APPENDIX A
Phase I Environmental Site Assessment
(Sear-Brown, 2002)

PHASE I ENVIRONMENTAL SITE ASSESSMENT

CORN HILL LANDING
EXCHANGE BOULEVARD
ROCHESTER, NEW YORK 14608

JUNE 2002

Prepared for:

GREYSTONE SERVICING CORPORATION, INC.
419 BELLE AIR LANE
WARRENTON, VIRGINIA 20186

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June 17, 2002

Ms. Leslie Caton
Greystone Servicing Corporation, Inc.
119 Belle Air Lane
Warrenton, Virginia 20186

RE: Phase I Environmental Site Assessment **15718.08**
Corn Hill Landing
Exchange Boulevard
City of Rochester, New York

Dear Ms. Caton:

As requested, please find enclosed our Phase I Environmental Site Assessment (ESA) of Corn Hill Landing located on Exchange Boulevard in the City of Rochester, New York. In order to satisfy the requirements of the United States Department of Housing and Urban Development (HUD), this investigation was conducted such that it fulfills the requirements of the American Society for Testing and Materials (ASTM) Standard Practice E 1527-00 guidelines for Phase I ESAs. All the information contained herein is true to the best of our knowledge and can be relied upon by Greystone Servicing Corporation, Inc. and HUD.

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

Very truly yours,

Michael P. Storonsky
Senior Associate

Enclosure

cc: Joseph Biondolillo, City of Rochester DEQ

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1.0 Executive Summary

The subject property, known as Corn Hill Landing, is located adjacent to the west bank of the Genesee River and the east side of Exchange Boulevard (formerly Exchange Street), in the City of Rochester, New York (Figure 1). The property, which totals 6.36$^{\pm}$ acres, extends northward from approximately 450 ft. south of South Plymouth Street, to the approximate northern boundary of the Interstate 490 overpass. The property is comprised of eleven (11) adjoining tax parcels (See Figure 2). The property is zoned Corn Hill Landing Planned Development (July 13, 1999) and is proposed for a mixed-use commercial/residential development by Mark IV Construction (Mark IV).

Tax Parcels Comprising Corn Hill Landing	Former/Current Street Addresses Associated with Parcel
121.39-1-5	200 Exchange Blvd.
121.59-1-008	260 Exchange Blvd.
121.47-1-20	300 Exchange Blvd.
121.47-1-47	Former Ritter Street
121.47-1-17	320 Exchange Blvd.
121.47-1-40.1	330 Exchange Blvd.
121.47-1-46	Former Adams Street and Part of 380 Exchange Blvd.
121.47-1-41.1	350 Exchange Blvd.
121.47-1-14.1	378 Exchange Blvd.
121.47-1-15	Part of 382 Exchange Blvd.
121.47-1-45	Former Edinburgh Street

The subject property appears on the New York State Department of Environmental Conservation (DEC) spills listing with two closed and one active spill events. DEC spill events DEC I.D. Nos. 9102615 and 0011244 have been closed, which indicates that they were resolved to the satisfaction of the DEC. The active spill event DEC I.D. No. 9102615 is discussed in the Findings and Conclusions Section below. The two closed spill events are discussed in detail in Section 6.1.

The subject property also appears on the EPA Resource Conservation and Recovery Act (RCRA) Hazardous Waste Notifiers List as being a large quantity generator (EPA I.D. NYR000092148). This listing is a result of Sear-Brown's Lead Impacted Soil Remediation program conducted on behalf of the property owner, which is discussed in the Findings and Conclusions Section below and in detail in Section 3.0.

We have performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Standard Practice E 1527-00 and the requirements of the United States Department of Housing and Urban Development (HUD), for Corn Hill Landing located on Exchange Boulevard in the City of Rochester, New York. Any exceptions to, or deletions from, this scope of work are described in Sections 2.2, 2.3, and 2.4 of this report. This assessment has revealed no recognized environmental conditions associated with the subject property except for the following:

Findings and Conclusions

Sear-Brown completed a Phase I ESA of the subject property in May 1999. The Phase I ESA identified environmental concerns involving historic use of the subject property as a rail yard and by various industrial and commercial businesses. Fill material, historic petroleum tanks and one historic on-site petroleum spill were also identified as concerns. As a result, a Phase II Environmental Investigation was recommended.

A Phase II Environmental Investigation was subsequently completed by Sear-Brown in July 1999 that identified the presence of site wide metal- and PAH-impacted fill materials and petroleum impacts at the former on-site historic petroleum spill site. As a result, development of mitigative measures were recommended including preparation of a Corrective Action Plan (CAP) to address the petroleum contamination and a Soil Management Plan (SMP) to address the site wide fill materials.

The CAP and SMP were subsequently prepared and submitted to the DEC, New York State Department of Health (NYSDOH) and Monroe County Department of Health (MCDOH) for review and approval in October 1999. The CAP and SMP were approved by the agencies in January 2001. Following their approval, a soil removal program was conducted in January-February 2001 involving metal impacted (lead, mercury and arsenic) soils in two locations.

In the summer of 2001, quotes were obtained form contractors for implementation of the petroleum remediation program outlined in the CAP. In addition engineering controls were incorporated into the building designs to address environmental concerns presented in the CAP and SMP.

No new environmental concerns were identified during the current Phase I ESA. However, in anticipation of project construction, Sear-Brown has recently provided proposals (June 2002) to Mark IV Construction Co. for construction oversight involving implementation of the CAP and SMP.

Recommendations

- The remedial activities outlined in Sear-Brown's DEC approved CAP will need to be implemented in consultation with state and local agencies prior to or as part of the proposed development of the subject property. The activities will include excavation and off-site disposal of petroleum affected soil, pumping and off-site disposal of petroleum affected groundwater installation of monitoring wells, implementation of engineering controls (e.g., vapor barriers and passive sub-slab venting systems) and monitoring.

- During the proposed mixed-use redevelopment of the site, Sear-Brown's DEC approved SMP will need to be implemented in consultation with the state and local agencies to aid the developers in properly handling and managing the impacted fill materials.

2.0 Introduction

2.1 Purpose

This investigation was requested to identify, to the extent feasible, recognized environmental conditions in connection with the subject property in anticipation of redevelopment of the subject property. The investigation was conducted in conformance with ASTM E 1527-00 Standard Practice for Environmental Site Assessments (ESAs): Phase I Environmental Site Assessment Process and HUD Multifamily Accelerated Processing (MAP) guidelines.

2.2 Detailed Scope of Services

The Scope of Services for this Phase I ESA was developed/conducted using the American Society for Testing and Materials (ASTM) Standard Practice E 1527-00 guidelines for Phase I ESAs and HUD MAP guidelines.

2.3 Limiting Conditions and Methodologies Used

This report presents a description of the conditions observed within and immediately surrounding the subject property at the time of the site visit. In addition, this assessment was based on a review of reasonably ascertainable federal, state, and local environmental records, a site reconnaissance of the property, and interviews with individuals familiar with the current and historical uses of the property.

The findings, opinions, and conclusions presented in this report are based only on information gathered during these activities. Therefore, since much of the information has been provided by others, the accuracy of the conclusions drawn from this information are inherently related to the accuracy and reliability of the information that was provided.

2.4 Outstanding Information

There was no requested information that was outstanding at the time this report was prepared.

2.5 Special Terms and Conditions

This Phase I ESA includes a discussion of wetlands, asbestos, radon and lead-based paint which are not within the scope of ASTM Standard Practice E 1527-00. However, site specific wetland investigations, asbestos sampling, lead-based paint sampling or radon screening were not performed as part of this study.

2.6 User Reliance

This document may not be used or relied upon by others without the expressed written consent of Sear-Brown and the Greystone Servicing Corporation, Inc., to which reliance on this report is expressly provided.

3.0 Previous Environmental Studies

Sear-Brown completed a Phase I ESA of the subject property in May 1999. The ESA included an additional three acres that are contiguous to the south, which are not included in the property proposed for development by Mark IV, and were not the subject of a Phase II Environmental Investigation completed by Sear-Brown in July, 1999. The Phase I ESA provided the following findings and conclusions:

- Review of readily available historical information indicated that as many as 16 railroad tracks traversed the subject property primarily in a north/south direction, and a large portion of the northern section of the property was used as a railroad yard, including a railroad depot, for a period of about 100 years.

- The retaining wall located adjacent to the current eastern property boundary was originally constructed between 1918 and 1926. As a result, it was considered likely that fill material has been brought onto the property in the past.

- Various industrial and commercial uses were located adjacent to the subject property in the past included a planing mill (address unavailable-adjacent to the east of the freight house formerly located at 200 Exchange Street), filling stations (280 and 422 Exchange Street), the Armour & Co. meat packing facility (300-332 Exchange Street), the Brown Brothers Scrap Iron yard (306 and 308 Exchange Street), the George Engert and Co. Coal Pockets and Yard (310 Exchange Street), the J.E. Waters Coal Yard (348-356 Exchange Street), the L. Edelman Coal Yard (348-356 Exchange Street), the H.F. Drake Coal Yard (356-360 Exchange Street), the Big Elm Dairy Company (372-378 Exchange Street), the M. Barron Coal Yard (374-384 Exchange Street), the Rochester Lead Works (380 and 382 Exchange Street), and the Howe and Rogers Company oil cloth storage facility (23 and 25 Edinburgh Street).

- A review of Building Department records maintained by the City of Rochester indicated that there are a number of permits on file which relate to underground storage tanks on, or near, the subject property. The first permit (No. 18394), issued on March 12, 1942, granted permission to the Erie Railroad Company, 200 Exchange Street, to store oil in one 10,500-gallon tank and in one 6,000-gallon tank located at the rear of the building. This permit was updated through March 1, 1956. There was no additional information regarding the disposition of these oil storage tanks.

- A 1938 Sanborn map showed that a building, approximately 30 ft. x 15 ft. and identified as a gasoline filling station, had been constructed about 170 ft. north of the intersection of Exchange Street and Ritter Street at 280 Exchange Street. To the east of this building, a gasoline storage tank was depicted. This filling station is believed to have been situated off of the subject property within the current location of Exchange Boulevard. Exchange Boulevard was relocated approximately 80 ft to the east to its present alignment circa 1980.

- A review of Building Department records maintained by the City of Rochester indicated that a permit (No. 911812) was issued on June 5, 1991 for the removal of one 3,000-gallon

storage tank from 290 Exchange Street. Although there are discrepancies regarding the address and size, it is believed that this removal permit is associated with a spill that was reported for the subject property which involved a leaking underground storage tank. This spill (DEC I.D. No. 9102615) was reported on June 4, 1991 for the South River Corporation boat dock (currently operated by Sam Patch Boat Tours), located at 300 Exchange Street, when a backhoe ruptured an abandoned 4,000-gallon UST while excavating for a boat dock project. According to the Monroe County Department of Health (MCDOH) file regarding this spill event, 1,800 - 2,000 gallons of water and 1,000-1,200 gallons of fuel oil product were present in the tank. The City of Rochester contracted Environmental Products and Services, Inc. to remove the tank and its contents, and to excavate associated contaminated soil for disposal off-site. According to the MCDOH report, the storage tank, and the fuel oil and water which were present within the tank, were removed from the subject property on June 5, 1991. Additionally, approximately 35 cubic yards of contaminated soil was excavated for off-site disposal. The DEC spill report indicated that a 1-2 ft. thick vein of heavily contaminated soil extended from the bottom of the tank pit, but that it was covered by 6 ft. of clean fill. The spill report further indicated that removal of the contaminated soil was not practical due to the presence of this clean fill above the vein of contamination. Additionally, the report indicated that this area was formerly a gas station and that there may be additional USTs located on-site. The DEC indicated that no further remediation of the site was necessary at that time, because the site was to be used as a parking lot, and because there were no properties located adjacent to the spill site which were identified as potential receptors of contamination.

- In the 1938 Sanborn map, the buildings located to the immediate west of the subject property, between Adams Street and Ritter Street, included 302-332 Exchange Street, which was identified as Armour & Co. (meat packing), and 338 and 340 Exchange Street, which was the Biscuit Warehouse. A gasoline tank, which appeared to be associated with these facilities, was depicted approximately 80 ft. to the west of the current subject property boundary, under Adams Street. Another tank was depicted approximately 150 ft. west of the current subject property boundary, approximately 60 ft. to the north of Adams Street, adjacent to the former location of Exchange Street. A permit (No. 13335) was issued on March 1, 1938 to the Armour & Co. facility that granted permission for the storage of gasoline in one 1,000-gallon storage tank through March 1, 1952. Review of records maintained by the City of Rochester indicated that one 2,000-gallon underground storage tank was removed from 320 Exchange Street on November 6, 1970. No further documentation was readily available regarding the tanks at this location.

- Another gasoline storage tank was depicted in the 1938 Sanborn map about 125 ft. to the west of the current subject property boundary, between 358 and 360 Exchange Street. No additional information was readily available regarding the disposition of this tank.

- The Sanborn map dated 1938 indicated that a building approximately 25 ft. x 30 ft. had been constructed adjacent to the westernmost railroad line, near the southwestern property boundary. This facility was identified as an auto repair shop (17 Edinburgh Street). The repair shop building was demolished circa 1974.

Two tank removal permits were issued for 392 Exchange Boulevard (current address) in the vicinity of this former automobile repair facility. The first (No. 213451) was issued on May 28, 1974 for the removal of tanks. No additional information was provided in the permit report regarding tank sizes, contents, or locations. The second permit (No. 300085) for this address was issued on September 4, 1974 for the removal of one 1,000-gallon gasoline storage tank.

Following the Phase I ESA, Sear-Brown completed a Phase II Environmental Site Investigation of the subject property between April and June 1999. The Phase II Report dated July 1999, which has been provided to the DEC, MCDOH and New York State Department of Health (NYSDOH). The program included the installation of 28 soil gas probes, excavation of 59 test pits, and the installation of 10 monitoring wells and 7 small diameter soil and groundwater monitoring points. The Phase II ESA presented the following findings, conclusions, and recommendations:

Petroleum Spill Area

As a follow-up to the spill that was reported to the DEC on June 4, 1991 (DEC I.D. No. 9102615) near the Sam Patch Boat Tours dock, a series of investigation activities were performed. During the Phase II Investigation, petroleum impacts were identified in the same area and a new spill was reported to the DEC (DEC I.D. No. 9970155). Soil test borings, test pits, and monitoring wells advanced during the Phase II Environmental Investigation generally defined the extent of the petroleum-contaminated soil in this area. The Phase II Investigation was provided to the DEC and it was recommended that a cleanup program be developed in conjunction with regional spill personnel assigned to handle the file.

Given the findings, an estimated 540 tons of petroleum-contaminated soil is believed to be present and was recommended for removal. The affected area was reasonably well defined on the east, south and west sides. Due to the presence of a concrete slab to the north, however, limitations exist regarding the definition of the extent of contamination in the northerly direction (See Appendix 2).

Similarly, groundwater within the area of petroleum-impacted soil contains #2 fuel oil and low parts per billion concentrations of some volatile organic compounds (VOCs). The recommended excavation of the affected soils is expected to encounter groundwater which will need to be removed and disposed during the remedial activities. It was estimated that a volume of approximately 27,000 gallons of potential petroleum contaminated groundwater may need to be removed. It was recommended that this water be pumped to an on-site containment vessel, treated by activated carbon (if necessary) and then discharged to the municipal sewer system. Permission will need to be obtained from Monroe County Pure Waters prior to discharge.

In the event the recommended remedial activities are not able to sufficiently remove the petroleum affected soil and groundwater, it was noted that contingencies involving groundwater monitoring and/or installation of vapor controls (e.g., vapor barriers and passive sub-slab venting systems) may be needed. In addition, during excavation of the other building foundations and various utility trenches, it is possible that additional petroleum-impacted soils or source areas may be encountered. Contingencies were recommended to be included for each of these potential scenarios.

Site-wide Fill Materials

In general, soil conditions across the site consist of 4 to 6 feet of black, cinder-rich fill, with varying amounts of slag, coal, sand and gravel. These fill materials on various portions of the site exceed DEC recommended soil cleanup objectives for certain metals and semi-volatile organic compounds (SVOCs). In addition, lubricating oil has been reported in various soil samples, although a specific guidance value has not been established by the DEC. The SVOCs reported were generally polycyclic aromatic hydrocarbons (PAHs) that are commonly formed during the incomplete combustion of coal, petroleum products and other organic substances.

These types of analytical findings (metals, PAHs and lubricating oil) are typical of former railroad yards. These compounds are relatively insoluble in water and do not generally leach into, or migrate via, groundwater in appreciable concentrations. However, metals and SVOCs in soils can present inhalation and ingestion concerns via wind blown dust or direct contact exposure pathways. Given these findings and the proposed mixed-use redevelopment of the site, it was recommended that a Soil Management Plan be developed and implemented to properly handle and manage the impacted fill materials. This would include placement of one foot of clean soil (4 in. of topsoil and 8 in. of subsoil) on landscaped areas to minimize the potential for human contact.

In preparation for re-development of the subject property, and to address the findings of the July 1999 Phase II Environmental Site Assessment, a Corrective Action Plan (CAP) and a Soil Management Plan (SMP) were prepared by Sear-Brown. These two plans were submitted to the DEC, MCDOH and NYSDOH in October 1999.

Based on comments presented by the DEC, it was requested that further evaluation of metals in soils be conducted around two test pits (TP-10 and TP-57). Several rounds of investigations were subsequently performed. The results of the supplemental soil sampling programs were presented to the DEC in a report dated October 1, 2000 in conjunction with an Addendum to Corrective Action Plan (ACAP) dated October 1, 2000. The ACAP called for the removal of lead, arsenic and mercury affected soil located around the two test pits (TP-10 and TP-57) on the subject property. The DEC subsequently approved the ACAP on January 10, 2001. Approximately 162 tons of soil were removed from TP-10 and approximately 729 tons from TP-57. The excavation of impacted soil at TP-57 was limited due to the presence of Exchange Boulevard to the west, City of Rochester street lighting conduit, and Monroe County Traffic Signal Control Center conduit at a depth of approximately 18 inches below ground surface (bgs) in the right-of-way (ROW). As such, it is estimated that approximately 75 tons of impacted soils remain in place off the subject property in the ROW. To notify potential developers of the site regarding this condition, the City of Rochester indicated they would flag the subject property in the City of Rochester Building Information System (BIS). This flag will require a permit applicant to seek an environmental review prior to the issuance of any City permit for future development of this area.

The CAP and SMP were reviewed and approved by the DEC on January 10, 2001. A copy of the DEC approval letter is included as Appendix 3.

4.0 Site Description

4.1 Location and Legal Description

The subject property, known as Corn Hill Landing, is located adjacent to the west bank of the Genesee River and the east side of Exchange Boulevard (formerly Exchange Street), in the City of Rochester, New York (Figure 1). The property, which totals 6.36± acres, extends northward from approximately 450 ft. south of South Plymouth Street, to the approximate northern boundary of the Interstate 490 overpass. The property is comprised of eleven (11) adjoining tax parcels (See Figure 2). The property is zoned Corn Hill Landing Planned Development (July 13, 1999) and is proposed for a mixed-use commercial/residential development by Mark IV Construction (Mark IV).

Tax Parcels Comprising Corn Hill Landing	Former/Current Street Addresses Associated with Parcel
121.39-1-5	200 Exchange Blvd.
121.59-1-008	260 Exchange Blvd.
121.47-1-20	300 Exchange Blvd.
121.47-1-47	Former Ritter Street
121.47-1-17	320 Exchange Blvd.
121.47-1-40.1	330 Exchange Blvd.
121.47-1-46	Former Adams Street and Part of 380 Exchange Blvd.
121.47-1-41.1	350 Exchange Blvd.
121.47-1-14.1	378 Exchange Blvd.
121.47-1-15	Part of 382 Exchange Blvd.
121.47-1-45	Former Edinburgh Street

4.2 Site and Vicinity General Characteristics

According to the United States Geological Survey (USGS) 7.5 Minute topographic map (Rochester East Quadrangle, photorevised 1978), the subject property is generally level and lies at an average elevation of 515± ft. as determined by the National Geodetic Vertical Datum of 1929.

Surface water on the subject property and the vicinity are anticipated to flow in multiple directions, being controlled by the various roadways and parking areas, and their associated stormwater drainage systems. According to Dr. Richard Young's Groundwater Contour Maps for Monroe County (1980), regional groundwater flow in the vicinity of the subject property is interpreted to flow easterly towards the Genesee River, located adjacent to the east of the subject property.

According to the Monroe County Soil Survey (1973), soils on the subject property are described as Urban Land, which are areas which have been so altered or obscured by public works that identification of the soils is not feasible. These areas are located in the built up portions of the City of Rochester.

The Federal Emergency Management Agency Federal Insurance Rate Map (Community Panel No. 360431 0020B) indicates that the subject property is not located within the 500 year flood plain.

According to the Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York (Miller, 1985) the groundwater underlying the subject property is not within the boundaries of an unconfined sand and gravel aquifer.

According to the United States Department of the Interior National Wetlands Inventory (Rochester East Quadrangle) and New York State DEC Freshwater Wetlands Map (Rochester East Quadrangle), there are no designated wetlands within the boundaries of the subject property. The Genesee River, adjacent to the east of the subject property, is identified as a wetland according to the United States Department of the Interior National Wetlands Inventory. This wetland is classified as a lacustrine, limnetic wetland, which is located in open water, and has an unknown bottom regime.

The retaining wall located adjacent to the current eastern property boundary was originally constructed between 1918 and 1926 and most recently renovated in 2001.

Although the Site is located in a seismic zone, a seismic study is not needed and will not be completed. During an earthquake, an additional horizontal force is applied to a structure. Based on the Multidisciplinary Center for Earthquake Engineering (MCEER) the Site is located within Seismic Zone B, which has an effective peak acceleration factor of 0.12. However, the New York State Building Code is silent on incorporating an earthquake load into a building design. The wind loads identified in the New York State Building Code typically result in a higher force than the force developed during an earthquake, and is therefore the controlling design factor. Furthermore, it is our understanding that the building foundations will be constructed on bedrock which will limit the potential for soil liquefaction under the foundations resulting from an earthquake.

4.3 Current Use of the Properties

The southern portion of the property is grass-covered, and a paved pedestrian walkway extends northward to Court Street. The Sam Patch Boat Tours maintains a parking lot and ticket booth on the subject property. Docks for the boats are located directly east of the parking area, which extend into the Genesee River. The northernmost portion of the subject property is currently a paved municipal parking lot.

4.4 Structures, Roads, Other Improvements on the Site

The northernmost portion of the property is improved with a municipal parking lot. Immediately south of this parking lot is the Sam Patch Boat Tours parking lot and associated ticket booth located at 250 Exchange Boulevard. The southern portion of the subject property is improved with a paved pedestrian walkway, which extends north to Court Street.

The subject property has access to municipal utilities that serve the vicinity. Potable water is supplied to the area by the City of Rochester. Combined sanitary and storm sewers are maintained by the City of Rochester. Electric and natural gas services are provided to the area by Rochester Gas and Electric Corporation (RG&E).

5.0 User Provided Information

5.1 Title Records

A request was made to the City of Rochester for an Abstract of Title. However, the Abstract of Title has not been prepared for the site and therefore could not be reviewed.

5.2 Environmental Liens or Activity and Use Limitations

According to Mr. Joseph Biondolillo, City of Rochester Department of Environmental Quality, to the best of his knowledge there are no environmental liens associated with the subject property. There is however, a limited use area in the right-of-way (ROW) located adjacent to Exchange Boulevard. This limitation is discussed in Section 3.0.

5.3 Specialized Knowledge

Specialized knowledge and/or experience that is material to any recognized environmental conditions in connection with the subject property is discussed in Section 3.0.

5.4 Valuation Reduction for Environmental Issues

Sear-Brown was not provided with any appraisals or any other information that would identify valuation reduction of the subject property.

5.5 Owner, Property Manager, and Occupant Information

According to the City of Rochester Building Information System (BIS) the owner of the subject property is listed as the Rochester Urban Renewal Agency. Additional information obtained from the City of Rochester BIS is included in appropriate sections of this report.

5.6 Reason for Performing Phase I Environmental Site Assessment

This investigation was requested to identify, to the extent feasible, recognized environmental conditions in connection with the subject property in anticipation of redevelopment for combined commercial and residential uses.

6.0 Records Review

6.1 Standard Environmental Record Sources

Federal, state and local environmental records, which included the U.S. Environmental Protection Agency (EPA) Internet On-Line Databases and Sear-Brown's in-house paper and magnetic disk files, were reviewed for ASTM-specified radii including: the EPA National Priorities List (NPL, March 2002), Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS, March 2002) sites, Resource Conservation and Recovery Act (RCRA, March 2002) Notifiers and the Emergency Response Notification System (ERNS, March 2002); the New York State Department of Environmental Conservation (DEC) Registry of Inactive Hazardous Waste Disposal Sites (July 2001), Inactive Hazardous Waste Disposal Site Remedial Plan (March 2002), Hazardous Substance Waste Disposal Sites survey (HSWDS, March 2002), Active Solid Waste Disposal Facilities (ASWDF, March 2002), registered petroleum bulk storage (PBS) and chemical bulk storage (CBS) tanks (October 2001) and reported spill files (February 2002); and the EMC Inventory of Waste Disposal Sites (March 1999). Additionally, Building Information Systems (BIS) and Fire Department records for the subject property were provided to Sear-Brown by the City of Rochester, and were reviewed for purposes of this report.

Written Freedom of Information Law (FOIL) requests were submitted to the DEC and to the City of Rochester to review their files regarding the subject property (see Appendix 1). The DEC FOIL response revealed no information in their files regarding recognized environmental conditions for the subject property. The City of Rochester FOIL information is incorporated in the appropriate sections below.

On-Site

The subject property does not appear on the EPA NPL, CERCLIS, or ERNS listings; the DEC Registry of Inactive Hazardous Waste Sites, Inactive Hazardous Waste Disposal Site Remedial Plan, HSWDS survey, ASWDF listing, or registered PBS or CBS tanks; or the EMC Inventory of Waste Disposal Sites.

The subject property appears on the DEC spills listing with three spill events. The first spill event involves a permit (No. 911812) that was issued by the City of Rochester on June 5, 1991 for the removal of one 3,000-gallon storage tank from 290 Exchange Street (Appendix 4). Although there are discrepancies regarding the address and size of the tank, it is believed that this removal permit is associated with a spill that was reported to the DEC which involved a leaking underground storage tank (LUST). This spill event (DEC I.D. No. 9102615) was reported on June 4, 1991 for the South River Corporation boat dock (currently operated by Sam Patch Boat Tours), located at 300 Exchange Street, and occurred when a backhoe ruptured an abandoned 4,000-gallon UST while excavating for a boat dock project (see Appendix 4). According to the Monroe County Department of Health (MCDOH) file regarding this spill event, 1,800-2,000 gallons of water and 1,000-1,200 gallons of fuel oil product were present in the tank. The City of Rochester contracted Environmental Products and Services to remove the tank and the product from the tank, and to excavate associated contaminated soil for disposal off-site.

According to the MCDOH report, the storage tank, and the fuel oil and water which were present within the tank, were removed from the subject property on June 5, 1991. Additionally, approximately 35 yards of contaminated soil was excavated for off-site disposal. The DEC spill report indicated that a 1-2 ft. thick vein of heavily contaminated soil extended from the bottom of the tank pit, but that it was covered by 6 ft. of clean fill. It further indicated that removal of the contaminated soil was not practical due to the presence of this clean fill above the vein of contamination. Additionally, the DEC spill report indicated that this area was formerly a gas station and that there may be additional USTs located on-site. The DEC indicated that no further remediation of the site was necessary at that time, because the site was to be used as a parking lot, and because there were no properties located adjacent to the spill site which were identified as potential receptors of contamination.

The second spill event (DEC I.D. No. 9102615) was reported to the DEC as part of Sear-Brown's July 1999 Phase II Environmental Investigation. This active spill event is discussed in detail in Section 3.0.

The third spill event (DEC I.D. No. 0011244) was reported to the DEC on January 15, 2001 and involved the release of hydraulic fluid from a tractor trailer truck to the ground surface. During Sear-Brown's May 2001 Lead Impacted Soil Remediation while a truck was removing a roll-off container of lead-impacted soil, it broke a hydraulic line. The spilled material was cleaned-up and disposed off-site. The DEC closed the spill event on January 22, 2001, which indicates that it was resolved to the satisfaction of the DEC. Given its closed status, this spill event does not present a recognized environmental condition for the subject property.

As a result of Sear-Brown's Lead Impacted Soil Remediation program, the subject property appears on the EPA Resource Conservation and Recovery Act (RCRA) Hazardous Waste Notifiers List as being a large quantity generator (EPA I.D. NYR000092148). This program is discussed in detail in Section 3.0.

Off-Site

There are no facilities within the ASTM specified one-mile radius of the subject property which are on the EPA NPL or on the RCRA hazardous waste Treatment, Storage or Disposal (TSD) facility listing.

There is one DEC Hazardous Substance Waste Disposal Site located within one mile of the subject property (see Appendix 5 and Figure 3). This is the RG&E Front Street site (DEC ID No. HS8048), located 3,000$^{\pm}$ ft. north of the subject property, which was a former coal gas manufacturing plant. The by-products from the former coal gas operations were sold, and the remaining waste was buried on-site. The disposal site was then paved over. Given its distance from the subject property, and the interpreted groundwater flow in the vicinity of this waste site to the north-northeast, away from the subject property, this waste site does not appear to present a recognized environmental condition for the subject property.

There is one site on the DEC Inactive Hazardous Waste Disposal Sites (IHWDS) listing that is within one mile of the subject property (Appendix 5 and Figure 3). This is the Davidson's Collision site (DEC ID No. 828091) located at 399 Gregory Street, approximately 3,500$^{\pm}$ ft. southeast of the subject property. An environmental audit report submitted to the DEC revealed evidence of waste paint and thinner disposal on-site. Sample analysis revealed contamination by toluene, xylene, and ethylbenzene. The former site owner performed a limited interim remedial measure (IRM) which consisted of soil removal from the disposal area. Additional drums of contaminated soil were removed from the property in July 1997 using state Superfund money. A Preliminary Site Assessment (PSA) completed in April 1995 concluded that the groundwater had been contaminated by toluene, ethylbenzene, benzene, and total xylenes at levels exceeding Part 703 groundwater standards. The site is located in a residential area served by the public water supply, therefore, exposures via drinking water are not expected. Groundwater in the vicinity of this waste disposal site is anticipated to flow in a northerly direction, cross-gradient to the subject property. The IHWDS disposal report further states that there is no significant threat to the environment posed by this site. Given the involvement of the DEC, its distance from the subject property and the anticipated northerly groundwater flow, cross-gradient to the subject property, this waste disposal site does not appear to present a recognized environmental condition for the subject property.

There are no facilities within one half mile of the subject property which are on the EPA CERCLIS listing or the DEC ASWDF or IHWDS Remedial Plan listings.

There have been twenty-four (24) spill events within one-half mile of the subject property which have been reported to the DEC involving leaking underground storage tanks (LUSTs). Twenty one (21) of these spill files have been closed or inactivated by the DEC, which indicates that they were resolved to the satisfaction of the DEC. Given their closed or inactivated status, these LUST spills do not present recognized environmental concerns for the subject property at this time. The active spill events are summarized below:

Reported Leaking Underground Storage Tank Active Spill Files
Within One-Half Mile of the Subject Property

DEC Spill No.	Spill Date	Spill Location	Cause	Status
9613020 and 9613032	2/3/97	Reese Residence 210 Adams Street	Equipment Failure	**Active**
0070040	3-31-99	Monroe County Sheriff 180-182 Exchange Boulevard	Tank Failure	**Active**

The active spill (DEC I.D. No. 9613020) occurred on February 3, 1997, at the Reese residence located at 210 Adams Street, approximately 0.25 miles to the west of the subject property, when it was discovered that a home heating oil tank, located in the basement of the residence, was rusted out and was leaking oil to the cellar floor. According to Ms. Kimberly Shutts, Region 8 DEC, the second spill file (DEC I.D. No. 9613032) was mistakenly created for the same spill event. The DEC spill report indicated that the oil was flushed to the sanitary sewer, and that Speedy Dry was

applied to the floor of the basement in the area around the tank. Additionally, four drums were placed on the side of the house to contain the remainder of the product, which had been pumped from the tank. Based on Dr. Young's groundwater map, groundwater flow in the vicinity of this spill site is anticipated to be north-northeasterly, towards the subject property. Although this spill file is still considered active, given its distance, its location within a basement, and the response activities undertaken, this spill incident does not appear to be a recognized environmental condition for the subject property.

The third active spill event (DEC I.D. No. 0070040) was reported to the DEC on March 31, 1999 during a Sear-Brown subsurface investigation of 180-182 Exchange Boulevard, approximately 200 feet to the north of the subject property. Soil and groundwater contamination was encountered and a subsequent petroleum contaminated soil removal program was conducted. Long term groundwater monitoring program and an additional subsurface soil investigation has delineated contamination to an area located on the northeastern portion of the site. Although this spill file is still considered active, given its distance, the delineation of contamination on-site and the response activities undertaken, this spill incident does not appear to be a recognized environmental condition for the subject property.

There are five confirmed EMC waste disposal sites, and two suspected EMC waste disposal sites, located within one-half mile of the subject property. The EMC identifies suspect waste sites by reviewing historical aerial photographs for areas of disturbance. Designation by EMC as a suspect waste site only suggests the potential for past waste disposal. No waste disposal at the two suspect sites has been confirmed and there is no documentation to indicate that hazardous wastes have been disposed there. The confirmed sites are summarized below.

Confirmed EMC Waste Sites
Within One-Half Mile of the Subject Property

EMC No.	Description of Waste Site	Location from Subject Property
RO-114	Junkyard	1,800± ft. Southwest: cross-gradient
RO-12	Construction and Demolition Debris	2,400± ft. Southwest: cross-gradient
RO-181	Sludge	2,400± ft. South-southwest: cross-gradient
RO-150	Construction and Demolition Debris	600± ft. East: cross-gradient
RO-183	Industrial and Hazardous Substance	2,700± ft. North: down-gradient

Based on Dr. Young's groundwater flow map, groundwater flow direction in the vicinity of waste sites RO-150 and RO-183 is interpreted to be north-northwesterly. These waste sites are located cross-gradient and down-gradient, respectively, from the subject property. Groundwater flow direction in the vicinity of the remaining confirmed EMC waste sites is anticipated to be easterly, towards the Genesee River and cross-gradient to the subject property. Given their distances and the anticipated regional groundwater flow direction, these waste sites do not appear to be recognized environmental conditions for the subject property.

There are no facilities adjacent to the subject property that maintain PBS or CBS tanks which are registered with the DEC.

A review of the RCRA Hazardous Waste notifiers list indicates that there are no registered RCRA facilities located adjacent to the subject property.

A review of records maintained by the City of Rochester indicated that there are two permits on-file with the City for parcels that comprise the subject property. The first permit (No. 18394), issued on March 12, 1942, granted permission to the Erie Railroad Company, 200 Exchange Street, to store oil in one 10,500-gallon tank and in one 6,000-gallon tank located at the rear of the building. This permit was updated through March 1, 1956. There was no additional information regarding the disposition of these oil storage tanks.

A permit (No. 13335) was issued March 1, 1938 to the Armour & Co. facility, which granted permission for the storage of gasoline in one 1,000-gallon storage tank through March 1, 1952. Review of records maintained by the City of Rochester indicated that one 2,000-gallon underground storage tank was removed from 320 Exchange Street on November 6, 1970. No further documentation was readily available regarding the tanks at this location.

6.2 Additional Environmental Record Sources

Additional research of the subject property and adjacent properties included review of: the New York State Department of Health (NYSDOH) statewide Basement Radon Survey (March 2000).

6.3 Physical Setting Sources

This ESA included a review of: the United States Geological Survey (USGS) 7.5 Minute topographic map (Rochester West Quadrangle); the Monroe County Soil Survey (1973), prepared by the USDA SCS; the United States Fish and Wildlife Service Wetlands Maps (Rochester West Quadrangle); the NYS DEC Freshwater Wetlands Maps (Rochester West Quadrangle); the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) (Community Panel No. 360431 0020B) and Dr. Richard Young's Groundwater Contour Map for Monroe County (1980, unpublished).

