these sediment traps could not be determined. It was reported to Day that the floor drains are connected to the public sewer system, and have been connected to it since the building was constructed. However, this connection has not been verified.
- Suspect asbestos containing material (ACM) was observed inside the quonset hut and consisted of approximately 250 linear feet of pipe and joint insulation. Portions of the material were damaged.

Phase I Recommendations

- Given the historical presence of tanks on the subject property, it was recommended that available Sanborn Maps be obtained through a database service in an attempt to determine the locations of the former tanks. In addition, it was recommended that a cursory subsurface investigation be conducted to determine whether underground tanks are currently located on the property and to evaluate the potential existence of contamination.
- It was recommended that a subsurface investigation be performed in the area of the former Mill Race to identify the composition and extent of the fill materials.
- It was recommended that subsurface investigations be performed in the areas of the former Monroe County garage and the quonset hut to determine whether former operations conducted in conjunction with these garages have had an adverse environmental impact on the subject property.

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- It was recommended that the sediments in the sediment trap/floor drains be removed, characterized and disposed of. It was also recommended that the traps be visually observed at the time they are cleaned out to evaluate their integrity. A dye-test was also recommended to confirm discharge of the floor drains to the sanitary sewer.
- It was recommended that suspect ACM be sampled and analyzed for asbestos content. If found to be asbestos, it was recommended that the damaged material be removed by a licensed contractor.

This Phase II Investigation was requested to address the environmental concerns identified in the Phase I ESA and was conducted using generally accepted Phase II Environmental Site Assessment practices. In addition, potential remedial scenarios and associated costs are presented and discussed.

Review of Sanborn Fire Insurance Maps

Sear-Brown requested available historical maps for the subject property through Environmental Risk Information & Imaging Services (ERIIS) in an attempt to determine the locations of former tanks on the subject property. Sanborn Maps from 1892, 1904, 1912, 1938, 1950 and 1971 were provided by ERIIS. In addition, 1910 and 1926 Hopkins Maps and a 1946 Nirenstein Map were provided. A review of these maps did not provide additional information regarding potential UST locations on the subject property, but did confirm the historical presence of the Mill Race, Monroe County Garage and Monroe County Jail on the subject property. Copies of these maps are included in this report as Appendix A.

Geophysical Survey

A Geonics EM-61 geophysical investigation was performed on the subject property on October 3, 1998 by Geomatrix Consultants, Inc. (Geomatrix), located in Williamsville, New York. The investigation was conducted in an attempt to identify potential UST locations.

The investigation was performed using a Geonics EM-61 metal detector with a 3 ft. line spacing. The Geonics EM-61 unit is a high sensitivity, high resolution, time domain electromagnetic (TDEM) device that can detect both ferrous and non-ferrous metallic objects to an approximate depth of 10 feet. A transmitter coil on the unit generates a pulsed primary electromagnetic field at a rate of 150 pulses per second as it is wheeled across a grid pattern. Two receiver coils measure the decay rates of the eddy currents. The data is introduced into a processing console which is interfaced to a digital data logger. The data is digitally recorded by the data logger at a rate of approximately two measurements per foot of travel. Instrument responses are recorded in units of milliVolts (mV), which are used to generate figures showing the measured values over the survey area.

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The geophysical survey indicated that there were eight different areas which exhibited significantly strong responses (anomalies) which were suggestive of the potential presence of metal objects such as tanks. A number of linear anomalies, inferred to represent buried utilities or building foundations, were also present. Anomalies are shown on Figure 1 of Geomatrix's report. The Geomatrix report is included as Appendix B.

As shown on Figure 1 of the Geomatrix report, a large cluster of anomalies (Anomaly G) were observed in the location of the former Monroe County Jail and Monroe County Garage. These anomalies could be associated with a former reinforced concrete slab or demolition debris associated with the demolition of these buildings. According to Geomatrix, anomalies A, B, C, D, E and F were suggestive of buried metal anomalies that may be associated with USTs or other metal. Anomaly H was strongly suggestive of steel reinforced concrete.

Information obtained from the geophysical survey was used to assist selecting drilling locations.

Subsurface Investigation

The subsurface investigation included a two day investigation conducted on October 17 and 18, 1998. The program consisted of 15 drilled soil borings (Figure 2) to assess potential impacts from historic site uses including the historical presence of USTs, the Mill Race and former Sheriff's and County garages.

Prior to drilling, a United Facilities Protection Organization (UFPO) stakeout was requested to locate public underground utilities. In conjunction, utility drawings from the Monroe County Records Department were obtained and reviewed. Sear-Brown's review of the available drawings revealed the presence of extensive underground utilities on the subject property. Utilities present include sewer, stormwater, electric and water condensate delivery and return lines. The presence of these utilities precluded drilling in several areas of the property. This included the former Mill Race; most of the area south of the Quonset Hut; the area adjacent west to the Quonset Hut where geophysical anomalies D and E were noted; and the area where a linear anomaly extended from geophysical anomaly B.

Prior to drilling, downhole drilling tools were decontaminated using an Alconox and water rinse. This cleaning procedure was also used on drilling and sampling tools between each boring. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface was not be permitted.

A total of fifteen borings (SB-1 through SB-15) were completed (Figure 2). Several of these borings had to be relocated due to subsurface fill refusal. The boreholes were drilled to the suspected top of rock refusal which ranged in depth from 8.5 to 14.5 feet below surface. Continuous soil samples were collected at each soil boring location. In general, soil conditions at

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180-182 Exchange Street included a five to ten-ft. thick fill layer. The fill layer consisted primarily of moist, brown silty sand and gravel, with trace to some amounts of brick, asphalt, concrete and ash. The fill was underlain by a moist light to dark grey silty sand. Although moist conditions were encountered, the water table was not observed during drilling operations. Therefore, it is anticipated that groundwater will most likely be present within the bedrock. Drilling into the bedrock was not performed as part of this scope of work. Soil descriptions are presented on boring logs presented in Appendix C.

Soil samples were screened for the presence of volatile organic vapors with a calibrated HNu photoionization detector (PID) equipped with a 10.2 eV lamp. Specifically, portions of the soil samples were collected and placed in individual sealed containers. The volatile organic vapors that accumulated within the headspace of the containers were screened and recorded for volatile organic vapors using the PID (Table 1). Significantly elevated headspace readings (over 2,000 parts per million (ppm)) were noted at soil borings B-4 and B-5 at depths of 11 to 14 ft. below ground surface (bgs). In boring B-4 elevated headspace readings were also noted starting at 7 ft. below surface. Slightly elevated headspace readings (4 to 8 ppm over background) were noted at various depths in borings B-6, B-8, B-9, B-10 and B-12.

Soil samples were also visually evaluated for indications of staining, oils, fill, etc. Grayish-black staining was observed in soils obtained from depths of 4-14 ft. bgs and 9-14 ft. bgs in borings B-4 and B-5 respectively, while fill materials were observed at every borehole location.

Based upon field observations (e.g., elevated PID headspace readings, visually stained soils, fill material) eight representative soil samples were selected for analysis. Analyses were performed by Paradigm Environmental Services, Inc. (Paradigm), Rochester, New York, a New York State Department of Health (NYSDOH) Environmental Library Accreditation Program (ELAP) analytical laboratory. Selection of soil samples and the requested analyses were made with the concurrence of Mr. Joe Biondolillo, City of Rochester Environmental Specialist. A sample summary is presented in Table 2.

Sample B-1 (12'-14.5'), B-9 (1'-2.5') and B-10 (5'-7'), which consisted of fill materials, were submitted for analysis of Target Compound List (TCL) semi-volatile organic base-neutral compounds (SVBNs) by EPA Method 8270 and total concentrations of the eight Resource Conservation and Recovery Act (RCRA) Metals. Samples B-4 (13'-14') and B-5 (13'-14'), which had significantly elevated PID readings (>2,000 ppm) and odors indicative of gasoline or solvent contamination, were submitted for analysis of TCL volatile organic compounds (VOCs) by EPA Method 8260 and PCBs by EPA Method 8081. The sample from boring B-4 (13'-14') was subsequently requested to undergo a total petroleum hydrocarbon (TPH) fingerprinting scan using NYSDOH Method 310-13. Samples B-6 (9'-11'), B-8 (3'-5') and B-12 (8'-9') which exhibited slightly elevated PID readings, were submitted for analysis of DEC STARS list VOCs using EPA Method 8021 and STARS list SVBNs using EPA Method 8270.

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Drill cuttings from B-4 and B-5 were contained and are stored on-site in a secured 55-gallon drum. Based on the investigation findings, this drum will require special handling and disposal procedures.

Each boring location was restored at the end of the program to its original condition with drill cuttings, grout and asphalt cold patch.

Sediment Traps/Floor Drain Testing Program

At the request of the City of Rochester, personnel from Monroe County cleared the sediments out of the three quonset hut sediment traps. On October 13, 1998, following the clearing of the traps, Sear-Brown visually inspected the traps for their integrity. The traps were observed to consist of clay crocks with solid bottoms. No cracks or fissures were visually observed in any of the traps.

Also on October 13, 1998, Sear-Brown conducted floor drain dye tests to verify the anticipated discharge of the three floor drains to the municipal sewer system. The dye test involved introduction of a coloring agent to the floor drains and flushing of the drains with potable water provided by the City of Rochester. The tests were independently conducted on each of the three sediment traps. All three drains were observed to discharge to a sanitary sewer line which is located to the west of the quonset hut and flows in a northerly direction.

Based on these observations, no further investigation appears necessary with regards to the sediment traps and floor drains.

Asbestos Sampling

Three samples of the potential asbestos containing pipe insulation and three samples of elbow insulation were obtained by a Sear-Brown accredited Asbestos Inspector on October 13, 1998. The samples were submitted to Labella Associates, P.C, a NYSDOH accredited laboratory. The laboratory report is presented in Appendix D. Analytical results indicate that both the pipe insulation and elbow insulation were asbestos containing (i.e. greater than 1% asbestos). Approximately 236 linear feet of asbestos material was identified in the quonset hut.

Analytical Results

The detected analytical results are summarized in Table 3 and are compared to applicable DEC soil guidance values. The laboratory report is presented in Appendix E. As shown in Table 3, various VOCs were detected in the soil samples from borings B-4, B-5, B-6 and B-8. The detected VOCs are commonly associated with gasoline. Reported concentrations of four of these VOC compounds (ethylbenzene, toluene, m,p-xylene and o-xylene) exceed soil guidance values established in DEC STARS Memo #1 for the samples from boring B-4 and B-5. More, specifically, ethylbenzene was

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analyzed at 201,655 parts per billion (ppb) in the soil sample from boring B-4. The DEC STARS soil guidance value for ethylbenzene is 100 ppb. Similarly, toluene, m,p-xylenes and o-xylene were found at 199,525 ppb, 818,979 ppb and 351,006 ppb, respectively, in the soil sample from B-4. These compounds also have a DEC STARS soil guidance value of 100 ppb. In the soil sample from boring B-5, the concentrations of ethylbenzene, toluene, m,p-xylenes and o-xylene, were 1,581 ppb, 1,156 ppb, 7,335 ppb and 2,494 ppb respectively. The VOCs found in B-6 and B-8 did not exceed DEC soil guidance values.

The results of the SVBN analysis are also summarized in Table 3. Various SVBNs were detected in boring B-9, while two SVBNs were detected in boring B-10. Five of the detected SVBNs (benzo (a) anthracene, chrysene and benzo (b) fluoranthene, benzo (k) fluoranthene and benzo (a) pyrene) exceeded their respective DEC recommended soil cleanup objectives in the sample from B-9. For example, benzo (a) anthracene (DEC soil cleanup objective of 301 ppb) was detected in the soil sample from B-9 at 1,259 ppb. Also in B-9, chrysene with a DEC soil cleanup objective of 301 ppb was detected at 1,102 ppb. None of the SVBNs exceeded DEC recommended cleanup objectives in the sample from B-10. The detected SVBNs are polycyclic aromatic hydrocarbons (PAHs) which commonly result from the incomplete combustion of organic matter including fossil fuels, such as coal or fuel oil, and are often found in ash, cinders and soot, and coal tar pitch. Small quantities of such materials were observed in some of the boreholes located in the former county jail building footprint. Based on the fill material present throughout the site, it is not unusual to find these PAHs and no further investigation is recommended at this time. These contaminants are isolated below asphalt paving and do not appear to present a health concern at this time. However, if the materials exhibiting these contaminants were to be disturbed in the future, such as during construction and earth moving activities, special considerations and precautions would need to be implemented.

The RCRA metals analytical results are compared with DEC recommended soil cleanup objectives and eastern USA background ranges (Table 3). These comparisons reveal that RCRA Metals were found below DEC recommended soil cleanup objectives and the Eastern USA Background Range with the exception of mercury in boring B-10 (0.201 ppm) which was found very slightly above the upper limit of the Eastern USA background range of 0.2 ppm. Given the depth of this finding (5-9 ft. bgs), this minor exceedance does not appear to be of concern.

The TPH fingerprinting scan identified a light weight petroleum hydrocarbon (PHC) such as gasoline in the soil sample from B-4 at 1789 ppm. The reported concentration of TPH from this sample exceeds the individual generic maximum contaminant concentration of 10 ppm that is designed to protect against objectionable nuisance characteristics (STARS Memo #1).

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Supplemental Phase II Investigation

As previously mentioned, soil samples were obtained from boreholes B-4 and B-5 and laboratory analysis indicated the presence of typical gasoline components such as ethylbenzene, toluene, and xylenes. In addition, a petroleum hydrocarbon (PHC) scan was run on B-4 which indicated that the material was a light weight PHC such as gasoline. However, since the high PID readings (>2,000 ppm) that were measured at B-4 and B-5 are not typical of gasoline, the potential presence of solvent contaminant was suspected and could not be ruled out. This was due to elevated laboratory detection limits which may have masked a lower concentration solvent compound. Therefore, it was requested that additional soil sampling and analysis as well as downhole air sampling be performed in the area of boring B-4 to determine if solvent contaminants are potentially present in the subsurface.

The supplemental investigation included a one-half day subsurface investigation consisting of two drilled soil borings to assess the potential presence of solvent contamination near the northeastern corner of the quonset hut.

The first borehole (SB-4a) was completed within a few feet of former borehole SB-4 (Figure 2) and was drilled to refusal (14 ft. bgs). Soil samples from SB-4a were screened for the presence of volatile organic vapors with a calibrated PID. Again, significantly elevated headspace readings (over 2,000 ppm) were noted in SB-4a at depths of 10 to 14 ft. bgs. Lower, but still elevated, headspace readings were obtained starting at 4 ft. bgs. Grayish-black staining and strong odors were observed in the recovered soils starting at 4 ft. bgs.

A soil sample was collected from SB-4a at a depth interval of 12-14 ft. bgs. for analysis by Paradigm. In addition, a duplicate sample of the chosen soil sample interval was submitted to a different NYSDOH ELAP certified analytical laboratory for quality assurance/quality control purposes. This second laboratory was Columbia Analytical Services of Rochester, New York. The soil samples were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs) by EPA Method 8260.

The second borehole, SB-4b, was drilled to 11 ft. bgs for the purpose of collecting a soil vapor sample in a Summa canister. The Summa canister is a stainless steel canister which has been evacuated of air (i.e., vacuum). The sampling method consisted of introducing Tygon tubing into the borehole to the desired depth. The tube was secured to the stainless steel Summa canister which was then opened for collection of borehole soil vapors. This sampling was performed by a representative of Paradigm. Once the sample was obtained, the Summa canister was sealed and forwarded by Paradigm to Performance Laboratory which is located in California. The air from the canister was analyzed for the Target Compound List (TCL) VOCs. Laboratory data from the Supplemental Phase II Investigations are presented in Appendix E.

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The TCLP analysis of the soil samples did not indicate the presence of TCLP volatile organics in the soil samples analyzed. To the contrary, all the TCLP VOCs were reported as non-detect by both laboratories. However, it should be noted that the TCLP VOC list does not include the petroleum based analytes previously identified at the site, but instead it is designed to evaluate the presence of hazardous wastes originating primarily from solvents. The soil vapor analysis indicated the presence of elevated concentrations of the previously identified VOCs including ethylbenzene, toluene, and xylenes (Table 4). In addition, a low concentration (85 ppb) of cis-1,2-dichloroethene was detected. Therefore, it was concluded that the source of the contaminants of concern was indeed gasoline.

Potential Remedial Scenarios and Costs

The data generated from this Phase II Environmental Investigation has indicated the presence of petroleum affected soils above DEC soil guidance values. The affected soils are located adjacent to the north of the quonset hut which is located adjacent to the eastern property line, along the Genesee River. Remedial measures are necessary to address these petroleum affected soils.

At this time, you have indicated that it is not certain if the property will be re-developed or if it will remain as a parking lot. As previously indicated, there are numerous underground utilities which are present near and around the area of concern which may impede certain investigative and remedial measures. It is understood that if re-development of the subject property is to occur, then the quonset hut will be removed and excavation of soils will likely occur during construction of new waterfront buildings. Utilities may be re-routed as a result of this construction. Therefore, in this case, excavation and disposal of the contaminated soils in conjunction with construction activities, is a logical remedial measure. However, if the subject property is to remain as a parking lot, it may not be physically feasible to properly excavate the affected soils. Therefore, an in-situ remedial measure would be more appropriate. These two scenarios and their potential costs are described below.

Scenario A – Excavation and Disposal

Should the City choose to redevelop the property, where excavation of building foundations would be involved, excavation and disposal of the affected soil would be a logical remedial method. In order to estimate the extent of petroleum impacted soil near borings B-4 and B-5 that may be subject to remediation, laboratory analytical data, field headspace screening results, and observations noted during the field investigation were evaluated. The lateral extent of impacted soils was approximated by taking into consideration the location and distance to the nearest sample location which did not exhibit indications of petroleum impacts. Since field and analytical data were not available for the soils beneath the quonset hut, it was assumed, for cost estimating purposes, that the affected soils extended 15 ft. south under the hut. The vertical extent of impacted soil was estimated using headspace readings, field observations and depth to bedrock. Based on the

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data available to date, and the assumptions stated above, the volume of impacted soil that may require remediation was estimated to be about 1,030 cubic yards. Calculations are presented in Appendix F.

The estimated remedial costs associated with this volume of petroleum impacted soil is on the order of \$140,000. This includes excavation of impacted soil to bedrock, off-site disposal as non-hazardous soil at a permitted solid waste disposal facility, confirmatory sampling and analysis, limited engineering oversight, backfilling the excavation and compaction. This cost assumes that the quonset hut would be removed prior to soil excavation. In addition, it should be noted that special precautions such as shoring may be necessary since the affected area is located close to a Genesee River retaining wall. Incremental costs that might be incurred for shoring are not included in the cost estimate. Given a 50% contingency factor for the uncertainties regarding the quantity of affected soil, it is estimated that the remedial cost for excavation and disposal could be on the order of \$210,000.

Scenario B – In-Situ Remediation

Should the City decide to continue use of the subject property as a parking lot, an in-situ method such as soil vapor extraction (SVE) may be a more appropriate remedial alternative. A pilot test would be conducted prior to design and installation of a SVE system. Based on the data available to date, the remedial costs associated with performing a pilot test and installing, maintaining and operating a five well SVE system for 12 months is on the order of \$89,000. Given a 50% contingency factor for the uncertainties regarding the extent of affected soil, it is estimated that the remedial cost for conducting this remedial scenario could be on the order of \$133,500. It is possible that the system will have to be operated for more than 12 months, however, the costs to operate and maintain the system beyond the first year have not been included in this cost estimate. Calculations are presented in Appendix F.