6.4 Historical Use Information on the Property

The property history was compiled through a review of: historical aerial photographs at the Monroe County Environmental Management Council dated 1930, 1944, 1945, 1961, 1970, 1975, 1976, 1988, 1993, and 1996; historical Sanborn Fire Insurance Company maps dated 1892, 1904, 1912, 1938, 1950, and 1971 (Appendix 6); historical Plat Maps for Monroe County dated 1875, 1888, 1900, 1902, 1910, 1918, 1924, 1926, and 1935; historic Polk Directories for the City of Rochester dated 1949, 1959, 1969 and 1979; and Building Information (BIS) and Fire Department records maintained by the City of

Rochester. The Abstract of Title had not been provided to Sear-Brown for review at the time this report was prepared. Exchange Street was relocated from the west to the east between 1976 and 1988, so that its current alignment now divides the locations of many of the former buildings and businesses that were once situated on or adjacent to the subject property. Additionally, it should be noted that street addresses also were changed in the past. For this reason, the various portions of the property have been grouped by their current addresses for purposes of the historical discussion. Current and historic addresses are identified on drawings included in Appendix 7.

200-300 Exchange Boulevard

In an 1875 Plat map, the area from Ritter Street northward to the northern property boundary, was depicted as being occupied by a railroad depot, which was located across from the intersection of Troup Street and Exchange Street on the western portion of the property. Additionally, a planing mill and lumber yard were depicted as occupying the western portion of this area. It appeared that a main railroad line ran north/south along the western bank of the Genesee River on the subject property, and then divided into approximately four end lines.

A Plat map dated 1888 showed that the railroad depot was still present on the northernmost portion of the subject property. A coal yard with several associated smaller buildings was now depicted in place of the planing mill on the western portion of the property. An outline was shown where a proposed addition to the railroad lines was planned on the eastern portion of the property. Two additional buildings had been constructed on the property between Ritter Street and Troup Street. The first was located at the northeast corner of the intersection of Ritter Street and Exchange Street, and the second was located to its northeast, between several railroad spurs.

An 1892 Sanborn map indicated that the building located across from Troup Street, which was identified as a railroad depot in the previous Plat maps, was operated by the NY, LE and W. Railroad. Two railroad lines were depicted as entering this building from the south, while another was shown to end approximately 75 ft. to the south of this building. Five additional spurs of the railroad lines ended to the immediate east of this building on the subject property, while two continued northward. To the south of this freight house, another freight house was located east of a northward bend in Exchange Street, between railroad lines, on the subject property. Two buildings were located at the northeast corner of the intersection of Ritter Street and Exchange Street and were identified as the F & C Crittenden & Co. Cold Storage, and as the Brewster, Crittenden & Riley Produce Corporation. These buildings were served by a rail line located adjacent to their east on the subject property.

Review of Plat maps dated 1900, 1902, and 1910, and a 1910 Hopkins map indicated that there were no significant changes since the 1892 Sanborn map had been produced.

In a 1912 Sanborn map, the freight house which was formerly located across from a northward bend in Exchange Street, was no longer shown on the map. In place of the freight house was a smaller building which was identified as an ice house. There appeared to have been no other significant changes since the 1910 Hopkins and Plat maps were produced.

Review of 1926 Hopkins and Plat maps indicated that the total number of railroad lines which passed through or ended on this portion of the subject property was 16. Additionally, a flood prevention wall had been constructed to the immediate east of the subject property along the west bank of the Genesee River. This wall was depicted as bordering the entire eastern property boundary with the river. It is suspected that fill material was placed in conjunction with construction of this wall.

An aerial photograph dated 1930 (I.D. No. 50-12-8) indicated that there had been no significant changes to this portion of the subject property, or to areas to the north, east, or west, since the 1926 Hopkins and Plat maps had been produced.

A 1935 Hopkins map indicated that there had been no significant changes to the subject property since the 1930 aerial photograph had been taken.

A 1938 Sanborn map showed that a building approximately 30 ft. x 15 ft., and identified as a gasoline filling station, had been constructed $170^{\pm}$ ft. north of the intersection of Exchange Street and Ritter Street (280 Exchange Street). To the east of this building, a gasoline storage tank was depicted. There appeared to have been no other significant changes to the subject property since the 1935 Hopkins map had been produced.

Aerial photographs dated 1944 (I.D. No. ARK-2H-44) and 1945 (ARK-2H-45) indicated that there had been no significant changes since the 1938 Sanborn map had been produced.

Review of the 1949 Polk Directory for the City of Rochester indicated that the freight house on the northernmost portion (No. 200 Exchange Street) of the subject property was operated by the Erie Railroad. The gasoline filling station (No. 280 Exchange Street) located $170^{\pm}$ ft. north of the intersection of Exchange Street and Ritter Street was operated by the Pure Quill Gasoline Corporation. The buildings located at the northeast corner of the intersection of Exchange Street and Ritter Street (No. 290 Exchange Street), were occupied by the F&C Crittenden Company (meat packing).

A 1950 Sanborn map and a 1959 Polk directory indicated that there had been no significant changes since the 1945 aerial photographs had been taken, or since the 1949 Polk directories had been made.

Aerial photographs dated 1961 (I.D. Nos. AQB-321 and 322) indicated that Interstate 490 (I-490) had been constructed, and an overpass of this roadway crossed the northern portion of the subject property over the top of the freight station. There appeared to have been no other significant changes since the 1950 Sanborn map had been made.

Review of a Polk directory dated 1969 indicated that the freight station (No. 200 Exchange Street) had been vacated since the 1959 Polk directory had been produced. Additionally, there was no longer a listing for the gasoline station which was formerly located at No. 280 Exchange Street, and the buildings located at No. 290 Exchange Street were now occupied by Swift & Company (wholesale meats).

In 1970 aerial photographs (I.D. Nos. 1983-13-1029 and 1030) and a 1971 Sanborn map, the former filling station was no longer present. There appeared to be no other significant changes since the 1961 aerial photographs had been taken.

Aerial photographs dated 1975 (I.D. Nos. 5-071 and 072) indicated that all of the buildings on the entire subject property had been demolished since the 1970 aerial photos had been taken, except for the former freight house on the northernmost portion of the subject property. The remainder of the subject property appeared to have been scraped. Railroad lines were still present adjacent to the Genesee River on the subject property, and some railcars were observed on the tracks.

The 1976 aerial photographs (I.D. Nos. 4-172 and 173) indicated that the northernmost portion of the subject property was used as a paved parking lot. There appeared to be no other significant changes since the 1975 aerial photographs had been taken.

Review of a Polk directory dated 1979 indicated that there were no longer any listings for the subject property.

The 1988 (I.D. Nos. 15-28 and 29), 1993 (I.D. Nos. 13-33 & 34 and 14-33 & 34), and 1996 (I.D. Nos. 14-29 and 30) aerial photographs, showed no significant changes since the 1976 aerial photos had been taken.

320 and 330 Exchange Boulevard

In an 1875 Plat map this portion of the subject property (formerly 302 – 340 Exchange Street), from Adams Street northward to Ritter Street, was identified as a coal yard. The main north/south lines of the railroad ran along the eastern portion of the property, adjacent to the Genesee River.

Review of an 1888 Plat map indicated that the coal yard on this portion of the subject property was owned by George Engert & Co. Retail Dealers in Coal, and that as many as ten railroad spurs ended on, or traversed, this portion of the property.

Review of an 1892 Sanborn map indicated that two coal pockets were located on the western portion of the subject property, and that the railroad lines still crossed the property.

Plat maps dated 1900, 1902, 1910, and 1918, a Sanborn map dated 1912, and a Hopkins map dated 1910, indicated that there had been no significant changes during that time.

Review of 1926 Hopkins and Plat maps indicated that a flood prevention wall had been constructed to the immediate east of the subject property along the west bank of the Genesee River, since the 1918 Plat map had been produced.

Hopkins maps dated 1926 and 1935 indicated that there were no significant changes since the 1926 Hopkins and Plat maps had been made.

In a 1938 Sanborn map the buildings located to the immediate west of the subject property, between Adams Street and Ritter Street, had been connected and added-on to since the 1935 Hopkins map had been made, and the northeastern corner of this building was located on the subject property. The northern two-thirds of the building (302-332 Exchange Street) was identified as being occupied by Armour & Co. (meatpacking), while the southern one-third (338 and 340 Exchange Street) was occupied by the Biscuit Warehouse. A gasoline tank, which appeared to be associated with these facilities, was depicted approximately 80 ft. to the west of the current subject property boundary, under Adams Street. Another tank was depicted approximately 150 ft. west of the current subject property boundary, approximately 70 ft. to the north of Adams Street, adjacent to the former location of Exchange Street. A permit (No. 13335) was issued March 1, 1938 to the Armour & Co. facility, which granted permission for the storage of gasoline in one 1,000-gallon storage tank through March 1, 1952. Review of records maintained by the City of Rochester indicated that one 2,000-gallon underground storage tank was removed from 320 Exchange Street on November 6, 1970. No further documentation was readily available regarding the tanks at this location.

Review of aerial photographs dated 1944 (I.D. No. ARK-2H-44), 1945 (ARK-2H-45), 1961 (I.D. Nos. AQB-321 and 322), and 1970 (I.D. Nos. 1983-13-1029 and 1030); Polk directories dated 1949, 1959, and 1969; and Sanborn maps dated 1950 and 1971, indicated that there were no significant changes during that time.

In aerial photographs dated 1975 (I.D. Nos. 5-071 and 072), all of the buildings on this portion of the subject property had been demolished since the 1971 aerial photos had been taken. The property appeared to have been scraped and was mostly devoid of vegetation. The main railroad line was still present on the eastern portion of the property, adjacent to the Genesee River. It was not possible to determine how many (if any) railroad spurs remained in the central and western section of this portion of the subject property.

The 1979 Polk directory indicated that there were no longer any listings for the addresses which previously occupied this portion of the subject property.

In aerial photographs dated 1988 (I.D. Nos. 15-28 and 29), 1993 (I.D. Nos. 13-33 & 34 and 14-33 & 34), and 1996 (I.D. Nos. 14-29 and 30), there appeared to have been no significant changes since the 1976 aerial photos had been taken.

Northern Portion of 350 Exchange Boulevard - 382 Exchange Boulevard

In an 1875 Plat map this portion of the subject property, from Edinburgh Street northward to Adams Street, was shown to have a north/south railroad line which was located adjacent to the Genesee River. A spur of this line was shown to split off, and apparently served a westerly adjacent icehouse.

Review of an 1888 Plat map indicated that there were no significant changes since the 1875 Plat map had been produced.

A Sanborn map dated 1892 indicated that three main railroad lines entered the property from the south, and were further divided approximately four times as they continued in a northward direction. One of these rail lines apparently served westerly adjacent coal and lumberyards, and their associated buildings. The easternmost portions of some of these buildings were located on or near the current subject property boundary.

Plat maps dated 1900 and 1902 indicated that there had been no significant changes since the 1892 Sanborn map had been produced.

A 1910 Hopkins map indicated that the westernmost line of the railroad, which was located on or near the current subject property boundary, now served the Rochester Lead Works (380-382 Exchange Street) and Big Elm Dairy Co. (376-378 Exchange Street) (milk separating and bottling plant) manufacturing facility, which had replaced the former coal yard to the immediate west of the subject property.

A 1912 Sanborn map indicated that a trestle had been constructed in between the railroad lines on the northern portion of this section of the subject property. Subsequent historical mapping indicated that this trestle was replaced with bins which were used for the storage of coal.

Based on a review of historical fire insurance maps, Polk directories, and aerial photos, there were no significant changes in the use of this portion of the subject property from 1918 through 1971, except for the construction of the retaining wall adjacent to the western bank of the Genesee River between 1918 and 1926.

According to BIS records maintained by the City of Rochester, a demolition permit was issued for 382 Exchange Boulevard (formerly Exchange Street) on January 27, 1972, and another was issued for 350 Exchange Boulevard on September 18, 1969.

In aerial photographs dated 1975 (I.D. Nos. 5-071 and 072) and 1976 (I.D. Nos. 4-172 and 173), the rail lines were still present on this portion of the subject property, but they no longer served any buildings.

Aerial photographs dated 1988 (I.D. Nos. 15-28 and 29), indicated that the railroad lines were no longer present on the subject property. There were no other significant changes since the 1976 aerial photos had been taken.

In aerial photographs dated 1993 (I.D. Nos. 13-33 and 34), a paved pedestrian walkway had been constructed on the property which began at a point immediately south of the intersection of Exchange Street and South Plymouth Avenue on this portion of the subject property, and continued in a southwestward direction through the remainder of the subject property. There were no other significant changes since the 1988 aerial photos had been taken.

Review of aerial photographs dated 1996 (I.D. Nos. 14-29 and 30), indicated that there had been no significant changes to this portion of the subject property since the 1993 aerial photos had been taken.

Southern Portion of 350 Exchange Boulevard, 392 Exchange Boulevard, and Edinburgh Street

In an 1875 Plat map, the area from Glasgow Street northward to Edinburgh Street was occupied by the north/south railroad lines which were adjacent to the Genesee River. In addition to the rail lines, a two-story residence was depicted near the northeast corner of the property, adjacent to the railroad tracks. A warehouse was shown to the immediate west of the southern portion of this section of the subject property, and the southeast corner of this building appeared to abut the subject property.

A Plat map dated 1888 indicated that there had been no significant changes since the 1875 Plat map had been produced.

Review of an 1892 Sanborn map indicated that the warehouse which had been formerly located adjacent to the subject property, was now in ruins. There were no other significant changes since the 1888 Plat map had been made.

Plat maps dated 1900, 1902, and 1910 indicated that there were no significant changes since the 1892 Sanborn map had been produced.

A 1912 Sanborn map indicated that the residence which was formerly located near the northeastern corner of the subject property, near the railroad lines, was no longer present on the property.

Based on a review of Plat maps dated 1918 and 1926, a Hopkins map dated 1926, and an aerial photograph dated 1930 (I.D. No. 50-12-8), there appeared to have been no significant changes since the 1912 Sanborn map was made, except for the previously mentioned construction of the retaining wall along the western bank of the Genesee River between 1918 and 1926.

A Sanborn map dated 1938 indicated that a building approximately 25 ft. x 30 ft. had been constructed adjacent to the westernmost railroad line, near the current western property boundary. This facility was identified as an auto repair shop (17 Edinburgh Street).

Based on a review of historical fire insurance maps, Polk directories, and aerial photos, there were no significant changes from 1938 through 1970.

A 1971 Sanborn map indicated that the building at 17 Edinburgh Street had been replaced with a larger building which was identified as a private garage. The address of this facility had been changed to 23 Edinburgh Street. There were no other significant changes since the 1970 aerial photos (I.D. Nos. 1983-13-1029 and 1030) had been taken.

In aerial photographs dated 1975 (I.D. Nos. 5-071 and 072), the building at 23 Edinburgh Street, had been demolished. The property appeared to have been scraped and was mostly devoid of vegetation. The main railroad line was still present on the property, adjacent to the Genesee River.

Aerial photographs from 1976 (I.D. Nos. 4-172 and 173), did not reveal any significant changes since the 1975 aerial photographs had been taken.

In an aerial photograph dated 1988 (I.D. Nos. 15-28 and 29), there no longer appeared to be any railroad tracks.

In aerial photographs dated 1993 (I.D. Nos. 13-33 and 34), a paved pedestrian walkway had been constructed, which ran parallel to the Genesee River on this portion of the subject property, and continued in a southwestward direction through the remainder of the subject property.

Review of aerial photographs dated 1996 (I.D. Nos. 14-29 and 30), indicated that there had been no significant changes since the 1993 aerial photos had been taken.

6.5 Historical Use Information on Adjacent Properties

In an 1875 Plat map, the Rochester, Fitzhugh, and Carroll Race (canal) was depicted as extending northwest from the Genesee River, adjacent to the northeast of the subject property, and then turning northward. Farther to the north, the race intersected with the Erie Canal. The Genesee River was shown to the east of the subject property. Railroad lines were located adjacent to the south of the subject property. Further to the south and south of Ford Street was primarily residential. A semi-circular shaped railroad round house and turntable was located immediately south of Glasgow Street, adjacent to the west of the subject property, at 400-424 Exchange Street.

A Plat map dated 1888 indicated that there were no significant changes to the areas to the north, east, or west of the subject property since the 1875 Plat map had been produced.

Review of an 1892 Sanborn map showed that the county jail and the canal were located to the immediate north of the subject property. To the east of the subject property was the Genesee River. The engine house was still located to the immediate west of the subject property. Additionally, Disbrows Lumber Yard was located at

362 Exchange Street, Brown Brothers Scrap Iron Yard was located at 366 and 368 Exchange Street, and the White Swan Soap Co. was located at 500-504 Exchange Street.

Review of Plat maps dated 1900, and 1902, indicated that there were no significant changes to the areas to the north, east, south, and west of the subject property (when depicted), since the 1892 Sanborn map had been produced.

Hopkins and Plat maps dated 1910, indicated that the Monroe County Jail had been constructed adjacent to the north of the subject property. There were no significant changes to the east or south of the subject property since the 1902 Plat map had been produced. A building housing the Big Elm Dairy and the Rochester Lead Works had been constructed adjacent to the west of the subject property, on the northeast corner of Exchange and Edinburgh Streets.

A Sanborn map dated 1912 indicated that a building had been constructed adjacent to the west of the subject property at 29 Edinburgh Street since the 1910 Hopkins and Plat maps had been produced. This was the Howe and Rogers Company (oil cloth storage) facility. The Erie Railroad roundhouse located to the west contained a repair shop and oil shed. Additionally, the WH Wilson Iron Works and Genesee Boiler Works was adjacent to the west of the subject property at 436-452 Exchange Street. It appeared that the easternmost portions of these buildings were located on the western portion of the subject property. There were no significant changes to the areas to the north of the subject property since the 1910 Hopkins and Plat maps had been made.

Review of 1926 Hopkins and Plat maps indicated that the Monroe County Jail and the Rochester, Fitzhugh & Carroll Race were still located to the immediate north of the subject property. Northeast of the subject property, the Mohawk Dam was now depicted as spanning the Genesee River. A flood prevention wall had been constructed to the immediate east of the subject property along the west bank of the Genesee River. This wall was depicted as bordering the entire eastern property boundary with the river. It was suspected that fill material was placed in conjunction with construction of this wall. Further to the east, across the Genesee River, a railroad yard was now located near the east bank of the river. The area located to the south of Ford Street was still primarily residential. The area located to the west of Exchange Street was also primarily residential, with some commercial properties scattered along the western side of the street.

An aerial photograph dated 1930 (I.D. No. 50-12-8) indicated that there had been no significant changes to areas to the north, east, south, or west since the 1926 Hopkins and Plat maps had been produced.

A 1935 Hopkins map indicated that there had been no significant changes to the areas to the north, east, south, or west of the subject property since the 1930 aerial photograph had been taken.

Review of a Sanborn map dated 1938 indicated that the railroad round house which had been located immediately south of Glasgow Street, adjacent to the west of the subject property, was no longer present, however the turntable was still present. Three smaller structures were depicted in the vicinity of the former engine house. The first was identified as a filling station (No. 422 Exchange Street), the second was a storage building, and the third was a tool shed. Additionally, three gasoline storage tanks were located $50^{\pm}$ ft. to the west of the current subject property boundary, at a point $250^{\pm}$ ft. south of Glasgow Street, adjacent to the storage building. Another gasoline storage tank was depicted in the 1938 Sanborn map $125^{\pm}$ ft. to the west of the current subject property boundary, between 358 and 360 Exchange Street. No additional information was readily available regarding this tank.

Additional manufacturing and service facilities had been constructed adjacent to the subject property, which appeared in the 1938 Sanborn map. These included two automobile repair facilities (17 Edinburgh Street and 23 Edinburgh Street), and the Electric Panel Board facility (426 Exchange Street).

Aerial photographs dated 1944 (I.D. No. ARK-2H-44) and 1945 (ARK-2H-45) indicated that there had been no significant changes to the areas to the north, east, south or west of the subject property since the 1935 Hopkins map had been produced.

Aerial photographs dated 1961 (I.D. Nos. AQB-321 and 322) indicated that to the north of the subject property the canal had been filled, and a rectangular building was now located adjacent to the east bank of the Genesee River approximately 75 ft. north of the subject property. There appeared to be no significant changes to the areas located to the east, south, and west of the subject property since the 1950 Sanborn map had been made.

In 1970 aerial photographs (I.D. Nos. 1983-13-1029 and 1030) and a 1971 Sanborn map, there appeared to be no significant changes to the areas to the north, east, south, or west of the subject property since the 1961 aerial photos had been taken.

Aerial photographs dated 1975 (I.D. Nos. 5-071 and 072) indicated that the former Monroe county jail building located to the immediate north of the subject property had been demolished since the 1970 aerial photos had been taken. This area had been paved for use as a parking lot. To the east of the subject property, across the Genesee River, the railroad yard which was previously located adjacent to the western bank of the Genesee River had been removed, and all of the associated buildings had been demolished. There were no significant changes to the area to the south of the subject property since the 1970 aerial photos had been taken. All of the buildings to the west of the subject property, along Exchange Street, had also been demolished since the 1970 aerial photos had been taken.

The 1976 aerial photographs (I.D. Nos. 4-172 and 173) appeared to show no significant changes to the area to the north of the subject property. To the east of the subject property, across the Genesee River, five apartment buildings had been constructed on the site of the former railroad yard near the east bank of the river.

There appeared to be no significant changes to the areas located to the south or west of the subject property since the 1975 aerial photos had been taken.

Aerial photographs dated 1988 (I.D. Nos. 15-28 and 29), indicated that there had been no significant changes to the north of the subject property since the 1976 aerial photos had been taken. To the east of the subject property, across the Genesee River, a large manufacturing building and associated parking areas had been constructed since 1976. A building had also been constructed approximately 500 ft. southwest of the subject property, adjacent to the Genesee River. The railroad tracks were no longer located on the adjacent property to the south. The area to the immediate west of the subject property had been developed as a residential subdivision, including single family and multi-family housing units.

Aerial photographs dated 1993 (I.D. Nos. 13-33 and 34) and 1996 (I.D. Nos. 14-29 and 30), indicated that there were no significant changes to the areas to the north, east, south or west of the subject property since the 1988 aerial photos had been taken.

7.0 Site Reconnaissance and Interviews

On March 13, 2002, Sear-Brown conducted a site visit to the subject property to obtain information indicating the likelihood of identifying "recognized environmental conditions," as defined in ASTM 1527-00, in connection with the property. Representative photographs from the site visit are included as Appendix 8 of this report.

The site reconnaissance focused on the following elements: topographic conditions; indications of current uses of the site; evidence of past uses; indications of environmental issues; identification of buildings, outdoor drainage features, miscellaneous debris, areas of disturbed soils; and areas of stressed vegetation. This section describes the observations made by Sear-Brown during the site reconnaissance.

During the property visit, there was a groundwater monitoring well and 55-gallon drum observed adjacent to the Sam Patch Boat Tours ticket building. The presence of this well and drum are discussed in detail in Section 3.0.

There was a construction trailer, dumpster and roll-off container observed on the central portion of the subject property. This trailer and containers are on-site for the proposed redevelopment of the subject property.

7.1 Hazardous Substances in Connection with Identified Uses

There were no readily apparent indications of hazardous substances on the subject property at the time of the property visit.

7.2 Hazardous Substance Containers or Unidentified Substance Containers

No indications of drums, pails or unidentified substance containers were observed on the subject property at the time of the property visit.

7.3 Storage Tanks

During the property visit, no above ground storage tanks (ASTs) were observed on the subject property.

Numerous underground storage tanks (USTs) were formerly located on or near the subject property, and are discussed in sections 6.1 and 6.5 of this report.

7.4 PCBs

At the time of the Sear-Brown property visit, there were no readily apparent indications of large equipment (e.g., hydraulic lifts, transformers) which may contain PCBs observed on the subject property.

7.5 *Solid Waste Disposal*

There were no indications of solid waste disposal observed on the subject property.

7.6 *Other Areas of Concern*

As noted in ASTM Standard Practice E 1527-00, some substances may be present on a property in quantities or conditions that may lead to contamination of the property or nearby properties but are not included in CERCLA's definition of hazardous substances (42 USC Section 9601(14)) or do not otherwise present potential CERCLA liability. These materials are not included in the scope of ASTM Standard Practice E 1527-00. Asbestos-containing building materials (ACBM), radon and lead-based paint are three of these substances which are discussed below.

Asbestos

During Sear-Brown's property visit, there were no potential asbestos-containing building materials (ACBM) observed as there were no structures on the property.

Radon

According to the NYSDOH Basement Radon Survey, 660 readings in the City of Rochester yielded an average reading of 1.7 picoCuries/liter (pCi/l). This average value is below the 4 pCi/l action level suggested by the EPA as the maximum allowed for residential structures.

Radon levels can vary depending on such factors as building construction and geologic conditions. For instance, radon tends to infiltrate and accumulate in basements and crawl spaces. The proposed buildings on the subject property have basements and, although site-specific radon levels cannot be determined without site-specific testing, given the available average reading for the City of Rochester, radon does not appear to present a significant environmental concern for the subject property at this time.

Lead-Based Paint

During Sear-Brown's property visit, there were no potential lead-based paint materials observed as there were no structures on the property.

8.0 EA Form HUD-4128

As requested, Sear-Brown completed EA Form HUD-4128 in conjunction with the preparation of the Phase I ESA report. There are two questions in the EA Form HUD-4128 that required additional comment. These two questions are summarized below. The EA Form HUD-4128 is included as Appendix 9.

18. Historic Preservation

In responding to comments on this section it is important to note that the City of Rochester completed a New York State Environmental Quality Review (SEQRA) Environmental Assessment Long Form for this project in July 1999. This document stated that the project is located one block east of the Corn Hill neighborhood, an area of the city renowned for its historic architecture. It was recognized however that the subject property contains no structures, is the location of a former railroad siding, has been historically filled with $6^{\pm}$ feet of fill material, and was therefore determined to have no effect on historical or archaeological resources. The City of Rochester issued a negative declaration of significance on July 13, 1999, requiring no further action (See Appendix 9).

In light of this previous documentation that the project will have no impact to historic resources, we did not contact the State Historic Preservation Officer as part of the completion of the EA Form HUD-4128.

24a. Endangered Species

As noted in the EA Form HUD-4128, the property is primarily comprised of an unpaved parking lot with no occurrence of natural habitat. The City of Rochester SEQRA Determination (dated July 19, 1999) states that the following: the project site is located adjacent to the Genesee River; the project site does not contain any other sensitive natural features; and no significant impacts are anticipated with respect to water or air quality.

The section of the Genesee River that the project is located adjacent to has a vertical, concrete river wall with no natural riverbanks. The project will have no direct effect on the Genesee River with the exception of attracting more pedestrians and recreational boating to its developed riverwall. There is no anticipated impact to existing river habitat. It is important to note that the water level of the section of the Genesee River adjacent to the subject property is controlled by the Court Street Dam located approximately 600 feet downstream (north) of the project location.

9.0 Findings

The subject property, known as Corn Hill Landing, is located adjacent to the west bank of the Genesee River and the east side of Exchange Boulevard (formerly Exchange Street), in the City of Rochester, New York (Figure 1). The property, which totals 6.36± acres, extends northward from approximately 450 ft. south of South Plymouth Street, to the approximate northern boundary of the Interstate 490 overpass. The property is comprised of eleven (11) adjoining tax parcels (See Figure 2). The property is zoned Corn Hill Landing Planned Development (July 13, 1999) and is proposed for a mixed-use commercial/residential development by Mark IV Construction (Mark IV).

Tax Parcels Comprising Corn Hill Landing	Former/Current Street Addresses Associated with Parcel
121.39-1-5	200 Exchange Blvd.
121.59-1-008	260 Exchange Blvd.
121.47-1-20	300 Exchange Blvd.
121.47-1-47	Former Ritter Street
121.47-1-17	320 Exchange Blvd.
121.47-1-40.1	330 Exchange Blvd.
121.47-1-46	Former Adams Street and Part of 380 Exchange Blvd.
121.47-1-41.1	350 Exchange Blvd.
121.47-1-14.1	378 Exchange Blvd.
121.47-1-15	Part of 382 Exchange Blvd.
121.47-1-45	Former Edinburgh Street

The subject property appears on the New York State Department of Environmental Conservation (DEC) spills listing with two closed and one active spill events. DEC spill events DEC I.D. Nos. 9102615 and 0011244 have been closed, which indicates that they were resolved to the satisfaction of the DEC. The active spill event DEC I.D. No. 9102615 is discussed in the Findings and Conclusions Section below. The two closed spill events are discussed in detail in Section 6.1.

The subject property also appears on the EPA Resource Conservation and Recovery Act (RCRA) Hazardous Waste Notifiers List as being a large quantity generator (EPA I.D. NYR000092148). This listing is a result of Sear-Brown's Lead Impacted Soil Remediation program conducted on behalf of the property owner, which is discussed in the Findings and Conclusions Section below and in detail in Section 3.0.

We have performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Standard Practice E 1527-00 and the requirements of the United States Department of Housing and Urban Development (HUD), for Corn Hill Landing located on Exchange Boulevard in the City of Rochester, New York. Any exceptions to, or deletions from, this scope of work are described in Sections 2.2, 2.3, and 2.4 of this report. This assessment has revealed no recognized environmental conditions associated with the subject property except for the following:

Findings and Conclusions

Sear-Brown completed a Phase I ESA of the subject property in May 1999. The Phase I ESA identified environmental concerns involving historic use of the subject property as a rail yard and by various industrial and commercial businesses. Fill material, historic petroleum tanks and one historic on-site petroleum spill were also identified as concerns. As a result, a Phase II Environmental Investigation was recommended.

A Phase II Environmental Investigation was subsequently completed by Sear-Brown in July 1999 that identified the presence of site wide metal- and PAH-impacted fill materials and petroleum impacts at the former on-site historic petroleum spill site. As a result, development of mitigative measures were recommended including preparation of a Corrective Action Plan (CAP) to address the petroleum contamination and a Soil Management Plan (SMP) to address the site wide fill materials.

The CAP and SMP were subsequently prepared and submitted to the DEC, New York State Department of Health (NYSDOH) and Monroe County Department of Health (MCDOH) for review and approval in October 1999. The CAP and SMP were approved by the agencies in January 2001. Following their approval, a soil removal program was conducted in January-February 2001 involving metal impacted (lead, mercury and arsenic) soils in two locations.

In the summer of 2001, quotes were obtained form contractors for implementation of the petroleum remediation program outlined in the CAP. In addition engineering controls were incorporated into the building designs to address environmental concerns presented in the CAP and SMP.

No new environmental concerns were identified during the current Phase I ESA. However, in anticipation of project construction, Sear-Brown has recently provided proposals (June 2002) to Mark IV Construction Co. for construction oversight involving implementation of the CAP and SMP.

Recommendations

- The remedial activities outlined in Sear-Brown's DEC approved CAP will need to be implemented in consultation with state and local agencies prior to or as part of the proposed development of the subject property. The activities will include excavation and off-site disposal of petroleum affected soil, pumping and off-site disposal of petroleum affected groundwater installation of monitoring wells, implementation of engineering controls (e.g., vapor barriers and passive sub-slab venting systems) and monitoring.

- During the proposed mixed-use redevelopment of the site, Sear-Brown's DEC approved SMP will need to be implemented in consultation with the state and local agencies to aid the developers in properly handling and managing the impacted fill materials.

10.0 Opinions and Conclusions

- The remedial activities outlined in Sear-Brown's DEC approved CAP will need to be implemented in consultation with state and local agencies prior to or as part of the proposed development of the subject property. The activities will include excavation and off-site disposal of petroleum affected soil, pumping and off-site disposal of petroleum affected groundwater installation of monitoring wells, implementation of engineering controls (e.g., vapor barriers and passive sub-slab venting systems) and monitoring.

- During the proposed mixed-use redevelopment of the site, Sear-Brown's DEC approved SMP will need to be implemented in consultation with the state and local agencies to aid the developers in properly handling and managing the impacted fill materials.

11.0 References

Persons Interviewed

- Mr. Joseph Biondolillo, City of Rochester DEQ

Documents Reviewed

- Monroe County Soil Survey (1973) prepared by the U.S. Department of Agriculture Soil Conservation Service;
- Aerial photographs at the Monroe County Environmental Management Council dated 1930, 1944, 1945, 1961, 1970, 1975, 1976, 1988, 1993, and 1996;
- Historical Sanborn Fire Insurance Company maps dated 1892, 1904, 1912, 1938, 1950, and 1971;
- Historical Plat Maps for Monroe County dated 1875, 1888, 1900, 1902, 1910, 1918, 1924, 1926, and 1935;
- Historic Polk Directories for the City of Rochester dated 1949, 1959, 1969 and 1979;
- Building Information (BIS) and Fire Department records maintained by the City of Rochester;
- United States Fish and Wildlife Service National Wetlands Inventory (NWI) Map (Rochester East Quadrangle);
- New York State Department of Environmental Conservation (DEC) Freshwater Wetland Map (Rochester East Quadrangle);
- United States Geological Survey (USGS) 7.5 minute Quadrangle Map (Rochester East Quadrangle);
- The New York State Department of Health (NYSDOH) Basement Radon Survey;
- Federal Emergency Management Agency Federal Insurance Rate Map (Community Panel No. 360431 0020B);
- Sear-Brown Phase I ESA dated May 1999;
- Sear-Brown Phase II Environmental Investigation dated July 1999;
- Sear-Brown Corrective Action Plan, October 1999;
- Sear-Brown Soil Management Plan October 1999;
- Sear-Brown Addendum to Corrective Action Plan dated October 2000; and
- Sear-Brown Lead Impacted Soil Remediation report dated May 2001.

Resources Reviewed

U.S. Environmental Protection Agency (EPA):

- National Priorities List (NPL) sites;
- The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) for suspected hazardous waste sites;
- The Resource Conservation and Recovery Information System (RCRIS) database, including treatment, storage, and disposal (TSD) facilities, large quantity generator (LQG) facilities, and small quantity generator (SQG) facilities; and
- The Emergency Response Notification System (ERNS).

New York State Department of Environmental Conservation (DEC):

- Registry of Inactive Hazardous Waste Disposal Sites (IHWDS);
- Inactive Hazardous Waste Disposal Site Remedial Plan;
- Hazardous Substance Waste Disposal Site (HSWDS) Study;
- Active Solid Waste Disposal Facilities (ASWDF);
- Registered Petroleum Bulk Storage (PBS) and Chemical Bulk Storage (CBS) tanks; and
- Reported Spill Incidents.

12.0 Qualifications of Environmental Professionals Participating in Phase I ESA

The following Sear-Brown employees participated in the Phase I Environmental Site Assessment of Corn Hill Landing, located in the City of Rochester, Monroe County, New York. Copies of resumes for each individual are presented on the following pages.

Michael P. Storonsky
Senior Associate

Rebecca M. Gerardi
Environmental Scientist

Michael P. Storonsky
Senior Associate

Education
B.S., Wildlife Biology, State University of New York, College of Environmental Science and Forestry, Syracuse, N.Y., 1979

A.A.S., Fish and Wildlife Technology, State University of New York, Agricultural and Technical College, Cobleskill, N.Y., 1976

Professional Affiliations
President, The Rochester Committee for Scientific Information

Professional Experience
With more than 20 years of experience from both a consulting and regulatory perspective, Mr. Storonsky's experience has included preparation of work plans, agency negotiations, permitting, environmental investigations and remediation design and implementation oversight for industrial facilities, hazardous waste "Superfund" sites, landfills, military facilities, and contaminated commercial properties and buildings.