Recommendations for Additional Investigations

To define the areal extent of contamination in the vicinity of SB-4 and the former quonset hut, additional subsurface investigations are recommended. It is recommended that an additional day of drilling be performed to better define the southerly and westerly extent of contamination. It should be noted however, that there are numerous subsurface utility lines which will preclude drilling in certain areas. Also, to better define the southerly extent of contamination, it would be necessary to perform drilling inside the quonset hut. Therefore, special drilling equipment might be necessary, unless the quonset hut is removed. It is estimated that the supplemental investigation program would cost approximately \$4,500-\$6,500 to perform additional drilling, collect soil samples for STARS VOCs as well as geotechnical parameters (for remedial purposes) and prepare a summary letter report.

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Given the presence of affected soil extending down to the top of rock and the lack of groundwater observed during the drilling program, it is recommended that four bedrock groundwater monitoring wells be installed to evaluate the potential for impacts to groundwater. Assuming installation of four two-inch PVC monitoring wells to approximately 20 feet in depth; development, purging and sampling the groundwater wells for STARS VOCs; and preparation of summary report, it is estimated that these services would cost approximately \$9,000-\$11,000.

Conclusions and Recommendations

With regards to the PAHs detected in the fill materials in borings B-9 and B-10, no further investigation is recommended at this time. These contaminants are isolated below asphalt paving and do not appear to present a health concern at this time. However, it is recommended that consideration be given to preparation of a Soil Management Plan for construction activities, if and when the property is to be developed, to properly manage potential construction worker health concerns, soil relocation and disposal requirements. Should a Soil Management Plan be needed, it could be prepared for an estimated cost in the range of \$1,500 - \$2,000.

As previously indicated, the data indicates that petroleum affected soil is present above soil guidance values adjacent to the north of the quonset hut. Based on the information available at this time, the following table summarizes our preliminary estimate of the anticipated range of costs for further investigation of the extent of contamination and remedial alternatives:

<u>Investigation/ Remediation Measures</u>	<u>Preliminary Estimated Range of Investigation/Remediation Costs</u>
Monitoring Well Installations	\$ 9,000 - \$ 11,000
Additional Soil Sampling	\$ 4,500 - \$ 6,500
Soil Management Plan*	\$ 1,500 - \$ 2,000
<i>Remedial Scenario A – Soil Removal/Disposal**</i>	\$140,000 - \$210,000
<i>Remedial Scenario B – Soil Vapor Extraction System**</i>	\$ 89,000 - \$133,500

* This estimate does not include additional costs that may be incurred if excavation, removal and disposal of materials contaminated with PAHs are found to be required.

** Since it is not known if groundwater contamination exists at the subject property, these estimates do not include additional costs to remediate potentially contaminated groundwater.

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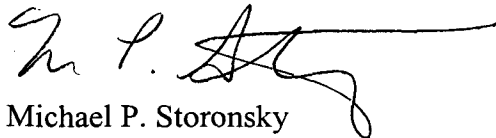
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Please be advised that the results from this and future Phase II Investigations may need to be reported to the DEC. Sear-Brown is prepared to assist you with the DEC notification process, if deemed appropriate.

Should you have any questions or require further information, please call.

Sincerely,



Michael P. Storonsky
Associate

MPS:JCI:glv:M:1515502\R0001.doc

Attachments: Figures 1 and 2

Tables 1-4

Appendix A: Sanborn Fire Insurance Maps

Appendix B: Geomatrix Report

Appendix C: Boring Logs

Appendix D: Laboratory Analytical Reports

Appendix E: Engineering Calculations



THE SEAR-BROWN GROUP
FULL-SERVICE DESIGN PROFESSIONALS

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Figure 1
180 and 182 Exchange Blvd.

City of Rochester, Monroe County, NY

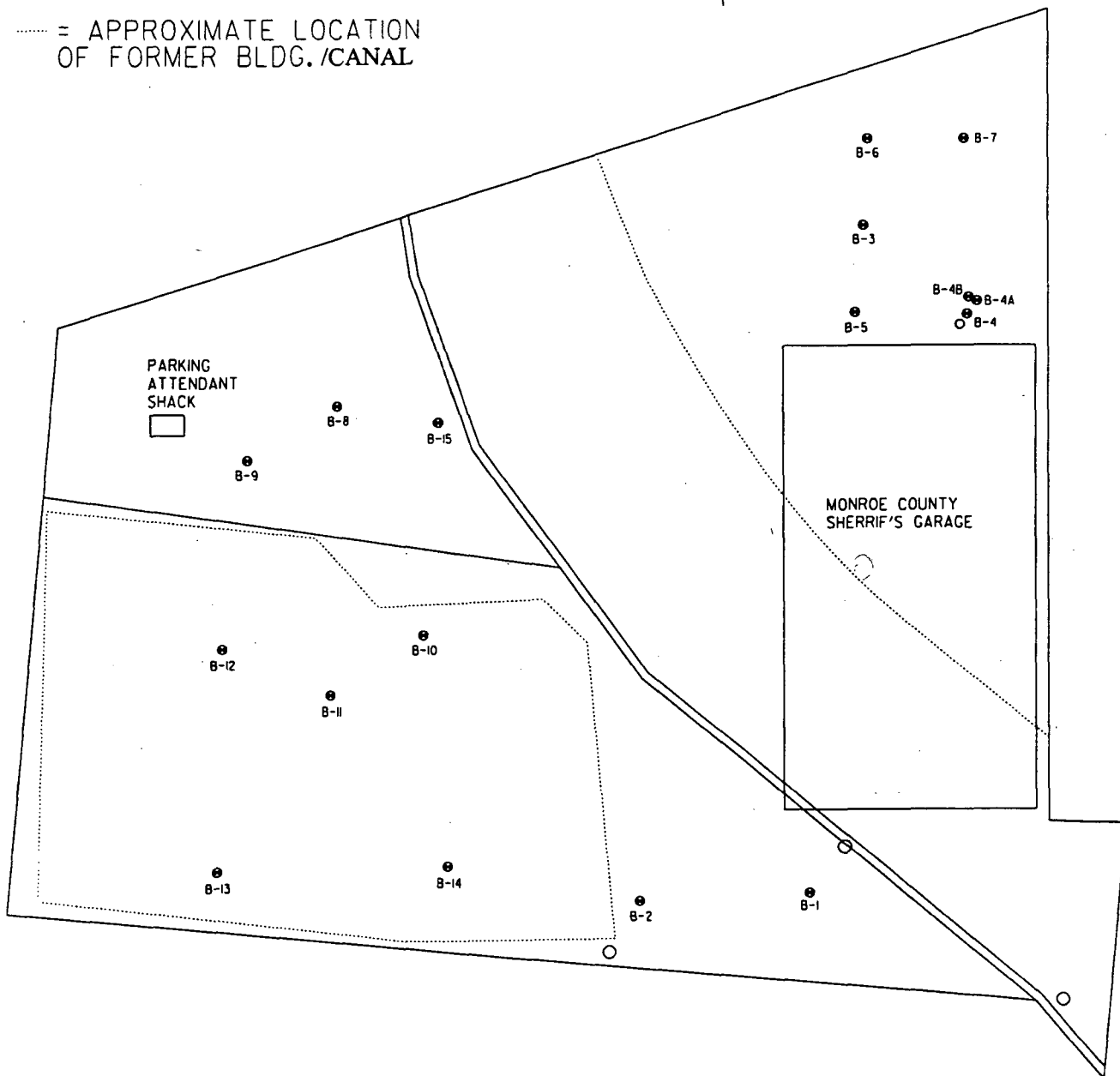
Site location Map

Scale: 1 in. = 2,000 ft.

Source: USGS Topographic Map, Rochester East Quadrangle

LEGEND

- = SOIL SAMPLE POINT
- = MANHOLE
- = APPROXIMATE LOCATION OF FORMER BLDG./CANAL



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PROJECT MANAGER M. STORONSKY	DATE 10/20/98
DEPT./BRANCH/AFFILIATE/MANAGER M. STORONSKY	DATE 10/20/98
DRAWN BY M. GORMAN	DATE DRAWN 10/20/98
SCALE 1IN = 40 FT	DATE ISSUED 10/20/98

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PROJECT
**180-182 EXCHANGE STREET
ROCHESTER, NY**

TITLE OF DRAWING
SOIL BORING LOCATIONS

PROJECT NO.
1515502
DRAWING NO.
2

TABLE 1
SUMMARY OF MAXIMUM SOIL BORING PID HEADSPACE READINGS
180-182 Exchange Street
Rochester, NY

Boring	Sample	Depth (ft BGS)	PID Headspace		
			Peak (ppm)	Background (ppm)	Net (ppm)
B-1	3	5-7	3.6	2.8	0.8
	4	7-9	3.8	2.8	1.0
	5	10-12	3.9	2.8	1.1
	6	12-14.5	4.5	2.8	1.7
B-2	1	1-3	3.6	3.6	0.0
	5	9-11	3.6	3.6	0.0
	6	11-13	3.6	3.6	0.0
	7	13-15	3.6	3.6	0.0
B-3	1	1-1.5	3.4	2.9	0.5
	2	5-7	3.5	2.9	0.6
	3	7-9	4.2	2.9	1.3
	4	9-11	3.5	2.9	0.6
	5	11-13	4.1	2.9	1.2
B-4	1	3-5	18.6	2.6	16.0
	2	5-7	424	2.6	421.4
	3	7-9	1311	2.6	1308.4
	4	9-11	1851	2.6	1848.4
	5	11-13	>2000	NA	>2000
	6	13-14	>2000	NA	>2000
B-5	1	1-3	4.6	4.6	0.0
	2	3-5	8.6	4.6	4.0
	3	5-7	4.6	4.6	0.0
	4	7-9	10.1	4.6	5.5
	5	9-11	154.0	4.6	149.4
	7	13'-14'	>2000	NA	>2000
B-6	1	1-1.5	3.6	2.8	0.8
	2	5-7	3.4	2.8	0.6
	3	7-9	9.0	2.8	6.2
	4	9-11	11.2	2.8	8.4
	5	11-13	5.0	2.8	2.2
	6	13-13.5	3.8	2.8	1.0
B-7	1	3-5	4.1	3.0	1.1
	2	5-7	3.8	3.0	0.8
	3	7-8.3	4.2	3.0	1.2

TABLE 1
SUMMARY OF MAXIMUM SOIL BORING PID HEADSPACE READINGS
180-182 Exchange Street
Rochester, NY

Boring	Sample	Depth (ft BGS)	PID Headspace		
			Peak (ppm)	Background (ppm)	Net (ppm)
B-8	1	1-3	5.4	4.0	1.4
	2	3-5	9.9	4.0	5.9
	3	5-7	5.2	4.0	1.2
	4	7-9	NA	NA	NA
B-9	1	1 - 2.5	10.6	5.8	4.8
	2	8-10	9.3	5.8	3.5
	3	10-12	6.1	5.8	0.3
B-10	1	1-3	6.2	5.0	1.2
	2	3-5	NA	NA	NA
	3	5-7	13.2	5.0	8.2
	4	7-9	5.0	5.0	0.0
	5	9-11	7.6	5.0	2.6
	6	11-13	5.0	5.0	0.0
	7	13-15	5.1	5.0	0.1
B-11	1	1-3	4.2	3.8	0.4
	2	5-7	4.6	3.8	0.8
	3	7-9	4.2	3.8	0.4
	4	9-11	4.2	3.8	0.4
	5	11-13	3.8	3.8	0.0
B-12	1	5-7	3.9	4.4	0.0
	2	7-9	4.1	4.4	0.0
B-13	1	5-7	3.9	3.6	0.3
	2	7-9	4.1	3.6	0.5
B-14	1	1-3	2.5	2.2	0.3
	2	5-7	2.8	2.2	0.6
	3	7-9	2.4	2.2	0.2
	4	9-11	2.4	2.2	0.2
	5	11-13	NA	NA	NA
	6	13-15	2.2	2.2	0.0
	7	15-17	NA	NA	NA
B-15	1	1-3	4.2	3.6	0.6

Notes:

1. All readings expressed in ppm (parts per million) using a 10.2 eV lamp.
2. NA = Not available.

TABLE 2
ANALYTICAL SOIL SAMPLE SUMMARY
180-182 Exchange Street
Rochester, NY

Boring	Depth (feet) below ground	Date Collected	Matrix	Analytical Parameters
B-1	12-14.5	10/17/98	soil	TCL 8270 TOTAL RCRA METALS
B-4	13-14	10/17/98	soil	TCLP 8260 PCBs 8081
B-4A	14-Dec	11/24/98	soil	TCLP 8260
B-5	13-14	10/17/98	soil	TCL 8260B PCBs 8081
B-6	9.0-11	10/17/98	soil	STARS 8021 STARS 8270
B-8	3.0-5	10/18/98	soil	STARS 8021 STARS 8270
B-9	1-2.5	10/17/98	soil	TCL 8270 TOTAL RCRA METALS
B-10	5.0-10	10/17/98	soil	TCL 8270 TOTAL RCRA METALS
B-12	8.0-9	10/18/98	soil	STARS 8021 STARS 8270

TABLE 3
SUMMARY OF DETECTED COMPOUNDS
SOIL SAMPLING
180-182 Exchange Street
Rochester, New York

	Units	Guidance Value*	Eastern USA Background Range*	B-1	B-4	B-5	B-6	B-8	B-9	B-10
Sample Depth	ft.			12-14.5	13-14	13-14	9-11	3-5	1-2.5	5-7
EPA Method 8260B										
<u>TCL - Volatiles</u>										
Ethylbenzene	ug/kg	100	NA		201655	1581				
Toluene	ug/kg	100	NA		199525	1156				
m,p-Xylene	ug/kg	100	NA		818979	7335				
O-Xylene	ug/kg	100	NA		351006	2494				
NYDOH Method 310.13										
<u>Petroleum Hydrocarbon</u>										
TPH	mg/kg	NA	NA		1,789					
EPA Method 8021										
<u>Stars LIST - Volatiles</u>										
Toluene	ug/kg	100	NA					7.7		
Ethylbenzene	ug/kg	100	NA				6.9			
m,p-Xylene	ug/kg	100	NA				68.5	17.8		
O-Xylene	ug/kg	100	NA				8.9			
1,2,4-Trimethylbenzene	ug/kg	100	NA					11.6		
EPA Method 8270										
<u>TCL - Semi-Volatile BN</u>										
Fluoranthene	ug/kg	50000	NA						2623	
Anthracene	ug/kg	50000	NA						461	
Phenanthrene	ug/kg	50000	NA						1758	340
Benzo (a) anthracene	ug/kg	301	NA						1259	
Chrysene	ug/kg	301	NA						1102	
Pyrene	ug/kg	50000	NA						2836	348
Benzo (b) fluoranthene	ug/kg	1100	NA						1363	
Benzo (k) fluoranthene	ug/kg	1100	NA						1151	
Benzo (g,h,i) perylene	ug/kg	50000	NA						442	
Benzo (a) pyrene	ug/kg	301	NA						901	
Indeno (1,2,3-cd) pyrene	ug/kg	3200	NA						495	
RCRA Metals Various Methods										
<u>Total Concentrations</u>										
Arsenic	mg/kg	7.5 or SB	3-12	5.36					5.4	2.99
Barium	mg/kg	300 or SB	15-600	23.8					42.7	82.3
Cadmium	mg/kg	1 / 10***	0.1-1	2.01					2.03	1.66
Chromium	mg/kg	10 / 50***	1.5-40****	7.36					8.49	7.11
Lead**	mg/kg	SB	**	31.8					69.2	211
Mercury	mg/kg	0.1	0.001-0.2	0.142					0.187	0.201
Selenium	mg/kg	2 or SB	0.1-3.9	<0.429					<0.442	<0.423
Silver	mg/kg	SB	NA	<0.875					<0.885	<0.826

Notes:

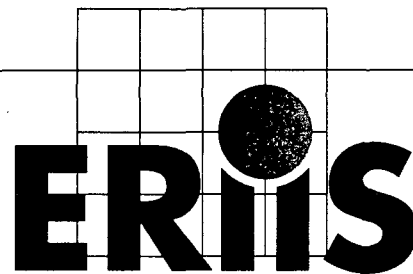
1. ug/kg = micrograms per kilogram (equivalent to parts per billion).
2. Sample results which exceed guidance values are presented in **Bold**.
3. Blank space= below method detection limit
4. SB = site background
5. * Guidance values and Eastern USA Background ranges from NYSDEC guidance document TAGM HWR, 94-4046, Jan 24, 1994.
and STARS Memo #1, Petroleum Contaminated Soil Guidance Policy, August 1992
6. ** Background levels for lead vary widely. Average background levels in metropolitan or suburban areas typically range from 200-500 ppm.
7. *** Existing and proposed guidance values.
8. **** New York State Background
9. NA = Not applicable

TABLE 4
SUMMARY OF DETECTED COMPOUNDS
SUMMA CANISTER AIR SAMPLE
180-182 EXCHANGE STREET
ROCHESTER, NEW YORK

Compound	Result (ppb)	Reporting Limit (ppb)
cis-1,2-Dichloroethene	85	62
Toluene	210	66
Ethylbenzene	4,000	58
m-&p-xylenes	13,000	58
o-Xylene	3,200	58

Note:
ppb - parts per billion

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THE SEAR-BROWN GROUP



PERTAINING TO:
180 AND 182 EXCHANGE STREET
ROCHESTER, NY 14614

REPORT NUMBER:
273991A

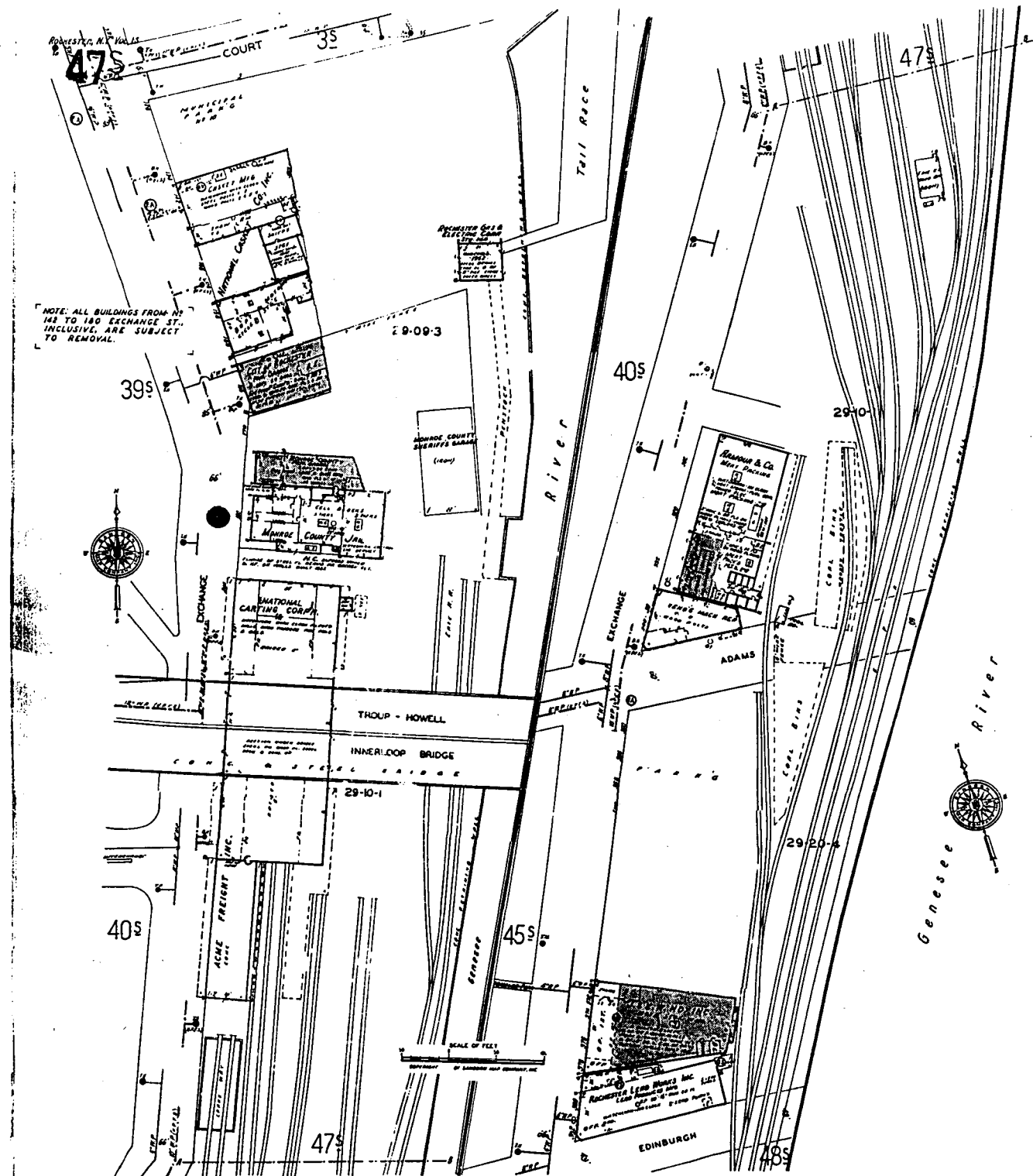
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09/21/1998

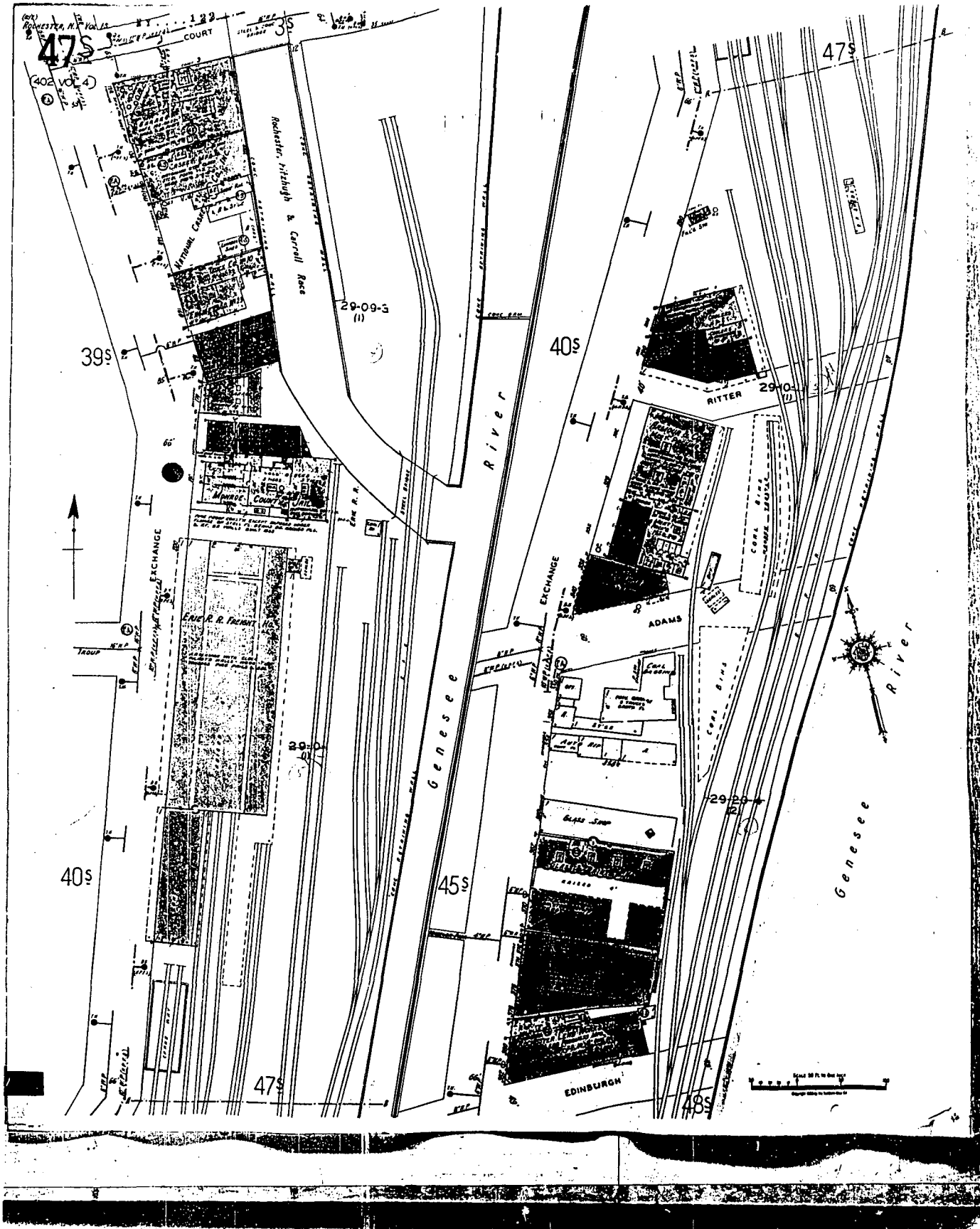
ON BEHALF OF:
The Sear-Brown Group
85 Metro Park
Rochester, NY 14623

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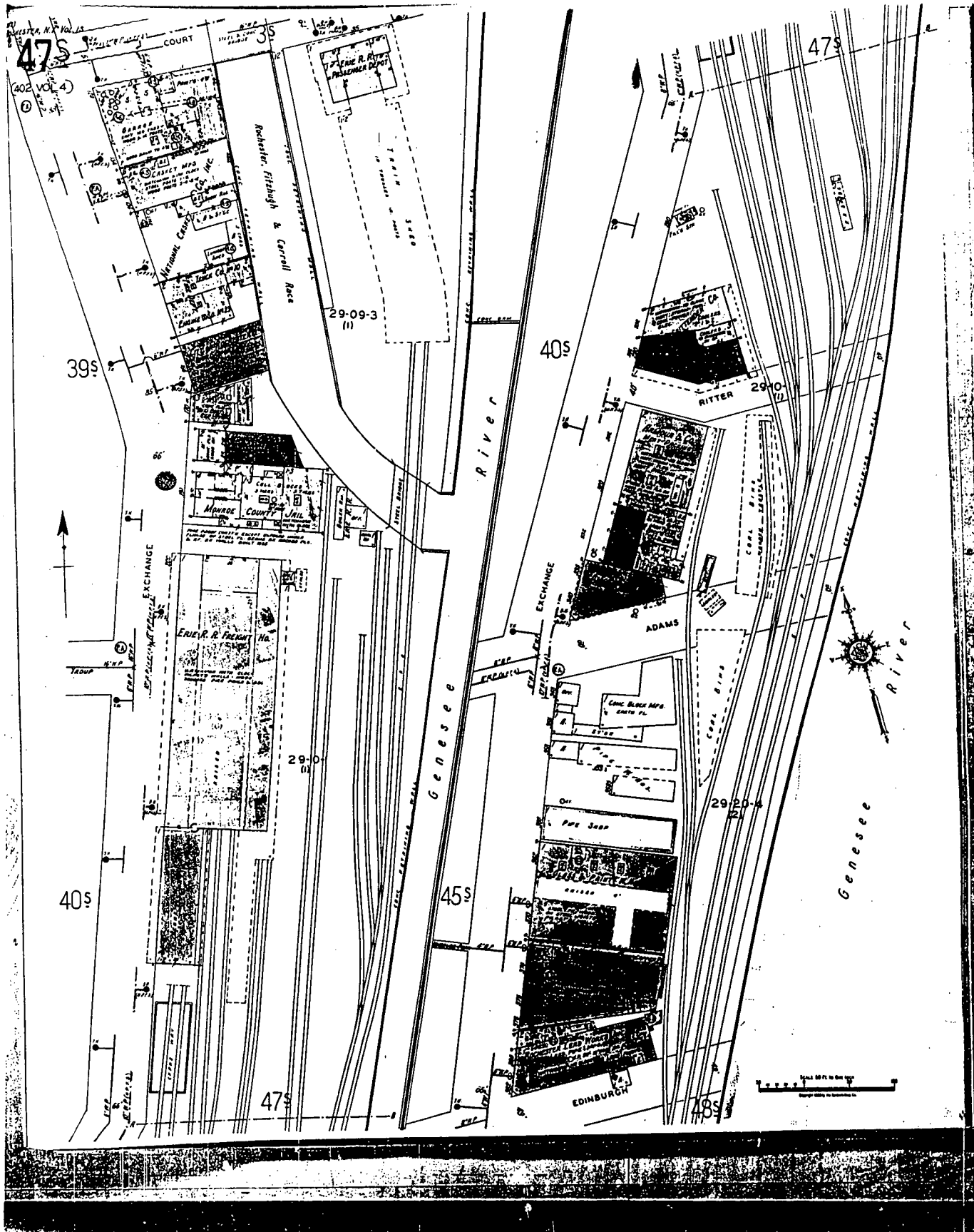
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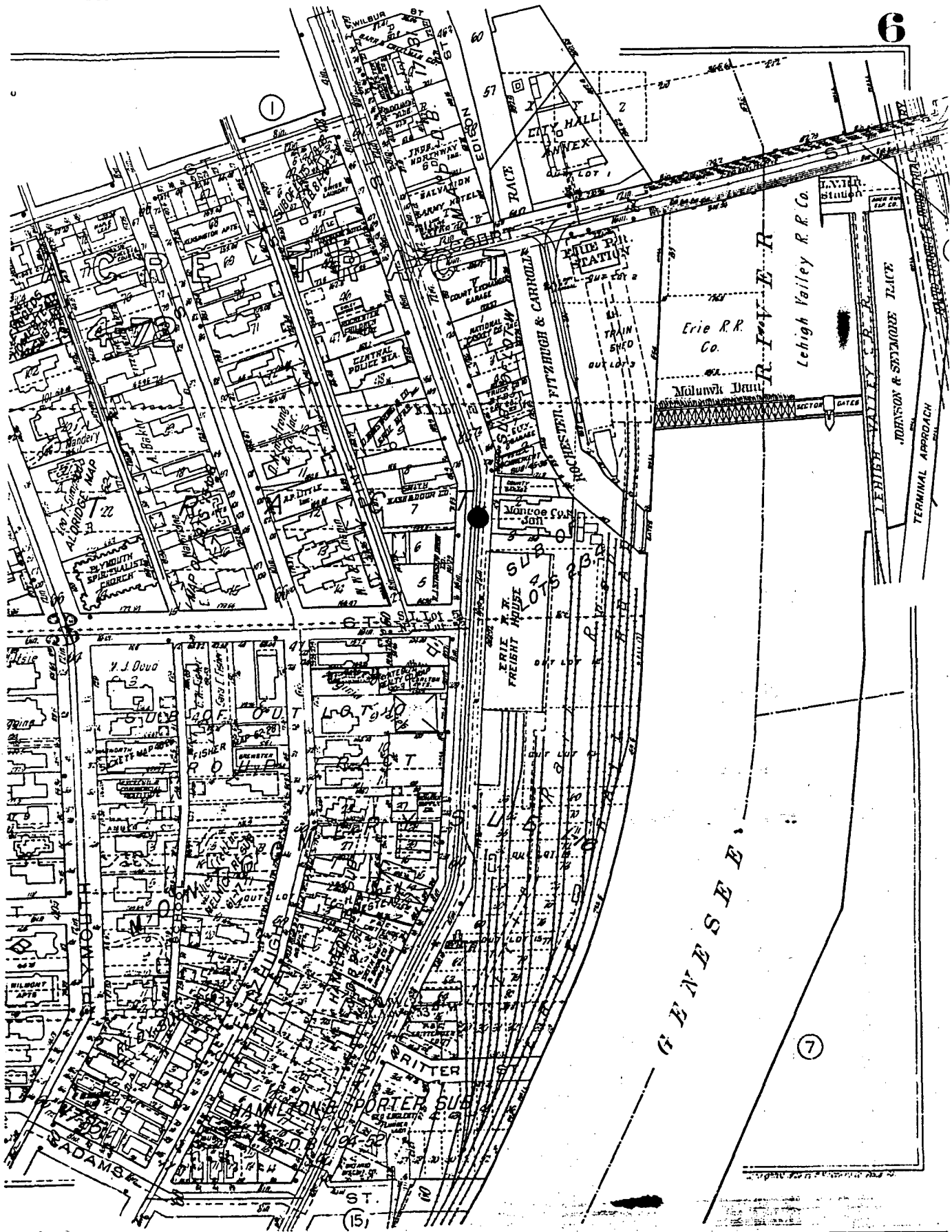
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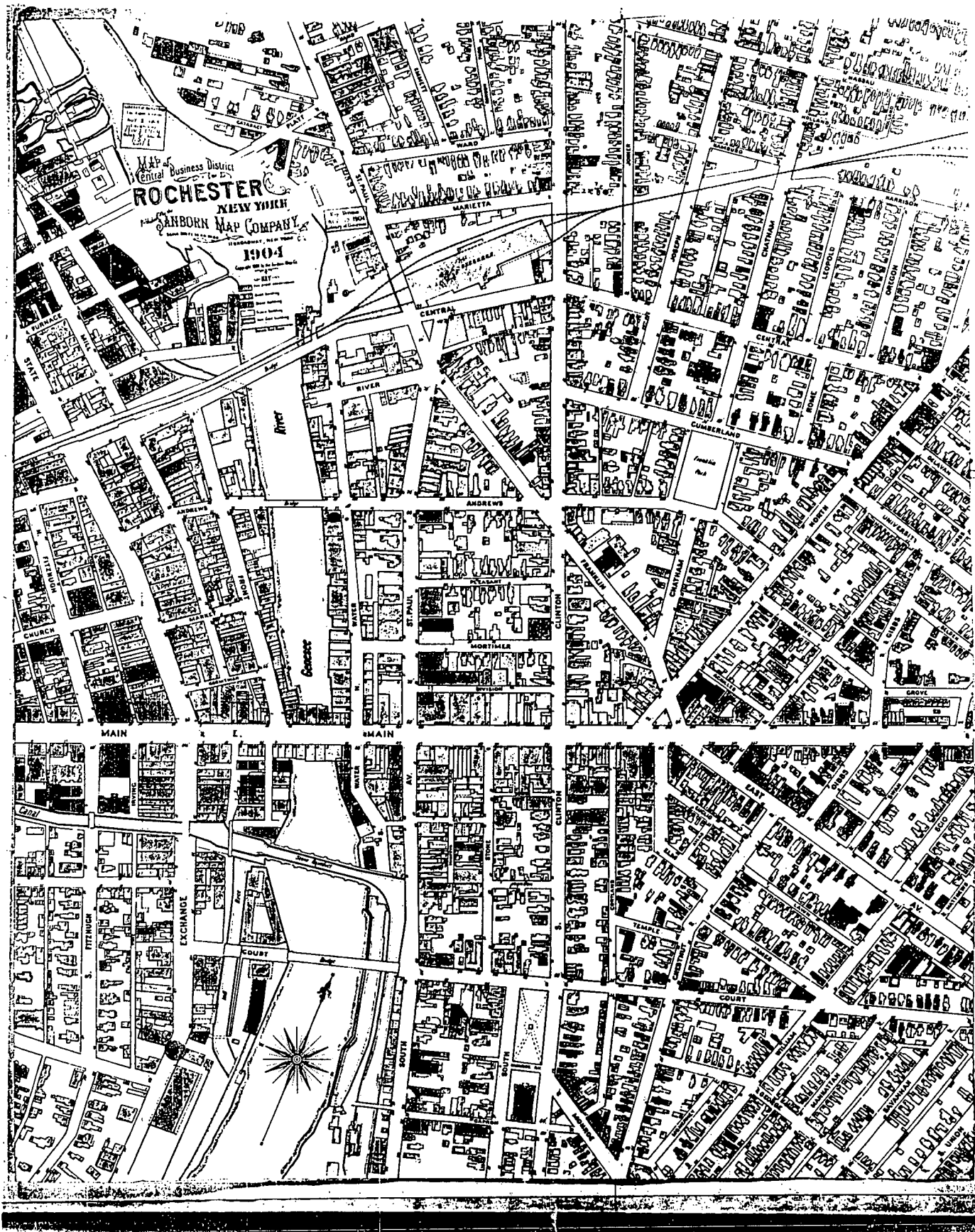


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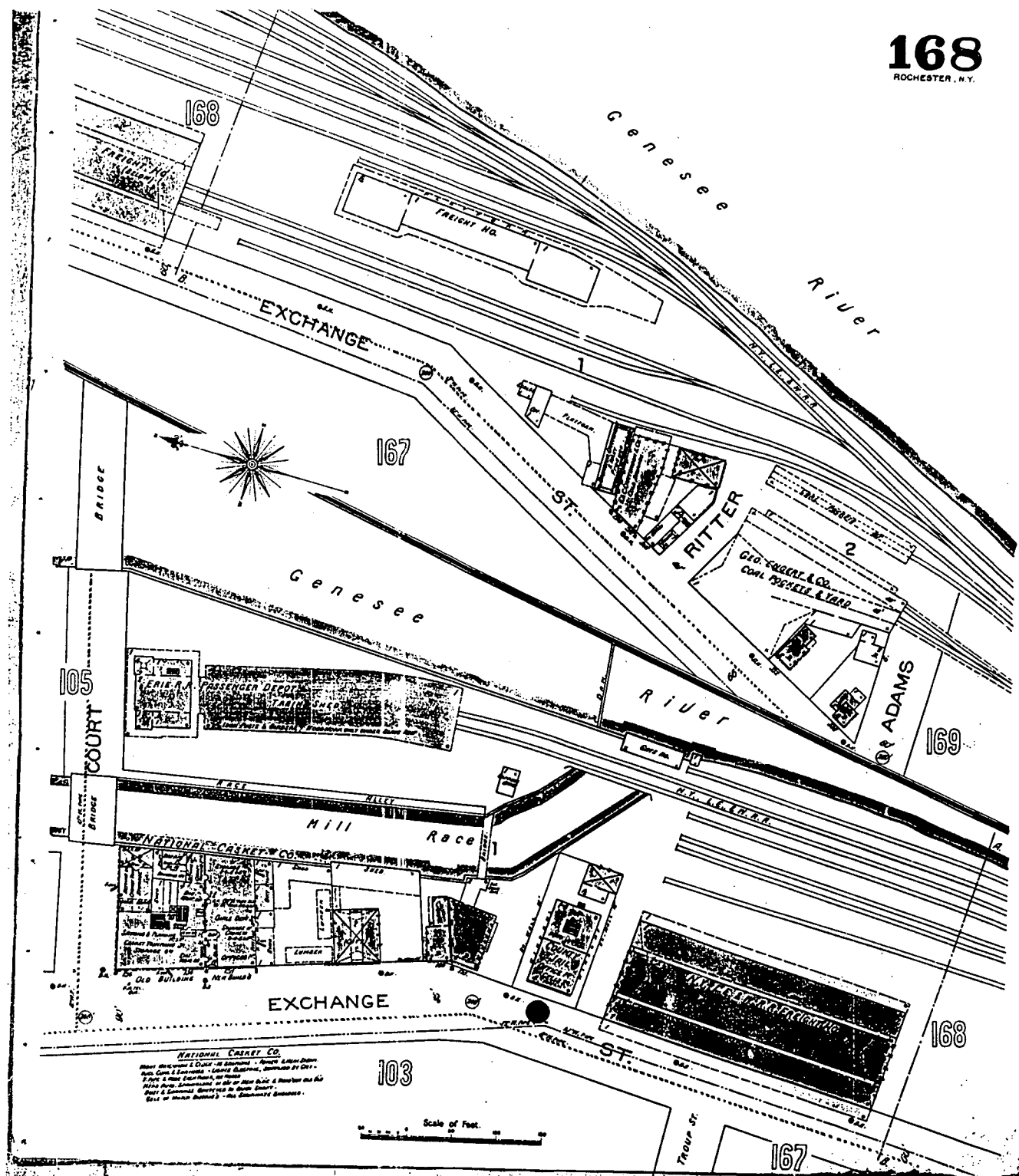
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1892

October 6, 1998

B4979

Julia Ispentchian
The Sear-Brown Group
85 Metro Park
Rochester, NY 14623

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OCT 7 1998

THE SEAR-BROWN GROUP

Dear Ms. Ispentchian:

Re: Geophysical Survey Results, 180-182 Exchange Blvd., Rochester, NY

1.0 Introduction

This report presents the results of a geophysical investigation performed by Geomatrix Consultants, Inc. (Geomatrix) at a property located at 180-182 Exchange Blvd. in Rochester, NY. Historical records provided to Geomatrix by Sear Brown indicate that the Monroe County Jail occupied the western portion of the site. This building has since been demolished. The site is currently an asphalt paved parking lot. A metallic Quonset hut, used as the Monroe County Sheriff's Garage, is located on the eastern portion of the site. Several metallic surface features are present on the site including a dumpster, a shack for the parking attendant, manholes, and fences.