Since joining Sear-Brown, Mr. Storonsky has:

- coordinated, implemented and managed more than 1000 Phase I, Phase II and Phase III environmental investigations and/or cleanups. The hazardous waste investigations have included a 700,000-sq. ft. industrial complex in Horseheads, N.Y.; a 560,000-sq. ft. industrial facility in Seneca Falls, N.Y., that was undergoing RCRA closure; a 550,000±-sq. ft. 80-year old industrial complex in Irvine, Pa.; a $60-million hotel complex in San Juan, Puerto Rico; and a 310-acre vacant parcel being developed into a $150-million multiple use complex in Henrietta, N.Y.
- coordinated and implemented a wide variety of soil and groundwater sampling and analysis programs. These programs have included investigations of solvent, PCB and oil contaminated industrial facilities, incinerator ash landfills, petroleum contaminated gasoline service stations, municipal landfills, heavy metal contaminated sites and construction and demolition debris landfills.
- managed the site investigation, evaluation of remedial alternatives, agency negotiations, design and construction oversight of a combined groundwater sparging/soil vapor extraction system for cleanup of a former dry cleaning facility that was the source of soil and groundwater contamination pursuant to a voluntary cleanup agreement with the NYSDEC.
- managed a two-year investigation program, preparation of work plans, and subsequent cleanup of two former industrial facilities with PCB and metal soil and groundwater contamination pursuant to the first completed voluntary cleanup agreement in New York State.
- managed the site investigations, evaluation of remedial alternatives, preparation of work plans and agency negotiations, for a voluntary cleanup agreement with the NYSDEC at a former railroad yard in the Buffalo area where elevated levels of lead and various petroleum hydrocarbons were allowed to remain in place.
- managed investigations of three petroleum impacted sites which are currently at the stage of DEC negotiations regarding voluntary cleanup agreements.

- managed the successful closure of five RCRA hazardous waste storage facilities in the Southern Tier of New York; a NYSDEC Phase II investigation at the site of a former municipal incinerator ash landfill in Rochester, N.Y., which resulted in the de-listing of the site from the Inactive Hazardous Waste Site Registry; and the design and implementation of an industrial wastewater treatment system and hydrogeologic investigation under the terms and conditions of a NYSDEC consent order.
- managed the preparation of work plans, agency negotiations, remedial investigations, design and cleanup oversight, and a risk assessment for a former gasoline station that involved several thousand yards of affected on-site and off-site soils.
- managed emergency response, remedial investigations, design of a soil vapor extraction and groundwater collection and treatment system, permitting, agency negotiations, construction observation and system monitoring for an 800 gallon stoddard solvent spill at an industrial facility.
- reviewed and complied with federal, state and military environmental regulatory requirements for a new hazardous waste storage facility and a new pesticide storage building for the US Army Corps of Engineers at Ft. Drum, Watertown, N.Y.
- developed an investigation, testing, clean-up and removal program for 35 underground petroleum and fuel oil storage tanks at 23 facilities owned by the Rochester City School District. In addition, he was project manager for the phase I environmental site assessments and environmental impact statements for four new school sites in Rochester, N.Y.
- oversaw a hazardous materials compliance audit for the 80 buildings that comprise Rochester Telephone, and several subsequent site assessment and engineering design projects.
- managed the development of EPA Spill Prevention Control and Countermeasure Plans, RCRA Hazardous Waste Management Plans, Asbestos Operation and Maintenance Plans, and Lead-Based Paint Operation and Maintenance Plans.

Prior to joining Sear-Brown, Mr. Storonsky was employed at an architectural/engineering consulting firm in Buffalo, N.Y., where he had significant responsibility for the development, implementation, evaluation and report preparation for the $600,000 NYSDEC/USEPA NPL Superfund Remedial Investigation at the cadmium and nickel contaminated Foundry Cove, Cold Spring, N.Y.

Mr. Storonsky began his career working at the NYSDEC where he was involved with PCB studies on the Hudson River relating to the General Electric NPL Superfund site.

Mr. Storonsky is OSHA/EPA certified to work on hazardous waste sites.

Rebecca M. Gerardi
Environmental Scientist

Education
B.S., Environmental Studies, State University of New York College of Environmental Science and Forestry at Syracuse University, Syracuse, N.Y., 1993

Certification
Certified Asbestos Inspector

Occupational Safety and Health Administration 40-Hour Hazard Waste Operations Course

Professional Affiliations
Finger Lakes Chapter of Certified Hazardous Materials Managers

Professional Experience
Ms. Gerardi has seven years of experience with environmental projects, including residential, commercial and industrial site assessments, and Phase II soil and groundwater investigations.

Ms. Gerardi's experience includes:

- compliance audits of several large flexible printing facilities in the U.S. and Canada. Preparation of cost projections to bring each facility into compliance with environmental regulations (U.S. and Canadian).
- environmental site assessment of a large imaging equipment manufacturing facility in Western N.Y. Focus was placed on a historical outdoor drum storage area, industrial wastewater compliance issues, leaking underground storage tank, and two adjacent DEC inactive hazardous waste sites.
- environmental site assessment of a large manufacturer of customized motor test systems, hysteresis brakes and clutches, and dynamometers in Western N.Y. Focus was placed on a metal plating operation and a reported DEC spill event. The site assessment activities involved the review of chemical inventory records, waste manifests and DEC spill file information.
- environmental site assessment of a large toy manufacturing facility located adjacent to a DEC inactive hazardous waste site in Western NY. Focus was placed on seven reported spill events.
- environmental assessment of a 500-acre property located in Greece, N.Y. The property included a known waste site where drum marshalling was historically conducted. The site assessment activities included the review of town, county and state records for the parcel.
- oversight services for a project involving excavation and disposal of hazardous waste soils. Performed oversight of construction, field testing of soils, prepared final certification report, and progress reports.
- multiple NYSDOT Hazardous Waste Assessments on multi-million dollar road improvement and bridge reconstruction projects across New York State.
- environmental site assessment of an environmental contractor's headquarters involving large quantity waste oil aboveground storage tanks, over 500 drums, multiple spills, and historic landfilling.

- Field team leader for the development, purging, sampling and slug testing of groundwater monitoring wells at multiple sites in Western N.Y. including a construction and demolition debris landfill, former dry cleaning facilities, and various commercial/industrial properties.

- Phase II Subsurface investigations involving Geoprobe® sampling techniques at multiple commercial and industrial properties in Western New York.

- oversight of operations for an ORC® slurry injection program at a former gas station in Irondequoit, N.Y. Project included direct injection into groundwater via a Geoprobe® system at 47 points.

- water level monitoring, purging and sampling of groundwater monitoring wells at an EPA Superfund site in Western N.Y.

- environmental assessment of a DEC permitted solid waste transfer station that routinely handles/transfers petroleum contaminated waste, lead batteries, etc. The site assessment activities involved the review of groundwater monitoring well information and eight DEC spill files for spill events that occurred on-site.

- multiple simultaneous site assessments across New York State as part of the proposed sale of 120 commercial properties nationwide.

- environmental site assessment of a multi-family apartment complex, adjacent to an inactive hazardous waste site. Subsequent Phase II activities involved review of groundwater monitoring well information to evaluate potential subsurface contamination concerns.

- Site assessment of a major oil storage facility in the Albany area, including review of monitoring well data and a Spill Prevention, Control and Countermeasure plan.

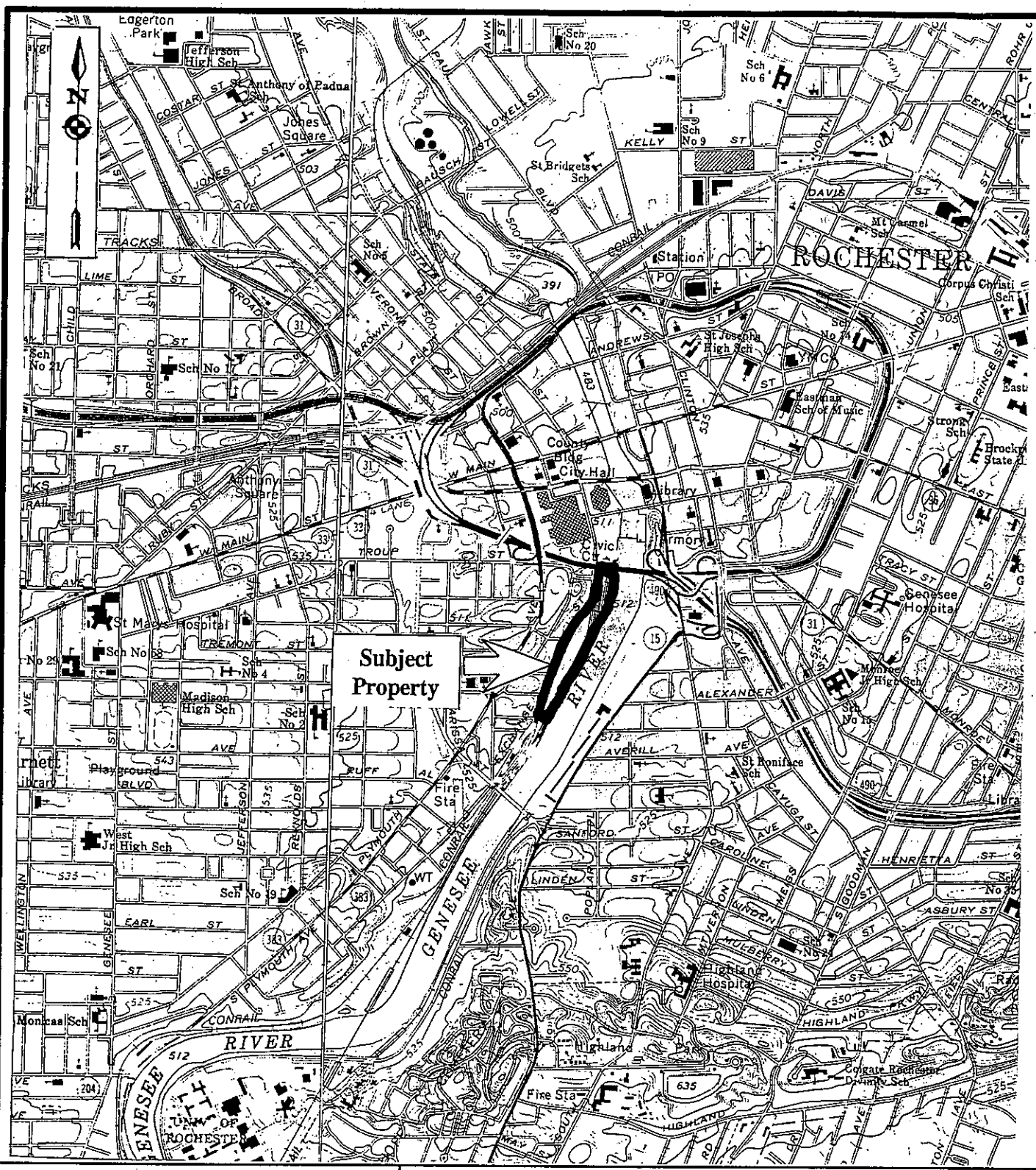
- demolition surveys of several homes for asbestos containing building material that were being acquired in Elmira, N.Y. for a NYSDOT project.

- demolition surveys for asbestos containing building material on behalf of two major gasoline service station chains at multiple sites across New York State.

DISCLAIMER

This report has been prepared for the exclusive use of the client. It is a professional opinion and judgment, dependent upon Sear-Brown's knowledge, information supplied by the present owners of the property or their managers, employees, agents or tenants, and data and information provided by governmental agencies. Sear-Brown warrants only that it provides services in accordance with generally accepted practices in the environmental site assessment field. No other warranty or representation, either expressed or implied, is included or intended as part of its services, proposals, contracts or reports.

In addition, Sear-Brown cannot provide guarantees, certifications or warranties that the property is or is not free of environmental impairment without a subsurface investigation involving drilling, vapor analysis, laboratory soil analysis, groundwater monitoring well installation, and laboratory groundwater analysis. Even with such a program, the data and samples from any given soil boring or monitoring well will indicate conditions that exist only at that location and may not necessarily apply to the general site as a whole.



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CONSTRUCTION

Figure 1

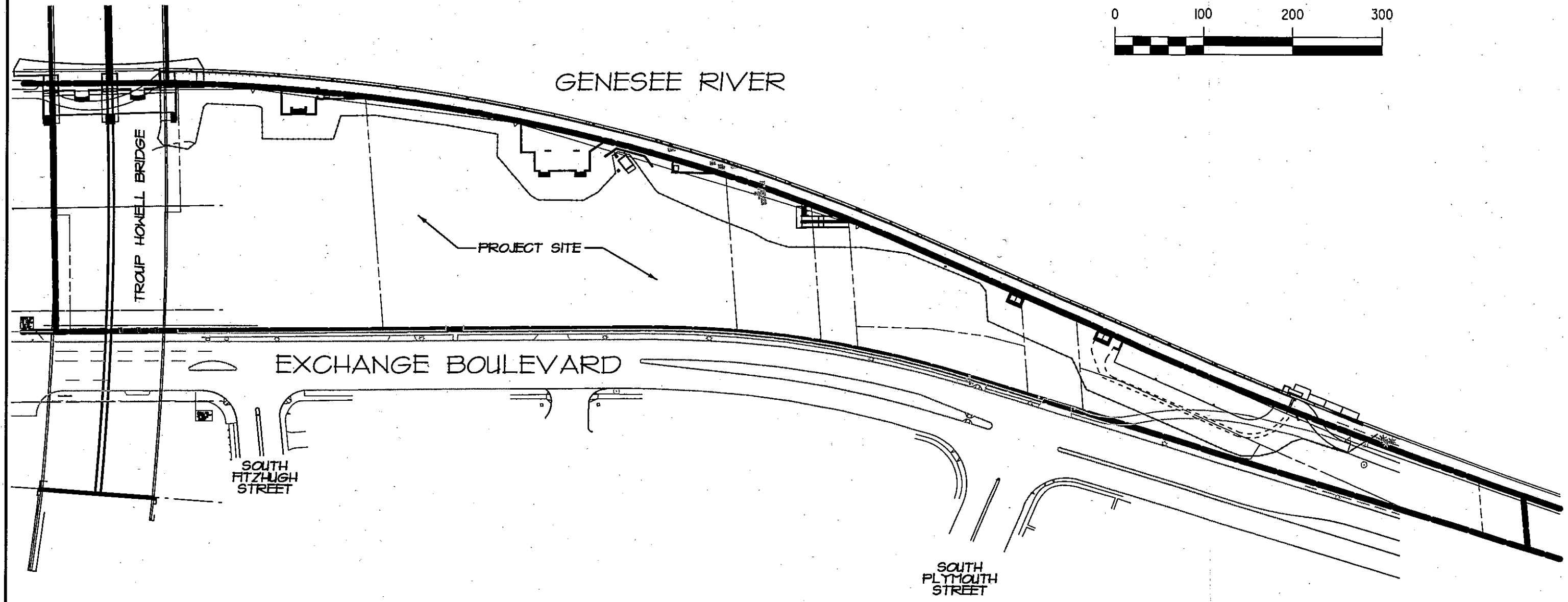
Corn Hill Landing

City of Rochester, Monroe County, New York

Site Location Map

Scale: 1:24,000

Source: USGS Topographic Maps (Rochester East and West Quadrangles)



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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

PROJECT MANAGER

DRAWN BY

SCALE: 1"=110'

FIRST ISSUE DATE

SEAR-BROWN
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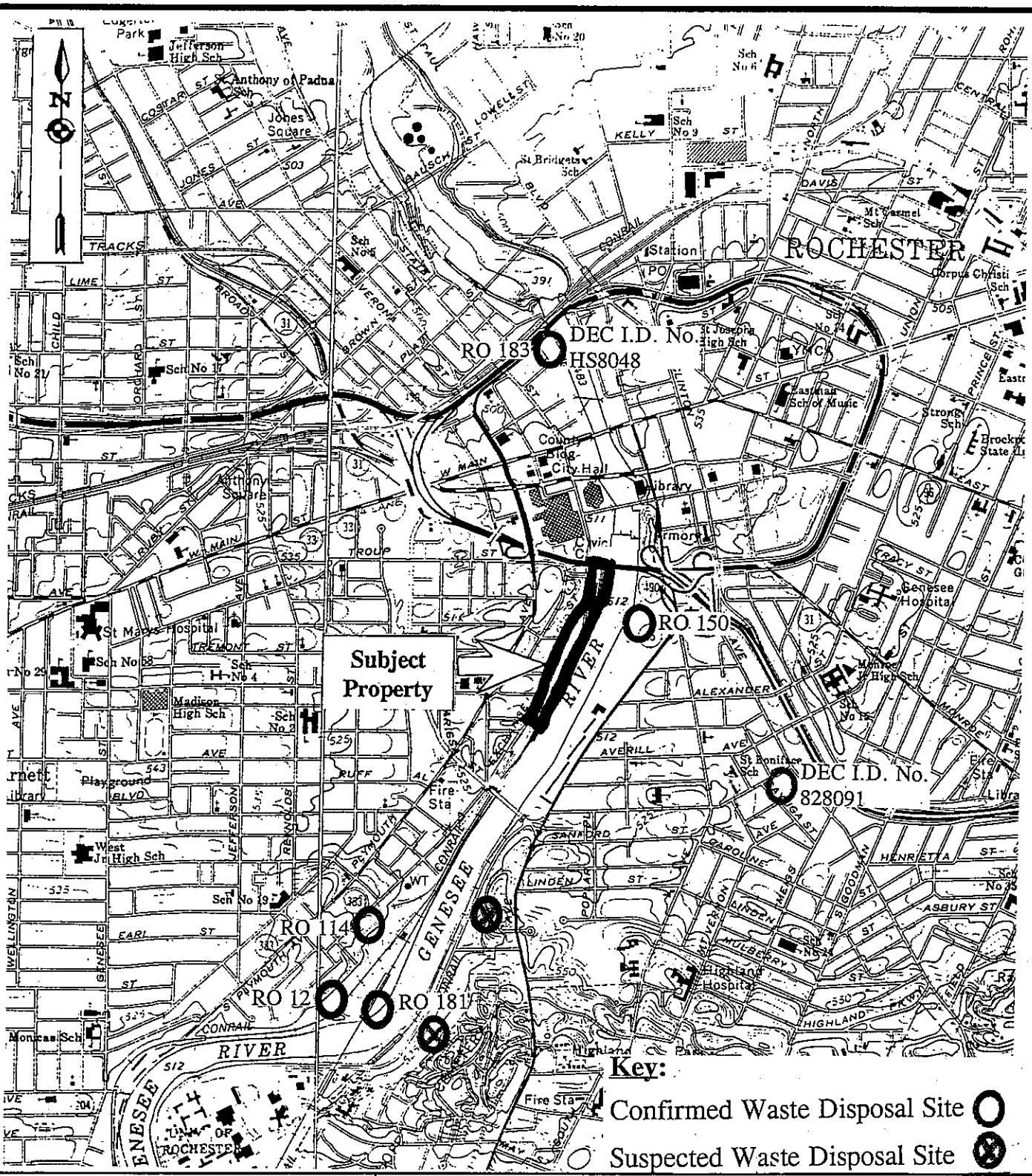
www.searbrown.com

PROJECT
CORNHILL LANDING
CITY OF ROCHESTER
ROCHESTER, NY

TITLE OF DRAWING
SITE PLAN

PROJECT NO.
1571808

DRAWING NO.
FIGURE 2



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CONSTRUCTION

Figure 3

Corn Hill Landing

City of Rochester, Monroe County, New York

Known Waste Site Location Map

Scale: 1:24,000

Source: USGS Topographic Maps (Rochester East and West Quadrangles)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR ACCESS TO RECORDS

(See Instructions on Reverse Side)

NUMBER

APPLICANT

- **TO THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION:**
  I hereby apply to inspect the following records under the provisions of the Freedom of Information Law:

See attached Listing

After inspection, should I desire copies of all or part of the records inspected, I will identify the records to be copied and hereby offer to promptly pay the established fees. (Cost of reproduction or 25¢ per page as applicable). Contact me if cost will exceed $ _____

Name (Print or type) Becky Sciandra Telephone No. 475-1440

Attention of: Sear-Brown Group

Mailing Address 85 Metro Park Rochester NY 14623

Signature _____ Date 3-4-02

RECORDS CUSTODIAN

- **TO THE APPLICANT:**

–Records Provided

☐ The reproduction costs for the records provided are $ _____

☐ Records have been (partially, fully) provided. (If not fully provided, date when records are expected to be fully provided: _____)

–Records Not Available

☐ Records cannot be found after diligent search

☐ The Department is not the custodian for records indicated

–Records Denied

I hereby certify that access to the records–or part of the records–circled above has been denied to the applicant for the reason(s) checked below:

☐ Specifically exempt by other statute

☐ Unwarranted invasion of personal privacy

☐ Would impair present or imminent contract awards or collective bargaining negotiations

☐ Are examination questions or answers

☐ Are inter-agency or intra-agency materials that are not:
- statistical or factual tabulations or data
- instructions to staff that affect the public
- final agency policy or determinations; or
- external audits, including but not limited to audits performed by the comptroller and the federal government

☐ Are trade secrets

☐ Would endanger the life of any person

☐ Are compiled for law enforcement purposes and which, if disclosed would:
- interfere with law enforcement investigations or judicial proceedings
- deprive a person of the right to a fair trial or or impartial adjudication
- identify a confidential source or disclose confidential information relating to a criminal investigation, or
- reveal criminal investigative techniques or procedures, except routine techniques and procedures

☐ Are computer access codes

Identification of records withheld (attach listing if additional space is required) and/or explanation if appropriate:

Records Custodian Signature _____ Title _____ Date _____

200 Exchange Blvd.
Rochester Urban Renewal Agency

260 Exchange Blvd.
Rochester Urban Renewal Agency

102 Violetta Street
Rochester Urban Renewal Agency

300 Exchange Blvd.
Rochester Urban Renewal Agency

320 Exchange Blvd.
Rochester Urban Renewal Agency

382 Exchange Blvd.
Rochester Urban Renewal Agency

330 Exchange Blvd.
Rochester Urban Renewal Agency

350 Exchange Blvd.
Rochester Urban Renewal Agency

354 Exchange Blvd.
Rochester Urban Renewal Agency

356 Exchange Blvd.
Rochester Urban Renewal Agency

378 Exchange Blvd.
City of Rochester

392 Exchange Blvd.
Rochester Urban Renewal Agency

350 Exchange Blvd.
Rochester Urban Renewal Agency

482 Exchange Blvd.
City of Rochester

492 Exchange Blvd.
Rochester Urban Renewal Agency

494 Exchange Blvd.
Rochester Urban Renewal
Agency

496 Exchange Blvd.
Rochester Urban Renewal
Agency

500 Exchange Blvd.
Rochester Urban Renewal

502 Exchange Blvd.
Rochester Urban Renewal
Agency

504 Exchange Blvd.
Rochester Urban Renewal Agency

508 Exchange Blvd.
Rochester Urban Renewal Agency

420 Exchange Blvd.
City of Rochester

424 Exchange Blvd.
City of Rochester

430 Exchange Blvd.
City of Rochester

436 Exchange Blvd.
City of Rochester

446 Exchange Blvd.
City of Rochester

452 Exchange Blvd.
City of Rochester

466 Exchange Blvd.
City of Rochester

476 Exchange Blvd.
City of Rochester

All of the above addresses are located in the City of Rochester, N.Y.

New York State Department of Environmental Conservation
6274 East Avon-Lima Road, Avon, NY 14414

Telephone: 716-226-2466

April 9, 2002

Ms. Becky Gerardi
The Sear-Brown Group
85 Metro Park
Rochester, NY 14623-2674

RECEIVED
APR 11 2002
THE SEAR-BROWN GROUP

Dear Ms. Gerardi:

Re: FOIL Request
031802.04
March 4, 2002

This is in response to a request you filed under the State Freedom of Information Law (FOIL). The request is for records pertaining to a particular parcel of real property.

I have prepared our response in tabular form. The columns in the enclosed table indicate the following:

-- Owner. This is the name of the property owner provided in your letter.

-- Property Address. This is the property address provided in your letter.

-- On Inactive Site Registry? This column contains the staff's informal determinations as to whether or not the parcel is listed on the State Registry of Inactive Hazardous Waste Sites. This is not a determination that the site will never be determined to be an Inactive Hazardous Waste Site. Such a determination would require additional information and investigation.

-- Other Files Available? Your request was circulated to the air, water, solid waste, hazardous substance regulations, hazardous waste remediation, regulatory affairs, pesticides and legal units in our Region 8 office. This column indicates whether or not those units have files under the owner name provided in your letter.

Please be advised of the following limitations on the inquiry which we conducted:

1. We did not inquire whether the Albany office or other regional offices of our Department have records of the type you requested. If you wish to determine whether those offices have any such records, please submit FOIL requests directly to them.

2. The records of criminal cases by our Division of Law Enforcement are maintained in our Albany office. We have not made a search of those records for the owner name provided in your letter; a separate FOIL request would be required for that purpose.

3. Most of the files in our Region 8 office are organized under the names of individuals and corporations. Therefore, our inquiry was limited to files under the owner name provided in your letter. We have no way of locating or retrieving records about the parcel of real property in which you are interested, if the records are in files under names other than the one you have provided.

4. The fact that we have not located any files under the owner name you provided does not necessarily mean, and should not be interpreted to mean, that there have never been any violations, complaints, claims, investigations or inquiries involving the person in question. We cannot make any representations as to whether there are or have been any such violations, complaints, claims, investigations or inquiries.

5. Due to the fact that your office has the Region 8 spill log, we did not do a search for any spill information.

Please contact Vonnie Gerace at this office within 15 days of the date of this letter if you have any questions regarding this foil request, or if you would like to schedule an appointment to review the files.

Sincerely,

Kimberly T. Shutts

Kimberly T. Shutts
Legal Division

SUMMARY OF RESPONSE

Property Owner - Address	Inactive Site Registry	Other Files
City of Rochester 378,420,424,430, Exchange Blvd Rochester	No	No
City of Rochester 436,446,452,466,476 Exchange Rochester	No	No
Rochester Urban Renewal 500,502,504,508 Exchange Blvd. Rochester	No	No
Rochester Urban Renewal Agency 200,260,300,320 Exchange Blvd. Rochester	No	No
Rochester Urban Renewal Agency 382,330,350,354,356 ExchangeBv Rochester	No	No
Rochester Urban Renewal Agency 392,350,492,494,496,Exchange Rochester	No	No
Rochester Urban Renewal Agency 102 Violetta St. Rochester	No	No

City of Rochester

Records Access Application

(Please print or type)

March 4, 2002
Date

Becky Gerardi
Print Name

Sear-Brown Group
Representing

475-1440
Telephone

GS metro Park
Address

Rochester NY 14623

Signature

I hereby apply to inspect ☐ and/or copy ☐ the following record(s):

Fire Marshall, BIS & Environmental Records for:
See attached pages for Addresses

Return completed application to:
Records Access Officer
Bureau of Communications &
Special Events
City Hall
30 Church Street
Rochester, New York 14614

There is a 25c per page charge for copying most records. For more information on public access to records, call 428-7135.

For agency use only

☐ Approved

☐ Denied

☐ Record not Maintained by City

Records Access Officer

Date

For appeal only

If you wish to appeal the Record Access Officer's decision on your application for public access to records, sign below and send this form within 30 days to: Corporation Counsel, City Hall, 30 Church Street, Rochester, New York 14614.

I hereby appeal:

Signature

Date

290 Exchange Street

260 Exchange Street

102 Violetta Street

382 Exchange Boulevard

350 Exchange Boulevard

378 Exchange Boulevard

392 Exchange Boulevard

482 Exchange Boulevard

452 Exchange Boulevard

492 Exchange Boulevard

494 Exchange Boulevard

496 Exchange Boulevard

500 – 504 Exchange Boulevard

508 Exchange Boulevard

200 Exchange Boulevard
300 Exchange Boulevard
320 Exchange Boulevard
382 Exchange Boulevard
330 Exchange Boulevard
354 Exchange Boulevard
356 Exchange Boulevard
350 Exchange Boulevard
420 Exchange Boulevard
424 Exchange Boulevard
430 Exchange Boulevard
436 Exchange Boulevard
446 Exchange Boulevard
466 Exchange Boulevard
476 Exchange Boulevard

RS/MEI/DEP/Hist.
18187
3-7-02

City of Rochester

Records Access Application

(Please print or type)

March 4, 2002
Date

Becky Gerardi
Print Name

Sear-Brown Group
Representing

475-1440
Telephone

95 Metro Park
Address

Rochester NY 14623

Signature

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☑ Approved

☐ Denied

☐ Record not Maintained by City

Brigitte Bunce
Records Access Officer

Date

For appeal only

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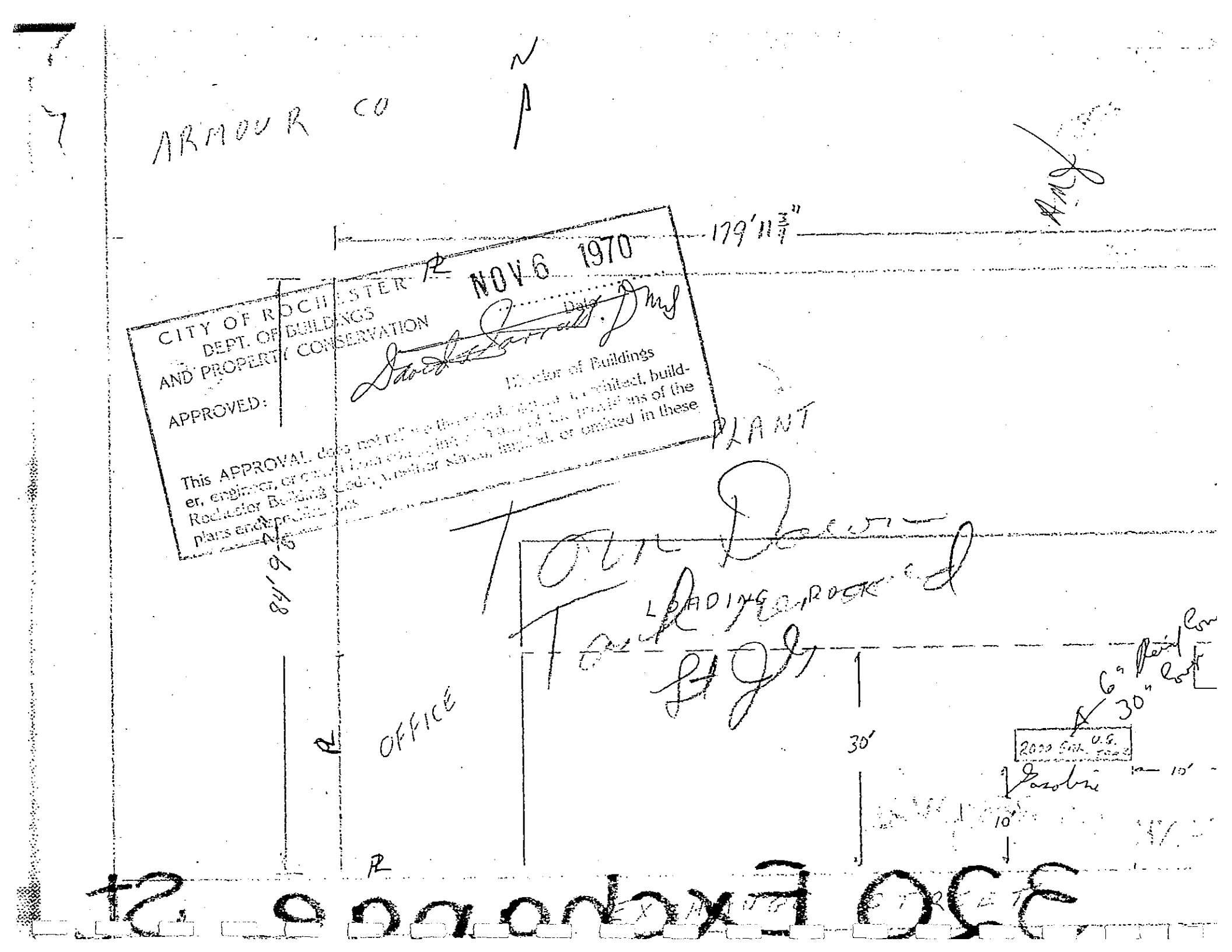
200 Exchange Boulevard
300 Exchange Boulevard
320 Exchange Boulevard
382 Exchange Boulevard
330 Exchange Boulevard
354 Exchange Boulevard
356 Exchange Boulevard
350 Exchange Boulevard
420 Exchange Boulevard
424 Exchange Boulevard
430 Exchange Boulevard
436 Exchange Boulevard
446 Exchange Boulevard
466 Exchange Boulevard
476 Exchange Boulevard


ARMOUR CO
N
179'11 3/4"
CITY OF ROCHESTER
DEPT. OF BUILDINGS
AND PROPERTY CONSERVATION
APPROVED:
NOV 6 1970
Date
Director of Buildings
This APPROVAL does not relieve the owner, architect, builder, engineer, or contractor from compliance with the provisions of the Rochester Building Code, Housing Code, and/or Sanitary Code, and/or other applicable laws
plans and specifications
PLANT
LOADING DOCK
OFFICE
30'
6" Pipe Col
30"
10'
10'
350 Exchange St

320 Exchange St

TANK REMOVAL: 11/70

591

1979 11

320 Exchange St.

591

320 EXCHANGE ST.

1-2000 gal. gasoline tank

TANK REMOVAL November, 1970

PRIVATE

298

476 EXCHANGE ST.

1-3000 gal. gasoline tank

1-2000 gal. gasoline tank

1-1000 gal. gasoline tank

TANK REMOVAL

October 2, 1973
Frederico Wrecking

PRIVATE

POST IN A CONSPICUOUS PLACE

Permit for the Storage and Sale of Explosives and Combustibles

DEPARTMENT OF PUBLIC SAFETY

BUREAU OF BUILDINGS

No 13467

Plat Plan No.....

Rochester, N. Y., March 1, 1938.

Permission is Hereby Granted to Swift & Co., Inc. XXXXXXXXXXXXXXXXXX COMPANY of 290 Exchange Street, Rochester, N. Y., to sell and store GASOLINE at No. 265-267 Exchange Street. This Permit will expire Mar. 1, 1939.

Public Station? Bulk? Wholesale? or Private Use? Private

If for Renewal, Transfer, or Additional Storage, give former Permit No. 11939

Number and Capacity of Tanks 1

Total Quantity 150 Gallons. Number of Pumps 1

Thomas C. Woods,
Commissioner of Public Safety.

Walker S. Lee,
Superintendent of Buildings.

This Permit is granted on the express condition that the said Explosives or Combustibles are kept in an approved receptacle or apartment used exclusively for that purpose, approved by the Bureau, and not in proximity to Gas, Oil, Arc Lights or Stoves or any open flame; that signs "NO SMOKING," be placed in a conspicuous place on the premises where said Explosives or Combustibles are kept; that for other than Private Use approved foam extinguishment shall be provided.

Renewal, Additional Storage, Transfer

Permit Number	Date	Number and Capacity of Tanks	Number of Pumps	
14099	3-1-39	1-150 Gals.	1	
15722	MAR 12 1940			
16590	FEB 24 1941			
17682	[illegible]			
19107	MAR 4 1943			
19970	MAR 1 1944			
20956	MAR 1 1945			
22213	MAR 1 1946			
23578	MAR 1 1947			
24461	MAR - 1 1948			
25708	MAR 1 1949			
26745	MAR 2 1950	1-500	1	
27488	MAR 1 1951			
28529	MAR 1 - 1952			

POST IN A CONSPICUOUS PLACE

Permit for the Storage and Sale of Explosives and Combustibles

DEPARTMENT OF PUBLIC SAFETY

BUREAU OF BUILDINGS

18573 Plat Plan No.....

Rochester, N. Y., AUG 17 1942 19

Permission is Hereby Granted to Blue Boy Dairy Inc. of

476 Exchange St. Rochester, N. Y., to sell and store GASOLINE

at No. " " 8 Street. This Permit will expire Mar. 1 19 43.

Public Station? Bulk? Wholesale? or Private Use? Private

If for Renewal, Transfer, or Additional Storage, give former Permit No.....

Number and Capacity of Tanks 1-1000 Gals

Total Quantity..... Gallons. Number of Pumps 1

Thomas C. Woods
Commissioner of Public Safety.

Walter S. Lee
Superintendent of Buildings.

This Permit is granted on the express condition that the said Explosives or Combustibles are kept in an approved receptacle or apartment used exclusively for that purpose, approved by the Bureau, and not in proximity to Gas, Oil, Arc Lights or Stoves or any open flame; that signs "NO SMOKING," be placed in a conspicuous place on the premises where said Explosives or Combustibles are kept; that for other than Private Use approved foam extinguishment shall be provided.

Renewal, Additional Storage, Transfer

Permit Number	Date	Number and Capacity of Tanks	Number of Pumps	
19192	MAR 5 1943			
20012	MAR 1 1944			
20862	MAR 1 1945			
[illegible]	MAR 1 1946			
23197	MAR 1 1947			
24145	MAR - 1 1948			
25263	MAR 1 1949			
26140	FEB 27 1950			
27302	MAR 1 1951			
28301	MAR 1 - 1952			
29569	MAR 1 1953			
30361	MAR 1 1954			
31285	MAR 1 1955			
32569	MAR 1 [illegible]			

POST IN A CONSPICUOUS PLACE

Permit for the Storage and Sale of Explosives and Combustibles

DEPARTMENT OF PUBLIC SAFETY

BUREAU OF BUILDINGS

No 13296

Plat Plan No.....

Rochester, N. Y., March 1st 1938 193 .

Permission is Hereby Granted to ..... Erie Railroad Co., ... of ... 200 Exchange Street ..... Rochester, N. Y., to sell and store GASOLINE .....

at No. .... 420 Exchange Street ..... Street. This Permit will expire .. Mar. 1 .. 1939 .

Public Station? Bulk? Wholesale? or Private Use? ..... Private .....

If for Renewal, Transfer, or Additional Storage, give former Permit No. .... 12016 .....

Number and Capacity of Tanks .....

Total Quantity ..... 19,500 ..... Gallons. Number of Pumps .... 1 .....

..... Thomas C. Woods .....
Commissioner of Public Safety.

..... Walker S. Lee .....
Superintendent of Buildings.

This Permit is granted on the express condition that the said Explosives or Combustibles are kept in an approved receptacle or apartment used exclusively for that purpose, approved by the Bureau, and not in proximity to Gas, Oil, Arc Lights or Stoves or any open flame; that signs "NO SMOKING," be placed in a conspicuous place on the premises where said Explosives or Combustibles are kept; that for other than Private Use approved foam extinguishment shall be provided.

Renewal, Additional Storage, Transfer

Permit Number	Date	Number and Capacity of Tanks	Number of Pumps	
14102	3-1-39	19,500 Gals.	1	
15726	MAR 12 1940			
16677	FEB 28 1941			
	March 17/42	Letter from Erie RR. Co, that these tanks were removed prior to March 1,1942.		

POST IN A CONSPICUOUS PLACE

Permit for the Storage and Sale of Explosives and Combustibles

DEPARTMENT OF PUBLIC SAFETY

BUREAU OF BUILDINGS

No 13335

Plat Plan No.....

Rochester, N. Y., Mar. 1, 1938.

Permission is Hereby Granted to Armour & Company of 320 Exchange St., & Rochester, N. Y., to sell and store GASOLINE at No. 320 Exchange Street. This Permit will expire Mar. 1 1939.

Public Station? Bulk? Wholesale? or Private Use? Private

If for Renewal, Transfer, or Additional Storage, give former Permit No. 12809

Number and Capacity of Tanks

Total Quantity 1,000 Gallons. Number of Pumps 1

Thomas C. Woods
Commissioner of Public Safety.

Walker S. Lee
Superintendent of Buildings.

This Permit is granted on the express condition that the said Explosives or Combustibles are kept in an approved receptacle or apartment used exclusively for that purpose, approved by the Bureau, and not in proximity to Gas, Oil, Arc Lights or Stoves or any open flame; that signs "NO SMOKING," be placed in a conspicuous place on the premises where said Explosives or Combustibles are kept; that for other than Private Use approved foam extinguishment shall be provided.

Renewal, Additional Storage, Transfer

Permit Number	Date	Number and Capacity of Tanks	Number of Pumps	
14100	3-1-39	1-1,000	1	
15723	MAR 12 1940			
16422	[illegible]			
12492	[illegible]			
19392	MAR 11 1943			
20911	MAR 1 1944			
21251	[illegible]			
22360	MAR 2 1946			
23545	MAR 1 1947			
24201	MAR - 1 1948			
25350	[illegible]			
26592	MAR 1 1950			
27606	MAR 1 1951			
28461	[illegible]			

EXCHANGE ST. #200

1 Dispensing unit

1- 200 gal. diesel fuel tank

Erie-Lackawana Railroad Bldg.

Private

Erie Railroad Company, 205 Exchange St

MAR 1 1957

MAR 1 1959

MAR 18 1960

MAR 1 - 1961

POST IN A CONSPICUOUS PLACE

Permit for the Storage and Sale of Explosives and Combustibles

DEPARTMENT OF PUBLIC SAFETY

BUREAU OF BUILDINGS

18394

Plat Plan No.....

Rochester, N. Y., MAR 12 1942 19

Permission is Hereby Granted to Erie Railroad Co., of Main & Scott Street, Buffalo, N.Y. Rochester, N. Y., to sell and store ~~GASOLINE~~ OIL at No. 200 Exchange Street (rear) Street. This Permit will expire Mar. 1 19 43.

Public Station? Bulk? Wholesale? or Private Use? Private

If for Renewal, Transfer, or Additional Storage, give former Permit No.....

Number and Capacity of Tanks 1-10,500 Gals 1-6000

Total Quantity..... Gallons. Number of Pumps.....

Thomas C. Wooley
Commissioner of Public Safety.

Walter J. [illegible]
Superintendent of Buildings.

This Permit is granted on the express condition that the said Explosives or Combustibles are kept in an approved receptacle or apartment used exclusively for that purpose, approved by the Bureau, and not in proximity to Gas, Oil, Arc Lights or Stoves or any open flame; that signs "NO SMOKING," be placed in a conspicuous place on the premises where said Explosives or Combustibles are kept; that for other than Private Use approved foam extinguishment shall be provided.

Renewal, Additional Storage, Transfer

Permit Number	Date	Number and Capacity of Tanks	Number of Pumps	
19552	MAR 27 1943			
20224	MAR 1 1944			
21[illegible]	MAR 1 1945			
[illegible]	MAR 1 1946			
23700	MAR 1 1947			
24537	MAR - 1 1948			
25852	MAR 10 1949			
26928	MAR 1 1950			
27487	MAR 1 1951			
29039	MAR 1 - 1952			
30178	APR 10 1953			
31015	MAR 1 1954			
31367	MAR 1 1955	MAIL TO, ERIE RAILROAD CO.,		
32493	MAR 1 1956	101 PROSPECT AVE N.W. CLEVELAND 15, OHIO		

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102 VIOLETTA	ST
0304699	00/00/00	11/24/75	1500	PMT CMPLT PRE CONVERSION 93/10/18
		REMOVE TWO 1,000 GAL GAS TANKS, ONE 550 GAL WASTE OIL TANK, ONE 550 GAL FUEL OIL TANK		
0304479	00/00/00	11/05/75		PMT CMPLT PRE CONVERSION 93/10/18
		DEMOLISH MASONRY SERVICE STATION		
0212633	00/00/00	03/21/74		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0210731	00/00/00	09/14/73		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0209881	00/00/00	07/09/73		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0209876	00/00/00	07/09/73		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0208104	00/00/00	02/05/73		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0202100	00/00/00	10/04/71		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
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SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0189920	00/00/00	10/14/66	2000	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT ADD FRONT OF CONCRETE BLK WAREHOUSE		
0186742	00/00/00	07/19/65	950	PMT CMPLT PRE CONVERSION 93/10/18
		CUT HOLE IN WALL REPLACE WITH DOR IN MASONRY DAIRY GAR		
GE				
0185515	00/00/00	02/15/65	300	PMT CMPLT PRE CONVERSION 93/10/18
		INSTALL 1 1000 GAL GAS TANK REPLACEMENT		
0184957 A	00/00/00	10/30/64		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0184902	00/00/00	10/19/64	1600	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT CEMENT BLOCK ADDITION GARAGE		
0181468	00/00/00	06/06/63	9000	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT ADD ON EXISTING MASONRY BLDG		
0181204 B	00/00/00	05/15/63		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0181204 A	00/00/00	05/15/63		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0177973	00/00/00	02/08/62	30000	PMT CMPLT PRE CONVERSION 93/10/18
		MASONRY ADD TO DAIRY PLANT		
0177430	00/00/00	10/13/61	750	PMT CMPLT PRE CONVERSION 93/10/18
		INSTAL 1 3000 1 2000 1 1000 GAL GAS TANKS 2 PUMPS		
0177318	00/00/00	09/27/61	1500	PMT CMPLT PRE CONVERSION 93/10/18
		INSTAL VAULT OVER ST LINE		
0176887	00/00/00	07/14/61	18500	PMT CMPLT PRE CONVERSION 93/10/18
		CEM BLK ADD TO ALL STEEL GARAGE BLDG		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0176816 A	00/00/00	06/30/61		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0175794	00/00/00	12/23/60		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0175736	00/00/00	12/08/60	100	PMT CMPLT PRE CONVERSION 93/10/18
		CUT IN DOOR IN MASONRY BLDG		
0173698 A	00/00/00	12/21/59		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

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SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0172727	00/00/00	07/10/59	800	PMT CMPLT PRE CONVERSION 93/10/18
		INSTAL 1 3000 GAL GAS TANK 1 PUMP		
0168678	00/00/00	10/28/57	800	PMT CMPLT PRE CONVERSION 93/10/18
		STEEL ADD TO BRICK BLDG BOILER ROOM		
0167575	00/00/00	06/11/57	350	PMT CMPLT PRE CONVERSION 93/10/18
		CHANGE USE OF FR 1 FAM DWELL INTO STORAGE LIGHT MFG BL G		
0166930	00/00/00	04/04/57	5500	PMT CMPLT PRE CONVERSION 93/10/18
		CEM BLK STORAGE BLDG		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0157127	00/00/00	08/24/53	2500	PMT CMPLT PRE CONVERSION 93/10/18
		CEM BLK ADD TO STORAGE BLDG		
0140484	00/00/00	09/28/48	6000	PMT CMPLT PRE CONVERSION 93/10/18
		MASONRY ADD TO DAIRY BLDG		
0137585	00/00/00	12/08/47	20000	PMT CMPLT PRE CONVERSION 93/10/18
		CON STEEL WAREHOUSE		
0134094	00/00/00	10/21/46	1800	PMT CMPLT PRE CONVERSION 93/10/18
		ALL STEEL STORAGE BLDG		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

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APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0131088	00/00/00	10/15/45		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0130933	00/00/00	09/20/45		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0129106	00/00/00	08/11/44		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0128379	00/00/00	03/01/44	1000	PMT CMPLT PRE CONVERSION 93/10/18
		INSTAL STOKER IN BR BLDG		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

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PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102 VIOLETTA	ST
0126793	00/00/00	11/12/42	3900	PMT CMPLT PRE CONVERSION 93/10/18
		REMODEL INTERIOR OF BR DAIRY BLD		
0111071	00/00/00	01/30/37		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0105518	00/00/00	06/19/34		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		
0101185	00/00/00	11/14/31		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102 VIOLETTA ST	
0098338	00/00/00	08/20/30	1400	PMT CMPLT PRE CONVERSION 93/10/18
		CEM BLK WALL TO REPLACE PRESENT FRAME WALL IN FACTORY BL G		
0075261	00/00/00	00/00/00	100	PMT CMPLT PRE CONVERSION 93/10/18
		FRAME ADD TO GARAGE		
0071720	00/00/00	11/14/24	1200	PMT CMPLT PRE CONVERSION 93/10/18
		OPEN BRICK SHED6 CAR GARAGE		
0066387	00/00/00	03/19/24	3640	PMT CMPLT PRE CONVERSION 93/10/18
		CEM BLK ADD TO CEM BLK BLDG MFG OF ELECTRIC PANEL BOARD		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102	VIOLETTA ST
0048319	00/00/00	04/01/21	150	PMT CMPLT PRE CONVERSION 93/10/18
		FRAME BLDG		
0046919	00/00/00	10/13/20	1500	PMT CMPLT PRE CONVERSION 93/10/18
		FRAME 3 CAR GARAGE		
0044960	00/00/00	04/26/20	250	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT AN IRON FRAME CABLE STORAGE		
0039973	00/00/00	06/10/18	150	PMT CMPLT PRE CONVERSION 93/10/18
		REBUILD A GALVANIZED IRON STORAGE		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102 VIOLETTA ST	
0033515 A	00/00/00	06/26/16	40	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT CONCRETE BLOCK FOUNDATION WALL KITCHEN		
0030355	00/00/00	10/06/14	22000	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT BRICK BLDG DAIRY BOILER ENGINE HOUSE		
0025219	00/00/00	03/10/13	3500	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT A CONCRETE BLOCK FOR STORAGE SHOP		
0020993	00/00/00	11/06/11	1000	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT CONCRETE BLOCK ADD MACHINE SHOP		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0102 VIOLETTA ST PERMIT NO.: _____
SBL NO.: 121 . 700 - 0001 - 039 . 001 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0102 VIOLETTA	ST
0020753	00/00/00	10/16/11	75	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT A FRAME ADD KITCHEN		
0012282	00/00/00	01/18/09	75	PMT CMPLT PRE CONVERSION 93/10/18
		BUILD A FRAME ADDITION KITCHEN		
0011932	00/00/00	10/31/08	4200	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT A BRICK WAREHOUSE		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0382 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 470 - 0001 - 015 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE	
				0382 EXCHANGE	BLVD
0974208	07/02/97	07/02/97	750	PMT COMPLETED/ WITH INSP	97/09/25
INSTALL THREE TENTS EACH 20' X 30' IN THE PARKING LOT USED BY CORNHILL NAVIGATION ADJACENT TO THE RIVER. NO COOKING					
0203425	00/00/00	01/27/72		PMT CMPLT PRE CONVERSION	93/10/18
		DEMO			
0187735	00/00/00	11/15/65	100	PMT CMPLT PRE CONVERSION	93/10/18
		ERECT METAL	WOOD SIGN		
0186293	00/00/00	05/25/65	300	PMT CMPLT PRE CONVERSION	93/10/18
		INSTALL DOOR	FRAME FRONT OF BR BLDG		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0382 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 470 - 0001 - 015 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0382 EXCHANGE	BLVD
0027618	00/00/00	11/18/13	1600	PMT CMPLT PRE CONVERSION	93/10/18
		ERECT BRICK ADD TO BRICK STORAGE			
0010555	00/00/00	01/31/08	300	PMT CMPLT PRE CONVERSION	93/10/18
		ERECT A BRICK ENGINE ROOM			

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0350 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 010 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0350 EXCHANGE	BLVD
0852501	00/00/00	07/12/85	57000	PMT CMPLT PRE CONVERSION	93/10/18
		INSTALL TEMPORARY PARKING LOT (40 DAYS PER YEAR, 3 YEARS ONLY, FOR CONVENTION CENTER VISITORS ONLY)			
0305286	00/00/00	01/30/76		PMT CMPLT PRE CONVERSION	93/10/18
		PLUMBING			
0202555	00/00/00	11/05/71	4000	PMT CMPLT PRE CONVERSION	93/10/18
		ERECT CHAIN LINK FENCE FRONT REAR SIDES OF LOT			
0195528 A	00/00/00	09/18/69		PMT CMPLT PRE CONVERSION	93/10/18
		DEMO			

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0350 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 010 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0350 EXCHANGE	BLVD
0137595	00/00/00	12/08/47	5200	PMT CMPLT PRE CONVERSION	93/10/18
		REMODEL INTERIOR OF STORAGE BLDG			
0105195	00/00/00	04/25/34	43000	PMT CMPLT PRE CONVERSION	93/10/18
		BRICK WAREHOUSE			

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0392 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 009 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0392	EXCHANGE BLVD
0953223	05/25/95	05/31/95	1000	PMT COMPLETED/ WITH INSP 95/06/12
INSTALL TEMPORARY 400 AMP SERVICE FOR CIRCUS-NY BOARD				
0300085	00/00/00	09/04/74	100	PMT CMPLT PRE CONVERSION 93/10/18
REMOVE 1 1000 GAL GAS TANK				
0213451	00/00/00	05/28/74	100	PMT CMPLT PRE CONVERSION 93/10/18
REMOVE TANKS				
0212555	00/00/00	03/15/74		PMT CMPLT PRE CONVERSION 93/10/18
DEMO				

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0392 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 009 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0392	EXCHANGE	BLVD
0148476	00/00/00	11/27/50		PMT CMPLT	PRE CONVERSION	93/10/18
		DEMO				
0146359	00/00/00	05/25/50		PMT CMPLT	PRE CONVERSION	93/10/18
		DEMO				
0118499	00/00/00	10/11/39	10	PMT CMPLT	PRE CONVERSION	93/10/18
		REPLACE WINDOW WITH DOOR				

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0452 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 059 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0452 EXCHANGE	BLVD
0172061	00/00/00	04/24/59	500	PMT CMPLT PRE CONVERSION	93/10/18
		FIRE ESCAPE ON BR 21 FAM APT			
0122067	00/00/00	02/25/41	600	PMT CMPLT PRE CONVERSION	93/10/18
		INSTAL STOKER IN APT BLDG			
0101497	00/00/00	01/30/32	1900	PMT CMPLT PRE CONVERSION	93/10/18
		REM INT ERECT CIN BLK ADD TO 20 FAM APT WAS 17 FAM APT			

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0492 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 620 - 0001 - 028 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
				0492 EXCHANGE BLVD
0208193	00/00/00	02/13/73		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0492 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 620 - 0001 - 028 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
				0492 EXCHANGE BLVD
0208193	00/00/00	02/13/73		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0494 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 620 - 0001 - 029 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0494	EXCHANGE BLVD
0167908 A	00/00/00	07/18/57		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0496 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 620 - 0001 - 030 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0496 EXCHANGE BLVD
0208190	00/00/00	02/13/73 DEMO		PMT CMPLT PRE CONVERSION 93/10/18

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0500-564 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 620 - 0001 - 031 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0500	EXCHANGE BLVD
0208192	00/00/00	02/13/73	PMT CMPLT PRE CONVERSION	93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0200 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 390 - 0001 - 005 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0200	EXCHANGE BLVD
1004698	06/21/00	06/27/00	5000	WAITING CONTRACTR CONTACT 00/06/27

DEMOLISH QUONSET TYPE METAL STORAGE STRUCTURE APPRX 40'X117' (4,680 SF)

0997208	10/25/99	10/25/99	100	PMT COMPLETED/ WITH INSP 99/10/25

PLUMBING: BACKFLOW TEST#954, 955 CERT#35

0966481	10/04/96	10/04/96	100	PMT COMPLETED/ NO INSP 96/10/04

PLUMBING: BACKFLOW TEST - DEVICE #954 & #955 (TESTER #35)

0944205	07/08/94	07/11/94	650	PMT COMPLETED/ WITH INSP 94/08/22

INSTALL 2 TENTS (20' X 40) FOR CORN HILL FESTIVAL 7/08/94 - 7/10/94

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0200 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 390 - 0001 - 005 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE	0200 EXCHANGE	BLVD
0936144	12/16/93	12/17/93	60	PMT COMPLETED/ WITH INSP		94/03/08
PLUMBING: BACKFLOW TEST						
0932947	00/00/00	07/02/93		PMT CMPLT PRE CONVERSION		93/10/18
INSTALL 20 X 30 3 PC TENT FOR 7/9/93 - 7/12/93 AT KNICKERS (#251)						
0923393	00/00/00	09/29/92	300	PMT CMPLT PRE CONVERSION		93/10/18
INSTALL 30' X 40' TENT AT 152 EXCHANGE -SEPT 30-OCT 1						
0842233	00/00/00	06/20/84		PMT CMPLT PRE CONVERSION		93/10/18
		PLUMB - MISC REPAIRS				

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0200 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 390 - 0001 - 005 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0200 EXCHANGE	BLVD
0832676	00/00/00	07/01/83	37300	PMT CMPLT PRE CONVERSION	93/10/18
		DEMOLISH 1 STORY BRICK/FRAME WAREHOUSE			

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0300 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 470 - 0001 - 020 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0300	EXCHANGE BLVD
1020114	01/08/02	01/08/02	2500	WAITING CONTRACTR CONTACT 02/01/08

ELECTRICAL: TEMPORARY SERVICE FOR CONSTRUCTION TRAILER - NYBFU

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0382 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 470 - 0001 - 015 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
			0382	EXCHANGE BLVD
0974208	07/02/97	07/02/97	750	PMT COMPLETED/ WITH INSP 97/09/25

INSTALL THREE TENTS EACH 20' X 30' IN THE PARKING LOT USED BY CORNHILL NAVIGATION ADJACENT TO THE RIVER. NO COOKING

0203425	00/00/00	01/27/72	PMT CMPLT PRE CONVERSION	93/10/18
		DEMO		
0187735	00/00/00	11/15/65	100 PMT CMPLT PRE CONVERSION	93/10/18
		ERECT METAL	WOOD SIGN	
0186293	00/00/00	05/25/65	300 PMT CMPLT PRE CONVERSION	93/10/18
		INSTALL DOOR	FRAME FRONT OF BR BLDG	

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0382 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 470 - 0001 - 015 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
				0382 EXCHANGE BLVD
0027618	00/00/00	11/18/13	1600	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT BRICK ADD TO BRICK STORAGE		
0010555	00/00/00	01/31/08	300	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT A BRICK ENGINE ROOM		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
MORE PERMITS ARE AVAILABLE FOR PARCEL - PRESS PF 8

APPLIC. ADDRESS: 0350 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 010 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
				0350 EXCHANGE BLVD
0852501	00/00/00	07/12/85	57000	PMT CMPLT PRE CONVERSION 93/10/18
		INSTALL TEMPORARY PARKING LOT (40 DAYS PER YEAR, 3 YEARS ONLY, FOR CONVENTION CENTER VISITORS ONLY)		
0305286	00/00/00	01/30/76		PMT CMPLT PRE CONVERSION 93/10/18
		PLUMBING		
0202555	00/00/00	11/05/71	4000	PMT CMPLT PRE CONVERSION 93/10/18
		ERECT CHAIN LINK FENCE FRONT REAR SIDES OF LOT		
0195528 A	00/00/00	09/18/69		PMT CMPLT PRE CONVERSION 93/10/18
		DEMO		

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/12/2002 >
END OF DATA

APPLIC. ADDRESS: 0350 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 540 - 0003 - 010 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE 0350 EXCHANGE	BLVD
0137595	00/00/00	12/08/47	5200	PMT CMPLT PRE CONVERSION	93/10/18
		REMODEL INTERIOR OF STORAGE BLDG			
0105195	00/00/00	04/25/34	43000	PMT CMPLT PRE CONVERSION	93/10/18
		BRICK WAREHOUSE			

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

2

LEGEND

- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EASEMENT LINE
- ADJOINER PROPERTY LINE
- FORMER BUILDING
- PROPOSED BUILDING
- SOIL GAS SAMPLE POINT
- MONITORING WELL
- TEST PIT

FEET 0 20 40 60 FEET

SCALE BAR

SG 26
TP 34
TP 42
MW 10
TP 41
SG 28
TP 38
TP 43
TP 44
FREIGHT HOUSE
(ADDRESS UNAVAILABLE)
APPROXIMATE LIMIT
OF AFFECTED SOIL
TP 54
MW 8
SG 12
GP-106
MW 9
TP 45
GP-104
TP 40
SG 14
SG 15
SG 11
GP-105
GP-107
SG 13
SG 10
TP 39
GP-103
GP-101
GP-102
RITTER STREET
(40' WIDE)
7+00

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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 ALTERATION.

PROJECT ENGINEER/ARCHITECT — DATE
PROJECT MANAGER: M. STORONSKY — DATE
DEPT./BRANCH/OFFICE/MANAGER — DATE
DRAWN BY: S. SMITH — DATE DRAWN: 5/27/99
SCALE: 1"=20' — DATE ISSUED

THE SEAR-BROWN GROUP
FULL-SERVICE DESIGN PROFESSIONALS
85 METRO PARK
ROCHESTER, N.Y. 14623-2674
(716) 475-1440
www.searbrown.com

PROJECT: CORN HILL LANDING
EXCHANGE STREET, ROCHESTER, NEW YORK
CLIENT: DEPARTMENT OF ENV. SERVICES
CITY OF ROCHESTER, CITY HALL, ROOM 300B
ROCHESTER, NEW YORK 14614

PROJECT NO. 1515506
DRAWING NO. 2

TITLE OF DRAWING: PROPOSED EXCAVATION AREA

3

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
Bureau of Spill Prevention & Response
6274 East Avon-Lima Road, Avon, New York 14414-9519
Phone: (716) 226-2466 • **FAX:** (716) 226-8139
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

January 10, 2001

Mr. Mike Storonsky
Sear Brown
2250 Brighton-Henrietta Townline Road
Rochester, New York 14623-2706

Dear Mr. Storonsky:

RE: Corn Hill Landing
Rochester (C), Monroe County
Spill No. 9970155

This Department has received and reviewed Sear-Brown's response dated December 22, 2000 to Comments on Corrective Action Plan (CAP), Addendum to CAP, and the Soil Management Plan for the above-referenced site.

This Department approves the CAP and Soil Management Plan for the above-referenced site. You may proceed with the lead removal program at your earliest convenience. Please notify this Department at least two days prior to the commencement of any of the outlined work to allow scheduling of an on-site inspector.

If you have any questions or comments regarding this matter, please contact me in writing at the above address or by telephone.

Sincerely,

Carl A. Hettenbaugh

Carl A. Hettenbaugh
Environmental Engineering Technician III
Bureau of Spill Prevention and Response
Division of Environmental Remediation

CAH:map

cc: J. Biondolillo, City of Rochester
T. Poley, Mark IV Construction
M. Leszczynski/J. Albert, Monroe County Health Department
D. Napier, New York State Department of Health
M. Peachey, New York State Department of Environmental Conservation - Avon

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NYSDEC SPILL REPORT FORM

DEC REGION# 8 (Avon) SPILL NUMBER 9102615
SPILL NAME: SOUTH RIVER COR BOAT DOCK DEC LEAD: CH
CALLER'S NAME: NOTIFIER'S NAME:
CALLER'S AGENCY: NOTIFIER'S AGENCY:
CALLER'S PHONE: EXT. NOTIFIER'S PHONE: EXT.

SPILL DATE: 06/04/1991 TIME: 12:00
CALL RECEIVED DATE: 06/04/1991 TIME: 13:30 RECEIVED BY CID #:

	Material Spilled	Mat. Class	Am't Spilled	Units	Am't Recovered
1)	DIESEL	Pet-Haz-Other-Unk.	0	Gal - (Lbs)	0
2)		Pet-Haz-Other-Unk.		Gal - Lbs	
3)		Pet-Haz-Other-Unk.		Gal - Lbs	
4)		Pet-Haz-Other-Unk.		Gal - Lbs	

SPILL LOCATION

PLACE: SOUTH RIVER COR BOAT DOCK
STREET: 300 EXCHANGE STREET
T/C/V: ROCHESTER CO: MONROE
CONTACT:
PHONE: EXT.

POTENTIAL SPILLER

NAME: CITY OF ROCHESTER
STREET:
CITY:
STATE: ZIP:
CONTACT:
PHONE: (716) 428-6840 EXT.

SPILL CAUSE

(Human Error) Traffic Accident Equipment Failure Vandalism
Tank Test Failure* Housekeeping Deliberate Abandoned Drums
Tank Failure Tank Overfill Other Unknown

SPILL SOURCE

Gas Station Passenger Vehicle Comm. Vehicle Tank Truck
Private Dwelling Vessel Railroad Car Major Facility
Non-Maj Facility Comm/Indust (Non-Comm/Instit) Unknown

RESOURCE AFFECTED

(On Land) In Sewer
Groundwater Surface Water**
Air

SPILL REPORTED BY

(Responsible Party) Affected Persons Police Department Fire Department
Tank Tester DEC Citizen Health Dept.
Local Agency Federal Gov't Other

**WATERBODY:

CALLER REMARKS: WHILE EXCAVATING FOR BOAT DOCK PROJECT A BACKHOE RUPTURED AN UNDERGROUND TANK THAT WAS FULL OF PRODUCT. THE CITY DID NOT KNOW THE TANK WAS PRESENT. CONTACT PERSON: JOHN STANDINGER

*PBS Number	Tank Number	Tank Size	Test Method	Leak Rate

PRIMARY CONTACT CALLED DATE: TIME: hrs. REACHED DATE: TIME: hrs.
SECONDARY CONT. CALLED DATE: TIME: hrs. FAXED BY CID#:

PIN #	T & A	Cost Center	ISR to Central Office	
Cleanup Ceased 06/05/1991	Meets St'ds YES	Last Inspection		Penalty NO
RP-CUI	ENF-INIT	INVES-COM	CAP	
UST Trust Eligible NO	Site: A B C D E	Resp. Party 1 2 3 4 5 6	Reg Close Date 06/05/1991	
Created on 08/10/1991	Last Updated on 04/21/1992	Is Updated? NO	EDO	DATA INPUT [ ]

Date Printed: 03/22/1999

DEC REMARKS

5/04/91: GREG BEYLER OF MCHD RESPONDED TO SCENE. ENV. PRODUCTS HIRED BY CITY O PICK UP LEAKING PRODUCT. TANK TO BE REMOVED ON 06-05-91. BEYLER TO BE IN TE FOR REMOVAL.

6/05/91: CH & GREG BEYLER ARE ON SCENE FOR TANK REMOVAL. CONTAMINATED SOIL ROUND & BELOW TANKS IS REMOVED. THERE IS A VEIN OF HEAVILY CONTAMINATED APPROX 2' THICK IN BOTTOM OF THE TANK PIT.

6/05/91: NOT PRACTICAL TO REMOVE THE 6' OF CLEAN FILL ABOVE THIS VEIN TO GET CONTAMINATION. SITE MAY STILL HAVE OLD TANKS PRESENT. SITE USED TO BE GAS TATION AND THERE WAS A RAIL YARD THERE.

5/05/91: BECAUSE SITE WILL BE USED FOR PARKING LOT AND THERE ARE NO IMMEDIATE NTERCEPTORS NO FURTHER ACTION IS REQUIRED AT THIS TIME.

BPPMTQY BIS - BUILDING - PERMITS ISSUED DATE: 03/02/99 >
END OF DATA

APPLIC. ADDRESS: 0290 EXCHANGE BLVD PERMIT NO.: _____
SBL NO.: 121 . 390 - 0001 - 008 . 000 / 0000

PMT#/SFX	APL DTE	ISS DTE	EST COST	STATUS/DATE
				0290 EXCHANGE BLVD
0911834	00/00/00	06/06/91	6200	PMT CMPLT PRE CONVERSION 93/10/18

PLUMBING - RUN 1-1/2" WATER SERVICE TO 1-1/2" BACKFLOW PREVENTION DEVICE TO SUPPLY (2) HOSE BIBS AT DOCK SIDE-FINALED OCTOBER 8, 1991, JOE CURCIO

0911812	00/00/00	06/05/91	2000	PMT CMPLT PRE CONVERSION 93/10/18

REMOVE (1) 3,000 GAL UNDERGROUND FUEL TANK

0911736	00/00/00	05/30/91	10000	PMT CMPLT PRE CONVERSION 93/10/18

CONSTRUCT 8' X 10' TICKET BOOTH

PF14-STAT LIST PF15-PMT DETL PF16-PMT EVTS PF17-PMT CONDS
PF18-PROP SUMM PF19-ADDR LIST PF20-CFO LIST PF21-PND/CANC

NYSDEC SPILL REPORT FORM

DEC REGION# 8 (Avon) SPILL NUMBER 9970155
SPILL NAME: CORN HILL LANDING DEC LEAD: CH
CALLER'S NAME: NOTIFIER'S NAME:
CALLER'S AGENCY: NOTIFIER'S AGENCY:
CALLER'S PHONE: EXT. NOTIFIER'S PHONE: EXT.

SPILL DATE: 06/15/1999 TIME: 12:00
CALL RECEIVED DATE: 06/15/1999 TIME: 13:15 RECEIVED BY CID #:

	Material Spilled	Mat. Class	Am't Spilled	Units	Am't Recovered
1)		Pet-Haz-Other-Unk.		Gal - Lbs	
2)		Pet-Haz-Other-Unk.		Gal - Lbs	
3)		Pet-Haz-Other-Unk.		Gal - Lbs	
4)		Pet-Haz-Other-Unk.		Gal - Lbs	

SPILL LOCATION

PLACE: CORN HILL LANDING
STREET: 260 EXCHANGE BOULEVARD
T/C/V: ROCHESTER CO: MONROE
CONTACT: JOE BIONDOLILLO
PHONE: (716) 428-6649 EXT.

POTENTIAL SPILLER

NAME: CITY OF ROCHESTER
STREET: CITY HALL, RM 300B
CITY: ROCHESTER
STATE: NY ZIP: 14616-
CONTACT: JOE BIONDOLILLO
PHONE: (716) 428-6649 EXT.

SPILL CAUSE

Human Error; Traffic Accident; Equipment Failure; Vandalism; Tank Test Failure*; Housekeeping; Deliberate; Abandoned Drums; Tank Failure; Tank Overfill; Other; (Unknown)

SPILL SOURCE

Gas Station; Private Dwelling; Non-Maj Facility; Passenger Vehicle; Vessel; Comm/Indust; Comm. Vehicle; Railroad Car; Non-Comm/Instit; Tank Truck; Major Facility; (Unknown)

RESOURCE AFFECTED

On Land; (Groundwater); Air; Sewer; Surface Water**

**WATERBODY:

SPILL REPORTED BY

(Responsible Party); Tank Tester; Local Agency; Affected Persons; DEC; Federal Gov't; Police Department; Citizen; Other; Fire Department; Health Dept.

CALLER REMARKS: WHILE DOING A PHASE 2 ENVIRONMENTAL INVESTIGATION ON CORN HILL LANDING SITE, TEST BORINGS WERE CONVERTED TO MONITORING WELLS. MONITORING WELL SAMPLES HAD ODOR, THERE WAS EVIDENCE OF A PETROLEUM SHEEN AND POSSIBLE TRACE AMOUNTS OF FREE PRODUCT FLOATING ON GROUNDWATER. SAM PATCH TOURS OPERATES BOAT TOURS AT

*PBS Number	Tank Number	Tank Size	Test Method	Leak Rate

PRIMARY CONTACT CALLED DATE: TIME: hrs. REACHED DATE: TIME: hrs.
SECONDARY CONT. CALLED DATE: TIME: hrs. FAXED BY CID#:

PIN #	T & A	Cost Center	ISR to Central Office
Cleanup Ceased	Meets St'ds NO	Last Inspection	Penalty NO
RP-CUI	ENF-INIT	INVES-COM	CAP
UST Trust Eligible NO	Site: A (B) C D E	Resp. Party 1 2 (3) 4 5 6	Reg Close Date
Created on 06/15/1999	Last Updated on 06/14/2001	Is Updated? NO	EDO / DATA INPUT [ ]

Data Printed: 03/11/2002

pill Number: 9970155 **Spill Name:** CORN HILL LANDING **Printed on:** 03/11/2002

CALLER'S REMARKS (continued)

HIS LOCATION. THERE IS A FORMER DEC SPILL - SPILL NO. 9102615 (WHICH IS LOSED) FOR THIS LOCATION. MCHD FAXED REPORT 06/15/99 AT 1315 HRS.

DEC REMARKS

6/16/99 BIONDOLILLO WILL SEND THE PORTION OF THE PHASE II OF THE SIX ACRE SITE THAT PERTAINS TO THE SPILL AREA. BECAUSE THEY WILL BE EXCAVATING FOR FOUNDATIONS FOR THE RESIDENTIAL/COMMERCIAL DEVELOPMENT, HE EXPECTS THAT THEY ILL DIG OUT THE CONTAMINATION.

7/15/99 TW, BF,PM, MZ (NYSDEC) MET WITH MARK GREGOR, ANNE SPAULDING AND JANE ORBES (CITY OF ROCHESTER). CITY REQUESTS A SEPARTE MEETING WITH NYSDEC AND EVELOPER REGARDING REMEDIAL SCHEDULE DURING THE REDEVELOPMENT OF THIS SITE.

09/22/99:CH,BF,PM MEET W/THE CITY OF ROCHESTER, MCHD, SEAR BROWN WHO IS THE ITY'S CONSULTANT AND THE SITE DEVELOPER. THE SITE IS TO BE DEVELOPED INTO ESIDENTIAL AND COMMERCIAL USE. THE ESTIMATED COST OF THE PROJECT IS $20 MILLION. SEAR BROWN PERFORMED THE PHASE 2 INVESTIGATION FOR THE SITE, WHICH EVEALED THE PRESENCE OF PETROLEUM CONTAMINATION AS WELL AS METALS AND SOME OLVENTS ABOVE DEC CLEANUP GUIDELINES. THE ENTIRE PHASE 2 REPORT HAS NOT BEEN SUBMITTED TO THE DEPT. YET. IT WILL BE PROVIDED IN IT'S ENTIRITY FOR DEPT REVIEW. DEVELOPER NEEDS TO BREAK GROUND BY DEC 15TH TO COMPLETE THE PROJECT ON IME.