The investigation was conducted to identify geophysical anomalies that may be related to a underground storage tanks (USTs) that may be present beneath the site. The accessible areas of the site was geophysically investigated on October 3, 1998 using time domain electromagnetic (TDEM) equipment. The field methods and results of the investigation are presented below.

2.0 Methodology

2.1 Reference Grid

A reference grid was installed by Geomatrix personnel prior to data acquisition. Data were collected along lines spaced 3 feet apart in a north-south direction. The survey grid was marked with yellow and orange spray paint to facilitate reoccupation of stations if necessary.

An attempt was made to locate labeled grid coordinates between rows of parking spaces in the event that vehicles are present at the time any possible intrusive follow-up investigation is performed. Surface features were annotated on-site to assist with geophysical data interpretation. These surface features are presented overlain onto the geophysical plan maps.

2.2 Geonics EM61 High Sensitivity Metal Detection Survey

The Geonics EM61 unit is a high sensitivity, high resolution TDEM metal detector that can detect both ferrous and nonferrous metallic objects. It has an approximate investigation depth of 10 feet. The processing console is contained in a backpack worn by the operator which is interfaced to a digital data logger. The transmitter and two receiver coils are located on a two-wheeled cart that is pulled by the operator.

The device's transmitter coil generates a pulsed primary EM field at a rate of 150 pulses per second, inducing eddy currents into the subsurface. The decay rates of these eddy currents are measured by two, 3.28 foot (1 meter) square receiver coils. By taking the measurements at a relatively long time frame after termination of the primary pulse, the response is practically independent of the survey area's terrain conductivity. Specifically, the decay rates of the eddy currents are much longer for metals than for normal soils.

Data are collected from the EM61's two receiver coils. One of the receiver coils is located coincident to the transmitter coil. The other receiver coil is located 1.31 feet (0.4 meters) above the transmitter coil. Data from the top receiver coil are stored on Channel 1 of a digital data logger. Data from the bottom receiver coil are stored on Channel 2 of the data logger. Channel 1 and Channel 2 data are simultaneously recorded at each station location. The instrument responses are recorded in units of milliVolts (mV). Data were recorded digitally by a data logger at a rate of approximately 2 measurements per foot along the survey lines which were spaced 3 feet apart.

3.0 Results

The EM61 Channel 2 data are presented in Figure 1. The color bar to the right of the map indicates the colors associated with the respective measured values. The color contour map represent the actual area covered by the survey.

Areas suspected to be free of buried metals are shown as color shades of blue. All areas exhibiting a response greater than background (0 to 12 mVolts) likely contain buried metals. These areas are depicted in shades of light blue through pink on the figure. Anomalies interpreted to be significant are alphabetically labeled on the figures and discussed below. It

is possible that any of the additional above background responses may be related to a UST, however, it is more likely that they are associated with minor amounts of buried metals.

The following labeled anomalous responses were observed and are referenced to Figure 1.

- Anomaly **A** is a north-south trending buried metal anomaly located in the northeast portion of the survey area. This anomaly is in the general area of a UST that was reportedly abandoned in place. This anomaly may be associated with a UST or other buried metal.
- Anomaly **B** is a buried metal anomaly located south of a dumpster. Anomaly B is not believed to arise from interference from the metal dumpster. There appears to be a linear anomaly trending northwest towards Anomaly B. This anomaly may represent a UST or other buried metal.
- Anomaly **C** is a buried metal anomaly east of the parking attendant shack. This anomaly appears to be associated with several smaller buried metal anomalies that are located in the vicinity of the shack. Anomaly C may be associated with a UST or other buried metal.
- Anomaly **D** is a buried metal anomaly located south of an interpreted east-west trending buried utility. Anomaly D may be associated with a UST or other buried metal.
- Anomaly **E** is a buried metal anomaly located south of Anomaly D. A subtle linear anomaly extends from Anomaly E towards Anomalous region G. This linear anomaly may represent a buried pipe or utility. Anomaly E may be associated with a UST or other buried metal.
- Anomaly **F** is a group of buried metal anomalies located south of the Monroe County Sheriff's Garage. The presence of thick vegetation and a fence to the south of these anomalies precluded acquisition of additional data south of this anomaly. Anomaly F may be associated with a UST or other buried metals.
- Anomalies **G** is a large region of buried metal anomalies located in the western portion of the survey area. Anomalous region G is in the vicinity of the now demolished Monroe County Jail that occupied a portion of the site. Anomalous region G may be related to buried construction and demolition debris remaining from the old jail or it may be related to remnants of a reinforced concrete foundation. The presence of this debris interferes with discrete responses from buried metal that may be representative of a UST. Therefore, any of the anomalies within this region may represent a UST or other buried metals.
- Anomaly **H** is a buried metal anomaly that is likely located off the actual site boundaries but within the survey area. While the ground surface in this area was asphalt paved, the geophysical response from Anomaly H is strongly suggestive of steel reinforced concrete. If a UST were present beneath Anomaly H, interference from the steel reinforced

concrete would preclude identification of geophysical anomalies that may suggest the presence of a UST.

4.0 Limitations

The geophysical methods used during this survey are established, indirect techniques for non-invasive subsurface reconnaissance exploration. As these instruments utilize indirect methods, they are subject to inherent limitations and ambiguities. Metallic surface features (steel reinforced concrete, automobiles, etc.) preclude reliable non-invasive data/results beneath, and in the immediate vicinity of, the surface features. Targets such as buried drums, buried tanks, conduits, etc. are detectable only if they produce recognizable anomalies or patterns against the background geophysical data collected. As with any remote sensing technique, the anomalies identified during a geophysical survey should be further investigated by other techniques such as historical aerial photography, test pitting and/or test borings, if warranted.

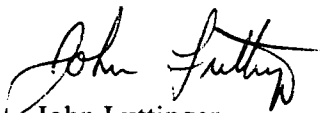
5.0 Conclusions

The geophysical survey performed at 180-182 Exchange Blvd. in Rochester, NY successfully mapped the distribution of metals below the ground surface. A total of 6 anomalies were identified that may possibly represent an UST and are labeled A through F on Figure 1. An anomalous region, identified as Anomaly G, is likely related to a demolished county jail that historically occupied the western portion of the site. Several linear anomalies are observed in the data set that are interpreted to represent buried pipes or utilities. It is possible that any of the additional above background responses may be related to a UST, however, it is more likely that they are associated with minor amounts of buried metals.

We trust the information contained in this report is sufficient for your present needs. Please do not hesitate to contact us if you have any questions or require additional information.

Yours very truly,

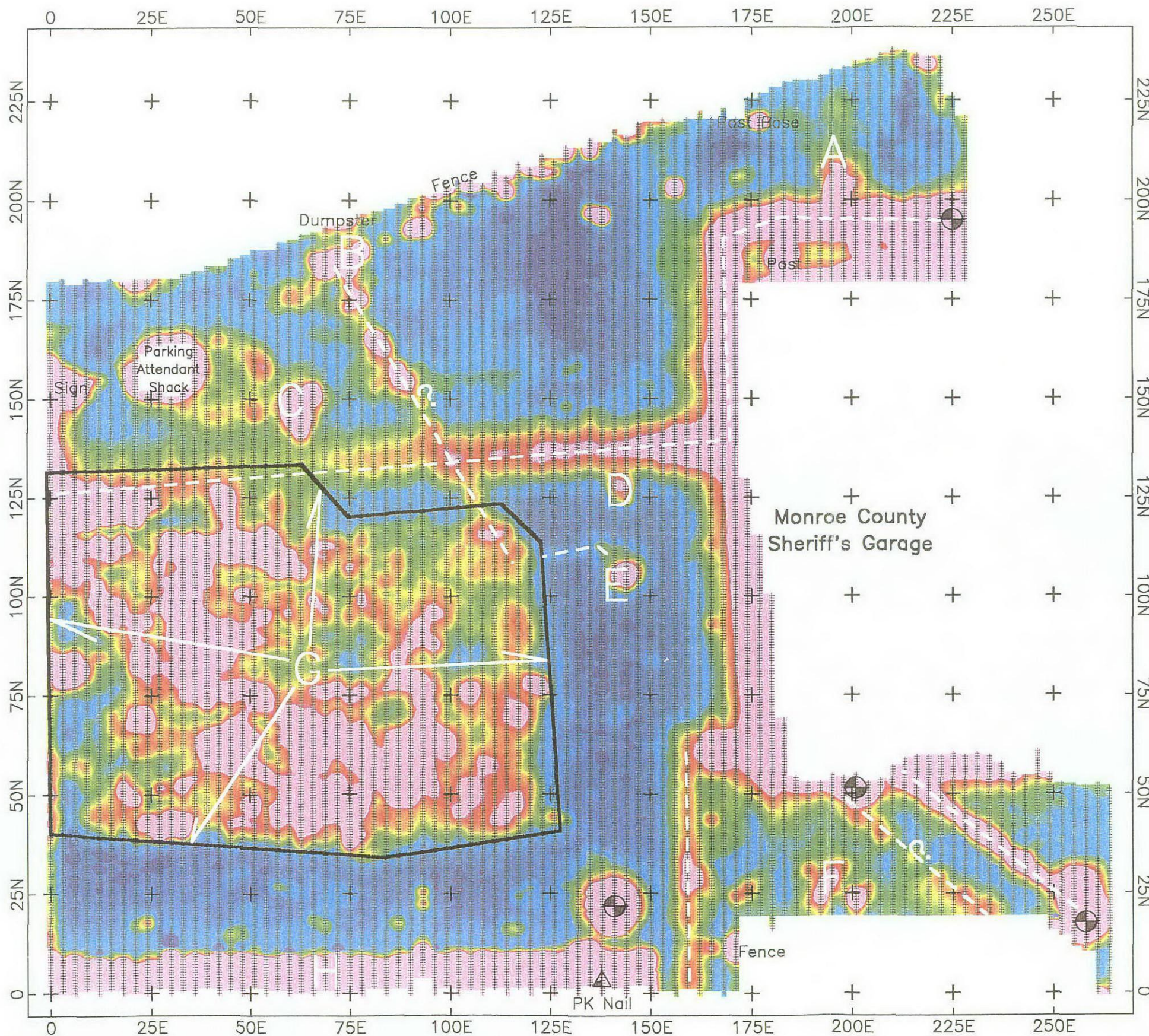
GEOMATRIX CONSULTANTS, INC.



John Luttinger

Project Geophysicist

Exchange Blvd.



LEGEND



Manhole/manway

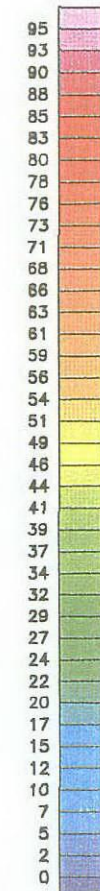


Geophysical anomaly discussed in text



Interpreted linear anomaly

Geophysical survey line and measurement point location. 3 ft line spacing, 0.6 ft station spacing. 21,000 data points total.



Channel 2 Response (mVolts)

Grid North



FIGURE 1

180-182 Exchange Blvd.
Rochester, NY

Geophysical Survey Results
Color Contours of EM61
Channel 2 Data (mVolts)
The Sear Brown Group

Geomatrix (716) 565-0624

B4979

LOCATION OF BORING

JOB NUMBER

CLIENT

LOCATION

1555.07

CITY OF RICHMOND

180-82 Exchange Street

DRILLING METHOD

3 1/4" Augers-

BORING NUMBER

B-1

SHEET

1 of 1

SAMPLING METHOD

2 1/2" x 2 1/2" sampler

DRILLING

START TIME

FINISH TIME

0900

1000

DATE

DATE

10/17

10/18

SURFACE CONDITIONS:

Asphalt

DATUM

ELEVATION

Quonset Hut

base of rim

manhole

6-1

SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
								0	
								1	
	24		1	5.7				2	
	0		1-3	7.4				3	
								4	
	24		2	4.8				5	
	0		3-5	6.5				6	
								7	
	24		3	3.7		3.6		8	
	12		5-7	4.3				9	
								10	
	24		4	5.3		3.8		11	
	12		7-9	3.3				12	
								13	
	24		5	9.11				14	
	12		10-12	17.8		3.9		15	
								16	
								17	
	24		6	4.8				18	
	6		12-14	6.5		4.5		19	
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								92	
								93	
								94	
								95	
								96	
								97	
								98	
								99	
								100	

Refuse @ 1 ft. BGS. Move Hole

NO REUSE

LIGHT BROWN SILTY CLAY, SOME FILL MATERIAL AND COARSE GRAVEL (WET) (LOOSE). SOME COAL/BRICK FRAGMENTS

SAME AS PREVIOUS

LIGHT GRAY SAND AND SILTY CLAY SOME COARSE GRAVEL AND BRICK FRAGMENTS, FILL MATERIAL (WET) (LOOSE).

SAME AS PREVIOUS (WET) (LOOSE)
DRILLER NOTES Refuse @ 14.5

ATTEMPT TO AUGER Refuse - 8
STOP B-1 @ 14.5 FT BGS @ 1000

NOTE H2O Backlog @ 2.8ppm
- Down wind of Driller rig

Quonset
Hut.

← N

43'

B-2.

16'

SEWER
OPENING

DATUM

ELEVATION

15155.02

CITY OF RICHMOND

EXCHANGE

DRILLING METHOD

3/4" AUGERS.

DRILLING NUMBER

B-2

SHEET 1 OF 1

SAMPLING METHOD

2" SPLIT SPOON

DRILLING

START

FINISH

TIME

TIME

SURFACE CONDITIONS:

Asphalt.

1045

1115

DATE

DATE

10/8

10/8

SAMPLER TYPE	INCHES DRIVEN RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
2" SS.	24 12"		1 1-3	4 7/8 13 1/2		3.6		0	
2" SS.	24 NR		2 3-5	7 7/8 13 1/4				1	
2" SS.	24 NR		4 5-5.3	50 1/2				2	
2" SS.	24 24		5 9-11	5 5/8 7 1/2		3.6		3	
2" SS.	24 12		6 11-13	2 3/4 20 1/4		3.6		4	
2" SS.	24 12		7 13-15	7 1/3 3 1/2		3.0		5	

DARK BROWN SILTY SAND (MOIST) (WET)

NO RECOVERY

NO RECOVERY

HARD AUGERS

LIGHT BROWN SAND (MOIST) (STIFF)
WITH SOME COBBLES

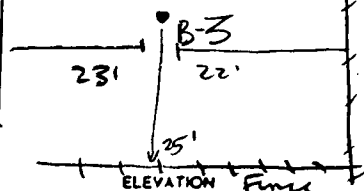
SAME AS PREVIOUS - TIP OF SPOON - SAME (Recheck)

SAME AS PREVIOUS.

DRILLER NOTES RETURN @ 14.5' BGS @ 1115.

HIGH BACKGROUND 36 ppm

ground
blb.



HOB NUMBER 15155.02		LOCATION CITY OF KANSAS		EXCHANGE EST	
DRILLING METHOD 3 1/4" AUGERS				DRILLING NUMBER B-3	
SAMPLING METHOD 2" x 24" SPLIT SPOON				SHEET 1 of 1	
SURFACE CONDITIONS: Asphalt				DRILLING	
				START TIME 1010	FINISH TIME 1047
				DATE 10/17	DATE 10/17

DATHUM	SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	OVA			DEPTH IN FEET	SOIL GRAPH
						AUGER	SAMPLE	CUTTINGS		
	2 1/2 SS	6"		1			B.C.		0	
		6"		1-1.5					1	
									2	
									3	
									4	
									5	
	2 1/2 SS	24"		2	18,10		3.5		6	
		24"		5-7	5,6				7	
									8	
	2 1/2 SS	24"		3	6,8		4.2		9	
		24"		7-9	5,6				10	
									11	
	2 1/2 SS	24"		4	1,1		3.5		12	
		21"		9-11	2,2				13	
									14	
	2 1/2 SS	24"		5	4,3		4.1		15	
		NR		11-13	3,5				16	
									17	
									18	
	2 1/2 SS	24"		6	4,6				19	
		NR		13-15					20	
									21	
									22	
									23	
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									31	
									32	

Asphalt / GRAVEL. DRILLER NOTES HUNDREDS OF @ 1-1.5' FILL MATERIAL, SOME COAL AND BRICK FRAGMENTS.

DRILL THRU FILL.

FILL MATERIAL. BRICK FRAGMENTS, COARSE GRAVEL, concrete debris.

SAME AS PREVIOUS.
Bottom 6" OF SPOON DARK GRAY SILTY SAND (MOIST) (LOOSE)

SAME AS PREVIOUS (WET) (LOOSE)

NO RECOVERY ON SPLIT SPOON

DRILLER NOTES REFUSAL @ 14' BLS

NOTE BCL: 2.9 ppm

General Bldg

8-3

8-4

8-5

8-4

8-7

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN	INCHES RECOVERED	TIME	SAMPLE NUMBER	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
						AUGER	SAMPLE	CUTTINGS		
									0	
									1	
									2	
									3	
2" ss	24			1	4.7		18.6		4	
	12			3.5	3.3				5	
2" ss	24			2	1.1		424		6	
	24			5.7	1.1				7	
2" ss	24			3	1.3		1311		8	
	24			7.9	6.3				9	
2" ss	24			4	1.2		1251		10	
	24			9-11	3.4				11	
2" ss	24			5	1.1		PEAKED		12	
	24			11-13	3.3				13	
2" ss	12"			6	3.0		PEAKED		14	
				13-14	9.0				15	
									16	
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DRILLING METHOD 3/4" AUGERS

SAMPLING METHOD 2" SPLIT SPOON

SURFACE CONDITIONS:

Asphalt

HARD AUGERS FROM 0-3' BGS.
(FILL)

DARK GRAY SILTY SAND (MOIST) (LOOSE),
WETTED PETROL ODR. (FUEL OIL)

SAME AS PREVIOUS, STRONG PETROL ODR.