10/14/99 MZ AND PM MET WITH MARK GREGOR AND JANES FORBES TO DISCUSS SITE. ILEER STATED THAT DEC IS CURRENTLY REVIEWING THE CITIES LATEST SUBMISSION. GREGOR STATED THAT SEAR BROWN IS DEVEOLPING A REMEDIAL ACTION WORK PLAN FOR THE SITE.

12/17/99:MEETING HELD WITH DEC, RG&E, AND CANALS TO DISCUSS POTENTIAL IMPACTS FROM CANAL CORP DROPPING RIVER LEVELS TO DO CANAL WALL REPAIRS. SOME OF THE EPAIRS WILL BE IN THE AREA OF THE CORN HILL LANDING PROJECT. IMPACTS FROM THE ROPPING OF THE RIVER SHOULD NOT EFFECT CONTAMINATION AT THE CORN HILL PROJECT.THERE IS THE POTENTIAL FOR ENCOUNTERING CONTAMINATED SOIL ON THE LAND SIDE OF THE RETAINING WALL. CANAL CORP. UNSUER IF THEY OR THE CITY WILL HANDLE CONTAMINATION ENCOUNTERD FROM RETENTION WALL IMPROVEMENT.

03/16/00 CH MEETS WITH THRUWAY/CANAL CORP, CITY OF ROCHESTER, PIKE COMPANY AND EP&S AT CORN HILL LANDING PROJECT SITE. WHEN PIKE COMPANY WAS EXCAVATING FOR A STORM SEWER CATCH BASIN ALONG THE CANAL WALL, A SHEEN APPEARED AND THEY ENCOUNTERED SOME DARK SOILS. A SAMPLE WAS COLLECTED BY EP&S AND RESULTS CAME BACK WITH HIGH LEVELS OF LEAD AND CHROMIUM. ANALYTICAL WAS STRAIGHT ANALYSIS, NOT TCLP. EXCAVATION WAS IN THE AREA OF TEST PIT 24 OF THE CITY OF ROCHESTER'S SITE INVESTIGATION. NO VOLATILES OR SEMI VOLATILES DETECTED. SAMPLE WAS TAKEN FROM SOME SLUDGE ON TOP OF GROUND. EXACT LOCATION WHERE SLUDGE WAS EXCAVATED FROM IS UNKNOWN. CH APPROVES REUSING SOIL ON SITE AS LONG AS COVER IS APPLIED OR OFF SITE REMOVAL TO APPROVED LANDFILL.

7/27/00 MZ AND TH MET WITH MARK GREGOR, ANNE SPAULDING, JANE FORBES AND JOE BIONDOLILLO (CITY OF ROCH) TO GO OVER STATUS OF SPILLS. RESULTS FROM LATEST TESTING TO BE SUBMITTED TO DEC. CITY NEED COMMENTS FROM DEC BY 10/01/00 IN ORDER FOR CITY TO PUT IN FOR FUNDING.

Spill Number: 9970155 **Spill Name:** CORN HILL LANDING **Printed on:** 03/11/2002

DEC REMARKS (Continued)

10/19/00 MZ AND TH MET WITH MARK GREGOR AND JOE BIONDOLLILO TO DISCUSS SITE. HE CITY IS WAITING FOR APPROVAL ON THE ADDENDUM FOR THE CORRECTIVE ACTION PLAN (SEE TODD CAFFOE IN HWR) WHICH ADDRESSES LEAD.

01/19/01 CH STOPS AT SITE TO CHECK ON REMOVAL OF LEAD CONTAMINATED SOIL. SEAR BROWN ON SITE WITH MARCOR. REMOVAL IS 80% COMPLETE. THEY HAVE ONE SMALL SPUR ON THE NORTH AND THEN IN THE EAST LANE OF THE STREET. THEY ARE USING A FIELD CREENING KIT FOR LEAD AND GETTING FIELD RESULTS VERY CLOSE TO LAB RESULTS.

2/22/01 MZ MET WITH MARK GREGOR, JANE FORBES AND JOE BIONDOLLILO (CITY OF OCH) TO DISCUSS STATUS OF SITE. CITY STATES THAT THE LEAD REMOVAL PROJECT IS OMPLETE WITH THE EXCEPTION OF A SMALL AMOUNT OF HAZ SOIL THAT WILL BE REMOVED WITHIN THE NEXT WEEK OR SO. THERE WAS SOME LEAD, ABOVE DEPT STDS., LEFT IN PLACE ALONG THE STREET. THE PROPERTY IS STILL OWNED BY CITY AT THIS TIME. ALE TO MARK IV IS ONGOING. MARK IV WILL BE RESPONSIBLE FOR PETROLEUM CLEANUP ON SITE ONCE SALE GOES THROUGH. CITY TO NOTIFY DEC WHEN SALE IS FINAL.

06/12/01: CH GIVES THE LEAD ABATEMENT REPORT TO TODD CAFFOE OF DER FOR HIS EVIEW.

NYSDEC SPILL REPORT FORM

DEC REGION# 8 (Avon) SPILL NUMBER 0011244
SPILL NAME: CORN HILL LANDING DEC LEAD: CH
CALLER'S NAME: NOTIFIER'S NAME:
CALLER'S AGENCY: NOTIFIER'S AGENCY:
CALLER'S PHONE: EXT. NOTIFIER'S PHONE: EXT.

SPILL DATE: 01/15/2001 TIME: 15:00
CALL RECEIVED DATE: 01/15/2001 TIME: 17:06 RECEIVED BY CID #: 266

	Material Spilled	Mat. Class	Am't Spilled	Units	Am't Recovered
1)	HYDRAULIC OIL	(Pet)-Haz-Other-Unk.	20	(Gal) Lbs	20
2)		Pet-Haz-Other-Unk.		Gal - Lbs	
3)		Pet-Haz-Other-Unk.		Gal - Lbs	
4)		Pet-Haz-Other-Unk.		Gal - Lbs	

SPILL LOCATION

PLACE: CORN HILL LANDING
STREET: EXCHANGE BOULEVARD
T/C/V: ROCHESTER CO: MONROE
CONTACT:
PHONE: EXT.

POTENTIAL SPILLER

NAME: TONAWANDA TANK
STREET:
CITY:
STATE: ZIP:
CONTACT: CARL ANDREWS
PHONE: (800) 888-8265 EXT.

SPILL CAUSE

Human Error	Tank Test Failure*	Tank Failure
Traffic Accident	Housekeeping	Tank Overfill
(Equipment Failure)	Deliberate	Other
Vandalism	Abandoned Drums	Unknown

SPILL SOURCE

Gas Station	Private Dwelling	Non-Maj Facility
Passenger Vehicle	Vessel	Comm/Indust
(Comm. Vehicle)	Railroad Car	Non-Comm/Instit
Tank Truck	Major Facility	Unknown

RESOURCE AFFECTED

(On Land)	Groundwater	Air
In Sewer	Surface Water**	

**WATERBODY:

SPILL REPORTED BY

Responsible Party	Tank Tester	Local Agency
Affected Persons	DEC	Federal Gov't
Police Department	Citizen	(Other)
Fire Department	Health Dept.	

CALLER REMARKS: THIS SITE WAS BEING PREPARED FOR REMEDIATION. SPILLER WAS DELIVERING ROLL-OFF CONTAINERS WHEN A HYDRAULIC LINE BROKE ON ONE OF THE TRUCKS, SPILLING HYDRAULIC OIL TO THE GRAVEL. CLEANED UP BY MARCOR ENVIRONMENTAL. SPILLER REPAIRED LINE. FAXED TO MCHD ON 01/17/2001 AT 1100 HRS.

*PBS Number	Tank Number	Tank Size	Test Method	Leak Rate

PRIMARY CONTACT CALLED DATE: TIME: hrs. REACHED DATE: TIME: hrs.
SECONDARY CONT. CALLED DATE: TIME: hrs. FAXED BY CID#:

PIN #	T & A	Cost Center	ISR to Central Office	
Cleanup Ceased 01/22/2001	Meets St'ds NO	Last Inspection	Penalty NO	
RP-CUI	ENF-INIT	INVES-COM	CAP	
UST Trust Eligible NO	Site: A B C (D) E	Resp. Party 1 2 (3) 4 5 6	Reg Close Date 01/22/2001	
Created on 01/15/2001	Last Updated on 01/22/2001	Is Updated? NO	EDO	DATA INPUT [ ]

Date Printed: 03/11/2002 PrintFor (i) 3/30/1999

Spill Number: 0011244 **Spill Name:** CORN HILL LANDING **Printed on:** 03/11/2002

DEC REMARKS

01/22/01: SPILL CLEANED UP BY MARCOR, NO FURTHER ACTION NECESSARY.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation

Inactive Hazardous Waste Disposal Report

April 1, 2001

Site Name: Davidson's Collision — **Site Code:** 828091
Class Code: 2a — Region: 8 — County: Monroe — EPA Id: NYD982532111
Address: 399 Gregory Street — City: Rochester — Zip: 14620
Latitude: 43 8' 34" — Longitude: 77 36' 4"
Site Type: Structure — Estimated Size: 1 Acres

Site Owner / Operator Information:
Current Owner(s) Name: Southwedge Collision, Inc.
Current Owner(s) Address: 399 Gregory St. — Rochester — NY 14620
Owner(s) during disposal: Davidson's Collision
Operator(s) during disposal: Davidson's Collision
Stated Operator(s) Address: 399 Gregory Street — Rochester — NY 14620
Hazardous Waste Disposal Period: From unknown To unknown

Site Description:
Davidson's Collision is an autobody repair shop that is still operating. An environmental audit report that was submitted to the DEC revealed evidence of waste paint and waste thinner disposal on site. Soils in the disposal area were stained with paints. Sample analysis revealed contamination by toluene at 60,900 ppm, xylene at 8,730 ppm and ethylbenzene at 1,750 ppm. The former site owner performed a limited Interim Remedial Measure (IRM) which consisted of a soil removal from the disposal area. Waste soils were drummed and left on-site. The DEC is currently negotiating with the PRP to get the drums removed. Additional investigation is required to determine the effectiveness of the IRM and to determine whether the groundwater has been impacted. A Preliminary Site Assessment (PSA) was conducted in 1994 to determine if groundwater was impacted. The PSA report was completed in April of 1995. It concluded that the groundwater had been contaminated by toluene, ethylbenzene, benzene and total xylenes at levels exceeding Part 703 groundwater standards. The City of Rochester's water supply serves all of the nearby residences and businesses. Drums of contaminated soil were removed from the property in July of 1997 using State superfund money. An investigation is planned in 2001 in order to better evaluate the extent of the threat posed by this site.

Confirmed Hazardous Waste Disposal:
Waste paint thinners (F005 Waste)

Quantity:
unknown

Analytical Data Available for: Soil
Applicable Standards Exceeded in:
Geotechnical Information:
Soil/Rock Type: — Depth to Groundwater:

Legal Action: Type: — Status:
Remedial Action: Complete — Nature of action: Soil removal.

Assessment of Environmental Problems:
Contamination of both groundwater and soil at this site has been confirmed and documented.

Assessment of Health Problems:
Exposures via drinking water are not expected because this residential neighborhood is served by public water. The property owner performed an interim remedial measure which removed the grossly contaminated soils. The Preliminary Site Assessment documented that subsurface soils and groundwater are contaminated with volatile organic compounds. The area of contaminated soil is partially fenced such that it is not easily accessible to the public. The additional investigation will determine the extent of groundwater contamination and whether or not any exposure pathways exist.

New York Department of Environmental Conservation
Division of Hazardous Waste Remediation

Hazardous Substance Waste Disposal Site - Description

Site Name	RG&E, Front Street	Registry	U	Site Number	HS8048
ddress	Front St	Reg. Site ID	U	HRS Score	U
	Rochester	Site Code	2A	HRS Date	U
County	Monroe	RCRA	U	Acres	0.00
Region	8				
Owner	P	EPA ID	None		
Owner Name	RG&E	Latitude	U		
Address	89 East Ave	Longitude	U		
	Rochester, NY 14649	Quadrangle	Rochester East		
Telephone	(716)724-8428	Is Site Active?			
		Years of Operation	1848 to 1873		
Operator	P	Completed Investigation?	U		
Oper. Name	Same				
Address	U				
Telephone	U				

Hazardous Substances Disposed

VOCs	Y	Pesticides	N
Semi-VOCs	Y	Metals	N
PCBs	N	Asbestos	N

Samples Collected

Groundwater, Subsurface Soil

Does a threat to the Environment or the Public Health exist? E/P

Site Impact Data - Affected Media

Contamination of...			
...Surface Water?	U	Active Drinking Water Supply?	N
...Groundwater?	U	Hazardous Substance Exposed?	N
...Drinking Water?	U	Controlled Site Access?	Y
Surface Water Class	U	Ambient Air Contamination?	U
Groundwater Class	U	Threat of Direct Contact?	N
		Documented Fish or Wildlife Mortality?	U
		Impact on special status fish or wildlife resource?	U

Describe the threat posed by disposed hazardous substance.

The site was notified under CERCLA in 1989. Coal tar is at the top of rock. On site disposal of coking wastes occurred during operation. Potential for direct contact if any uncontrolled excavations occur. The Monroe County Dept. of Pure Waters installed a tunnel in bedrock beneath the site. No contamination was found in the groundwater in the bedrock aquifer.

Describe the site.

This site is a former coal gas manufacturing plant site, which was used as a maintenance garage by RG&E until 1994. It is likely to be demolished in 1995. Coking processes took place onsite. The byproducts were sold, and the remaining waste were disposed of on-site. The site is paved and the waste materials are buried.

Hazardous Substance Disposed

Coal tar wastes were disposed on site.

Selected Analytical Information

Air	
	Groundwater
Surface Water	BTEX, PAH's
	Sediment
Surface Soil	
	Subsurface Soil
Waste	BTEX, PAH's
	Leachate
EP Toxicity	
	TCLP

Site Impact Data

Surface Water	***Fish or Wildlife Mortality***
Groundwater	***Special Status Fish or Wildlife Resource***
Drinking Water	***Building***

Regulatory Agencies Involved

NYSDEC

Preparer

Julie Welch(pb)
Env. Engineering Tech
June 13, 1994

Nominated By

NYSDEC SPILL REPORT FORM

DEC REGION# 8 (Avon) SPILL NUMBER 9613032

SPILL NAME: REESE RESIDENCE DEC LEAD: TW

CALLER'S NAME: NOTIFIER'S NAME:

CALLER'S AGENCY: NOTIFIER'S AGENCY:

CALLER'S PHONE: EXT. NOTIFIER'S PHONE: EXT.

SPILL DATE: 02/03/1997 TIME: 16:41

CALL RECEIVED DATE: 02/03/1997 TIME: 17:39 RECEIVED BY CID #: 312

	Material Spilled	Mat. Class	Am't Spilled	Units	Am't Recovered
1)	#2 FUEL OIL	(Pet)-Haz-Other-Unk.	100	(Gal) - Lbs	0
2)		Pet-Haz-Other-Unk.		Gal - Lbs	
3)		Pet-Haz-Other-Unk.		Gal - Lbs	
4)		Pet-Haz-Other-Unk.		Gal - Lbs	

SPILL LOCATION

PLACE: REESE RESIDENCE

STREET: 210 ADAMS STREET

T/C/V: ROCHESTER CO: MONROE

CONTACT: M S REESE

PHONE: (716) 663-4957 EXT.

POTENTIAL SPILLER

NAME: REESE RESIDENCE

STREET: 210 ADAMS STREET

CITY: ROCHESTER

STATE: NY ZIP: 14610-

CONTACT: MS. EVELYN REESE

PHONE: (716) 663-4957 EXT.

SPILL CAUSE

Human Error	Tank Test Failure*	(Tank Failure)
Traffic Accident	Housekeeping	Tank Overfill
Equipment Failure	Deliberate	Other
Vandalism	Abandoned Drums	Unknown

SPILL SOURCE

Gas Station	(Private Dwelling)	Non-Maj Facility
Passenger Vehicle	Vessel	Comm/Indust
Comm. Vehicle	Railroad Car	Non-Comm/Instit
Tank Truck	Major Facility	Unknown

RESOURCE AFFECTED

On Land	Groundwater	Air
(In Sewer)	Surface Water**	

**WATERBODY:

SPILL REPORTED BY

Responsible Party	Tank Tester	Local Agency
Affected Persons	DEC	Federal Gov't
Police Department	Citizen	Other
Fire Department	(Health Dept.)	

CALLER REMARKS: HOME HEATING OIL TANK RUSTED OUT LOSING OIL TO CELLAR - ROCHESTER FD FLUSHED THE OIL TO THE SANITARY SEWER NOTIFYING THE SEWER DISTRICT

*PBS Number	Tank Number	Tank Size	Test Method	Leak Rate

PRIMARY CONTACT CALLED DATE: TIME: hrs. REACHED DATE: TIME: hrs.

SECONDARY CONT. CALLED DATE: TIME: hrs. FAXED BY CID#:

PIN #	T & A	Cost Center	SR to Central Office
Cleanup Ceased	Meets St'ds YES	Last Inspection	Penalty NO
RP-CUI	ENF-INIT	INVES-COM	CAP
UST Trust Eligible NO	Site: A B (C) D E	Resp. Party 1 2 (3) 4 5 6	Reg Close Date

Created on 02/04/1997 Last Updated on 02/10/1997 Is Updated? NO EDO DATA INPUT [ ]

Date Printed: 03/22/1999

Spill Number: 9613032 **Spill Name:** REESE RESIDENCE **Printed on:** 03/22/19

DEC REMARKS

02/04/97 WALSH, MILLER ON SITE. SPEEDY DRY HAS BEEN APPLIED TO AREA ON THE FLOOR AROUND THE TANK IN THE BASEMENT. FOUR DRUMS HAVE BEEN PLACED ON THE SIDE OF THE HOUSE, CONTAINING THE PRODUCT PUMPED FROM THE TANK. THE DRUM IS BEING USED TO SUPPLY FUEL FOR HEAT.

NYSDEC SPILL REPORT FORM

DEC REGION# 8 (Avon) SPILL NUMBER 0070040
SPILL NAME: MONROE COUNTY SHERIFF DEC LEAD: PM
CALLER'S NAME: NOTIFIER'S NAME:
CALLER'S AGENCY: NOTIFIER'S AGENCY:
CALLER'S PHONE: EXT. NOTIFIER'S PHONE: EXT.

SPILL DATE: 03/31/1999 TIME: 12:00
CALL RECEIVED DATE: 04/19/2000 TIME: 11:09 RECEIVED BY CID #:

	Material Spilled	Mat. Class	Am't Spilled	Units	Am't Recovered
1)	GASOLINE	(Pet)-Haz-Other-Unk.	Unknown	(Gal) - Lbs	Unknown
2)		Pet-Haz-Other-Unk.		Gal - Lbs	
3)		Pet-Haz-Other-Unk.		Gal - Lbs	
4)		Pet-Haz-Other-Unk.		Gal - Lbs	

SPILL LOCATION

PLACE: MONROE COUNTY SHERIFF
STREET: 180-182 EXCHANGE STREET
T/C/V: ROCHESTER CO: MONROE
CONTACT: CALLER
PHONE: ( ) - EXT.

POTENTIAL SPILLER

NAME: MONROE COUNTY
STREET: 39 WEST MAIN STREET
CITY: ROCHESTER
STATE: NY ZIP: 14614-
CONTACT: REINHARD GFELLMEIER
PHONE: (716) 760-7600 EXT.

SPILL CAUSE

Human Error	Tank Test Failure*	(Tank Failure)
Traffic Accident	Housekeeping	Tank Overfill
Equipment Failure	Deliberate	Other
Vandalism	Abandoned Drums	Unknown

SPILL SOURCE

Gas Station	Private Dwelling	Non-Maj Facility
Passenger Vehicle	Vessel	Comm/Indust
Comm. Vehicle	Railroad Car	(Non-Comm/Instit)
Tank Truck	Major Facility	Unknown

RESOURCE AFFECTED

On Land	(Groundwater)	Air
In Sewer	Surface Water**	

**WATERBODY:

SPILL REPORTED BY

Responsible Party	Tank Tester	(Local Agency)
Affected Persons	DEC	Federal Gov't
Police Department	Citizen	Other
Fire Department	Health Dept.	

CALLER REMARKS: CALLER REPORTS THAT A PHASE 2 REPORT PREPARED BY SEAR BROWN WAS SENT TO THE DEC IN MARCH 1999 OUTLINING CONTAMINATION FOUND AT THE SITE. 4 MONITORING WELLS WERE INSTALLED AND 11 GEOPROBE POINTS WERE ALSO INSTALLED TO DEFINE EXTENT OF CONTAMINATION. LOCATION IS AT MONROE COUNTY SHERIFFS QUANSETT HUT. CITY HAS

*PBS Number	Tank Number	Tank Size	Test Method	Leak Rate

PRIMARY CONTACT CALLED DATE: TIME: hrs. REACHED DATE: TIME: hrs.
SECONDARY CONT. CALLED DATE: TIME: hrs. FAXED BY CID#:

PIN #	T & A	Cost Center	ISR to Central Office
Cleanup Ceased	Meets St'ds NO	Last Inspection	Penalty NO
RP-CUI	ENF-INIT	INVES-COM	CAP
UST Trust Eligible YES	Site: A (B) C D E	Resp. Party 1 2 (3) 4 5 6	Reg Close Date

Created on 04/19/2000 Last Updated on 02/23/2001 Is Updated? NO EDO DATA INPUT [ ]

Spill Number: 0070040 **Spill Name:** MONROE COUNTY SHERIFF **Printed on:** 03/11/2002

CALLER'S REMARKS (continued)

SINCE TAKEN OVER OWNERSHIP OF PROPERTY FROM COUNTY AND WANTS TO CLEAN UP THE PROPERTY FOR THE DEVELOPMENT OF THE TRAIL. RECENT SAMPLING INDICATES GASOLINE CONTAMINATION IN THE SUBSURFACE. CITY OF ROCHESTER TO FORWARD REPORT. FAXED TO MCHD ON 04/27/2000 AT 1123 HRS.

DEC REMARKS

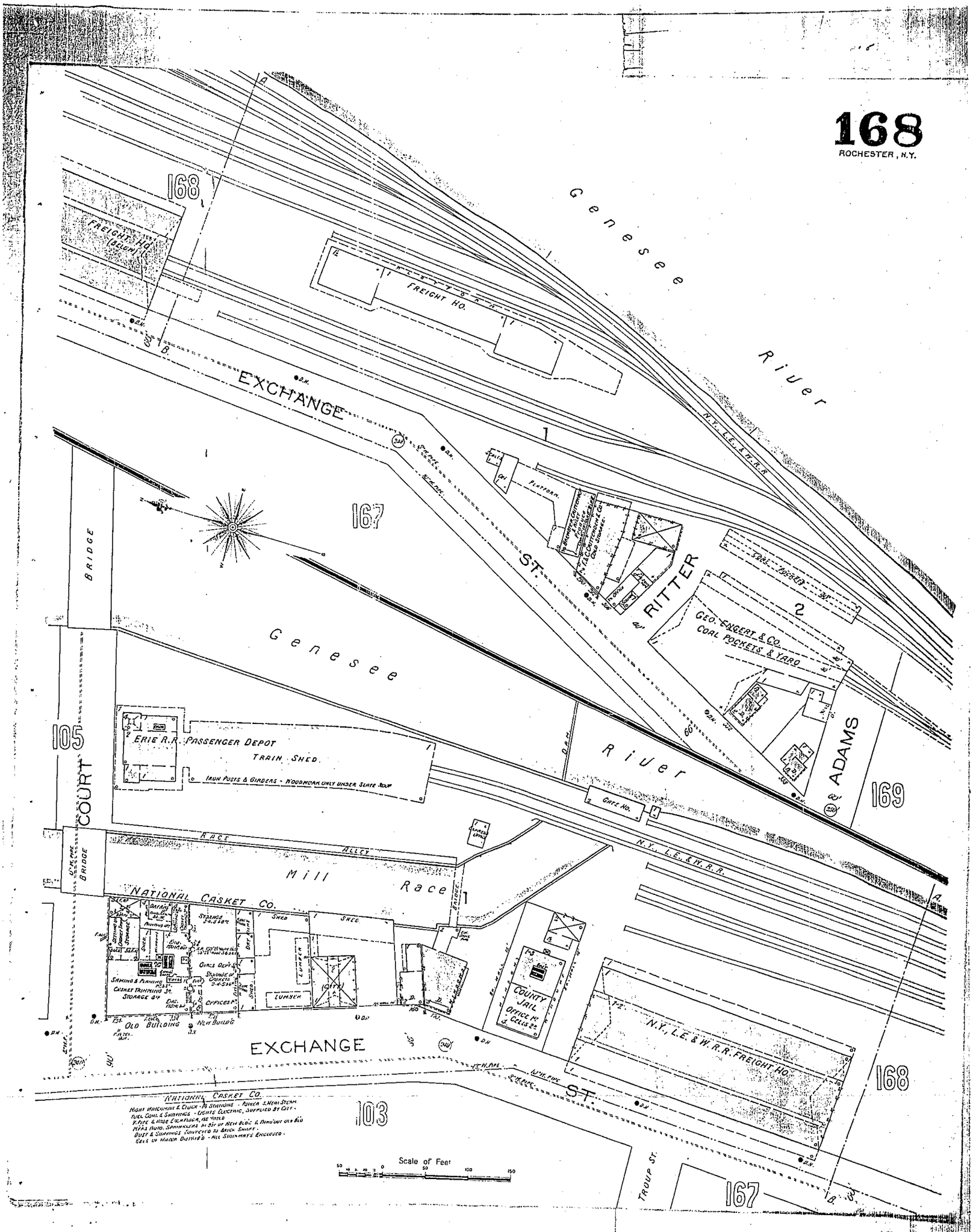
05/04/2000: PM ON SITE WITH MIKE STORONSKY & KEVIN IGNASIAK (SEAR BROWN) AND JOE BIONDOLLILO (CITY OF ROCHESTER). DISCUSSED WORK TO BE DONE TO REMOVE TANKS LOCTED NEAR CHILLER LINE THAT COOLS PUBLIC SAFETY AND OTHER BUILDINGS. TANKS ON SITE WERE FILLED IN PLACE PREVIOUSLY. SOIL AND GROUND WATER ON SITE SHOW ELEVATED LEVELS OF BTEX COMPOUNDS. CITY PLANS TO PROCEED QUICKLY WITH CLEANUP FOLLOWING RAZING OF QUANSETT HUT.

07/21/2000: TH ON SITE WITH APRIL (SEAR BROWN) AND PETE SPAGNOLA (MARCOR). MARCOR HAS EXCAVATED AND DISPOSED OF THE MAJORITY OF CONTAMINATED SOILS. EXCAVATION WORK LIMITED BY THE CHILLER LINE THAT RUNS THROUGH THE AREA. FURTHER INVESTIGATION (TEST PIT) NEEDED TO DETERMINE LOCATION OF SUSPECTED UST LOCATED JUST NORTH OF CHILLER LINE.

10/19/00 MZ AND TH MET WITH MARK GREGOR AND JOE BIONDOLLILO TO DISCUSS SITE. THE CITY IS PREPARING THE CLOSURE REPORT WHICH WILL PROPOSE INACTIVATION WITH CONTINUOUS GROUNDWATER MONITORING.

2/22/01 MZ MET WITH MARK GREGOR AND JOE BIONDOLILLO (CITY OF ROCH) TO DISCUSS STATUS OF SITE. CITY IS WAITING FOR FINAL CLOSURE REPORT FROM CONSULTANT. REPORT SHOULD BE SUBMITTED TO DEC IN A COUPLE WEEKS. LONG TERM GROUNDWATER MONITORING IS PLANNED FOR THIS SITE.

6



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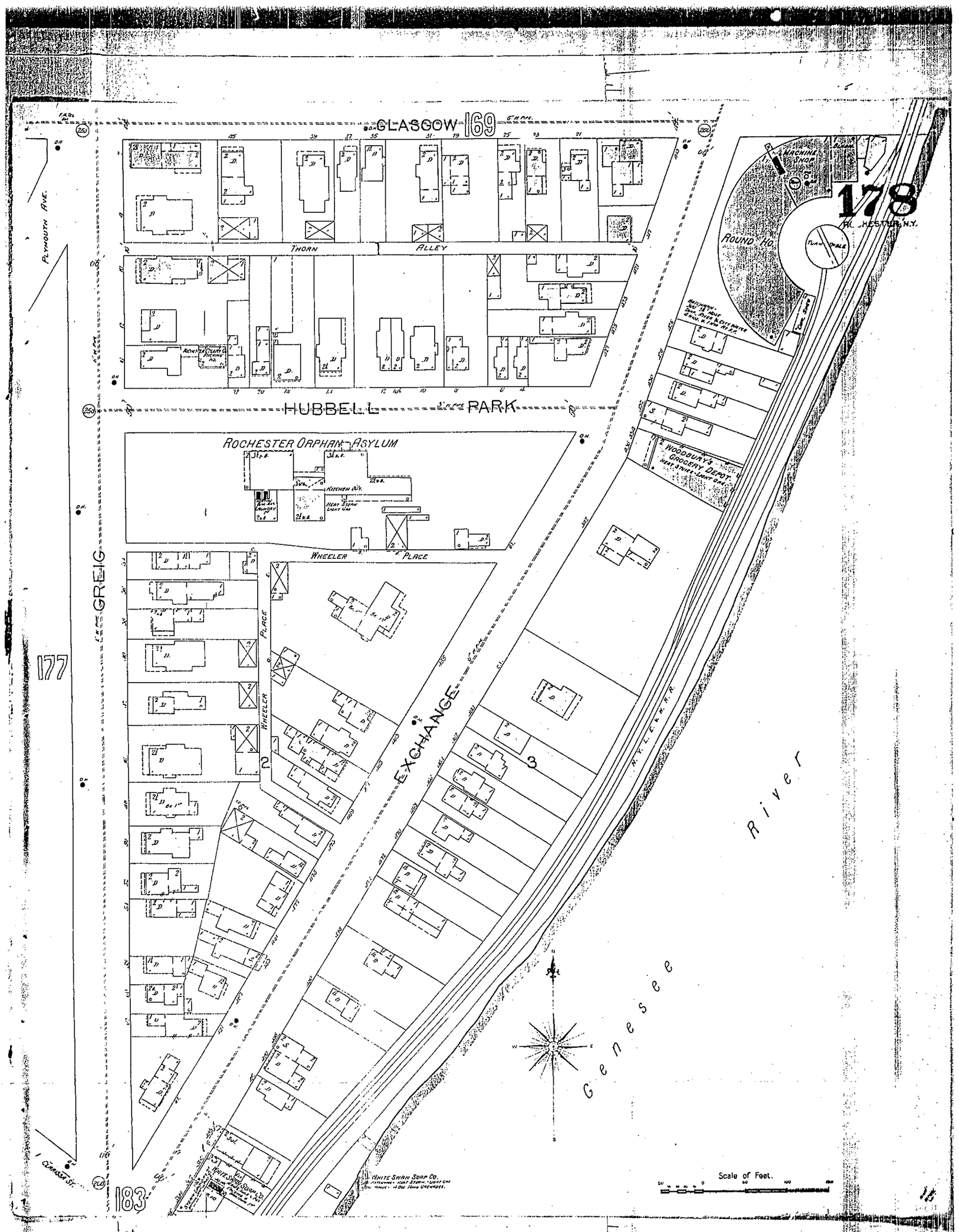
1892



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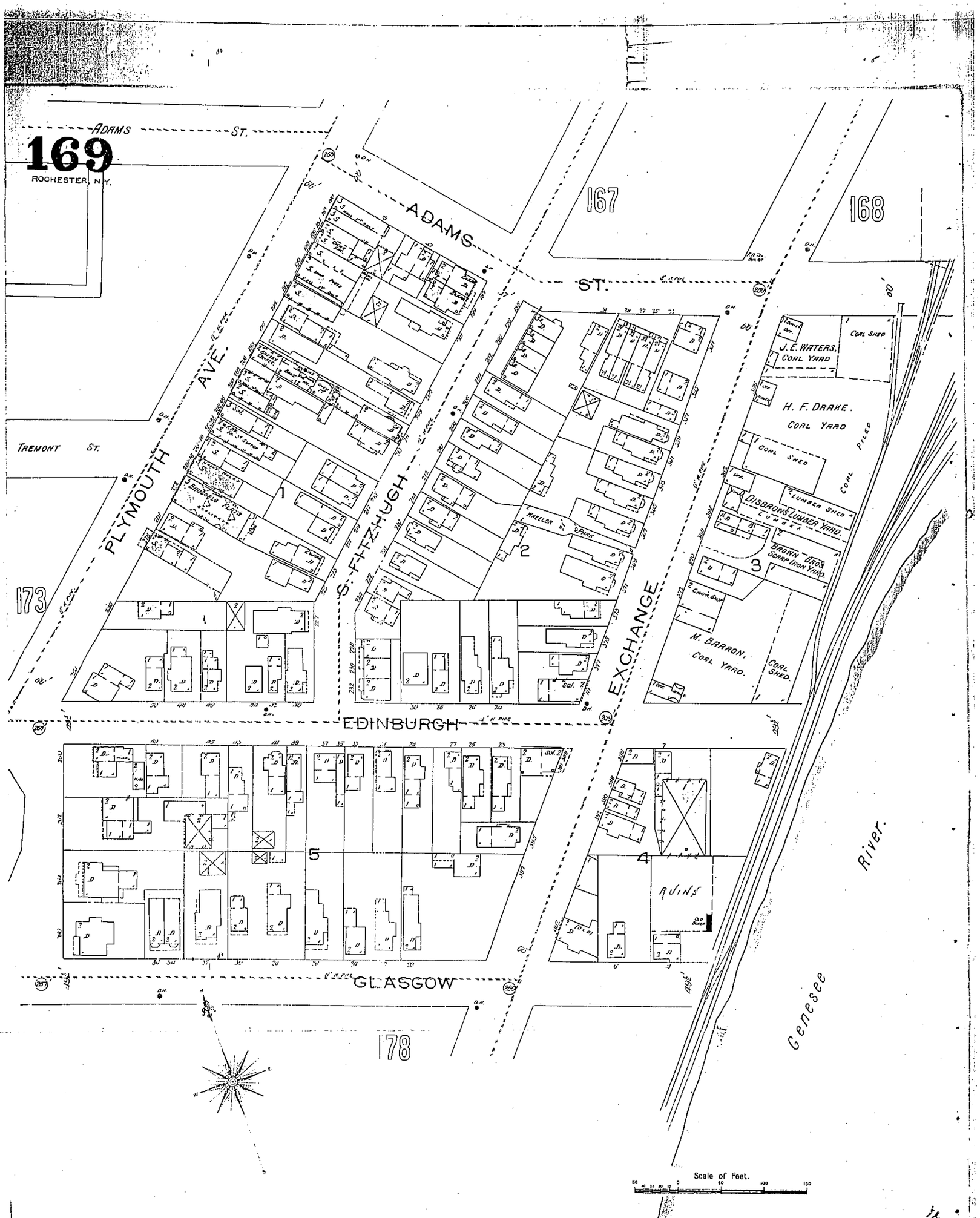

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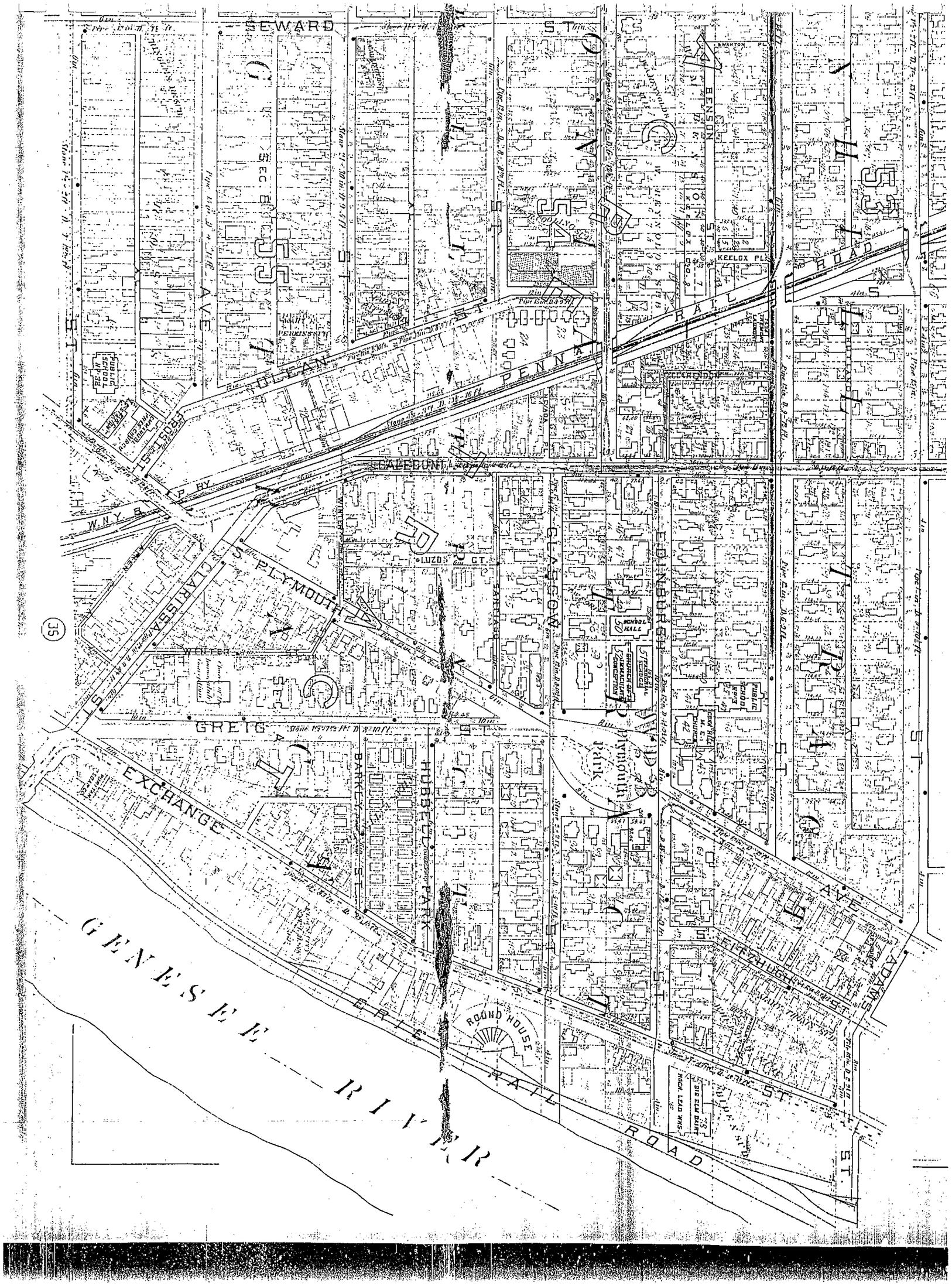

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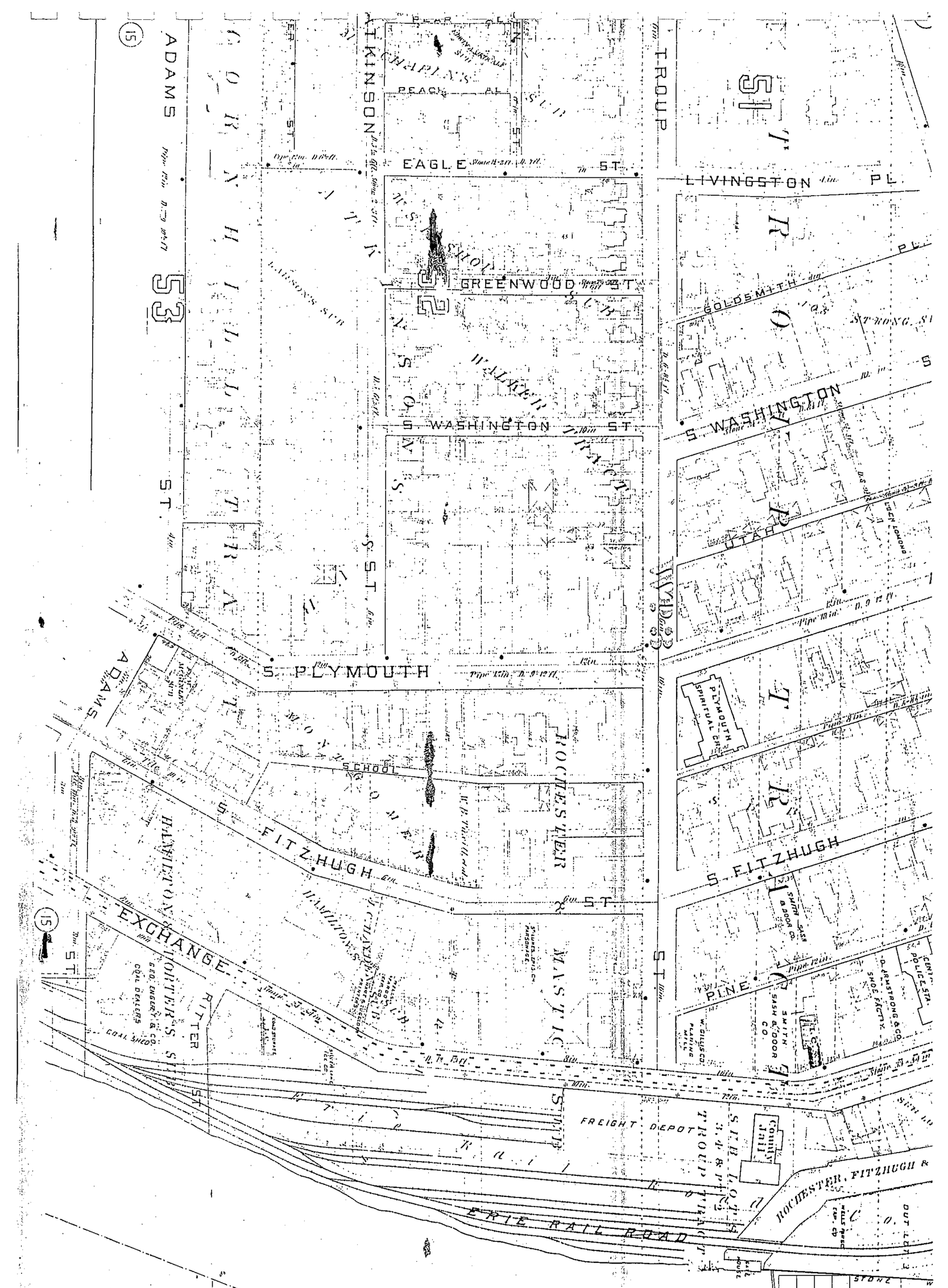
HOPKINS

1910



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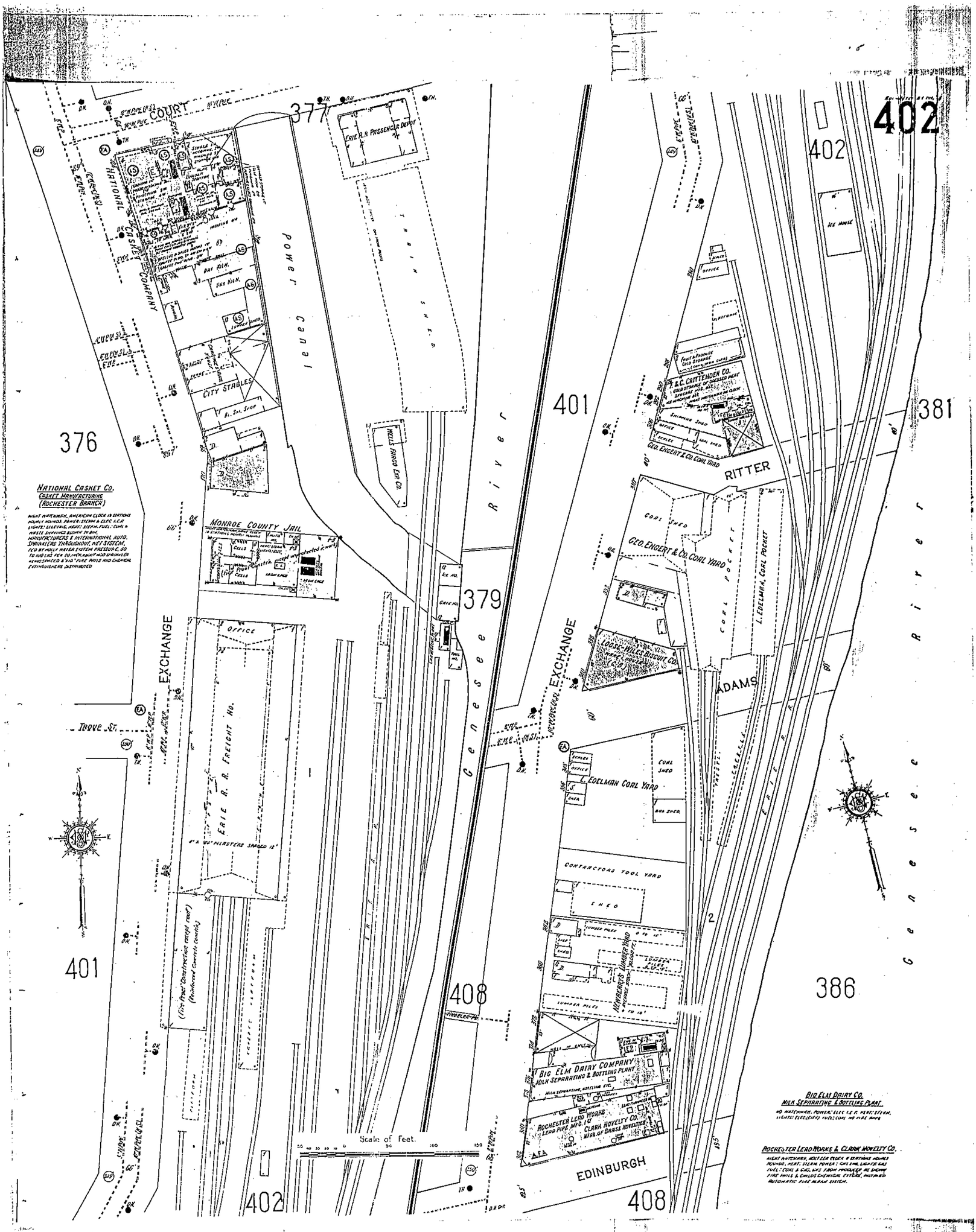

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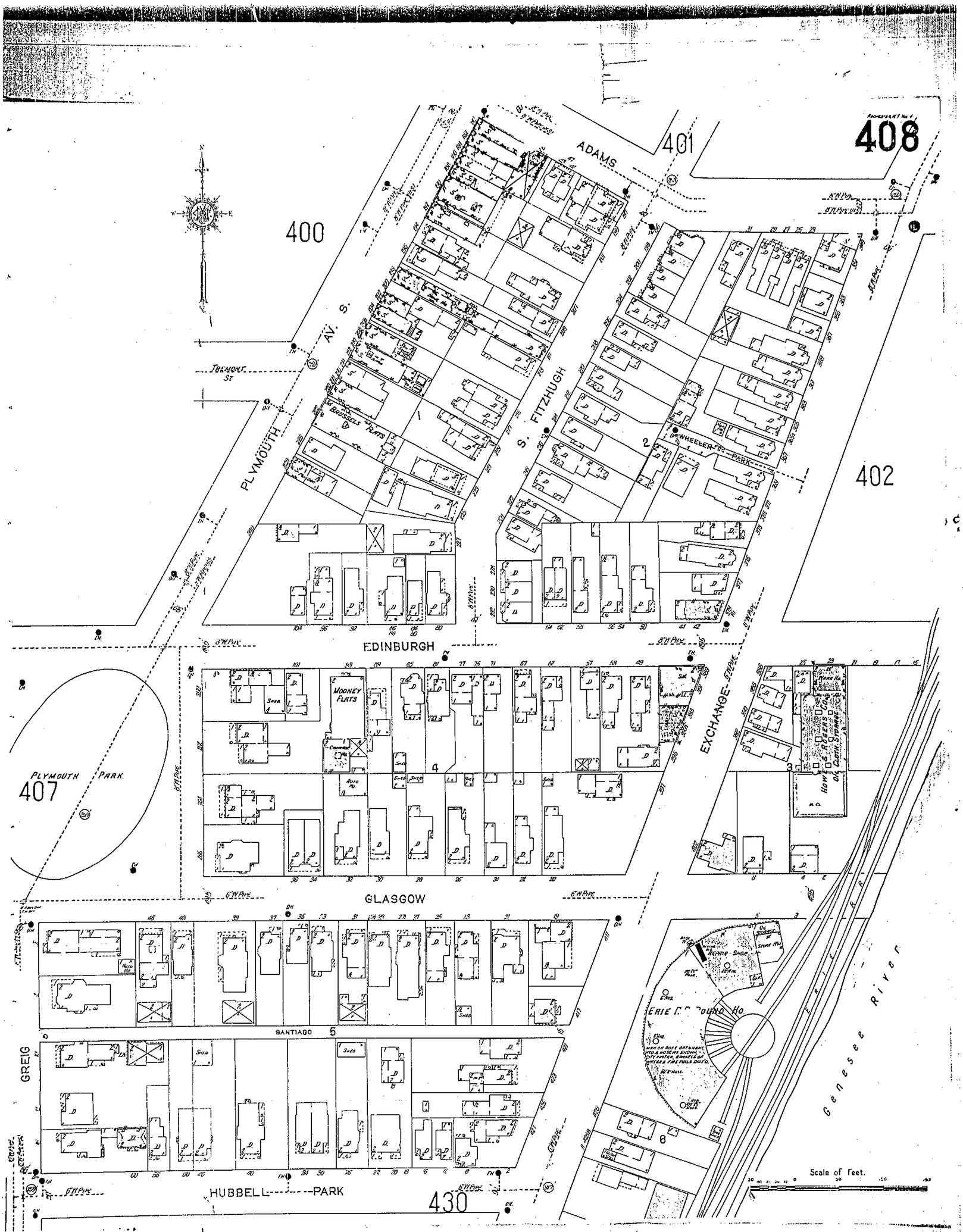
SANBORN

1912



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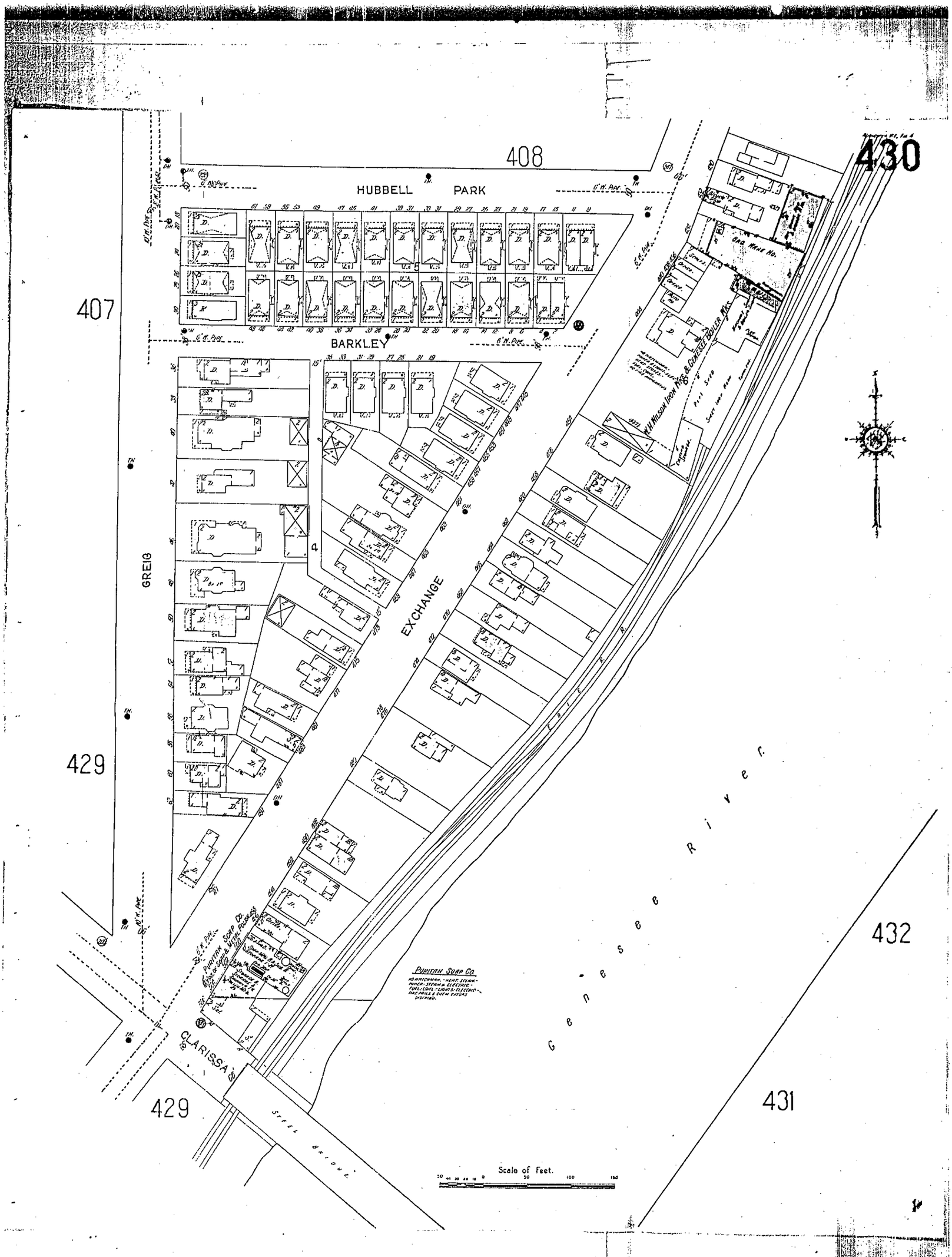

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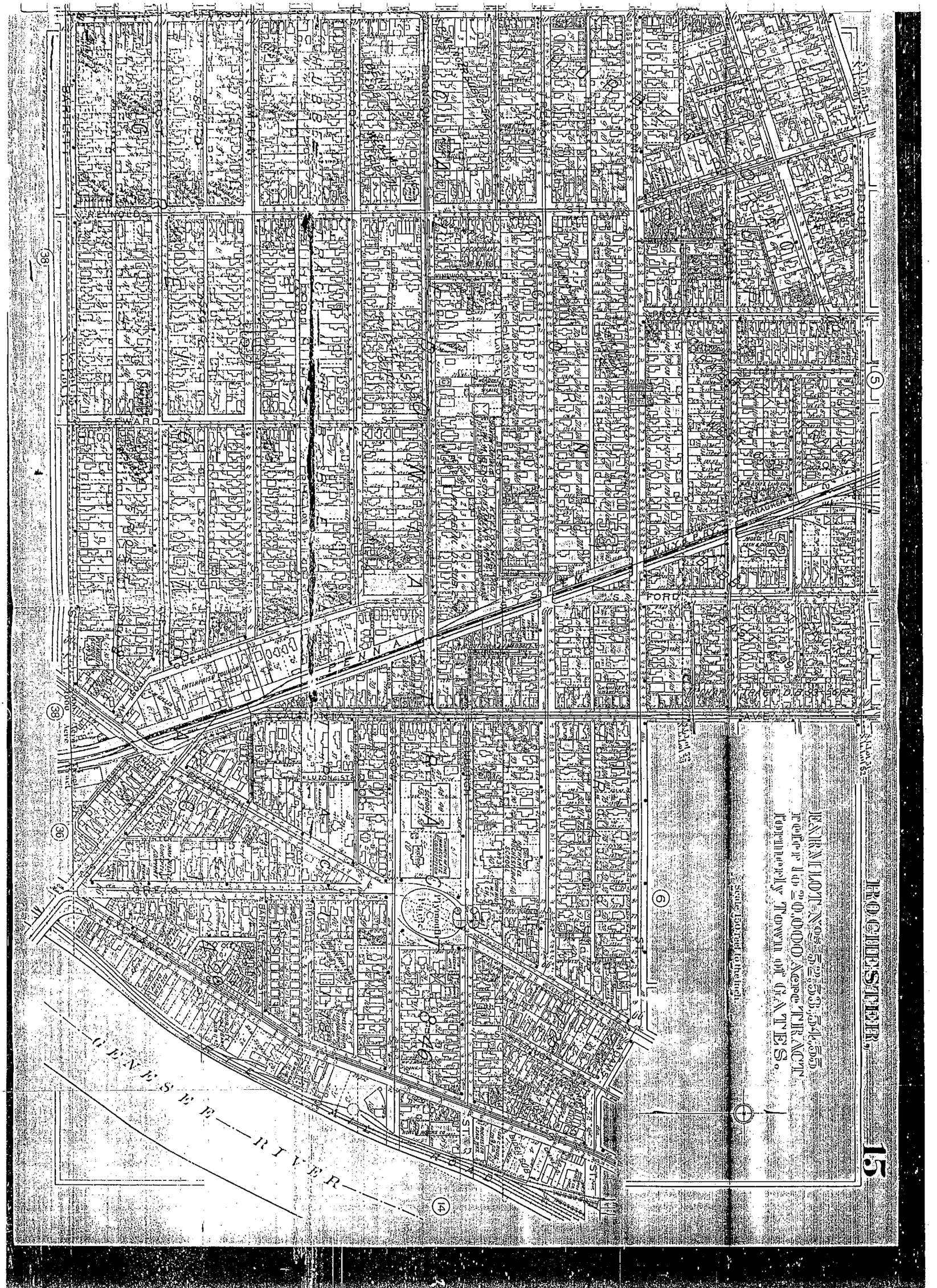

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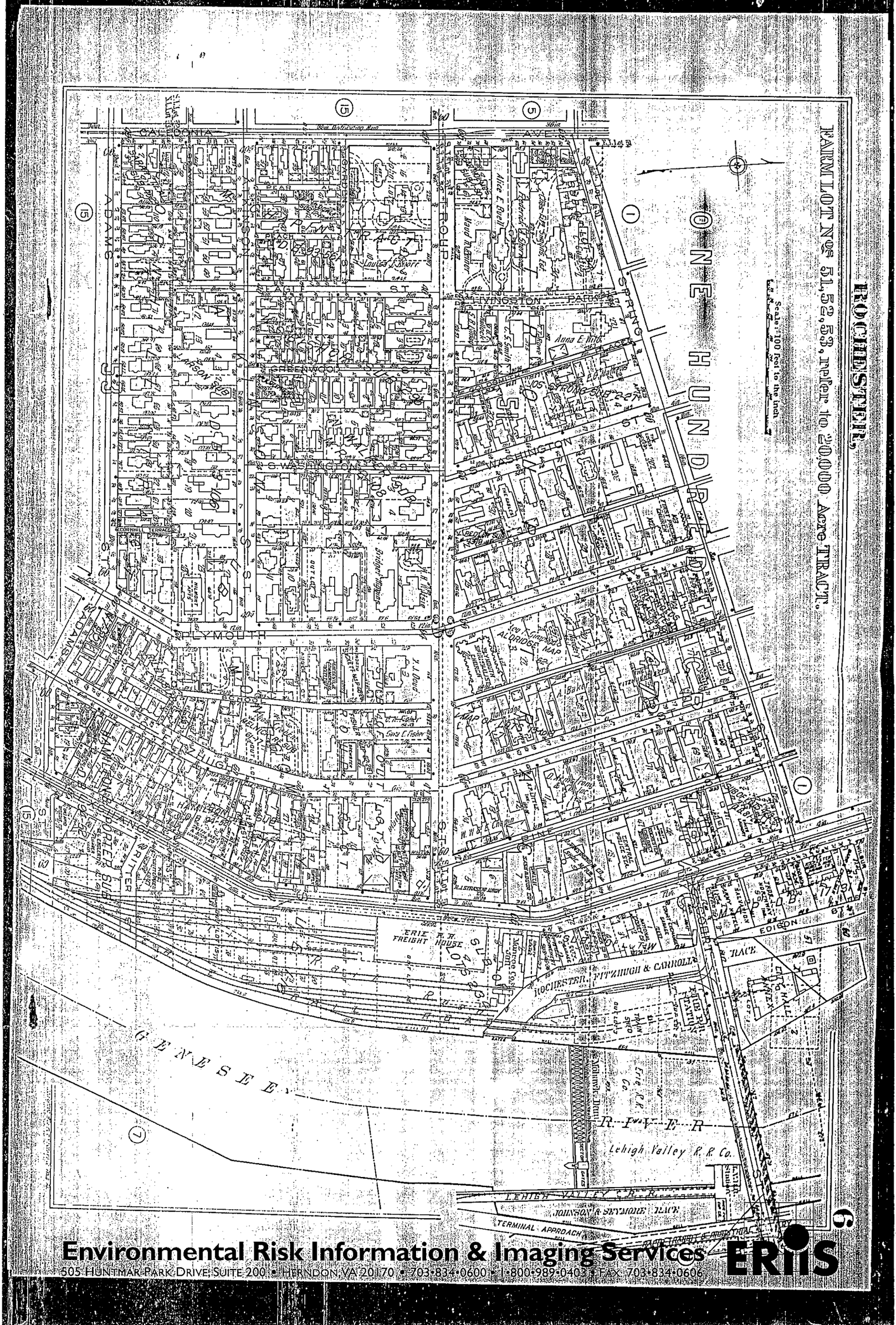
HOPKINS

1926



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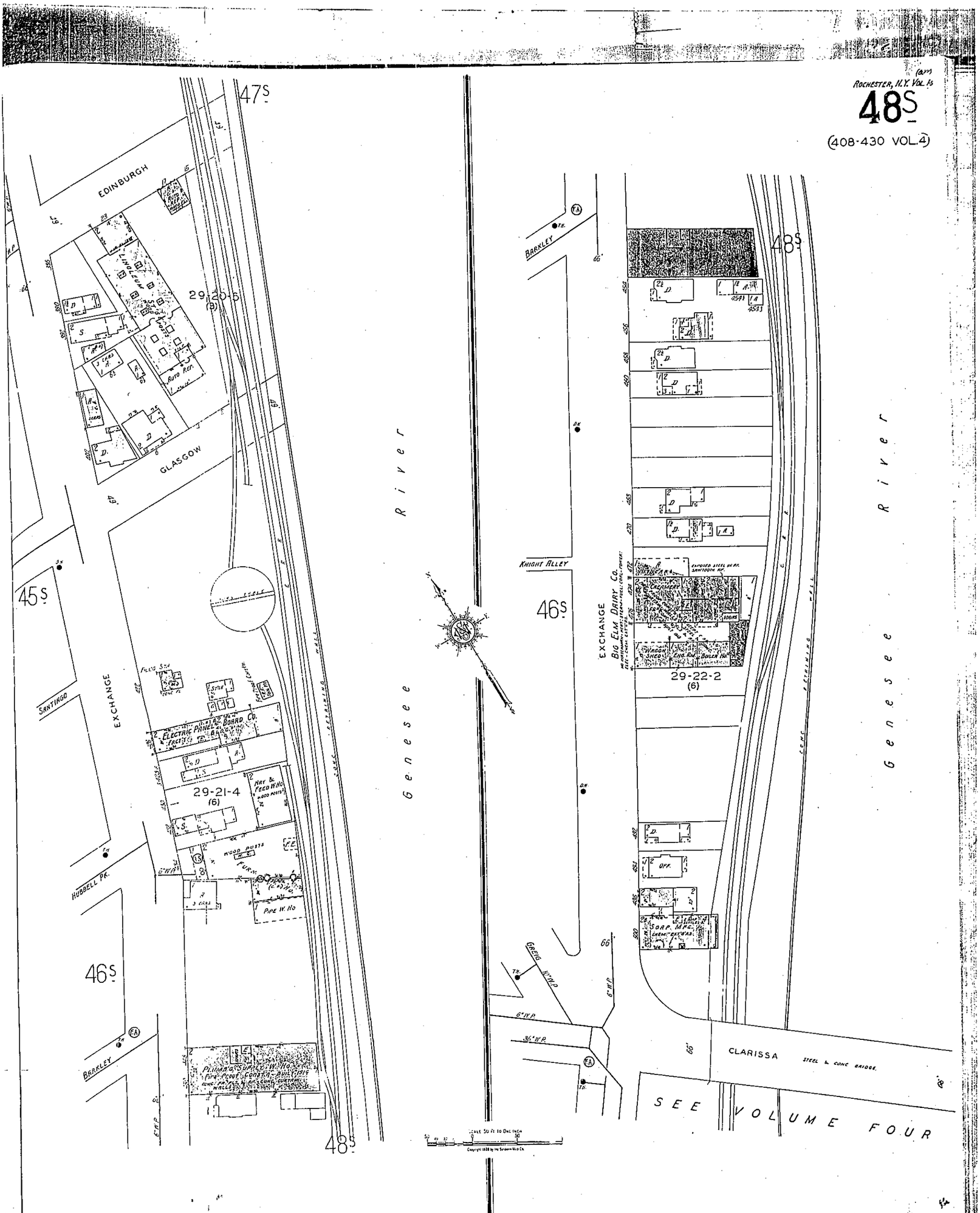

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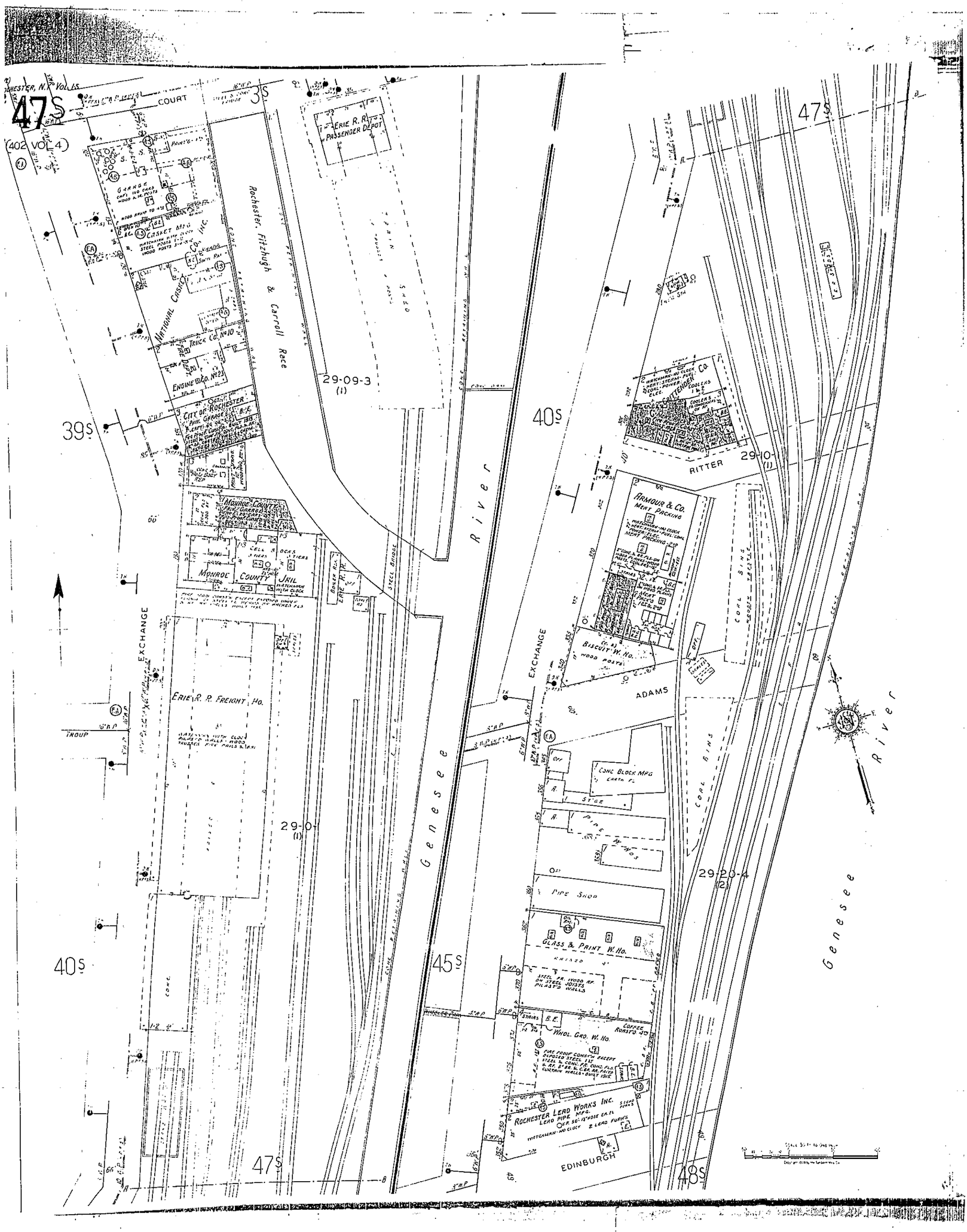
1938



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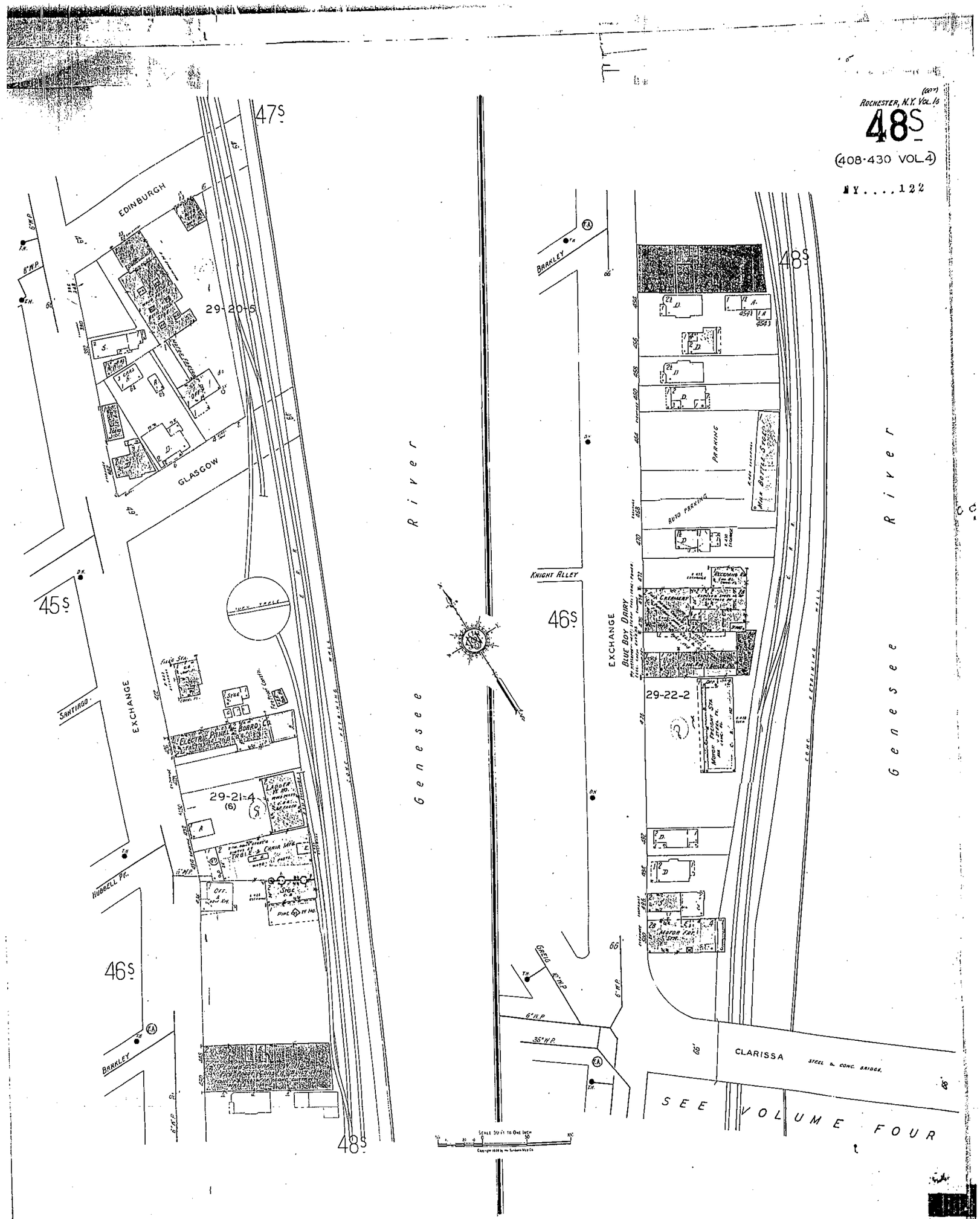
1938