SAME AS PREVIOUS, STRONG PETROL ODR.

SAME AS PREVIOUS - STRONG SOLVENT ODR.
- NOT AS MUCH PETROL ODR.

SAME AS PREVIOUS

SAME AS PREVIOUS.

DRIVER NOTES RETURN @ 141 BGS
HOLD BACKGROUND 24ppm

PID READING IN HOLE 740ppm

CITY OF ROCHESTER EXCHANGE ST.

DRILLING METHOD 3/4" AUGERS

DRILLING NUMBER

B-4

SHEET

1 OF 1

DRILLING

START

TIME

FINISH

TIME

1310

DATE

1400

DATE

10/17

10/17

LOCATION OF BORING

JOB NUMBER 1555.02	CLIENT C.O.R.	LOCATION Exchanges
DRILLING METHOD: HSA		BORING NUMBER SB4A/B
SAMPLING METHOD: 2' S.S.		SHEET 1 OF
		DRILLING
		START TIME
		FINISH TIME
		DATE
		DATE

SAMPLER TYPE	INCHES DRIVEN	INCHES RECOVERED	TIME	SAMPLE NUMBER	BLOWS/FT. SAMPLER	OVA			DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS:	DATE	DATE
						KNOWSET	BR	COFFINGS					
											asphalt/gravel	11/24/98	11/24/98
									0		Drill through fill/concrete		
									1				
									2				
									3				
									4				
	7"				2				4				
					2	300	3.5	275	5	SS-1	DARK Brown SILT, little gravel and sand strong petro odor trace clay moist		
					3				5				
					2				6				
					2				6				
	6"				1	38	3.6	27	7	SS-2	same as above		
					1				7		Not enough recovery after split sampling to get accurate HNU Rd)		
					2				8				
					4				8				
	6"				3	287	4.9	150	9	SS-3	same as above		
					3				9		not enough recovery to sample		
					2				10				
					4				10	SS4			
	12"				3	over 2000	6		11		same as above slight phen, strong solvent like odor		
					3				11				
					5				12				
					4	over 2000	11		12	SS5	Moist Gray Black silt, little f.m sand and clay		
	20"				3				13		Strong odor petro/solvent		
					4				13				
					3				14				
									15		EOB 14 Refused		
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4
N

8' T 8.5 8.4

QUONSET
BLDG

BRUCE
RIVER

DATUM

ELEVATION

JOB NUMBER 15155.02		CLIENT CITY OF ROCHESTER		LOCATION EXCHANGE ST.	
DRILLING METHOD 3 1/4" AUGERS				BORING NUMBER B-5	
SAMPLING METHOD 2" SPLIT SPOON				SHEET 1 OF 1	
				DRILLING	
				START TIME	FINISH TIME
				1620	1700
				DATE	DATE
				10/17	10/17
SURFACE CONDITIONS: Asphalt					

SAMPLER TYPE	INCHES DRIVEN RECOVERED	TIME	SAMPLE NUMBER DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
								0	
								1	
2"SS	24		1	6.9		4.6		2	
	24		1-3	12.11				3	
2"SS	24		2	6.9		8.6		4	
	24		3-5	8.11				5	
2"SS	24		3	5.4		4.6		6	
			5-7	7.21				7	
2"SS	24		4	11.14		10.1		8	
	12		7-9	13.8				9	
2"SS	24		5	6.5		13.1		10	
	12		4-11	3.4				11	
2"SS	24		6	3.3				12	
	NR		11-13	3.3				13	
2"SS	24		7	3.3		PEAKED		14	
	12		13-15					15	
								16	
								17	
								18	
								19	
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								50	

FILL MATERIAL, SOME BRICK FRAGMENTS
AND SLAG MATERIAL (MIST) (LOOSE)
C (ASH)

SAME AS PREVIOUS

FILL MATERIAL BRICK FRAGMENTS COARSE GRAVEL
ASH IN TIP OF SPOON (6") SOME COAL FRAGMENT
ASH

FILL MATERIAL BRICK AND COAL FRAGMENTS

LIGHT GRAY SILTY SAND
SLIGHT PETROL ODOR

SAME AS PREVIOUS. STRONGER PETROL ODOR.

DRILLER NOTES REFUSAL @ 14' BBS @ 1700

NOTE 4.6 HNW BKG.

JOB NUMBER

15155.07

JOB

CITY OF RICHMOND

LOCATION

DRILLING METHOD

3/4" ~~WILCOX~~

BORING NUMBER

B-6

SHEET

OF 1

SAMPLING METHOD

2" X 24" SPLIT SPOON

DRILLING

START

FINISH

TIME

TIME

1150

1130

DATE

DATE

10/17

10/17

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
								0	
	24 12"		1 1-14	4 50/6		3.6		1	
								2	
								3	
								4	
								5	
	24 24		2 5-7	12.22 18.14		3.4		6	
								7	
	24 24		3 7-9	14.11 7.10		9.0		8	
								9	
	24 24		4 9-11	2.2 4.3		11.2		10	
								11	
	24 6"		5 11-13	3.2 4.3		5.0		12	
	6" 6"		6 13-13.6	40/6		3.8		13	
								14	
								15	
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SURFACE CONDITIONS:

Asphalt

Asphalt.

FILL MATERIAL. BRICK FRAGMENTS, COARSE SAND

FILL MATERIAL, BRICK FRAGMENTS, COARSE SAND.

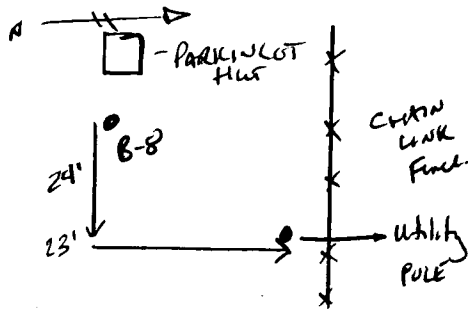
SAME AS PREVIOUS, BOTTOM 12" LIGHT GRAY SILTY SAND.

LIGHT GRAY SILTY SAND (MUSKY) (STIFF).
Weathered Petrolium.

SAME AS PREVIOUS.

SAME AS PREVIOUS.
DRIVER NOTES: At 13.6' BGS. SPLIT SPOON
- AUGER ATTEMPT - REFUSE @ 13.0' BGS @ 1130

NOTE BK6 - 2.8 ppm



15155.02		CITY OF ROCHESTER		EXCHANGE ST	
DRILLING METHOD		3/4" AUGERS		B-8	
SAMPLING METHOD		2" SPLIT SPOON		SHEET 1 OF	
SURFACE CONDITIONS: Asphalt.		0720		0750	
		DATE		DATE	
		10/18		10/18	

DATE		ELEVATION			DEPTH IN FEET	SOIL GRAPH	
SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER			
OVA					AUGER	SAMPLE	CUTTINGS
2 1/2 SS	24		1	15/12		5.4	
	24		1-3	18/18			
2 1/2 SS	24		2	35/10		9.9	
	12		3-5	14/15			
2 1/2 SS	24		3	8/5		5.2	
	12		5-7	6/7			
2 1/2 SS	24		4	12/6			
	NR		7-9	5/1			

Asphalt And crushed run

FILL MATERIAL ASH, BRICK FRAGMENTS, Concrete And coarse gravel (wedge)

VERY COARSE GRAVELS. SLIGHT GROUND.

SAME AS PREVIOUS WITH SOME LIGHT BROWN SILTY SAND (MOIST) (WEDGE) NOODOR.

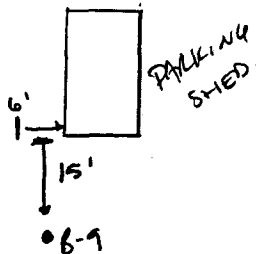
NO RECOVERY.

HARD AUGERS.

DRILLER NOTES REFUSE @ 9' 6" @ 750 STOP B-8

FINISH REG. 4.0.

CITY OF ROCHESTER



ELEVATION

DRILLING METHOD		BORING NUMBER	
3 1/4" Augers		B-9	
SAMPLING METHOD		SHEET	
2" SPLIT SPOON		1 OF 1	
		DRILLING	
		START	FINISH
		TIME	TIME
SURFACE CONDITIONS:		1415	1500
Asphalt		DATE	DATE
		10/17	10/17

Fill MATERIAL BRICK FRAGMENTS, COARSE
GRAVEL

HARD AWBERS

HARD AMBERS

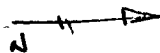
HARD ANSWERS

Fin material, concrete debris
Type of drain, silty clay (wet) (loose)

LIGHT Brown SILTY SAND (WET) (LOOSE)

STOP B-9 @ 13.10 FT BGS @ 1450.
DILUVER NOTES REFUSAL @ 13.10" FT BGS.

NOTE Backburned 5.8 ppm



B-9.

X CHAIN
TOWER
X 25' WEST
OF UTILITY
POLE

DATUM

1. B-10

75'

ELEVATION

SAMPLER TYPE	INCHES DRIVEN RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT SAMPLER	OVA			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
2" SS.	24 12		1 1-3	14.4 M.9		10.2		0	
2" SS.	24 NR		2 3-5	10.3				1	
2" SS.	24 24		3 5-7	3.2 3.2		13.2		2	
2" SS.	24 24		4 7-9	3.3 4.3		5.0		3	
2" SS.	24 24		5 9-11	10.3 4.4		7.4 5.0		4	
2" SS.	24 24		6 11-13	2.2 2.4		5.0		5	
2" SS.	24 12		7 13-15	3.3		5.1		6	

JOB NUMBER 15155.02		CITY OF Rochester		LOCATION Exchange St	
DRILLING METHOD 3 1/4" Augers				BORING NUMBER B-10	
SAMPLING METHOD 2" SPLIT STON.				SHEET 1 OF 1	
SURFACE CONDITIONS: Asphalt				DRILLING START TIME 1520 DATE 10/19	
				FINISH TIME 1555 DATE 10/19	

FILL MATERIAL, MOSTLY BRICK FRAGMENTS.

No Recovery - Brick Fragments

FILL MATERIAL, GRAVEL (COARSE), BRICK, GUES.
TIP OF SPOON - LIGHT GRAY SILTY SAND, WITH
SOME COARSE GRAVEL (MIST) (COARSE)

SAME AS PREVIOUS, SOME BRICK FRAGMENTS.

SAME AS PREVIOUS.

LIGHT GRAY SILTY SAND (MOST) (COARSE)

SAME AS PREVIOUS w/ SOME WOOD FRAGMENTS
(MIST) (COARSE)

SAME AS PREVIOUS
DRILLER NOTES REFUSE @ 14' BGS @ 1555

NOTE H.N. Background 50.

JOB NUMBER 15155.02		CITY OF ROCHESTER		LOCATION EXCHANGE	
DRILLING METHOD 3 1/4" Augers				BORING NUMBER B-11	
SAMPLING METHOD 2" SPLIT SPERN				SHEET 1 of 1	
SURFACE CONDITIONS: <i>Asphact</i>				DRILLING START TIME 1005 DATE 10/18	
				FINISH TIME 1040 DATE 10/18	

See B-14
Boxing well.

S.134

DATE		ELEVATION									
SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH		
					AUGER	SAMPLE	CUTTINGS				
								0			
								1			
2 1/2"	2 1/2"		1	16/10			4.2	2			
	12		1-3	12/2				3			
								4			
								5			
2 1/2"	2 1/2"		2	5/1			4.6	6			
	2 1/2"		57	3/4				7			
2 1/2"	2 1/2"		3	2/1			4.0	8			
	2 1/2"		7-9	2 1/2"			4.2	9			
								10			
2 1/2"	2 1/2"		4	9/7			4.2	11			
	12		4-11	2/2				12			
								13			
2 1/2"	2 1/2"		5	3/3			3.8	14			
	2 1/2"		1-13	3/4				15			
								16			
2 1/2"	2 1/2"		0	4/3				17			
	N/A		B-14	12/10				18			
								19			
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								98			
								99			
								100			

FILL MATERIAL - BRICK AND COARSE GRAVEL.

HARD AUGERS.

FILL MATERIAL, ASH AND BRICK MATERIAL.

DARK BROWN SILTY SAND (MOIST) (STIFF)

DARK GRAY SILTY SAND (MOIST) (STIFF)

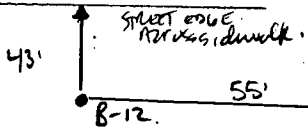
SAME AS PREVIOUS.

SAME AS PREVIOUS.

NO DELIVERY
DRIVER NOTES Refused @ 14' BGS @ 1040

Flow Aligned 3.8ppm

N



EXCHANGE ST.

1515502

CITY OF RICHMOND

EXCHANGE ST

DRILLING METHOD

3 1/4" Augers

DRILLING NUMBER

B-12

SHEET

1 OF 1

SAMPLING METHOD

2" SPLIT SPON

DRILLING

START

FINISH

TIME

TIME

0755

0820

DATE

DATE

10/18

10/18

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
								0	
								1	
								2	
								3	
2"SS	24 24		1 3.5	5/3 2/4		5.0 4.9		4	
2"SS	24 24		2 6.4	3/2 3/2		5.8		5	
2"SS	24 24		3 7.9	1/1 5/3		5.5 13.8		6	
2"SS	24 24		4 9.11	1/3 5/10		4.4		7	
								8	
								9	
								10	
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								100	

SURFACE CONDITIONS:

Asphalt

HOLD AUGERS.

HOLD AUGERS.

FILL MATERIAL. BRICK / CONCRETE DEBRIS SOME COARSE GRAVELS.

DARK BROWN SILTY SAND (MOIST) (LOOSE).

SAME AS PREVIOUS WITH SOME FINE GRAVELS (MOIST) (LOOSE).

SAME AS PREVIOUS (MOIST) (LOOSE).

FILL MATERIAL / BRICK FRAGMENT (LOOSE) (MOIST) SLIGHT ODOR.

-LIGHT GRAY SILTY SAND (WET) (LOOSE) SLIGHT ODOR.

STOP B-12 @ 11' BGS @ 0820.

FINN BACKMAN 4.4 PM.

ADD NUMBER

15155.02

CLIENT

CITY OF RICHMOND

LOCATION

EXCHANGE ST.

EXCHANGE STREET

44'

B-13

B-12

50'

DRILLING METHOD

3/4" Augers

DRILLING NUMBER

B-13

SAMPLING METHOD

2" SPUT SPOON

SHEET

1 of 1

DRILLING

START

FINISH

TIME

TIME

0830

0910

DATE

DATE

10/18

10/18

SURFACE CONDITIONS:

Asphalt

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	O.V.A.			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
								0	
								1	
								2	
								3	
								4	
								5	
2 1/2"	2 1/2"		1	6 1/2		3.9		6	
			57	1 1/2				7	
2 1/2"	2 1/2"		2	3 3/4		4.1		8	
			79	1 1/8				9	
								10	
								11	
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								98	
								99	
								100	

Asphalt and gravel

Hard Augers

Fill - BRICK FRAGMENTS

Hard Augers

Fill material, BSH, coarse gravel, brick fragments

Same as previous

Drill notes Refuse @ 9'8" @ 0910

Background 3.6 ppm

NO sample collected

3-8-12-8

5-7

Rehmy St.

NO NUMBER

15155.02

LOCATION

CITY OF Rehmy

EXCHANGE

EXCHANGE

DRILLING METHOD

3 1/4" AUGERS

DRILLING METHOD

3 1/4" AUGERS

B-14

SHEET

1 OF

SAMPLING METHOD

2" SPUT SPOON

DRILLING

START

FINISH

TIME

TIME

0920

0958

DATE

DATE

10/18

10/18

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN RECOVERED	TIME	SAMPLE NUMBER	SAMPLE DEPTH	BLOWS/FT. SAMPLER	OVA			DEPTH IN FEET	SOIL GRAPH
						AUGER	SAMPLE	CUTTINGS		
2 1/4"	24/12		1	15/15	2.5				0	
			1-3	15/14					1	
									2	
									3	
									4	
									5	
2 1/4"	24/12		2	3/8	2.8				6	
			5-7	12/8					7	
									8	
2 1/4"	24/12		3	5/7	2.4				9	
			7-9	2/3					10	
									11	
2 1/4"	24/12		4	2/3	2.1				12	
			9-11	4/4					13	
									14	
2 1/4"	24/12		5	3/3					15	
			11-13	4/2					16	
									17	
2 1/4"	24/12		6	2/2	2.2				18	
			13-15	4/2					19	
									20	
2 1/4"	24/12		7	50/0					21	
			15-17						22	
									23	
									24	
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									48	
									49	
									50	

SURFACE CONDITIONS: ASPHALT

FILL - BRICK FRAGMENTS

HOLD AUGERS

SAME AS PREVIOUS

SAME AS PREVIOUS

DARK BROWN SILTY SAND WITH SOME BRICK FRAGMENTS (MOIST) (LOOSE)

SAME AS PREVIOUS

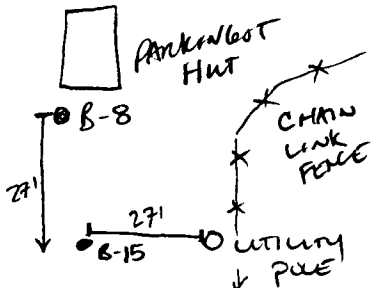
NO REMAINS

DARK GRAY SILTY SAND WITH SOME WOOD FRAGMENTS (WET) (LOOSE)

Miller Notes Refers C15.2 B65 C 0955

BK 2.2 ppm

Parking Lot



15155.02

CITY OF ROCKHURST

EXCHANGE

DRILLING METHOD

3/4" AUGERS

DRILLING NUMBER

B-15

SHEET

1 OF 1

SAMPLING METHOD

2" SPLIT SPIN

DRILLING

START

FINISH

TIME

TIME

1125

1210

DATE

DATE

10/8

10/18

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN INCHES RECOVERED	TIME	SAMPLE NUMBER SAMPLE DEPTH	BLOWS/FT. SAMPLER	OVA			DEPTH IN FEET	SOIL GRAPH
					AUGER	SAMPLE	CUTTINGS		
2"SS	24 6"		1 1-2	6/12				0	
								1	
								2	
								3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	
								11	
2"SS	24 24		1 1-3	8/15 17/22	4/2			1	
								2	
								3	
2"SS	24 NR		2 3-5	5/8 2/15				4	
								5	
2"SS	24 NR		3 5-7	25/18 18				6	
								7	
								8	
								9	
								10	
								11	

SURFACE CONDITIONS:

ASPHALT

Concrete debris and coarse gravel.

HARD AUGERS AT 2' BGS.

HARD AUGERS.

DRILLER NOTES REFUSE @ 5' BGS @ 1140.

MOVE HOLE 8' SOUTH.

BACKFILL STONE
IN CUTTINGS

FILL MATERIAL: BRICK AND COARSE GRAVEL
AND SLAG MATERIAL (USE)

NOT RECOVERED.

HARD AUGERS
NO RECOVERY

HARD AUGERS.

DRILLER NOTES REFUSE AT 9' BGS @ 1210

NOTE - TINA BACKGROUND 36 ppm

*Polarized-light microscopy (PLM) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can be used to determine if this material can be considered to be non-asbestos containing.