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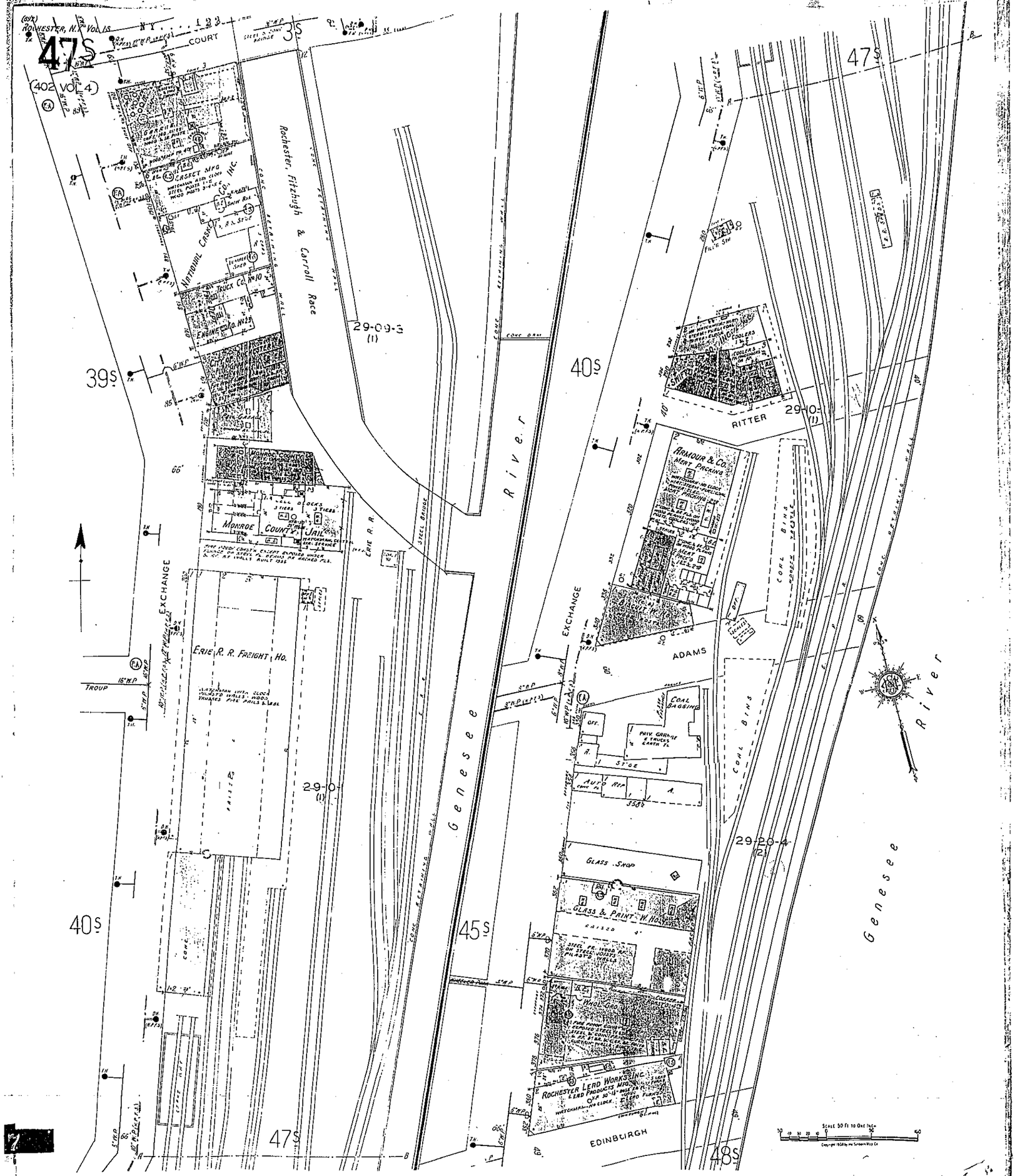
1950



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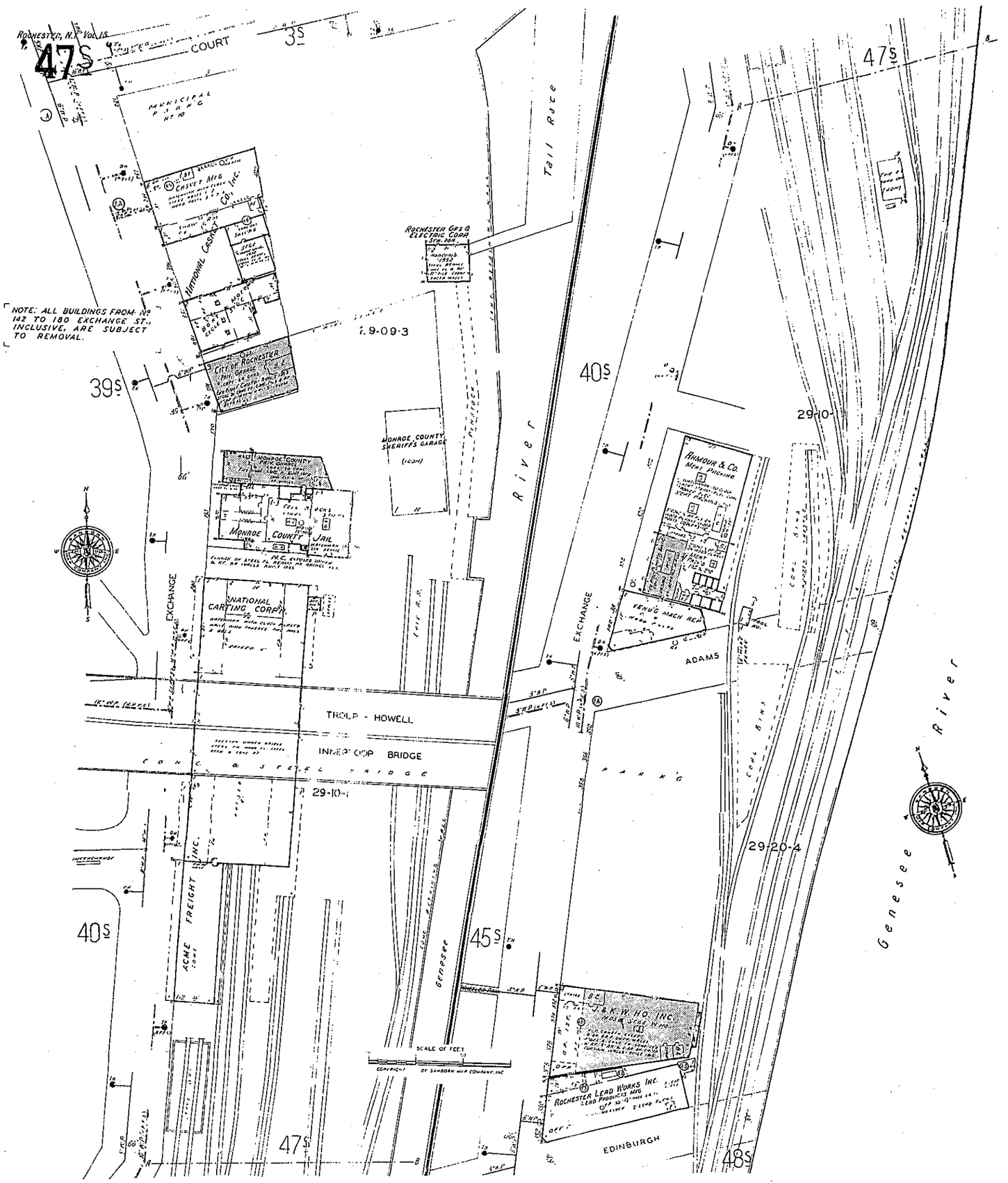
1950



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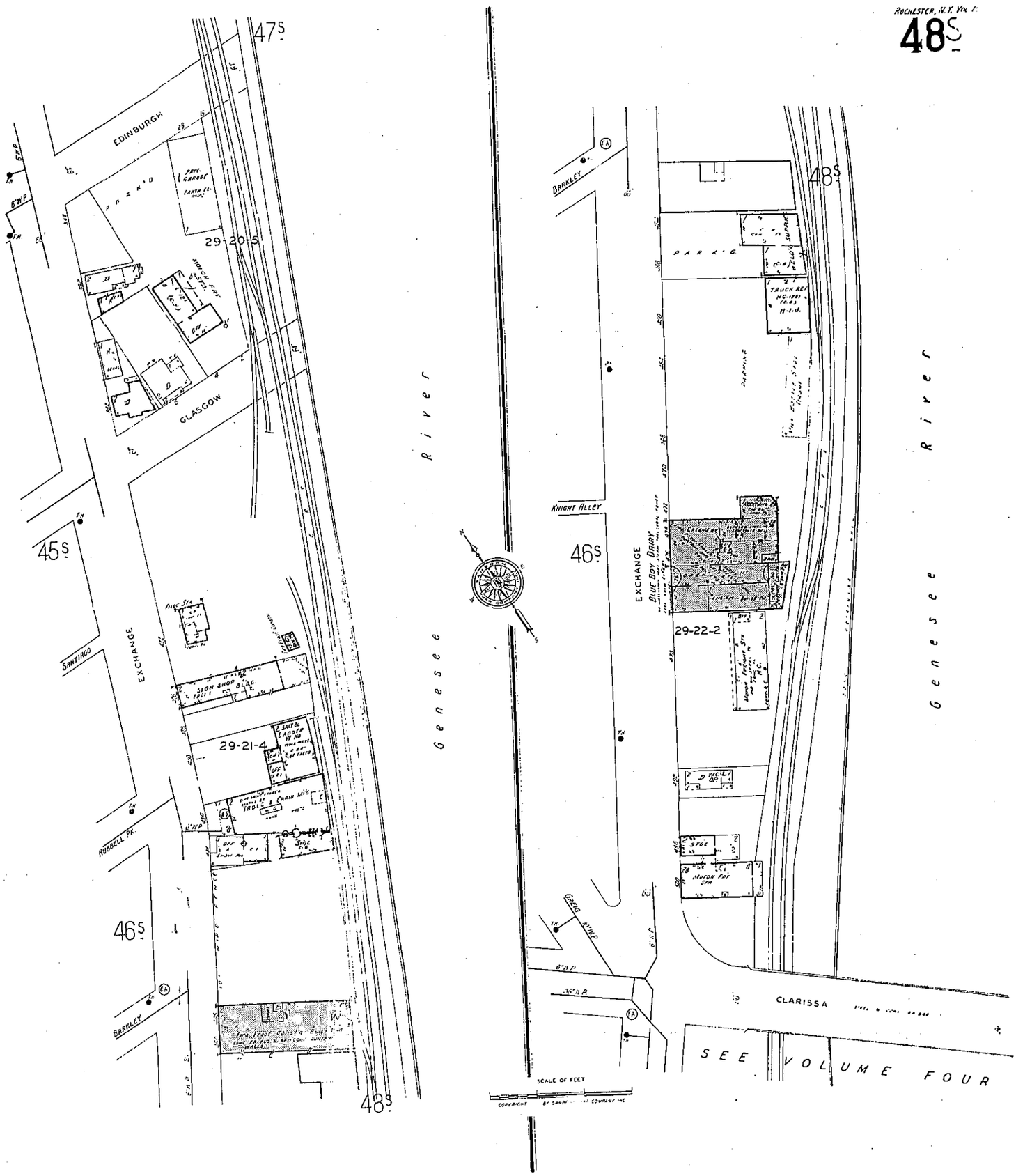
SANBORN

1971



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SANBORN

1971

7

Plotted By: default
Description: default
Pen No: 585
Node: #ACCTNODE

Plotted By: Matt Gorman
Drawing File: n:\jobs\571801\dxf\dr-dwg\enl1.dgn
Plotted: 17 MAY 1999 15:59
Ref Config: ...\imperial\hpd\mrgs.plt

LEGEND

- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EASEMENT LINE
- ADJOINER PROPERTY LINE
- FORMER BUILDING
- PROPOSED BUILDING

FEET 0 50 100 150 FEET

APPROXIMATE SCALE BAR

N/F
ROCHESTER URBAN RENEWAL
T.A.NO.121.39-01-005
200 EXCHANGE BLVD

PERMANENT EASEMENTS ACQUIRED IN FEE BY THE PEOPLE OF THE STATE OF NEW YORK FOR THE RECONSTRUCTING AND MAINTAINING OF THE ROCHESTER CITY INNER LOOP - GENESEE RIVER BRIDGE AND APPROACHES.

APPROXIMATE LOCATION OF SAM PATCH BOAT TOURS
250 EXCHANGE BLVD

BLVD

EXCHANGE

COURT STREET

R.O.W. LINE

F&C CRITTENDEN CO./
SWIFT & CO.
290-292 EXCHANGE

FILLING STATION
#280
UST

FREIGHT HOUSE
200 EXCHANGE
(PERMIT ISSUED 3/12/42
UPDATED THROUGH 3/1/56, FOR:
10,500 GALLON AND
6,000 GALLON OIL TANKS)

CONCRETE PIER

N/F
COUNTY OF MONROE
T.A.NO.121.39-01-004

N/F
COUNTY OF MONROE
T.A.NO.121.39-01-003

PROPERTY LINE

CANAL WALL

MATCH-LINE DRAWING 1571801EN 2

FREIGHT HOUSE
(ADDRESS UNAVAILABLE)

LANDS PERMANENTLY APPROPRIATED BY THE STATE OF NEW YORK FOR THE USE OF THE IMPROVED CANALS.

PERMANENT EASEMENTS ACQUIRED IN FEE BY THE PEOPLE OF THE STATE OF NEW YORK FOR THE RECONSTRUCTING AND MAINTAINING OF THE ROCHESTER CITY INNER LOOP - GENESEE RIVER BRIDGE AND APPROACHES.

N/F
STATE OF NEW YORK
T.A.NO.12154-03-010

RIVER

GENESEE

N/F
ROCHESTER URBAN RENEWAL
T.A.NO.121.47-01-020
300 EXCHANGE BLVD

N/F
ROCHESTER URBAN RENEWAL
T.A.NO.121.39-01-008
260 EXCHANGE BLVD

NOTE: FORMER AND PROPOSED BUILDING LOCATIONS ARE APPROXIMATE.

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BY	DATE	REVISIONS
7		
6		
5		
4		
3		
2		
1		

PROJECT ENGINEER/ARCHITECT DATE
PROJECT MANAGER DATE
M. STOROWSKY
DEPT./BRANCH/AFFILIATE/MANAGER DATE
DRAWN BY M. CORMAN — DATE DRAWN 4/8/99
SCALE 1"=100' — DATE ISSUED

THE SEAR-BROWN GROUP
FULL-SERVICE DESIGN PROFESSIONALS
85 METRO PARK
ROCHESTER, N.Y. 14623-2674
(716) 475-1440
www.searbrowngroup.com

PROJECT: CORN HILL LANDING
EXCHANGE STREET, ROCHESTER, NEW YORK
CLIENT: DEPARTMENT OF ENV. SERVICES
CITY OF ROCHESTER, CITY HALL, ROOM 300B
ROCHESTER, NEW YORK 14614

TITLE OF DRAWING: ENVIRONMENTAL SITE PLAN

PROJECT NO. 1571801
DRAWING NO. EN 1

Plotting Information
Plotted By: Matt Gorman
Date/Time: 10:10a 05/24/99
Plotted: 24 MAY 1999@05:22:27
Xref Dwg: ...\Imperial\hadjmrgs.dft

Wedgeplane
Discipline: default
Project:
Site:
Mode: #FACTOR(E)

LEGEND

- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EASEMENT LINE
- ADJOINER PROPERTY LINE
- FORMER BUILDING
- PROPOSED BUILDING
- SOIL GAS SAMPLE POINT
- MONITORING WELL
- TEST PIT

FEET 0 50 100 150 FEET
APPROXIMATE SCALE BAR

N

ERIE RR ROUND HOUSE
TURNTABLE
POSSIBLE LOCATION OF UST FIELD
R.O.W. LINE
MATCH-LINE DRAWING 1571801EN 3

N/F CITY OF ROCHESTER DEPARTMENT OF COMMERCIAL DEVELOPMENT T.A. NO. 121.54-03-024.1 482 EXCHANGE BLVD

AUTO REPAIR SHOP 17 EDINBURGH STREET TANK REMOVAL PERMITS ISSUED: 5/74 & 9/74 392 EXCHANGE

STORE
HOWE & ROGERS CO. OIL CLOTH STORAGE 23 EDINBURGH STREET
UST
EXCHANGE

N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.47-01-014.1 378 EXCHANGE BLVD

ROCHESTER LEAD WORKS/ COAL YARD PRIOR 380-382 EXCHANGE
BIG ELM DAIRY WAREHOUSE 374-378 EXCHANGE
N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.47-01-015 382 EXCHANGE BLVD
BROWN BROTHERS SCRAP IRON YARD 366-368 EXCHANGE
GLASS & PAINT W.H. 362 EXCHANGE
GLASS SHOP/PIPE SHOP 360 EXCHANGE
UST
BLVD

N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.47-01-041 350 EXCHANGE BLVD
AUTO REPAIR 358 EXCHANGE
CONCRETE MFG/ COAL STORAGE 348-356 EXCHANGE

S. PLYMOUTH AVENUE
UST
VENDING MACHINE REPAIR/ BISCUIT WAREHOUSE 338-340 EXCHANGE
F&B CRITTENDEN CO./ SWIFT & CO. INC./ LOOSE-WILES BISCUIT CO W.H. 290-292 EXCHANGE
N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.47-01-019
RCS MON.
ARMOR & CO MEAT PACKING/ COAL YARD PRIOR 300-332 EXCHANGE
R.O.W. LINE
MATCH-LINE DRAWING 1571801EN 1

22+00 21+00 20+00 19+00 18+00 17+00 16+00 15+00 14+00 13+00 12+00 11+00 10+00 9+00
CANAL WALL 2.5' 16'-4¾"

GLASGOW STREET (49.5' WIDE)
EDINBURGH STREET
ADAMS STREET (66' WIDE)
RITTER STREET (40' WIDE)

N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.54-03-009 392 EXCHANGE BLVD

LANDS PERMANENTLY APPROPRIATED BY THE STATE OF NEW YORK FOR THE USE OF THE IMPROVED CANALS.

SOUTHERN LIMIT OF MAJOR REDEVELOPMENT.

N/F ROCHESTER URBAN RENEWAL PORTION OF T.A. NO. 121.70-01-039.1 102 VIOLETTA STREET

GENESEE RIVER

CORN HILL LANDING

N/F STATE OF NEW YORK T.A. NO. 121.54-03-010

N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.47-01-040 330 EXCHANGE BLVD

N/F ROCHESTER URBAN RENEWAL T.A. NO. 121.47-01-017 320 EXCHANGE BLVD

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NO.	DATE	BY	REVISIONS
7			
6			
5			
4			
3			
2			
1			

PROJECT ENGINEER/ARCHITECT DATE
PROJECT MANAGER M. STOROWSKY DATE
DEPT./BRANCH/AFFILIATE/MANAGER DATE
DRAWN BY M. GORMAN DATE DRAWN 4/8/99
SCALE 1"=100' DATE ISSUED

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PROJECT CORN HILL LANDING
EXCHANGE STREET, ROCHESTER, NEW YORK
CLIENT DEPARTMENT OF ENV. SERVICES
CITY OF ROCHESTER, CITY HALL, ROOM 300B
ROCHESTER, NEW YORK 14614

TITLE OF DRAWING
ENVIRONMENTAL SITE PLAN

PROJECT NO.
1571801
DRAWING NO.
EN 2

22X34

SEAR·BROWN

CORN HILL LANDING
CITY OF ROCHESTER, NEW YORK

DESCRIPTION:

NORTHERN PORTION OF THE SUBJECT PROPERTY

PHOTO 1

DESCRIPTION:

SOUTHERN PORTION OF THE SUBJECT PROPERTY

PHOTO 2

SEAR·BROWN

CORN HILL LANDING
CITY OF ROCHESTER, NEW YORK

DESCRIPTION:

GENESEE RIVER LOCATED ADJACENT TO THE EAST OF THE SUBJECT PROPERTY

PHOTO 3

DESCRIPTION:

EXCHANGE BOULEVARD LOCATED ADJACENT TO THE WEST OF THE SUBJECT PROPERTY

PHOTO 4

Sample Field Notes Checklist

Project Number: HUD Program:

Project Name:Corn Hill Landing

Location: (street, city, county/state, & zip code)
Exchange Boulevard, Rochester, Monroe Counrty, NY

Number of Dwelling Units:

☒ New construction
☐ Rehabilitation

Project site is in a location described as:
☐ Central city ☐ Suburban
☒ Infill urban development ☐ In developing rural area
☐ In undeveloped area

Note to Reader: An Environmental Assessment (EA) is a concise public document that a Federal agency must prepare in order to comply with the National Environmental Policy Act (NEPA) and the related Federal environmental laws and authorities. The EA must support decision making process and provide a clear rationale, justification, and documentation for ratings assigned.

Instructions

It is recommended that this checklist be used by HUD staff who prepare the Environmental Assessment (EA; form HUD-4128). It will constitute full documentation for many factors on the EA, and partial documentation for others. It will avoid narrative reports and expedite the environmental review process. This checklist, which is a slightly revised version of Appendix C of Handbook 1390.2, should be used pending revision of Handbook 1390.2.

- The number for each checksheet topic is the number that appears on form HUD-4128. Also, each checklist title/heading is followed by a reference to where the topic appears in the current Handbook 1390.2.

Before the site visit, review the Phase I and all background information submitted with the application (if applicable). During the site visit, the preparers of form HUD-4128 are to: (i) answer all relevant questions on this checklist; (ii) use the spaces provided for comments to include supplemental information as well as to record any recommended mitigation measures or requirements for project approval; (iii) key your answers to the relevant questions (using additional sheets of paper to provide more detailed information); and (iv) use the spaces provided for source documentation

to cite the information source used (e.g., title of a technical report, map, or special study; site inspection/field observation; name and location of the qualified data source(s) that provided the information, for example, the local planning agency, the local housing and/or community development agency, the State environmental protection agency, the State Historic Preservation Officer, or other qualified data source.)

Preparers are to obtain and use, as appropriate, any environmental report (Federal, State, or local) that may have already been prepared for the property or area in which the property is located.

Several different types of maps will be useful in completing the review, such as the project plan or plot map, a location map showing major features and facilities in the vicinity, the USGS topographic map and FEMA flood map for the site area, and zoning/land use maps. ***Many of the conditions can and should be recorded directly on the project plan.*** Distances to major features and facilities (e.g., schools and fire stations) and a description of the surrounding area are examples. The plan can then be referenced as "source documentation" on form HUD-4128.

9. Environmental Report

List the Federal, State, or local agencies contacted to obtain their existing environmental reports and other data for the HUD environmental review for the proposed project:
List the major reports obtained: (attach the report(s) or otherwise list the title, author, publication date)

10. Planning Findings

Is the project in compliance or conformance with the local zoning?
☒ Yes ☐ No ☐ Not Applicable (If no or not applicable, explain) _____

Is the project located within a coastal management zone (CZM)?
☐ Yes ☒ No ☐ Not Applicable
If your answer is YES, the State Coastal Zone Management (CZM) Agency must make a finding that the project is consistent with the approved State CZM program
Is the State's finding attached to this checksheet?
☐ Yes ☐ No
Is the project in compliance with the air quality State Implementation Plan (SIP)?
☐ Yes ☐ No ☒ Not Applicable

Comments: There are no air pollution point sources existing on-site or associated with this project.

Source documentation: Sear-Brown conceptual plan

Are there any unresolved conflicts concerning the use of the site?
☐Yes ☒No

If your answer is YES, briefly explain:

16. Coastal Barrier Resources
Is the project located within a coastal barrier designated on a current FEMA flood map or Department of Interior coastal barrier resources map?
☐Yes ☒No

If your answer is YES, the law prohibits Federal funding of projects in designated coastal barriers.

17. Flood Management (24 CFR Part 55) (see CF 3 and 4 of Handbook 1390.2)
Is the project located within a floodplain designated on a current FEMA flood map?
☐Yes ☒No Identify FEMA flood map used to make this finding:

Community Name and Number: Rochester, New York
Map Panel Number and Date of Map Panel: Panel Number 3604310020B
If your answer is YES, use § 55.12 and the floodplain management decisionmaking process (§ 55.20) to comply with 24 CFR Part 55.

Comments:

Source documentation: (attach § 55.20 analysis)

18. Historic Preservation (see CF 2 of Handbook 1390.2)

Has the SHPO been notified of the project and requested to provide comments?
☐Yes ☒No

Is the property listed on or eligible for listing on the National Register of Historic Places?
☐Yes ☒No

Is the property located within or directly adjacent to an historic district?
☒Yes ☐No

Does the property's area of potential effects include an historic district or property?
☐Yes ☒No

If your answer is YES to any of the above questions, consult with the State Historic Preservation Officer (SHPO) and comply with 36 CFR part 800.

Has the SHPO been or is being advised of HUD's finding?
☐Yes ☒No

Comments:

The project is located several hundred feet to the east of Corn Hill Historic District. The subject site is separated from the historic district by Exchange Boulevard and more recent residential and commercial construction on west side of Excbange Boulevard. The subject site was historically a railroad siding that for the past 20 years has existed as undeveloped open space.

Source documentation: Phase I Environmental Site Assessment

19. Noise Abatement (see CF 1 of Handbook 1390.2)
Is the project located near a major noise source, i.e., civil airports (within 5 miles), military airfields (15 miles), major highways or busy roads (within 1000 feet), or railroads (within 3000 feet)?
☒Yes ☐No

If your answer is YES, comply with 24 CFR 51, Subpart B which requires a noise assessment for proposed new construction. Use adopted DNL contours if the noise source is an airport.

Comments: see attachment

Source documentation: (attach NAG worksheets)

20. Hazardous Industrial Operations (see CF 5 of Handbook 1390.2)

Are industrial facilities handling explosive or fire-prone materials such as liquid propane, gasoline or other storage tanks adjacent to or visible from the project site?

☐ Yes ☒ No

If your answer is YES, use HUD Hazards Guide and comply with 24 CFR Part 51, Subpart C.

Comments :

Source documentation: (attach ASD worksheets)

21. Airport Hazards (see CF 5 of Handbook 1390.2)

Is the project within 3,000 feet from the end of a runway at a civil airport?

☐ Yes ☒ No

Is the project within 2-1/2 miles from the end of a runway at a military airfield?

☐ Yes ☒ No

If your answer is YES to either of the above questions, comply with 24 CFR Part 51, Subpart D.

Comments:

Source documentation :

22. Protection of Wetlands (E.O. 11990) (see CF 3 and 4 of Handbook 1390.2)

Are there drainage ways, streams, rivers, or coastlines on or near the site?

☒ Yes ☐ No

Are there ponds, marshes, bogs, swamps or other wetlands on or near the site?

☐ Yes ☒ No

For projects proposing new construction and/or filling, the following applies:
Is the project located within a wetland designated on a National Wetlands Inventory map of the Department of the Interior (DOI)?

☐ Yes ☒ No

If your answer is YES, E.O. 11990, Protection of Wetlands, discourages Federal funding of new construction or filling in wetlands and compliance is required with the wetlands decisionmaking process (§ 55.20 of 24 CFR Part 55. Use proposed Part 55 published in the Federal Register on January 1, 1990 for wetland procedures).

Comments: The Genesee River located to the east is a federally designated wetland.

Source documentation: (attach § 55.20 analysis for new construction and/or filling)

23. Toxic Chemicals and Radioactive Materials (see CF 5 of Handbook 1390.2)

Has a Phase I (ASTM) Report been submitted and reviewed?

☒ Yes ☐ No

If your answer is NO, is a Phase I (ASTM) report needed?

☐ Yes ☐ No

Are there issues that require a special/specific Phase II report before completing the environmental assessment?

☐ Yes ☒ No

Is the project site near an industry disposing of chemicals or hazardous wastes?

☐ Yes ☒ No

Is the site listed on an EPA Superfund National Priorities or CERCLA, or equivalent State list?

☐ Yes ☒ No

Is the site located within 3,000 feet of a toxic or solid waste landfill site?
☐ Yes ☒ No

Does the site have an underground storage tank?
☐ Yes ☒ No

If your answer is YES to any of the above questions, use current techniques by qualified professionals to undertake investigations determined necessary and comply with § 50.3(i).

Are there any unresolved concerns that could lead to HUD being determined to be a Potential Responsible Party (PRP)?
☐ Yes ☒ No

Comments: See Attached Phase I Environmental Site Assessment report which identifies remediation measures that are required by DEC to be implemented by the borrower

Source documentation: (attach Phase I ASTM report)

24. Other

a. Endangered Species (see EF 3.4 of Handbook 1390.2)

Has the Department of Interior list of Endangered Species and Critical Habitats been reviewed?
☐ Yes ☒ No

Is the project likely to affect any listed or proposed endangered or threatened species or critical habitats?
☐ Yes ☒ No

If your answer is YES, compliance is required with Section 7 of the Endangered Species Act, which mandates consultation with the Fish and Wildlife Service in order to preserve the species.

Comments: The subject property is previously disturbed land located within a city landscape. the majority of the site is curretly unpaved parking area.

Source documentation: Sear-Brown's Phase I Environmental Site Assessment

b. Sole Source aquifers

Will the proposed project affect a sole source or other aquifer?
☐ Yes ☒ No

Comments:

Source documentation:

c. Farmlands Protection (see EF 3.3 of Handbook 1390.2)

If the site or area is presently being farmed, does the project conform with the Farmland Protection Policy Act and HUD policy memo?
☐ Yes ☒ No

If your answer is YES, compliance is required with 7 CFR Part 658, Department of Agriculture regulations implementing the Act.

Comments:

Source documentation:

d. Flood Insurance

Is the building located or to be located within a Special Flood Hazard Area identified on a current Flood Insurance Rate Map (FIRM)?
☐ Yes ☒ No

If your answer is YES, flood insurance protection is required for buildings located or to be located within a Special Flood Hazard Area as a condition of approval of the project. In addition, compliance with § 55.12 and the floodplain management decisionmaking process (§ 55.20) is required (refer to item #17 above). Document the map used to determine Special Flood Hazard Area in above item #17 pertaining to community name and number, map panel number and date of map panel.

e. Environmental Justice

Is the project located in a predominantly minority and low-income neighborhood?

☐ Yes ☒ No

Does the project site or neighborhood suffer from disproportionately adverse environmental effects on minority and low-income populations relative to the community-at-large?

☐ Yes ☒ No

If your answer is YES, compliance is required with E.O. 12898, Federal Actions to Address Environmental Justice.

Comments: _____

Source documentation: _____

25. Unique Natural Features and Areas (see EF 3.2 of Handbook 1390.2)

Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas?

☐ Yes ☒ No

Are other natural resources visible on site or in vicinity? Will any such resources be adversely affected or will they adversely affect the project?

☒ Yes ☐ No

Comments: The Genesee River is located to the east of the site. The Ford Street birdge located approximately 1,000 ft south of the site is a popular location from which to view the downtown Rochester skyline. This project will not impact on this view.

26. Site Suitability, Access, and Compatibility with Surrounding Development (see EF 1.1 and 1.3 of Handbook 1390.2)

Has the site has been used as a dump, sanitary landfill or mine waste disposal area?

☐ Yes ☒ No

Is there paved access to the site?

☒ Yes ☐ No

Are there other unusual conditions on site?

☒ Yes ☐ No

Is there indication of:

	Yes	No		Yes	No
distressed vegetation	☐	☒	oil/chemical spills	☒	☐
waste material/containers	☐	☒	abandoned machinery, cars,		
soil staining, pools of liquid	☐	☒	refrigerators, etc.	☐	☒
loose/empty drums, barrels	☐	☒	transformers, fill/vent pipes,		
			pipelines, drainage structures	☐	☒

Is the project compatible with surrounding area in terms of:

	Yes	No		Yes	No
Land use	☒	☐	Building type (low/high-rise)	☒	☐
Height, bulk, mass	☒	☐	Building density	☒	☐

Will the project be unduly influenced by:

	Yes	No		Yes	No
Building deterioration	☐	☒	Transition of land uses	☐	☒
Postponed maintenance	☐	☒	Incompatible land uses	☐	☒
Obsolete public facilities	☐	☒	Inadequate off-street parking	☐	☒

Are there air pollution generators nearby which would adversely affect the site:

	Yes	No		Yes	No
Heavy industry	☐	☒	Large parking facilities	☐	☒
Incinerators	☐	☒	(1000 or more cars)		
Power generating plants	☐	☒	Heavy travelled highway	☒	☐
Oil refineries	☐	☒	(6 or more lanes)		

Cement plants ☐ ☒ Other _____ ☐ ☐

Comments: Although the project is located adjacent to a six lane highway, it operates in a free-flowing condition. In addition, the project is located adjacent to other residential developments involving medium density housing with no ill effects.

source documentation _____

27. Soil Stability, Erosion, and Drainage (see EF 1.2 of Handbook 1390.2)

Slopes: ☐ Not Applicable ☐ Steep ☐ Moderate ☒ Slight

Is there evidence of slope erosion or unstable slope conditions on or near the site?
☐ Yes ☒ No

Is there evidence of ground subsidence, high water table, or other unusual conditions on the site?
☐ Yes ☒ No

Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the neighborhood of the site?
☐ Yes ☒ No

Have soil studies or borings been made for the project site or the area?
☒ Yes ☐ No ☐ Unknown

Do the soil studies or borings indicate marginal or unsatisfactory soil conditions?
☐ Yes ☒ No

Is there indication of cross-lot runoff, swales, drainage flows on the property?
☐ Yes ☒ No

Are there visual indications of filled ground?
☒ Yes ☐ No

If your answer is YES, was a 79(g) report/analysis submitted?
☐ Yes ☒ No

Are there active rills and gullies on site?
☐ Yes ☒ No

If the site is not to be served by a municipal waste water disposal system, has a report of the soil conditions suitable for on-site septic systems been submitted?
☐ Yes ☐ No ☒ N.A.

Is a soils report (other than structural) needed?
☐ Yes ☒ No

Are structural borings or a dynamic soil analysis/geological study needed?
☐ Yes ☒ No

Comments: _____

Source documentation _____

28. Nuisances and Hazards (see EF 1.3 and 1.4 of Handbook 1390.2)

Will the project be affected by natural hazards:

	Yes	No		Yes	No
Faults, fracture	☐	☒	Fire hazard materials	☐	☒
Cliffs, bluffs, crevices	☐	☒	Wind/sand storm concerns	☐	☒
Slope-failures from rains	☐	☒	Poisonous plants, insects, animals	☐	☒
Unprotected water bodies	☐	☒	Hazardous terrain features	☐	☒

Will the project be affected by built hazards and nuisances:

	Yes	No		Yes	No
Hazardous street	☐	☒	Inadequate screened		
Dangerous intersection	☐	☒	drainage catchments	☐	☒
Through traffic	☐	☒	Hazards in vacant lots	☐	☒

	Yes	No		Yes	No
Inadequate separation of pedestrian/vehicle traffic	☐	☒	Chemical tank-car terminal	☐	☒
Children's play areas located next to freeway or other high traffic way	☐	☒	Other hazardous chemical storage	☐	☒
Inadequate street lighting	☐	☒	High-pressure gas or liquid petroleum transmission lines on site	☐	☒
Quarries or other excavations	☐	☒	Overhead transmission lines	☐	☒
Dumps/sanitary landfills or mining	☐	☒	Hazardous cargo transportation routes	☐	☒
Railroad crossing	☐	☒	Oil or gas wells	☐	☒
			Industrial operations	☐	☒

Will the project be affected by nuisances:

	Yes	No		Yes	No
Gas, smoke, fumes	☐	☒	Unsightly land uses	☐	☒
Odors	☐	☒	Front-lawn parking	☐	☒
Vibration	☐	☒	Abandoned vehicle	☐	☒
Glare from parking area	☐	☒	Vermin infestation	☐	☒
Vacant/boarded-up buildings	☐	☒	Industrial nuisances	☐	☒
			Other _____	☐	☐

Comments: _____

_____

_____

Source documentation _____

_____

29. Water, Supply, Sanitary Sewers, and Solid Waste Disposal (see EF 2.1, 2.2, and 2.4 of Handbook 1390.2)

Is the site served by an adequate and acceptable:

water supply
☒Yes ☐No ☒Municipal ☐Private;

sanitary sewers and waste water disposal systems
☒Yes ☐No ☒Municipal ☐Private;

and trash collection and solid waste disposal
☒Yes ☐No ☒Municipal ☐Private.