FAX: (716) 475-1440
(716) 272-1814
424-5951

Date: 10-13-98 Bulk: X Swipe: _____

Inspector: R. Gerardi

SBG Project Name: Exchange St.

Project Number: 15155.02

[illegible]

SAMPLED BY:

AMPLED BY: Rebecca Brandi

RELINQUISHED BY:

DATE _____

10-15-98

TIME

Bill

RECEIVED BY:

RECEIVED BY
Matt Smith

DATE _____

10/19/98

TIME

TIME
0950

RELINQUISHED BY:

DATE _____

TIME

RECEIVED BY:

DATE _____

TIME

RELINQUISHED BY:

DATE _____

TIME

RECEIVED BY:

DATE _____

TIME

TURNAROUND TIME (circle one): 6 Hr. Same Day 24 Hr. 48 Hr. 3 Day 5 Day

Total Number of Samples:

6 ~~*~~ Sample until 1st positive
in each Series

Page (of (

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: **Sear-Brown**

Lab Project No.: 98-1909

Lab Sample No. 6719

Client Job Site: Exchange Street

Sample Type: Soil

Client Job No.: 15155.02

Date Sampled: 10/17/98

Field Location: 12'-14.5'

Date Received: 10/20/98

Field ID No.: B-1

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	10/20/98	EPA 7060	5.36
Barium	10/21/98	EPA 6010	23.8
Cadmium	10/21/98	EPA 6010	2.01
Chromium	10/21/98	EPA 6010	7.36
Lead	10/21/98	EPA 6010	31.8
Mercury	10/23/98	EPA 7471	0.142
Selenium	10/21/98	EPA 7740	<0.429
Silver	10/21/98	EPA 6010	<0.875

ELAP ID No.: 10958

Comments:

Approved By: 

Laboratory Director

PARADIGM

ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

SEMI-VOLATILES LABORATORY REPORT FOR BASE/NEUTRAL FRACTION IN SOIL

Client: The Sear-Brown Group

Lab Project No.: 98-1909

Client Job Site: Exchange St.

Lab Sample No.: 6719

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-1 12-14.5'

Sample Date: 10/17/98

Field ID No.: N/A

Date Received: 10/20/98

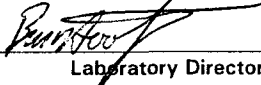
Date Analyzed: 10/22/98

COMPOUND	RESULT (ug/Kg)	COMPOUND	RESULT (ug/Kg)
Benzyl alcohol	ND < 870	Fluorene	ND < 348
Bis (2-chloroethyl) ether	ND < 348	Hexachlorocyclopentadiene	ND < 348
Bis (2-chloroisopropyl) ether	ND < 348	2-Nitroaniline	ND < 870
1,3-Dichlorobenzene	ND < 348	3-Nitroaniline	ND < 870
1,4-Dichlorobenzene	ND < 348	4-Nitroaniline	ND < 870
1,2-Dichlorobenzene	ND < 348	4-Bromophenyl phenyl ether	ND < 348
Hexachloroethane	ND < 348	Di-n-butyl phthalate	ND < 348
N-Nitrosodimethylamine	ND < 348	Fluoranthene	ND < 348
N-Nitroso-di-n-propylamine	ND < 348	Hexachlorobenzene	ND < 348
Bis (2-chloroethoxy) methane	ND < 348	N-Nitrosodiphenylamine	ND < 348
4-Chloroaniline	ND < 348	Anthracene	ND < 348
Hexachlorobutadiene	ND < 348	Phenanthrene	ND < 348
Isophorone	ND < 348	Benzidine	ND < 870
2-Methylnaphthalene	ND < 348	Benzo (a) anthracene	ND < 348
Naphthalene	ND < 348	Bis (2-ethylhexyl) phthalate	ND < 348
Nitrobenzene	ND < 348	Butylbenzylphthalate	ND < 348
1,2,4-Trichlorobenzene	ND < 348	Chrysene	ND < 348
2-Chloronaphthalene	ND < 348	3,3'-Dichlorobenzidine	ND < 348
Acenaphthene	ND < 348	Pyrene	ND < 348
Acenaphthylene	ND < 348	Benzo (b) fluoranthene	ND < 348
4-Chlorophenyl phenyl ether	ND < 348	Benzo (k) fluoranthene	ND < 348
Dibenzofuran	ND < 348	Benzo (g,h,i) perylene	ND < 348
Diethyl phthalate	ND < 348	Benzo (a) pyrene	ND < 348
Dimethyl phthalate	ND < 870	Dibenz (a,h) anthracene	ND < 348
2,4-Dinitrotoluene	ND < 348	Di-n-octylphthalate	ND < 348
2,6-Dinitrotoluene	ND < 348	Indeno (1,2,3-cd) pyrene	ND < 348

ELAP ID No: 10958

Analytical Method: EPA 8270

Comments: ND denotes Not Detected

Approved By: 

Laboratory Director

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Client: The Sear-Brown Group

Lab Project No: 98-1909

Client Job Site: Exchange Street

Lab Sample No: 6720

Client Job No: 15155.02

Sample Type: Soil

Field Location: B-4

Date Sampled: 10/17/98

Field ID No: 13-14'

Date Received: 10/20/98

Date Analyzed: 10/21/98

Analytical Method: EPA 8260B

ELAP ID No: 10958

Comments: ND denotes Not Detected

Approved By

Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Polychlorinated Biphenyls Laboratory Analysis Report For Soil/Sludge

Client: **The Sear-Brown Group**

Lab Project No.: 98-1909

Client Job Site: Exchange Street

Lab Sample No.: 6720

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-4

Date Sampled: 10/17/98

Field ID No: 13-14'

Date Received: 10/20/98

Date Analyzed: 10/23/98

Polychlorinated Biphenyl	Result (mg/Kg)	Reporting Limit (mg/Kg)
PCB 1016	ND	0.46
PCB 1221	ND	0.46
PCB 1232	ND	0.46
PCB 1242	ND	0.46
PCB 1248	ND	0.46
PCB 1254	ND	0.46
PCB 1260	ND	0.46

Analytical Method: EPA 8081

ELAP ID No.: 10958

Comments:

ND denotes Not Detected.

File ID: 981909P1.XLS

Approved By: 

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Organic Compound Laboratory Analysis Report For Soil/Sludge

Client: The Sear-Brown Group

Lab Project No: 98-1909

Client Job Site: Exchange Street

Lab Sample No: 6721

Client Job No: 15155.02

Sample Type: Soil

Field Location: B-5

Date Sampled: 10/17/98

Field ID No: 13-14'

Date Received: 10/20/98

Date Analyzed: 10/20/98

VOLATILE HALOCARBONS		RESULTS (ug/Kg)		VOLATILE AROMATICS		RESULTS (ug/Kg)	
Bromodichloromethane	ND < 614			Benzene	ND < 614		
Bromomethane	ND < 614			Chlorobenzene	ND < 614		
Bromoform	ND < 614			Ethylbenzene	1581		
Carbon tetrachloride	ND < 614			Toluene	1156		
Chloroethane	ND < 614			m,p - Xylene	7335		
Chloromethane	ND < 614			o - Xylene	2494		
2-Chloroethyl vinyl ether	ND < 614			Styrene	ND < 614		
Chloroform	ND < 614						
Dibromochloromethane	ND < 614						
1,1-Dichloroethane	ND < 614						
1,2-Dichloroethane	ND < 614						
1,1-Dichloroethene	ND < 614						
trans-1,2-Dichloroethene	ND < 614						
1,2-Dichloropropane	ND < 614						
cis-1,3-Dichloropropene	ND < 614						
trans-1,3-Dichloropropen	ND < 614						
Methylene chloride	ND < 1536						
1,1,2,2-Tetrachloroethan	ND < 614						
Tetrachloroethene	ND < 614						
1,1,1-Trichloroethane	ND < 614						
1,1,2-Trichloroethane	ND < 614						
Trichloroethene	ND < 614						
Vinyl Chloride	ND < 614						

<u>Ketones & Misc.</u>			
Acetone	ND < 2457		
Vinyl acetate	ND < 1228		
2-Butanone	ND < 1228		
4-Methyl-2-pentanone	ND < 1228		
2-Hexanone	ND < 1228		
Carbon disulfide	ND < 1228		

Analytical Method: EPA 8260B

ELAP ID No: 10958

Comments: ND denotes Not Detected

Approved By


Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Polychlorinated Biphenyls Laboratory Analysis Report For Soil/Sludge

Client: **The Sear-Brown Group**

Lab Project No.: 98-1909

Lab Sample No.: 6721

Client Job Site: Exchange Street

Sample Type: Soil

Client Job No.: 15155.02

Date Sampled: 10/17/98

Field Location: B-5

Date Received: 10/20/98

Field ID No: 13-14'

Date Analyzed: 10/23/98

Polychlorinated Biphenyl	Result (mg/Kg)	Reporting Limit (mg/Kg)
PCB 1016	ND	0.48
PCB 1221	ND	0.48
PCB 1232	ND	0.48
PCB 1242	ND	0.48
PCB 1248	ND	0.48
PCB 1254	ND	0.48
PCB 1260	ND	0.48

Analytical Method: EPA 8081

ELAP ID No.: 10958

Comments:

ND denotes Not Detected.

File ID: 981909P2.XLS

Approved By: 

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Solids (STARS List)

Client: **The Sear-Brown Group**

Lab Project No.: 98-1909

Client Job Site: Exchange Street

Lab Sample No.: 6722

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-6

Date Sampled: 10/17/98

Field ID No.: 9-11'

Date Received: 10/20/98

Date Analyzed: 10/20/98

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-Butyl Ether	ND < 6.6
Benzene	ND < 6.6
Toluene	ND < 6.6
Ethylbenzene	6.9
m,p-Xylene	68.5
o-Xylene	8.9
Isopropylbenzene	ND < 6.6
n-Propylbenzene	ND < 6.6
1,3,5-Trimethylbenzene	ND < 6.6
tert-Butylbenzene	ND < 6.6
1,2,4-Trimethylbenzene	ND < 6.6
sec-Butylbenzene	ND < 6.6
p-Isopropyltoluene	ND < 6.6
n-Butylbenzene	ND < 6.6
Naphthalene	ND < 16.5

Analytical Method: EPA 8021

NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: 

Laboratory Director

PARADIGM

ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

Semi-Volatile Analysis Report For Solids (STARS List)

Client: The Sear-Brown Group

Lab Project No.: 98-1909

Client Job Site: Exchange St.

Lab Sample No.: 6722

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-6 9'-11'

Date Sampled: 10/17/98

Field ID No.: N/A

Date Received: 10/20/98

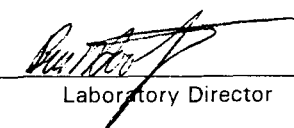
Date Analyzed: 10/22/98

COMPOUND	RESULT (ug/Kg)
Naphthalene	ND < 336
Acenaphthene	ND < 336
Fluorene	ND < 336
Fluoranthene	ND < 336
Anthracene	ND < 336
Phenanthrene	ND < 336
Benzo (a) anthracene	ND < 336
Chrysene	ND < 336
Pyrene	ND < 336
Benzo (b) fluoranthene	ND < 336
Benzo (k) fluoranthene	ND < 336
Benzo (g,h,i) perylene	ND < 336
Benzo (a) pyrene	ND < 336
Dibenz (a,h) anthracene	ND < 336
Indeno (1,2,3-cd) pyrene	ND < 336

Analytical Method: EPA 8270

NYS ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By: 

Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Solids (STARS List)

Client: **The Sear-Brown Group**

Lab Project No.: 98-1909

Client Job Site: Exchange Street

Lab Sample No.: 6723

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-8

Date Sampled: 10/18/98

Field ID No.: 3-5'

Date Received: 10/20/98

Date Analyzed: 10/20/98

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-Butyl Ether	ND < 6.2
Benzene	ND < 6.2
Toluene	7.7
Ethylbenzene	ND < 6.2
m,p-Xylene	17.8
o-Xylene	ND < 6.2
Isopropylbenzene	ND < 6.2
n-Propylbenzene	ND < 6.2
1,3,5-Trimethylbenzene	ND < 6.2
tert-Butylbenzene	ND < 6.2
1,2,4-Trimethylbenzene	11.6
sec-Butylbenzene	ND < 6.2
p-Isopropyltoluene	ND < 6.2
n-Butylbenzene	ND < 6.2
Naphthalene	ND < 15.5

Analytical Method: EPA 8021

NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: 
Laboratory Director

PARADIGM

ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

Semi-Volatile Analysis Report For Solids (STARS List)

Client: The Sear-Brown Group

Lab Project No.: 98-1909

Client Job Site: Exchange St.

Lab Sample No.: 6723

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-8 3-5'

Date Sampled: 10/18/98

Field ID No.: N/A

Date Received: 10/20/98

Date Analyzed: 10/22/98

COMPOUND	RESULT (ug/Kg)
Naphthalene	ND < 266
Acenaphthene	ND < 266
Fluorene	ND < 266
Fluoranthene	ND < 266
Anthracene	ND < 266
Phenanthrene	ND < 266
Benzo (a) anthracene	ND < 266
Chrysene	ND < 266
Pyrene	ND < 266
Benzo (b) fluoranthene	ND < 266
Benzo (k) fluoranthene	ND < 266
Benzo (g,h,i) perylene	ND < 266
Benzo (a) pyrene	ND < 266
Dibenz (a,h) anthracene	ND < 266
Indeno (1,2,3-cd) pyrene	ND < 266

Analytical Method: EPA 8270

NYS ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By: _____

Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: Sear-Brown

Lab Project No.: 98-1909

Lab Sample No. 6724

Client Job Site: Exchange Street

Sample Type: Soil

Client Job No.: 15155.02

Date Sampled: 10/17/98

Field Location: 1'-2.5'

Date Received: 10/20/98

Field ID No.: B-9

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	10/20/98	EPA 7060	5.40
Barium	10/21/98	EPA 6010	42.70
Cadmium	10/21/98	EPA 6010	2.03
Chromium	10/21/98	EPA 6010	8.49
Lead	10/21/98	EPA 6010	69.2
Mercury	10/23/98	EPA 7471	0.187
Selenium	10/21/98	EPA 7740	<0.442
Silver	10/21/98	EPA 6010	<0.885

ELAP ID No.: 10958

Comments:

Approved By: 

Laboratory Director

PARADIGM

ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

SEMI-VOLATILES LABORATORY REPORT FOR BASE/NEUTRAL FRACTION IN SOIL

Client: The Sear-Brown Group

Lab Project No.: 98-1909

Client Job Site: Exchange St.

Lab Sample No.: 6724

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-9 1-2.5'

Sample Date: 10/17/98

Field ID No.: N/A

Date Received: 10/20/98

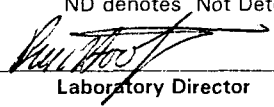
Date Analyzed: 10/22/98

COMPOUND	RESULT (ug/Kg)	COMPOUND	RESULT (ug/Kg)
Benzyl alcohol	ND < 754	Fluorene	ND < 301
Bis (2-chloroethyl) ether	ND < 301	Hexachlorocyclopentadiene	ND < 301
Bis (2-chloroisopropyl) ether	ND < 301	2-Nitroaniline	ND < 754
1,3-Dichlorobenzene	ND < 301	3-Nitroaniline	ND < 754
1,4-Dichlorobenzene	ND < 301	4-Nitroaniline	ND < 754
1,2-Dichlorobenzene	ND < 301	4-Bromophenyl phenyl ether	ND < 301
Hexachloroethane	ND < 301	Di-n-butyl phthalate	ND < 301
N-Nitrosodimethylamine	ND < 301	Fluoranthene	2623
N-Nitroso-di-n-propylamine	ND < 301	Hexachlorobenzene	ND < 301
Bis (2-chloroethoxy) methane	ND < 301	N-Nitrosodiphenylamine	ND < 301
4-Chloroaniline	ND < 301	Anthracene	461
Hexachlorobutadiene	ND < 301	Phenanthrene	1758
Isophorone	ND < 301	Benzidine	ND < 754
2-Methylnaphthalene	ND < 301	Benzo (a) anthracene	1259
Naphthalene	ND < 301	Bis (2-ethylhexyl) phthalate	ND < 301
Nitrobenzene	ND < 301	Butylbenzylphthalate	ND < 301
1,2,4-Trichlorobenzene	ND < 301	Chrysene	1102
2-Chloronaphthalene	ND < 301	3,3'-Dichlorobenzidine	ND < 301
Acenaphthene	ND < 301	Pyrene	2836
Acenaphthylene	ND < 301	Benzo (b) fluoranthene	1363
4-Chlorophenyl phenyl ether	ND < 301	Benzo (k) fluoranthene	1151
Dibenzofuran	ND < 301	Benzo (g,h,i) perylene	442
Diethyl phthalate	ND < 301	Benzo (a) pyrene	901
Dimethyl phthalate	ND < 754	Dibenz (a,h) anthracene	ND < 301
2,4-Dinitrotoluene	ND < 301	Di-n-octylphthalate	ND < 301
2,6-Dinitrotoluene	ND < 301	Indeno (1,2,3-cd) pyrene	495

ELAP ID No: 10958

Analytical Method: EPA 8270

Comments: ND denotes Not Detected

Approved By: 

Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: Sear-Brown

Lab Project No.: 98-1909

Lab Sample No. 6725

Client Job Site: Exchange Street

Sample Type: Soil

Client Job No.: 15155.02

Date Sampled: 10/17/98

Field Location: 5'-7'

Date Received: 10/20/98

Field ID No.: B-10

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	10/20/98	EPA 7060	2.99
Barium	10/21/98	EPA 6010	82.3
Cadmium	10/21/98	EPA 6010	1.66
Chromium	10/21/98	EPA 6010	7.11
Lead	10/21/98	EPA 6010	211
Mercury	10/23/98	EPA 7471	0.201
Selenium	10/21/98	EPA 7740	<0.423
Silver	10/21/98	EPA 6010	<0.826

ELAP ID No.: 10958

Comments:

Approved By: _____

Laboratory Director

PARADIGM

ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

SEMI-VOLATILES LABORATORY REPORT FOR BASE/NEUTRAL FRACTION IN SOIL

Client: **The Sear-Brown Group**

Lab Project No.: 98-1909

Client Job Site: Exchange St.

Lab Sample No.: 6725

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-10 5-7'

Sample Date: 10/17/98

Field ID No.: N/A

Date Received: 10/20/98

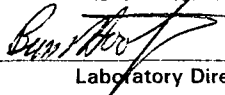
Date Analyzed: 10/22/98

COMPOUND	RESULT (ug/Kg)	COMPOUND	RESULT (ug/Kg)
Benzyl alcohol	ND < 838	Fluorene	ND < 335
Bis (2-chloroethyl) ether	ND < 335	Hexachlorocyclopentadiene	ND < 335
Bis (2-chloroisopropyl) ether	ND < 335	2-Nitroaniline	ND < 838
1,3-Dichlorobenzene	ND < 335	3-Nitroaniline	ND < 838
1,4-Dichlorobenzene	ND < 335	4-Nitroaniline	ND < 838
1,2-Dichlorobenzene	ND < 335	4-Bromophenyl phenyl ether	ND < 335
Hexachloroethane	ND < 335	Di-n-butyl phthalate	ND < 335
N-Nitrosodimethylamine	ND < 335	Fluoranthene	ND < 335
N-Nitroso-di-n-propylamine	ND < 335	Hexachlorobenzene	ND < 335
Bis (2-chloroethoxy) methane	ND < 335	N-Nitrosodiphenylamine	ND < 335
4-Chloroaniline	ND < 335	Anthracene	ND < 335
Hexachlorobutadiene	ND < 335	Phenanthrene	340
Isophorone	ND < 335	Benzidine	ND < 838
2-Methylnaphthalene	ND < 335	Benzo (a) anthracene	ND < 335
Naphthalene	ND < 335	Bis (2-ethylhexyl) phthalate	ND < 335
Nitrobenzene	ND < 335	Butylbenzylphthalate	ND < 335
1,2,4-Trichlorobenzene	ND < 335	Chrysene	ND < 335
2-Chloronaphthalene	ND < 335	3,3'-Dichlorobenzidine	ND < 335
Acenaphthene	ND < 335	Pyrene	348
Acenaphthylene	ND < 335	Benzo (b) fluoranthene	ND < 335
4-Chlorophenyl phenyl ether	ND < 335	Benzo (k) fluoranthene	ND < 335
Dibenzofuran	ND < 335	Benzo (g,h,i) perylene	ND < 335
Diethyl phthalate	ND < 335	Benzo (a) pyrene	ND < 335
Dimethyl phthalate	ND < 838	Dibenz (a,h) anthracene	ND < 335
2,4-Dinitrotoluene	ND < 335	Di-n-octylphthalate	ND < 335
2,6-Dinitrotoluene	ND < 335	Indeno (1,2,3-cd) pyrene	ND < 335

ELAP ID No: 10958

Analytical Method: EPA 8270

Comments: ND denotes Not Detected

Approved By: 
Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Solids (STARS List)

Client: **The Sear-Brown Group**

Lab Project No.: 98-1909

Client Job Site: Exchange Street

Lab Sample No.: 6726

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-12

Date Sampled: 10/18/98

Field ID No.: 8-9'

Date Received: 10/20/98

Date Analyzed: 10/21/98

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-Butyl Ether	ND < 9.5
Benzene	ND < 9.5
Toluene	ND < 9.5
Ethylbenzene	ND < 9.5
m,p-Xylene	ND < 9.5
o-Xylene	ND < 9.5
Isopropylbenzene	ND < 9.5
n-Propylbenzene	ND < 9.5
1,3,5-Trimethylbenzene	ND < 9.5
tert-Butylbenzene	ND < 9.5
1,2,4-Trimethylbenzene	ND < 9.5
sec-Butylbenzene	ND < 9.5
p-Isopropyltoluene	ND < 9.5
n-Butylbenzene	ND < 9.5
Naphthalene	ND < 23.8

Analytical Method: EPA 8021

NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: 

Laboratory Director

PARADIGM

ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

Semi-Volatile Analysis Report For Solids (STARS List)

Client: The Sear-Brown Group

Lab Project No.: 98-1909

Client Job Site: Exchange St.

Lab Sample No.: 6726

Client Job No.: 15155.02

Sample Type: Soil

Field Location: B-12 8-9'

Date Sampled: 10/18/98

Field ID No.: N/A

Date Received: 10/20/98


Date Analyzed: 10/22/98

COMPOUND	RESULT (ug/Kg)
Naphthalene	ND < 368
Acenaphthene	ND < 368
Fluorene	ND < 368
Fluoranthene	ND < 368
Anthracene	ND < 368
Phenanthrene	ND < 368
Benzo (a) anthracene	ND < 368
Chrysene	ND < 368
Pyrene	ND < 368
Benzo (b) fluoranthene	ND < 368
Benzo (k) fluoranthene	ND < 368
Benzo (g,h,i) perylene	ND < 368
Benzo (a) pyrene	ND < 368
Dibenz (a,h) anthracene	ND < 368
Indeno (1,2,3-cd) pyrene	ND < 368

Analytical Method: EPA 8270

NYS ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By: 

Laboratory Director

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(716) 647-2530 • (800) 724-1997
FAX (716) 647-3311

CHAIN OF CUSTODY

PROJECT NAME/SITE NAME:
EXCHANGE ST.

PROJECT #: 15155.02

REPORT TO:		INVOICE TO:		LAB PROJECT #
COMPANY	SEAR-BROWN	COMPANY	SAME	98-1909
ADDRESS	85 Metro Park	ADDRESS		
CITY	Rochester	CITY		P.O. # 15155.02
STATE	NY	STATE		
ZIP	14623	ZIP		
ATT.	Mike Stomsky	ATT.		
PHONE#	716-475-1440	PHONE#		
FAX#	716-424-5951	FAX#		<input type="checkbox"/> ADDENDUM
COMMENTS:				
TURN AROUND TIME (WORKING DAYS) <input type="checkbox"/> ONE <input type="checkbox"/> THREE <input checked="" type="checkbox"/> FIVE (STD) <input type="checkbox"/> OTHER				
REPRESENTATIVE:				

DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	CONTAINER NUMBER	REQUESTED ANALYSIS										REMARKS	PARADIGM LAB SAMPLE NUMBER	ANALYTICAL COSTS
							TCL 8270	TC 8270	TC 8270	TC 8270	TC 8270	TC 8270	TC 8270	TC 8270	TC 8270	TC 8270			
1	10/17	10:00	X	B-1, 12-14.5'	S	1	✓											6719	
2	10/17	14:00	X	B-4, 13-14'	S	1		✓										6720	
3	10/17	17:00	X	B-5, 13-14'	S	1		✓										6721	
4	10/17	11:30	X	B-6, 9-11'	S	1			✓									6722	
5	10/18	07:50	X	B-8, 3-5'	S	1			✓									6723	
6	10/17	14:50	X	B-9, 1-2.5'	S	1	✓			✓								6724	
7	10/17	15:50	X	B-10, 5-7'	S	1	✓			✓								6725	
8	10/18	08:20	X	B-12, 8-9'	S	1			✓									6726	
9																			
10																			
11																			
12																			

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	SAMPLE CONDITION	CHECK #	TOTAL COST
Mike P. Stomsky	10/19 5:05pm	Mike P. Stomsky	10/19/98 1705			
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	CARRIER COMPANY	AIR BILL NO.	P.I.F
RELINQUISHED BY:	DATE/TIME	RECEIVED @ LAB BY:	DATE/TIME	CARRIER PHONE #	DATE RESULTS REPORTED BY:	DATE/TIME
		Mike P. Stomsky	10/20/98 0735			

WHITE COPY-SAMPLE YELLOW COPY-FILE PINK COPY-RELINQUISHER

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

VOLATILE LABORATORY REPORT FOR TCLP ANALYSIS

Client: Sear-Brown
Client Job Site: Exchange Street
Client Job No.: 15155.02
Field Location: B-4A, 12'-14'
Field ID No.: N/A

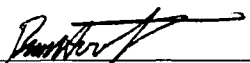
Lab Project No.: 98-2192
Lab Sample No.: 7618
Sample Type: TCLP Extract
Date Sampled: 11/24/98
Date Received: 11/24/98
Date Analyzed: 12/01/98

Parameter	Date Analyzed	Analytical Method	Results (ug/L)	Regulatory Limit (ug/L)
TCLP Volatiles				
Benzene	12/01/98	EPA 8240	ND < 20	500
Chlorobenzene	12/01/98	EPA 8240	ND < 20	100000
Carbon tetrachloride	12/01/98	EPA 8240	ND < 20	500
Chloroform	12/01/98	EPA 8240	ND < 20	6000
1,2-Dichloroethane	12/01/98	EPA 8240	ND < 20	500
1,1-Dichloroethene	12/01/98	EPA 8240	ND < 20	700
2-Butanone	12/01/98	EPA 8240	ND < 200	200000
Tetrachloroethene	12/01/98	EPA 8240	ND < 20	700
Trichloroethene	12/01/98	EPA 8240	ND < 20	500
Vinyl Chloride	12/01/98	EPA 8240	ND < 20	200

ELAP ID No.: 10958

Comments: ND denotes Not Detected.

Approved By


Laboratory Director

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(716) 647-2530 • (800) 724-1997
FAX (716) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		LAB PROJECT #
COMPANY	<i>Saur-Brown</i>	COMPANY	<i>Saur</i>	<i>98-2192</i>
ADDRESS	<i>85 Metro Park</i>	ADDRESS		
CITY	<i>Rochester</i>	CITY		P.O. #
STATE	<i>NY</i>	STATE		
ZIP	<i>14610</i>	ZIP		
ATT.	<i>J. Isentorian</i>	ATT.		
PHONE#	<i>475-1440</i>	PHONE#		
FAX#		FAX#		<input type="checkbox"/> ADDENDUM
PROJECT NAME/SITE NAME:		COMMENTS:		
<i>Exchange STREET</i>				
PROJECT #:		TURN AROUND TIME (WORKING DAYS)		
<i>15155.02</i>		<input type="checkbox"/> ONE <input type="checkbox"/> THREE <input checked="" type="checkbox"/> FIVE (STD) <input type="checkbox"/> OTHER		
		REPRESENTATIVE: <i>M. Shannon</i>		

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	CONTAINER NUMBER	REQUESTED ANALYSIS												REMARKS	PARADIGM LAB SAMPLE NUMBER			ANALYTICAL COSTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	SAMPLE CONDITION	CHECK #	TOTAL COST
<i>Julia Isentorian / Saur Brown</i>	<i>11/24/98</i>	<i>[Signature]</i>	<i>11/24/98 11:10</i>			
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	CARRIER COMPANY	AIR BILL NO.	P.I.F.
RELINQUISHED BY:	DATE/TIME	RECEIVED @ LAB BY:	DATE/TIME	CARRIER PHONE #	DATE RESULTS REPORTED BY:	DATE/TIME
		<i>[Signature]</i>	<i>11/24/98 11:25</i>			

WHITE COPY-SAMPLE YELLOW COPY-FILE PINK COPY-RELINQUISHER

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCLP
Reported: 12/24/98

Sear-Brown Group
Project Reference: EXCHANGE STREET
Client Sample ID : B4A 12-14

Date Sampled : 11/24/98 Order #: 258712 Sample Matrix: SOIL/SEDIMENT
Date Received: 11/24/98 Submission #: 9811000415 Analytical Run 33619

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED	: 12/16/98		
ANALYTICAL DILUTION:	10.00		
BENZENE	5.0	50 U	UG/L
2-BUTANONE (MEK)	10	100 U	UG/L
CARBON TETRACHLORIDE	5.0	50 U	UG/L
CHLOROBENZENE	5.0	50 U	UG/L
CHLOROFORM	5.0	50 U	UG/L
1,2-DICHLOROETHANE	5.0	50 U	UG/L
1,1-DICHLOROETHENE	5.0	50 U	UG/L
TETRACHLOROETHENE	5.0	50 U	UG/L
TRICHLOROETHENE	5.0	50 U	UG/L
VINYL CHLORIDE	5.0	50 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
BROMOFLUOROBENZENE	(86 - 115 %)	104	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	100	%

Data Reported following TCLP Toxicity Characteristics Leaching Procedure.
Federal Register, Part 261, Vol. 55, NO 126, June 29, 1990.

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS

METHOD 8260B TCLP

Reported: 12/24/98

Project Reference:

Client Sample ID : METHOD BLANK

Date Sampled :	Order #: 263069	Sample Matrix: SOIL/SEDIMENT
Date Received:	Submission #:	Analytical Run 33619

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 12/16/98			
ANALYTICAL DILUTION: 1.00			
BENZENE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L

<u>SURROGATE RECOVERIES</u>	<u>QC LIMITS</u>		
BROMOFLUOROBENZENE	(86 - 115 %)	99	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	99	%

Data Reported following TCLP Toxicity Characteristics Leaching Procedure.
Federal Register, Part 261, Vol. 55, NO 126, June 29, 1990.

(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 11/24/98 PAGE 1 OF 1

[illegible]

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Sear Brown Submission Number 11-415

Cooler received on 11/24/98 and opened on 11/24/98 by DN

1. Were custody seals on outside of cooler? hand delivered YES ☒ NO
- If yes, how many and where? hand delivered
2. Were signature & date correct? YES ☒ NO
3. Were custody papers properly filled out (ink, signed, etc)? YES YES ☒ NO
4. Did all bottles arrive in good condition (unbroken)? YES YES ☒ NO
5. Were all bottle labels complete (i.e. analysis, preservation, etc)? YES YES ☒ NO
6. Did all bottle labels and tags agree with custody papers? YES YES ☒ NO
7. Were correct bottles used for the tests indicated? YES YES ☒ NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES ☒ NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R

10. Temperature of cooler(s) upon receipt: 2.5

Is the temperature within $4 \pm 2^\circ \text{C}$? Yes ☒ Yes ☐ Yes ☐ Yes ☐ Yes ☐

If No, Explain Below No ☐ No ☐ No ☐ No ☐ No ☐

Date/Time Temperatures Taken: 11/24/98 16:45

Thermometer ID: #139 Circle One: Temp Blank Sample Bottle Cooler Temp.

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO ₃					
2	H ₂ SO ₄					
5-9*	P/PCBs (608 only)					

YES = All samples OK

NO = Samples were preserved at lab as listed

*If pH adjustment is required, use NaOH and/or H₂SO₄

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: _____

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix

Client:	<u>The Sear-Brown Group</u>	Lab Project No.:	98-1909A
Client Job Site:	Exchange St.	Lab Sample No.:	6720A
Client Job No.:	15155.02	Sample Type:	Soil
Field Location:	B-4 13-14'	Date Sampled:	10/17/98
Field ID No:	N/A	Date Received:	10/20/98
		Date Analyzed:	11/2/98

Petroleum Hydrocarbon	Result (ug/Kg)	Reporting Limit (ug/Kg)
Light Weight PHC as Gasoline	1,789,445	8,585

RECEIVED

NOV 13 1998

THE SEAR-BROWN GROUP

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10958

Comments: ND denotes Not Detected.

Approved By: 
Laboratory Director

File ID: 981909A1.XLS

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(716) 647-2530 • (800) 724-1997
FAX (716) 647-3311

PROJECT NAME/SITE NAME:
EXCHANGE ST.

CHAIN OF CUSTODY

Relog

REPORT TO:		INVOICE TO:		LAB PROJECT #
COMPANY	SEAR-BROWN	COMPANY	SAME	98-1909A
ADDRESS	85 Metro Park	ADDRESS		
CITY	Rochester	CITY		P.O. #
STATE	NY	STATE		1555.02
ZIP	14623	ZIP		
ATT.	Mike Starnsky	ATT.		
PHONE#	716-475-1440	PHONE#		
FAX#	716-424-5951	FAX#		<input type="checkbox"/> ADDENDUM
COMMENTS:				
PROJECT #: 15155.02				
TURN AROUND TIME (WORKING DAYS) <input type="checkbox"/> ONE <input type="checkbox"/> THREE <input checked="" type="checkbox"/> FIVE (STD) <input type="checkbox"/> OTHER				
REPRESENTATIVE:				

DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	CONTAINER NUMBER	REQUESTED ANALYSIS	REMARKS	PARADIGM LAB SAMPLE NUMBER	ANALYTICAL COSTS
1	10/17		X	B-1, 12-14.5'	S	1	✓		6719	
2	10/17		X	B-4, 13-14'	S	1	✓		6720A	
3	10/17		X	B-5, 13-14'	S	1	✓		6721	
4	10/17		X	B-6, 9-11'	S	1	✓		6722	
5	10/18		X	B-8, 3-5'	S	1	✓		6723	
6	10/17		X	B-9, 1-2.5'	S	1	✓		6724	
7	10/17		X	B-10, 5-7'	S	1	✓		6725	
8	10/18		X	B-12, 8-9'	S	1	✓		6726	
9										
10										
11										
12										

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	SAMPLE CONDITION	CHECK #	TOTAL COST
Mike P. Brown	10/19/98	John J. O'Brien	10/19/98	1705		
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	CARRIER COMPANY	AIR BILL NO.	P.I.F
RELINQUISHED BY:	DATE/TIME	RECEIVED @ LAB BY:	DATE/TIME	CARRIER PHONE #	DATE RESULTS REPORTED BY:	DATE/TIME
		John J. O'Brien	10/20/98	0735		

WHITE COPY-SAMPLE YELLOW COPY-FILE PINK COPY-RELINQUISHER

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: The Sear Brown Group

Lab Project No.: 98-2191

Lab Sample No.: 7617

Client Job Site: Exchange Street
Rochester, New York

Sample Type: Summa Canister

Client Job No.: 15155.02

Date Sampled: 11/24/98

Field Location: Method Blank

Date Received: 11/24/98

Field ID No.: N/A

Compound	Result ug/m3	Reporting Limit ug/m3	Result ppb	Reporting Limit ppb
Chloromethane	ND	5.0	ND	2.4
Vinyl Chloride	ND	5.0	ND	2.0
Chloroethane	ND	5.0	ND	1.3
Bromomethane	ND	5.0	ND	1.9
Acetone	ND	20	ND	8.4
Trichlorofluoromethane	ND	5.0	ND	0.89
1,1-Dichloroethene	ND	5.0	ND	1.3
Methylene Chloride	ND	5.0	ND	1.4
Carbon Disulfide	ND	5.0	ND	0.65
Trichlorotrifluoroethane	ND	5.0	ND	1.6
trans-1,2-Dichloroethene	ND	5.0	ND	1.3
cis-1,2-Dichloroethene	ND	5.0	ND	1.2
1,1-Dichloroethane	ND	5.0	ND	1.4
Methyl tert-Butyl Ether	ND	5.0	ND	1.4
Vinyl Acetate	ND	5.0	ND	3.4
2-Butanone	ND	10	ND	1.3
Chloroform	ND	5.0	ND	1.0
1,2-Dichloroethane	ND	5.0	ND	1.2
1,1,1-Trichloroethane	ND	5.0	ND	0.92
Benzene	ND	5.0	ND	1.6
Carbon Tetrachloride	ND	5.0	ND	0.80
1,2-Dichloropropane	ND	5.0	ND	1.1
Bromodichloromethane	ND	5.0	ND	0.75
Trichloroethene	ND	5.0	ND	0.93
cis-1.3-Dichloropropene	ND	5.0	ND	1.1
4-Methyl-2-pentanone	ND	10	ND	2.4

ELAP ID No.:11221

Comments: TR = Detected Below Indicated Reporting Limit

ND = Not Detected

Date Analyzed 12/1/98

Approved By: _____

Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: **The Sear Brown Group**

Lab Project No.: 98-2191

Lab Sample No.: 7617

Client Job Site: Exchange Street
Rochester, New York

Sample Type: Summa Canister

Client Job No.: 15155.02

Date Sampled: 11/24/98

Field Location: Method Blank

Date Received: 11/24/98

Field ID No.: N/A

Compound	Result ug/m3	Reporting Limit ug/m3	Result ppb	Reporting Limit ppb
trans-1,3-Dichlorpropene	ND	5.0	ND	1.1
1,1,2-Trichloroethane	ND	5.0	ND	0.92
Toluene	ND	5.0	ND	1.3
Dibromochloromethane	ND	5.0	ND	2.4
2-Hexanone	ND	10	ND	0.59
1,2-Dibromoethane	ND	5.0	ND	0.65
Tetrachloroethene	ND	5.0	ND	0.74
Chlorobenzene	ND	5.0	ND	1.1
Ethylbenzene	ND	5.0	ND	1.2
Bromoform	ND	5.0	ND	1.2
Styrene	ND	5.0	ND	0.48
m-&p-Xylenes	ND	5.0	ND	1.2
o-Xylene	ND	5.0	ND	1.2
1,1,2,2-Tetrachloroethane	ND	5.0	ND	0.73
1,3-Dichlorobenzene	ND	5.0	ND	0.83
1,4-Dichlorobenzene	ND	5.0	ND	0.83
1,2-Dichlorobenzene	ND	5.0	ND	0.83

ELAP ID No.:11221

Comments: TR = Detected Below Indicated Reporting Limit
ND = Not Detected
Date Analyzed 12/1/98

Approved By: _____

Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: **The Sear Brown Group**

Lab Project No.: 98-2191

Lab Sample No.: 7617

Client Job Site: Exchange Street
Rochester, New York

Sample Type: Summa Canister

Client Job No.: 15155.02

Date Sampled: 11/24/98

Field Location: Bore Hole

Date Received: 11/24/98

Field ID No.: N/A

Compound	Result ug/m3	Reporting Limit ug/m3	Result ppb	Reporting Limit ppb
Chloromethane	ND	250	ND	120
Vinyl Chloride	ND	250	ND	98
Chloroethane	ND	250	ND	64
Bromomethane	ND	250	ND	95
Acetone	ND	1000	ND	420
Trichlorofluoromethane	ND	250	ND	45
1,1-Dichloroethene	ND	250	ND	63
Methylene Chloride	ND	250	ND	72
Carbon Disulfide	ND	250	ND	33
Trichlorotrifluoroethane	ND	250	ND	80
trans-1,2-Dichloroethene	ND	250	ND	63
cis-1,2-Dichloroethene	340	250	85	62
1,1-Dichloroethane	ND	250	ND	69
Methyl tert-Butyl Ether	ND	250	ND	71
Vinyl Acetate	ND	250	ND	170
2-Butanone	ND	500	ND	63
Chloroform	ND	250	ND	51
1,2-Dichloroethane	ND	250	ND	62
1,1,1-Trichloroethane	ND	250	ND	46
Benzene	ND	250	ND	78
Carbon Tetrachloride	ND	250	ND	40
1,2-Dichloropropane	ND	250	ND	54
Bromodichloromethane	ND	250	ND	37
Trichloroethene	ND	250	ND	47
cis-1.3-Dichloropropene	ND	250	ND	55
4-Methyl-2-pentanone	ND	500	ND	120

ELAP ID No.:11221

Comments: TR = Detected Below Indicated Reporting Limit

ND = Not Detected

Date Analyzed 12/1/98

Approved By: _____

Laboratory Director

PARADIGM
Environmental
Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: **The Sear Brown Group**

Lab Project No.: 98-2191

Client Job Site: Exchange Street
Rochester, New York

Lab Sample No.: 7617

Client Job No.: 15155.02

Sample Type: Summa Canister

Field Location: Bore Hole
Field ID No.: N/A

Date Sampled: 11/24/98

Date Received: 11/24/98

Compound	Result ug/m3	Reporting Limit ug/m3	Result ppb	Reporting Limit ppb
trans-1,3-Dichloropropene	ND	250	ND	55
1,1,2-Trichloroethane	ND	250	ND	46
Toluene	800	250	210	66
Dibromochloromethane	ND	250	ND	120
2-Hexanone	ND	500	ND	29
1,2-Dibromoethane	ND	250	ND	33
Tetrachloroethene	ND	250	ND	37
Chlorobenzene	ND	250	ND	54
Ethylbenzene	18,000	250	4000	58
Bromoform	ND	250	ND	58
Styrene	ND	250	ND	59
m-&p-Xylenes	58,000	250	13,000	58
o-Xylene	14,000	250	3,200	58
1,1,2,2-Tetrachloroethane	ND	250	ND	36
1,3-Dichlorobenzene	ND	250	ND	42
1,4-Dichlorobenzene	ND	250	ND	42
1,2-Dichlorobenzene	ND	250	ND	42

ELAP ID No.:11221

Comments: TR = Detected Below Indicated Reporting Limit
ND = Not Detected
Date Analyzed 12/1/98

Approved By: _____


Laboratory Director

Performance Analytical Inc.

Air Quality Laboratory

A Division of Columbia Analytical Services, Inc.

An Employee Owned Company

2665 Park Center Drive, Suite D

Simi Valley, California 93065

Phone (805) 526-7161

Fax (805) 526-7270

98-2191

Chain of Custody Record Analytical Services Request

[illegible]



THE
SEAR-BROWN
GROUP

Project: Exchange Street Project No. 15155.02

By: J. Tspitchian Checked: M.P.G.

Date: 1/8/99 Sheet 1 of 2

SCENARIO A : EXCAVATION AND OFF SITE DISPOSAL

Estimate Volume of Petroleum Impacted Soil.

Boring locations with indications of impact

B-4 from 4' TO 14' as high as over 2,000 ppm
from 10' - 14'

B-5 from 9' TO 14' as high as 2,000 ppm.

Estimated Lateral extent of impacts:
see attached figure.

Estimated depth : 14' - bedrock refusal

From attached figure - calculate volumes:

area ①:

Depth : $14' - 4' = 10'$

Area : $30' \times 35' = 1330 \text{ SF}$

V : $1330 \text{ SF} \times 10' = 13,300 \text{ FT}^3 = 493 \text{ yd}^3$ -

area ②:

Depth : $14' - 9' = 5'$

Area : $30' \times 12' = 456 \text{ SF}$

V : $456 \text{ SF} \times 5' = 2,280 \text{ FT}^3 = 85 \text{ yd}^3$ -



Project: Exchange Street Project No. 15155.02
By: J. Isenitchian Checked: MPG
Date: 1/8/99 Sheet 2 of 2

area (3):

$$\begin{aligned}\text{Depth} &: 14' - 9' = 5' \\ \text{area} &: 38' \times 14' = 532 \text{ SF} \\ \checkmark &: 532 \text{ SF} \times 5' = 2660 \text{ ft}^3 = 99 \text{ yd}^3 \checkmark\end{aligned}$$

area (4):

$$\begin{aligned}\text{Depth} &: 14' - 9' = 5' \\ \text{area} &: 50' \times 38' = 1900 \text{ SF} \\ \checkmark &: 1900 \text{ SF} \times 5' = 9500 \text{ ft}^3 = 352 \text{ yd}^3 \checkmark\end{aligned}$$

$$\begin{aligned}\text{Total Volume} &: 493 \text{ yd}^3 + 85 \text{ yd}^3 + 99 \text{ yd}^3 + 352 \text{ yd}^3 \\ &= 1,029 \text{ yd}^3 \checkmark\end{aligned}$$

Estimated Weight of Soil: 1.8 tons per yd^3

$$\Rightarrow 1.8 \text{ TONS} / \text{yd}^3 \times 1,029 \text{ yd}^3 = 1852 \text{ TONS} \checkmark$$

Assume Excavation and off-site disposal

Excavation	1,029 yd^3 @ \$10/ yd^3 =	10,290 ✓
Disposal	1852 T @ \$40/T =	74,080 ✓
Backfill	1,029 yd^3 @ \$23/ yd^3 =	23,667 ✓
Sampling (VOCs)	15 soils for VOCs @ 100/sample =	1,500 ✓
		<u>\$109,537 ✓</u>

CONSTRUCTION TOTAL

engineering 5% \$5,500 ✓

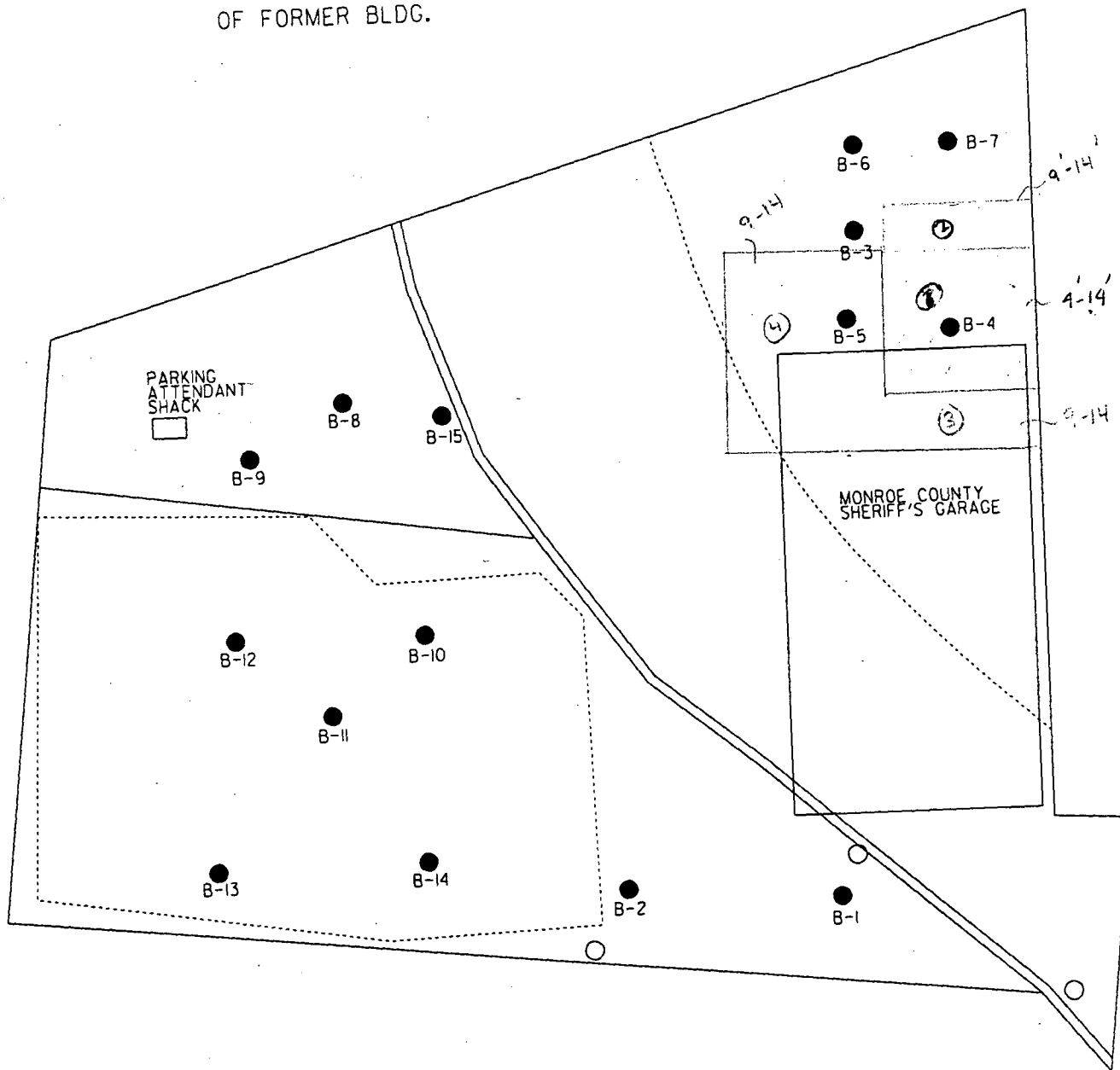
\$115,037 ✓

contingency 20% 23,000 ✓

TOTAL = \$138,050 ✓

LEGEND

- = SOIL SAMPLE POINT
- = MANHOLE
- = APPROXIMATE LOCATION OF FORMER BLDG.



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THE SEAR-BROWN GROUP

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF LICENSED ARCHITECT, PROFESSIONAL ENGINEER, LANDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY.

ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS OR HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATIONS.

PROJECT ENGINEER/ARCHITECT	DATE
JULIA ISPENTCHAN, P.E.	10/20/98
PROJECT MANAGER	DATE
M. STORONSKY	10/20/98
DEPT./BRANCH/AFFILIATE/MANAGER	DATE
M. STORONSKY	10/20/98
DRAWN BY	DATE DRAWN
M. CORMAN	10/20/98
SCALE	DATE ISSUED
1/4" = 40 FT	10/20/98



THE SEAR-BROWN GROUP

FULL - SERVICE DESIGN PROFESSIONALS

85 MONTRO PARK
ROCHESTER, N.Y. 14623
(716) 475-1440

PROJECT
EXCHANGE STREET
ROCHESTER, NY

TITLE OF DRAWING
SOIL BORING LOCATIONS

PROJECT NO.
1515502
DRAWING NO.
1



THE
SEAR-BROWN
GROUP

Project: Exchange St - City of Roch Project No. 15155 02

By: JCI Checked: KPI 1/28/99

Date: 1/25/99 Sheet 1 of 5

SCENARIO B : IN-SITU REMEDIATION

SOIL VAPOR EXTRACTION - 1YR. RUN

PILOT TEST

PILOT TEST
ENGINEERING

\$ 7,500
\$ 2,500
\$ 10,000 ①

CAPITAL COSTS

SVE SYSTEM ④ - 5 SVE WELLS
SHED AND PAID
CARBON FILTER SYSTEM ④ - AIR

\$ 12,578.64
\$ 2,500.00
\$ 3,083.21
\$ 18,161.85 ②

OPERATIONS & MAINTENANCE

ELECTRICAL ④

FIRST WK - DAILY VISITS
NEXT 3 WEEKLY - 2X A WEEK
WEEKLY THEREAFTER - 48 VISITS
MISC. EQUIPMENT COSTS
LAB COSTS (QUARTERLY AIR, 1 WATER 1 KNOCK-OUT POT)
CARBON ADSORPTION ④ (EVERY 3 MONTHS)
KNOCK-OUT POT WATER DISPOSAL - 1 DRUM BIMONTHLY OR
\$ 6 DRUMS

\$ 1,000.00
\$ 1,000.00
\$ 1,500.00
\$ 4,800.00
\$ 500.00
\$ 800.00
\$ 4,508.87
\$ 1,200.00
\$ 15,308.87 ③

ENGINEERING

DESIGN AND INSTALLATION OVERSIGHT
AIR PERMITTING FOR CARBON SYSTEM
REPORTING (QUARTERLY)

\$ 12,500.00
\$ 2,500.00
\$ 4,500.00
\$ 19,500.00 ④

EXPENSES

5% OF ENGINEERING (\$2,500 + \$19,500)

\$ 1,100.00 ⑤



THE
SEAR-BROWN
GROUP

Project: Exchange ST - City of Roch Project No. 15155-02

By: JCI

Checked: WDI 1/28/99

Date: 1/25/99

Sheet 2 of 5

TOTAL: ① + ② + ③ + ④ + ⑤

$$\begin{aligned} &= (\$10,000 + \$18,161.85 + \$15,308.87 + \$19,500 + \$1,100) \\ &= \$64,070.72 \end{aligned}$$

20% contingency - 76,884.86 → \$ 77,000.00

① SOURCE - ECHOS - ENVIRONMENTAL COST HANDLING OPTIONS
AND SOLUTIONS 95/98
(see attached for COST BREAKDOWN)

Date 01/20/99

Page 1

Time 10:37

DETAIL COST REPORT

Project:

EXCHANGE STREET
Rochester New York NY
SVE
JWI
01/19/99

Project Comments:

Site:

SVE

01/19/99

Site Comments:

	Quantity	\$/UM	Totals
--	----------	-------	--------

33

REMEDIAL ACTION

33.13

Physical Treatment

33.13.19

Carbon Adsorption (Gas)

33.13.19.01

Carbon Adsorption (Gas) - Capital Costs

100 CFM, 200 Lb Fill, Closed Upflow, 6.8" Pressure Drop

1.00 EA	834.81	834.81
---------	--------	--------

150 CFM, 8" Pressure, 3/4 HP, Blower System

1.00 EA	521.79	521.79
---------	--------	--------

Pressure Gauge

1.00 EA	124.55	124.55
---------	--------	--------

Monitoring Port W/Gas Monitor

1.00 EA	14.76	14.76
---------	-------	-------

Saturation Indicator

1.00 EA	77.25	77.25
---------	-------	-------

4" Iron Body Checkvalve

1.00 EA	374.92	374.92
---------	--------	--------

25' X 6" Flexible Stainless Steel High Pressure Hose

1.00 EA	985.09	985.09
---------	--------	--------

8" Structural Slab On Grade

25.00 SF	5.48	137.11
----------	------	--------

Electrical Charge (KWH)

251.00 KWH	0.05	12.93
------------	------	-------

Total Capital Costs

3,083.21

33.13.19.99

Carbon Adsorption (Gas) - O&M Costs

Date 01/20/99

Page 2

Time 10:37

DETAIL COST REPORT

	Quantity	\$/UM	Totals
33 REMEDIAL ACTION			
33.13 Physical Treatment			
33.13.19 Carbon Adsorption (Gas)			
33.13.19.99 Carbon Adsorption (Gas) - O&M Costs			
100 CFM, 200 Lb Fill, Closed Upflow, 6.8" Pressure Drop			
4.00 EA	834.81	3,339.25	
Remove/Reinstall Carbon Adsorber Unit			
4.00 EA	208.29	833.17	
Electrical Charge (KWH)			
6,533.00 KWH	0.05	336.45	
Total O&M Costs			4,508.87
Total Carbon Adsorption (Gas)			7,592.08
33.13.23 Vapor Extraction			
33.13.23.01 Vapor Extraction - Capital Costs			
1 HP, 230V, 98 SCFM, Vapor Recovery System			
1.00 EA	4,663.42	4,663.42	
DOT Steel Drum, 55 Gal			
1.00 EA	44.14	44.14	
Electrical Charge (KWH)			
335.00 KWH	0.05	17.25	
Surface Pad, Concrete, 4' X 4' X 4"			
5.00 EA	14.72	73.63	
Furnish 55 Gal Drum For Drilling Cuttings & Devel Water			
4.00 EA	44.13	176.54	
2" Well, Portland Cement Grout			
5.00 LF	0.92	4.64	
2" Screen, Filter Pack			
50.00 LF	9.63	481.71	
4" Iron Body Checkvalve			
2.00 EA	374.91	749.82	
2" Well, Bentonite Seal			
5.00 EA	29.19	145.98	
2" PVC, Sch 40, Connection Piping			
88.00 LF	2.91	256.27	
2" PVC, 90 Degree, Elbow			
5.00 EA	16.18	80.93	
4"x2" Reducer, PVC Sch 40			
5.00 ³ EA	7.62	38.11	
4" PVC, Sch 40, Tee			
5.00 EA	54.90	274.54	

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DETAIL COST REPORT

	Quantity	\$/UM	Totals
REMEDIAL ACTION			
Physical Treatment			
Vapor Extraction			
Vapor Extraction - Capital Costs			
2" PVC, Well Plug	5.00 EA	13.54	67.73
4" PVC, Sch 40, Manifold Piping	44.00 LF	6.84	301.30
2" PVC, Sch 40, Well Casing	30.00 LF	5.09	152.98
2" PVC, Sch 40, Well Screen	40.00 LF	9.94	397.92
OVA Rental, Per Day	2.00 DAY	103.00	206.00
Pressure Gauge	5.00 EA	124.55	622.77
Mob/Demob Drilling Rig & Crew	1.00 LS	1,268.34	1,268.34
Move Rig/Equipment Around Site	4.00 EA	39.63	158.54
Split Spoon Sample, 2" x 24", During Drilling	15.00 EA	25.75	386.25
Decontaminate Rig, Augers, Screen (Rental Equipment)	2.00 DAY	140.08	280.16
H Stem, 8" OD Borehole For 2" Well	75.00 LF	23.06	1,729.67
Total Capital Costs			12,578.64
Vapor Extraction - O&M Costs			
Electrical Charge (KWH)	8,710.00 KWH	0.11	958.10
Total O&M Costs			958.10
Total Vapor Extraction			13,536.74
TOTAL DIRECT COSTS REMEDIAL ACTION			21,128.82