If the water supply is non-municipal, has an acceptable "system" been approved by appropriate authorities and agencies?
☐Yes ☐No

If the sanitary sewers and waste water disposal systems are non-municipal, has an acceptable "system" been approved by appropriate authorities and agencies?
☐Yes ☐No

Comments: _____

_____

_____

Source documentation _____

_____

31. Schools, Parks, Recreation, and Social Services (see U/EF 4, 5, and 6 of Handbook 1390.2)

Will the local school system have the capability to service the potential school age children from the project?
☒Yes ☐No

Are parks and play spaces available on site or nearby?
☒Yes ☐No

Will social services be available on site or nearby for residents of the proposed project?
☒Yes ☐No

Comments : _____

_____

Source documentation _____

32. Emergency Health Care, Fire and Police Services (see U/EF 7, 8, and 9 of Handbook 1390.2)

Are emergency health care providers located within reasonable proximity to the proposed project?
☒Yes ☐No Approximate response time:_____

Are police services located within reasonable proximity to the proposed project?
☒Yes ☐No Approximate response time:_____

Is fire fighting protection ( ) municipal ( ) volunteer adequate and equipped to service the project?
☒Yes ☐No Approximate/estimated response time:_____

Comments: _____

Source documentation _____

33. Commercial/Retail and Transportation (see U/EF 10 and 11 of Handbook 1390.2)

Are commercial/retail shopping services nearby?
☒Yes ☐No

Is the project accessible to employment, shopping and services by
☒public transportation or ☒private vehicle?

Is adequate public transportation available from the project to these facilities?
☒Yes ☐No

Are the approaches to the project convenient, safe and attractive?
☒Yes ☐No

11. Conditions and Requirements for Approval:

Are mitigation measures required?
☒Yes ☐No
If your answer is YES, list and describe: See Phase I Environmental Site Assessment for required implementation of the Corrective Action Plan and Soil Management Plan.

Brief Description of the Project: Mixed-use commercial and residential development of vacant land

Field Inspection on: (date) By: (signature)

Attachment
Question 19 Noise Abatement

Corn Hill Landing – Noise level measurements

The HUD Environmental checklist contains a Noise Abatement section for projects involving new construction that are located near a major noise source. The checklist states that if a project is located near a busy road or major highway it must comply with the provisions of 24 CFR 51. An elevated section of I-490 crosses the northern portion of the project site on an overpass approximately 15 ft. above ground level. The Standards and Criteria contained in 24 CFR 51.103 identify Site Acceptability Standards (standards) for new construction of sensitive receptors, including residences. The standards identify a Day-Night average sound level (in decibels) of 65 dB as acceptable.

In response to the Noise Abatement section of the checklist, Sear-Brown environmental staff conducted noise measurements at the Corn Hill Landing project site. The noise measurements were conducted in accordance with the procedures described in the Federal Highway Administration – Highway Traffic Noise Analysis and Abatement Policy and Guidance, June 1995. The noise measurements were conducted between 8:15 and 8:30am, during the morning rush hour, on Thursday March 14, 2002. This time period was selected because it occurs during the morning peak traffic hour and represents the highest noise period of a day when considering the noise source is an urban arterial interstate. The noise measurements were recorded approximately 140 ft. south of the I490 overpass on the subject property at a location consistent with the nearest proposed residential building to I-490 identified on the project conceptual plan.

To determine the noise levels a Quest Electronics M-28 Noise Logging Dosimeter was used. The results of the noise measurements are as follows:

> Leq - The equivalent integrated sound level in decibels represented as the accumulated sound averaged during the run time of the instrument: 66.2 dB.
>
> Run time: 15 minutes 9 seconds.

Given that the noise generated during the peak traffic hour is only 1.2 dB above the 65 dB threshold established in the federal regulation for day/night average, it can be safely assumed that the day/night average sound level is below the noise abatement threshold of 65dB.

617.20 SEQF

Appendix A

State Environmental Quality Review

FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasureable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

DETERMINATION OF SIGNIFICANCE—Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☐ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which **will not** have a significant impact on the environment, therefore **a negative declaration will be prepared.**

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore **a CONDITIONED negative declaration will be prepared.***

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore **a positive declaration will be prepared.**

* A Conditioned Negative Declaration is only valid for Unlisted Actions

Corn Hill Landing Project
Name of Action

Director of Zoning
Name of Lead Agency

Margaret Wuerstle
Print or Type Name of Responsible Officer in Lead Agency

Director of Zoning
Title of Responsible Officer

Margaret C. Wuerstle
Signature of Responsible Officer in Lead Agency

Signature of Preparer (If different from responsible officer)

July 13, 1999
Date

CITY OF ROCHESTER
NOTICE OF ENVIRONMENTAL DETERMINATION

Issued in accordance with Article 8 of the New York State Environmental Conservation Law and Chapter 48 of the Rochester Municipal Code.

POSITIVE DECLARATION: The proposed action is one which will not have a significant impact on the environment.

ACTION: Classification:Type I
Description: Zoning Map, Zoning Text, Urban Renewal Plan and Official Map Amendments and Site Plan Review

PROJECT:
Title: Corn Hill Landing Project
Location: 200-382 Exchange Blvd./ Third Ward Urban Renewal District
Applicant: Mark IV Construction Co.
Description: To redevelop the 7.41 acre site with a mixed use development containing 134 apartments, 17000sf of commercial space, a 15000sf office building , public open space and water based amenities and accessory underground and surface parking facilities.

REASON(S) FOR DETERMINATION: The project site is located adjacent to the Genesee River. The project site does not contain any other sensitive natural features. No significant impacts are anticipated with respect to water or air quality. Community facilities and services (water supply, energy supplies, public safety, waste disposal and transportation) are adequate to accommodate and serve the proposed use. The project will not affect historic or archeological resources. The project is compatible with the area and adjacent uses. The project provides public accessibility to the riverfront in the form of walkways, assembly areas and water based amenities.

LEAD AGENCY: Director of Zoning

AGENCY CONTACT PERSON: Marcia W. Barry, Associate City Planner

DATE ISSUED: July 13, 1999

This declaration and supporting information is on file and available for public inspection with the Bureau of Buildings a Zoning, Room 122-B, City Hall.

FILE REFERENCE NUMBER: SP-098-98-99

DISTRIBUTION:
Mayor
City Clerk/City Council
Environmental Commission
New York State Canal Corp.
Applicant
Environmental Notice Bulletin
Lead Agency

PART III
IMPACT EVALUATION
(to be completed by agency)

Instructions: For each adverse-impact identified in Part II, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting(i.e. compatibility with Comprehensive Plan); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed.

IMPACT DESCRIPTION: Impact on open space and recreational opportunities

The subject area is currently zoned O-S Open Space and is intended for recreational purposes and the preservation of natural amenities. This area has never been improved for such and is partially utilized as overflow parking. The Comprehensive Plan recommends development of waterfront areas and developments that will promote tourism. The subject project conforms with these recommendations. Although open space will be permanently removed by the proposed development of mixed commercial and residential uses, recreational uses and public accessibility has been incorporated in the project.

MITIGATION MEASURES INCORPORATED IN PROJECT:

1)The riverfront will be developed with a public riverwalk promenade of varying widths which will ensure permanent public access and views of the Genesee River.
2)The flood wall will be relocated 15ft.(+) to allow access to the river .
3) A harbor master facility will provide boating and tourism amenities.
4)An amphitheater will be developed for special events and public use.
5) Additional boat slips will be provided to expand boating amenities.
6)The commercial and residential buildings will have a maritime theme and will be compatible in scale and materials to existing development in the Corn Hill neighborhood.
7)The asphalt paving of a parking lot at the south end of the site was reduced to increase green space.

OTHER MEASURES OF MITIGATION THAT COULD BE INCORPORATED:
1)Existing parking lots on-site can be closed off during special events to further expand public use of the site during special events.
2)The office building could be deleted from the project to further expand public space.

IMPORTANCE OF IMPACT WITH MITIGATION MEASURES INCORPORATED:
This is an important site to both the Corn Hill neighborhood and to Downtown Rochester. The Canal Corp.'s development of the pedestrian walkway and relocation of the flood wall will make the Genesee River accessible to Corn Hill residents , downtown workers and tourists. This open space area will finally become more usable. At the same time, residential and commercial development will result in the irreversible loss of opportunities to fully develop a parklike area for active and passive public use. The incorporation of public easements throughout the site and public land and water-based amenities will ensure public access to the riverfront .

PART III
IMPACT EVALUATION
(to be completed by agency)

Instructions: For each adverse-impact identified in Part II, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting(i.e. compatibility with Comprehensive Plan); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed.

IMPACT DESCRIPTION: Impacts on Transportation

1)The construction of 134 dwelling units, 30000sf of commercial space and 275 on-site parking spaces will moderately impact local traffic.

2) The development of riverfront walkways,open space areas and the development of commercial uses will significantly increase pedestrian traffic to the site from the Corn Hill neighborhood and from Downtown Rochester.

3)Proposed modifications to Exchange St. including; the introduction of on-street parking and reducing the number of drive lanes (between the Troup Howell Bridge and the Ford Street Bridge) from four lanes to two will moderately impact traffic flow and may significantly impact pedestrian safety.

4)The introduction and positioning of new curb openings along Exchange Blvd. will have a moderate traffic impact .

The proposed development will have an irreversible impact on this portion of Exchange Blvd.; however, Exchange Blvd. has the capacity to handle the increases in traffic associated with this project . The proposed modifications to Exchange Blvd. may have a traffic calming impact which could result in reductions in speed because of the proposed lane reductions and drivers entering or exiting on-street parking spaces along Exchange Blvd.

MITIGATION MEASURES INCORPORATED IN PROJECT:

1) Curb openings will be appropriately positioned along Exchange Blvd. to reduce hazards .

2)The driveway north of the N. Plymouth Ave. intersection will be an exit only limited to right turns.

3)The outlet of the southerly parking lot will be repositioned to avert traffic conflicts.

4)On-street parking spaces will be redesigned to provide adequate transitioning to and from the drive lanes.

5)The central access to the site will be designed to avert conflicts with southbound traffic and the on-street parking spaces.

OTHER MEASURES OF MITIGATION THAT COULD BE INCORPORATED:

1) A landscaped median could be provided on Exchange St. as a pedestrian refuge.

2)A traffic light could be provided at Fitzhugh St.for pedestrians and vehicles exiting the site.

IMPORTANCE OF IMPACT WITH MITIGATION MEASURES INCORPORATED:

The measures incorporated in the project will mitigate traffic hazards. The other measures that could be incorporated will enhance pedestrian safety. A high level of pedestrian traffic is anticipated. Pedestrian crossings have not been included in the project. Exchange Blvd. is a relatively busy street with an increase in traffic anticipated as a result of this project. A traffic light and /or a landscaped median are appropriate measures to mitigate conflicts between vehicular

traffic and pedestrians. A median would provide a refuge for pedestrians as well as enhance the aesthetic appeal of the approach to Downtown Rochester. A traffic light would ensure gaps in traffic for pedestrians and vehicles exiting the development.

PART III
IMPACT EVALUATION
(to be completed by agency)

Instructions: For each adverse-impact identified in Part II, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting(i.e. compatibility with Comprehensive Plan); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed.

IMPACT DESCRIPTION: Construction on contaminated soil

MITIGATION MEASURES INCORPORATED IN PROJECT:

1) A soil management plan is required to address the reuse and/or on-site disposal of the slightly elevated concentrations of semi-volatile compounds and metals present in the fill materials at the site.

2)A soil removal program, engineering controls, possible deterring of petroleum-contaminated groundwater and possible groundwater remediation and/or implementation of a long-term groundwater monitoring program will be considered to address petroleum contaminated ground water present in the vicinity of the Sam Patch parking lot and building.

3)Remedial actions will be performed concurrently with the redevelopment of the site.

OTHER MEASURES OF MITIGATION THAT COULD BE INCORPORATED:

The Phase II Environmental Investigation conducted by the Sear Brown Group included: a geophysical investigation, a test pit/soil sampling program, a boring/monitoring well installation and groundwater sampling program. Their findings do not indicate the need for measures in excess of the aforementioned remedial actions.

IMPORTANCE OF IMPACT WITH MITIGATION MEASURES INCORPORATED:

Not significant

PART III
IMPACT EVALUATION
(to be completed by agency)

Instructions: For each adverse-impact identified in Part II, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting(i.e. compatibility with Comprehensive Plan); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed.

IMPACT DESCRIPTION: Impact on Aesthetic Resources

1)The proposed construction of multi-story mixed use buildings will permanently impact views of the river, a significant natural resource to the Corn Hill neighborhood, and reduce open space.
2) The project is also within the Corn Hill neighborhood, an area of the city renown for its historic architecture.
3) The subject site is undeveloped. The new construction will permanently alter the character of the area and will newly define the character of this portion of Exchange Blvd.

MITIGATION MEASURES INCORPORATED IN PROJECT:
1) Pedestrian access and public use of the site has been incorporated into the project. The entire river front will be developed as a walkway; the river wall will be relocated to allow public access and view of the river ;and, public areas such as the amphitheatre will be developed to further maximize public use.
2) Corn Hill Landing is intended to be a waterfront oriented mixed residential/commercial area. New construction will convey a maritime theme.
3) The building design and materials will be of a high quality that will be compatible with the Corn Hill neighborhood.
4) The building design and materials and all site features and materials will be specified in Detailed and Final Plan submittals.
5) The specificity of the Planned Development District regulations will ensure that new construction and other improvements are in accordance with the approved plan for the area.

OTHER MEASURES OF MITIGATION THAT COULD BE INCORPORATED:

IMPORTANCE OF IMPACT WITH MITIGATION MEASURES INCORPORATED:

High quality development of this important waterfront site, both new construction and site improvements, and the incorporation of public access should mitigate the loss of open space and views to the river. The development of this area in accordance with the Concept Plan for Corn Hill Landing will assure all development of the site is consistent with the nautical theme for the area and the historic character of the adjacent Corn Hill neighborhood.

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

APPENDIX B
Phase II Environmental Site Assessment
(Bergmann, July 2019)

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Phase II Environmental Site Assessment

ROCHESTER RIVER WALL IMPROVEMENTS SEGMENT I – CORNHILL

Prepared by:

Bergmann

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Issued: July 2019

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1.0 INTRODUCTION

On behalf of the City of Rochester (City), Bergmann prepared this Phase II Environmental Site Assessment (ESA) report for the area of the Rochester River Wall Improvements Segment I – Cornhill project (Site). Soil borings and groundwater monitoring wells were installed as part of an investigation for the environmental evaluation of subsurface conditions as well as for collection of geotechnical samples in support for design of a flood protection river wall. The Site is adjacent to the Cornhill neighborhood, in the City of Rochester, Monroe County, New York (Figure 1 – Site Vicinity Map). This Phase II ESA was prepared in general accordance with portions of documents listed below:

- New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER-10) Technical Guidance for Site Investigation and Remediation, dated May 3, 2010;
- United States Environmental Protection Agency (USEPA) Sampling and Analysis Guidance and Template v.4 – General Projects 04/2014;
- Draft Sampling and Analysis Plan Rochester River Wall Segment 1 – Cornhill (Bergmann April 2018);
- Review of City of Rochester Platt maps; and
- Environmental Data Resources (EDR) report dated February 27, 2018.

This Phase II ESA describes the methods that were implemented to characterize soil and groundwater quality for environmental impacts at environmental/structural (geotechnical) soil boring and monitoring well locations at the Site. The conclusions and recommendations in this report will be used to assist in management of soil and groundwater during the planning, design and construction phases for rehabilitation of the River Wall and associated landside trail improvements. This Phase II ESA was prepared in conjunction with specific requirements and participation from the City's Department of Environmental Quality (DEQ).

1.1 BACKGROUND

The Site consists of an approximate 3.5 acres of land as part of Segment I of the Cornhill neighborhood alignment. The River Wall is bounded on the east by approximately 1,905 feet of Genesee riverfront beginning in the south at the Ford Street Bridge and terminating north at the Cornhill Landing property line, currently owned by Mark IV Construction (300 Exchange Boulevard). The City has recently acquired an easement on 300 Exchange Boulevard, however, this privately-owned property was not included during the Phase II ESA conducted and documented in this report. The City owns the parcel addressed as 102 Violetta Street, which runs from the 300 Exchange Street border south beyond Ford Street to the Erie Lackawana Pedestrian Bridge. New York State Canal Corporation currently own the portion of the Site along the western edge of the river addressed as 350 Exchange Street. It is noted that this Phase II ESA was only performed on the City and NYSCC parcels north of Ford Street and south of 300 Exchange Street.

Locations of environmental soil borings were determined based on a review of City of Rochester Platt Maps and an Environmental Data Resources (EDR) report dated February 27, 2018. The approximate locations of environmental and structural soil borings (for geotechnical purposes) collectively as subsurface explorations are presented on Figure 2. – Subsurface Explorations Plan. Final soil boring locations were surveyed for elevation and location by GPS mapping. Final monitoring well locations were instrument surveyed and the top of casing determined to 0.010-foot accuracy to City of Rochester datum by Popli Design Group's survey team. GPS coordinates were collected to determine each monitoring well location to 0.010-foot accuracy.

1.2 OBJECTIVE

The Phase II ESA objective was to complete subsurface explorations concurrent with the planned geotechnical (structural) soil borings to allow for assessment of soil quality, groundwater quality and geotechnical evaluation of the subsurface. The Phase II ESA was required to support planning, design and future construction requirements for rehabilitation of the Rochester River Wall Segment 1 - Cornhill area and associated landside trail improvements.

2.0 SCOPE OF WORK

The following section describes the scope of work that was implemented to fulfill the objective of the Phase II ESA described in Section 1.2.

2.1 HISTORIC REVIEW OF LAND USE

A review of historic City Platt Maps and a professional data search was completed to assist with locating the environmental soil borings and monitoring wells. Several former industrial and commercial facilities operations were located on-Site that may have impacted soil and groundwater quality. In addition, historic fill material was placed on Site to make land and as backfill for existing river wall. The suspected former facilities operations that may have had a potential impact on the Site and the corresponding soil boring locations are presented on Table 1 – Environmental and Structural Soil Boring Information.

2.1 SOIL BORINGS AND MONITORING WELL INSTALLATION

A subsurface exploration plan was prepared that presents the locations of soil borings and groundwater monitoring wells as shown on Figure 2 – Subsurface Exploration Plan. Twenty (20) environmental soil borings and seven (7) Structural/Environmental borings were completed during this Phase II ESA. Monitoring wells were installed at ten (10) Environmental/Structural soil boring locations based on the subsurface conditions encountered in completed soil boring/bedrock core holes. Soil samples were field screened with a photoionization detector (PID) from environmental soil boring locations. Bedrock core samples were drilled from the top of the bedrock surface to approximately 10 to 25 feet into the bedrock formation. Bedrock core samples were collected from structural borings A1 through A5 and A7. Soil samples were collected continuously from the ground surface to the bottom depth of each soil boring. Samples were selected from discrete depth intervals at each environmental soil boring location based on the results of field soil screening with the PID, visual and olfactory observations. Each soil boring location that was not completed as a groundwater monitoring well was backfilled to approximately 1-foot below ground surface with bentonite and the remaining 1-foot of borehole near ground surface was backfilled with surface soil removed prior to advancing the soil borings.

The subsurface explorations allowed for collection of soil and groundwater samples for laboratory analysis to evaluate soil and groundwater quality. Subsurface explorations were also used to observe soil conditions, field screen soils for total organic vapors with the PID and measure depth to groundwater. The locations of the subsurface explorations are presented on Figure 2.

Environmental Soil Borings

Environmental soil borings named SB-02, SB-3, SB-5, SB-6, SB-8, and SB-10 through SB-17, SB-19 and SB-20 were installed to depths of approximately 16 feet below ground surface (bgs) or until refusal of the drilling

equipment was observed. These fifteen (15) soil borings were solely installed for environmental data collection purposes. These borings were installed using direct push drilling methods and continuously sampled from the ground surface to the bottom depth of each soil boring using a 4-foot macro sampler equipped with acetate liners for each sample interval. A representative portion of each soil sample was collected for field soil screening with a PID to measure total volatile organic vapors. The subsurface conditions encountered were recorded on a test boring log for each soil boring location; see Appendix A – Test Borings and Well Completion Logs. Soil field screen PID measurements ranged from ND non-detect to over 200 ppm as recorded on each test boring log.

Structural (Geotechnical) Soil Borings

Eight (8) soil borings were installed for geotechnical data collection from structural soil borings named SB-1, SB-1A, A-2/SB-4, A-3/ B-7, A-4/SB-9, A-5, A-6/SB-18 and A-7. Environmental groundwater samples were collected from boring locations A-3 / SB-7, A-6 / SB-16 and A-7 that were completed as monitoring wells named MW-3, MW-9 and MW-10; respectively. Structural borings were installed to depths ranging from approximately 20 feet to 50 feet bgs. The structural borings were installed using ASTM 1586 D Rotary Drilling Methods and continuously sampled from the ground surface to the bottom depth of each soil boring using a 2-foot split sampler for soil collection. Nature's Way Consultants and Contractors, and a New York State Professional Geologist (PG) logged the soil samples. The subsurface conditions encountered were recorded on a Test Boring Log for each soil boring location; see Appendix A – Test Borings and Well Completion Logs.

Bedrock Core Samples

Bedrock core samples were collected following ASTM D2113 drilling methods from six (6) structural soil borings SB-1A, A-2/SB-4, A-4/SB-9, A-5, A-6/SB-18 and A-7. Bedrock core sampling was completed by advancing a 10 ft. NX size core barrel equipped with a diamond bit through the auger casing from the top of the bedrock surface to approximately 25 ft. into the bedrock formation (45 to 50 ft. bottom of rock core hole). A Nature's Way Consultants and Contractors PG logged the rock core samples. Drilling water was contained during rock coring and placed into drums for temporary storage on Site.

Groundwater Monitoring Well Installation

Groundwater monitoring wells, named MW-1 through MW-10, were installed for environmental data collection in completed soil borings SB-3 (MW-1), SB-5 (MW-2), A-3/SB-7 (MW-3), SB-8 (MW-4), SB-11(MW-5), SB-14 (MW-6), SB-16 (MW-7), SB-17 (MW-8), A-6 / SB-18 (MW-9) and A-7 (MW-10). Each monitoring well was screened approximately two (2) feet above the groundwater table. Groundwater monitoring wells MW-1, MW-2, MW-4, MW-5, MW-6, MW-7 and MW-8 were installed in completed environmental borings. These groundwater monitoring wells were constructed with 1-inch inside diameter schedule 40 PVC well screens of 0.010-inch slot size. Each 10-foot length of well screen was connected to 1-inch well casing that extends to the ground surface. Groundwater monitoring wells MW-3, MW-9 and MW-10 were installed in completed structural borings. These groundwater monitoring wells were constructed with 2-inch inside diameter schedule 40 PVC well screens of 0.010-inch slot size connect to 2-inch well casing that extend to the ground surface. The monitoring wells were used to measure the depth to groundwater, observe for the presence or absence of floating and sinking non-aqueous phase liquids, and allow for collection of overburden groundwater samples.

Each monitoring well was completed with a sand pack extending above the well screen and the remaining borehole annulus backfilled with bentonite and cement grout. Monitoring wells were completed at the ground surface with a concrete surface seal and locking cap. The actual design of these wells was determined based on field conditions encountered with recommendations from the Bergmann P.G. Well completion details are

presented in each Well Completion Report; see Appendix A. The locations of the monitoring wells are shown on Figure 2. Each monitoring well was developed to remove sediments from the well water prior to collection of groundwater samples; see Section 4.0.

2.1 SITE GEOLOGY

Site Overburden Geology

Three (3) overburden soil deposits were encountered in the subsurface explorations. A thin layer of topsoil that is a recent Fill deposit consisting of sandy topsoil and or sandy silt that overlies historic fill material placed to make land during former developments and construction of the river wall at the Site. The fill consists of reworked soil with lesser percentages of fill materials. A natural Lacustrine deposit consisting primarily of silt and clay soils underlie the Fill Deposit and was deposited during the times of post-glaciation lakes. Glacial Till was deposited during the advance of glaciers onto the bedrock surface and underlies the Lacustrine deposit. Dolostone Bedrock underlies the overburden soil deposits; see Figure 3 – Geologic Cross Section A-A' and Figure 4 – Geologic Cross Section B-B'.

At the ground surface, a thin layer of sandy topsoil or sandy fill was placed during landscaping at the Site. The thickness of this layer is approximately 0.1 to 0.5 ft. and was encountered at the ground surface. This Fill layer of topsoil overlies the historic fill materials. The historic fill materials were described as Black CINDERS and ASH, with coal fragments to Brown to gray GRAVEL, some coarse to fine sand, little silt (Lacustrine), with brick and concrete fragments. The combined sandy Fill layer of topsoil and historic fill materials are referred to in this report as the Fill deposit that ranged in thickness from approximately 8 feet to 11.5 feet. Therefore, the majority of the Fill deposit is historic fill material that was placed to make land for the former developments of the Site and as backfill for the river wall.

A Lacustrine deposit underlies the Fill deposit and is approximately 14 ft. in thickness. The Lacustrine deposit consisted of loose to medium dense Gray SILT, little clay to soft light brown CLAY, trace silt. Underlying the Lacustrine deposit is Glacial Till that consisted of dense to very dense dark gray gravelly SILTY SAND, very fine to fine sand, some silt to Brown gravelly SILT, little very fine sand. Soil descriptions are noted on the soil boring logs with the Unified Classification System (UCS) class symbols in bold type (see Appendix A). The interpretation of the locations and thickness of underlying overburden geology with deposits / UCS class symbols is presented on Geologic Cross Sections; see Figures 3 and 4.

Site Bedrock Geology

The bedrock at the Site is Dolostone and described as gray, very hard, very thin to medium bedded (1 to 8 inches thick) with occasional small vugs (small cavities). The bedrock formation appears to be LOCKPORT DOLOMITE and was encountered at approximately 15 to 20 feet below the ground surface. The rock quality designation (RQD) for the upper 10 ft. of the bedrock ranged from approximately 67% to 78% RQD (fair rock) and from 10 ft. to 15 ft. was approximately 75% to 85% RQD (good rock). Bedrock core from 15 to 25 ft. indicates RQD values in the 90% range or greater (excellent rock). In general, the bedrock RQD increased with depth. The frequency of vertical joints, high angle joints and horizontal partings was higher in the bedrock zone from the top of rock to approximately 10 ft. into the formation. The bedrock core logs are recorded on the test boring logs; see Appendix A. The interpretation of the location and depth to bedrock is presented on Geologic Cross Sections; see Figures 3 and 4.

2.3 SOIL SAMPLING PROCEDURES

Soil samples were collected in general accordance with the Draft Sampling and Analysis Plan Rochester River Wall Segment 1 – Cornhill (DSAP) and NYSDEC DER-10 guidelines. Bergmann retained the services of Nature's Way Environmental Consultants and Contractors, Inc. (Nature's Way) to advance fifteen (15) Environmental borings and seven (7) Structural/Environmental borings. Rotary drilling methods for ASTM D5876 and associated sampling methods were used to advance structural borings for geotechnical purposes. Direct push drilling methods were used to advance environmental borings. The Bergmann P.G. visually logged soil samples with remarks regarding suspect evidence of impacts/contamination and recorded soil descriptions from Environmental soil borings and the Nature's Way P.G. logged the structural borings; see Appendix A. The ambient air above the soil samples in the breathing zone were screened with a photoionization detector (PID) per the Health and Safety Plan. Elevated PID measurements in the worker breathing zone and Site boundaries were not detected that would change the level of personal protective equipment or trigger action respond of the Community Air Monitoring Plan (CAMP). In addition, there were no exceedances of levels of dust or particulate matter described in the CAMP levels during the entire drilling program.

Soil samples were collected continuously in four-foot intervals using a two-inch diameter macro sampler with acetate liners during the installation of environmental borings. A representative portion of each soil sample was placed into a glass jar and allowed to equilibrate to approximately room temperature for headspace screening. Another representative portion was placed into a glass jar and stored on ice for possible laboratory analysis. A photoionization detector (PID) equipped with a 10.2 eV lamp was used to screen headspace soil vapor from each soil sample container for total organic vapors. Discrete portions of the recovered soil samples were placed in laboratory supplied containers for possible analytical laboratory testing based on visual observations and PID soil screening results.

Sixteen (16) soil samples and one (1) QA/QC sample (detailed in Section 2.6) were selected for analysis from depth intervals generally above the groundwater table based on PID field screen measurements, visual and olfactory observations. In the event that elevated field screening measurements were not detected, the soil sample interval above the top of the groundwater table was selected or a sample from the bottom of the boreholes was collected for laboratory testing.

The sample identification names for each of the discrete samples that were collected are provided in data Tables 3 through 7. The discrete samples were submitted to Paradigm Environmental Services, Inc. of Rochester, New York (laboratory). Each discrete soil sample was analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Target Analyte List (TAL) Metals, Polychlorinated Biphenyls (PCBs), and Pesticides.

Soil samples were selected from environmental soil borings at the following sample locations and depth interval:

- SB-2 (4.5-5 ft.)
- SB-6 (6.5-7 ft.)
- SB-12 (3.5-4 ft.)
- SB-16 (14.5-15 ft.)
- SB-3 (6.5-7 ft.)
- SB-8 (1.5-2 ft.)
- SB-13 (1.5-2 ft.)
- SB-17 (3.5-4 ft.)
- SB-5 (7.5-8 ft.)
- SB-10 (6.5-7 ft.)
- SB-14 (10.0-12 ft.)
- SB-19 (3.5-4 ft.)
- SB-5 (10.0-10.5 ft.)
- SB-11 (7.5-8 ft.)
- SB-15 (1-1.5 ft.)
- SB-20 (6.0-6.5 ft.)

These samples were submitted for laboratory analysis, under chain-of custody documentation, from locations and sample depth intervals selected to represent potential impacts based on visual observations of staining and PID measurements. Samples were also selected to represent historic fill soils and native soils based on a lack of elevated PID measurements. Sample depth intervals are noted on each test boring log. The PID measurements are presented on each soil boring log (test boring log) for each sample depth interval. The macro soil sampler equipment was decontaminated between sample intervals and a new acetate liner was used prior to collection of each soil sample; refer to Section 2.4 for decontamination procedures.

After completion of the planned environmental and structural borings were completed, a series of soil borings named GB-101 through GB-110 were installed to investigate petroleum odors/elevated PID measurements at the A-6/SB-18 soil boring; refer to Section 5.7.

Surface soil sampling was conducted on March 20, 2019 to determine if topsoil could be reused on-Site during the construction phase of the project. Samples were collected in accordance with the requirements set forth by DER-10 Table 5.4 (e) 10 Recommended Number of Soil Samples for Soil Imported to or Exported from a Site. In accordance with this table, and accounting for approximately 1,000 Cubic Yards (CY) of topsoil to be removed at the Site, eight (8) discrete sample locations were identified (labeled RRW-CH-SS-XX-032019). Additionally, three (3) composite samples were collected from five (5) separate locations (labelled RR-CH-CS-XX-032019) as detailed in Figure 6. Surface Soil Analytical Results Map. Soil was collected from the top 6-inches of the Site with a hand trowel, field decontaminated between each sample location, then placed into the appropriate sample jars prior to relinquishing to Paradigm Environmental Laboratories.

2.3 GROUNDWATER SAMPLING PROCEDURES

The groundwater sampling procedures generally followed the methods and procedures in the DSAP. However, the lack of groundwater available in several monitoring wells did not allow for sample collection or partial numbers of samples were collected. Sampling procedures involved removing the well cap and PID measurement prior to measuring the depth to water in each well to the nearest hundredth of a foot using an electronic water-level indicator and recorded on a field sample record; see Appendix B. The probe on the water level indicator was decontaminated between measurements with a solution of Alconox (non-phosphate detergent) and potable water, followed by a distilled water rinse to avoid cross contamination between wells. Wash and rinse water were drummed and consolidated with the monitoring well development water.

After collection of the depth to groundwater measurements the wells were checked for the presence of light non-aqueous phase liquid (LNAPL) and dense non-aqueous phase liquid (DNAPL) using a translucent well bailer with visual observation prior to sample collection. The bailer was lowered across the top of the water level in the well and removed to observe if LNAPL is present. Observations for the presence of DNAPL were completed by lowering the bailer to the bottom of the well and removing it to observe if DNAPL is present.

Groundwater monitoring wells were purged prior to sampling by using dedicated bailers to purge each well. The wells were purged until three (3) well volumes were removed, or until dry. Field parameters including pH, temperature, specific conductivity, dissolved oxygen (DO), and turbidity of the purged discharge water were recorded for each well volume. The field parameter meter was calibrated according to the manufacturer's instructions. Field measurements for each monitoring well were recorded on field sample records; see Appendix B – Field Records. After the purging, disposable well bailers were used to collect the groundwater samples. Each bailer was slowly lowered into the well using new nylon rope. The rope was lowered and raised

by hand with the slack portion left to lie on a plastic sheeting on the ground surface next to the well. Each bailer was slowly lowered until it was immersed below the water level. Care was taken not to agitate the water in each well to avoid possible volatilization of contaminants. Bailers and rope were discarded after sampling.

Water from each bailer was carefully transferred to laboratory supplied sample containers to minimize aeration of each sample. The VOC sample containers were filled first, followed by SVOCs, metals, PCBs, and pesticides. Special care was taken in filling and capping VOC vials, so that headspace or air bubbles were not observed. Sample bottle caps were secured. Each sample was placed directly on ice in coolers provided by the laboratory. Samples were delivered to the laboratory under chain-of-custody documentation.

During the second round of groundwater sampling (December, 2018) low-flow groundwater sampling methodology was utilized. The second round of groundwater samples were collected via low-flow groundwater sampling methodology utilizing a geo-pump electric, variable speed peristaltic pump. Sample field parameters were collected and recorded at each well including turbidity, temperature, pH, oxygen reduction potential, and conductivity. The majority of the field parameters were measured periodically using a YSI Professional Plus (or equivalent) water quality meter with a flow-through cell. Turbidity was measured with a LaMotte 2020 turbidity meter. Water quality readings were recorded on Low-Flow Groundwater Sampling Field Records, included Appendix B. Additionally, depth to water measurements were collected and total volume purged recorded as detailed in the Low Flow Groundwater Sampling Field Records. Once field parameters stabilized, the samples were collected, placed in a cooler pre-chilled with ice, and prepared for proper drop-off to the analytical laboratory.

2.4 DECONTAMINATION PROCEDURES

Sampling methods and equipment were used to minimize decontamination requirements and prevent the possibility of cross-contamination (e.g. disposable acetate liners during soil sample collection). Direct push Geoprobe® and drilling equipment were decontaminated, as necessary, after drilling each boring/monitoring well. Split-spoons and other non-disposable sampling equipment, macro-core samplers, and/or stainless steel spoons were decontaminated using the following procedure:

- Disassembling the split spoon or other sampling equipment if necessary;
- Removing soils from equipment;
- Scrubbing equipment with brushes in Alconox® tap water solution;
- Rinsing equipment with potable water; and
- Allowing equipment to air dry.

Re-usable sampling equipment and hand tools were washed with a mixture of potable water and Alconox® solution, rinsed with potable water, then air or paper towel dried.

2.5 INVESTIGATION DERIVED WASTE HANDLING

The subsurface investigative activities produced investigation derived waste (IDW) that required appropriate management and off-Site disposal. Materials generated as IDW included:

- Drill cuttings
- Groundwater resulting from development of new groundwater monitoring wells
- Groundwater resulting from the sampling of the groundwater monitoring wells
- Decontamination fluids resulting from decontamination of the drill equipment

- Personnel protective equipment (PPE) and sample bailers/acetate soil sample liner) resulting from the execution of field activities
- General refuse and asphalt.

The management of these wastes is discussed below. Disposal documentation is provided in Appendix F.

Drill cuttings
Drill cuttings generated during the direct push drilling program and installation of monitoring wells were contained in 55-gallon drums and temporarily staged at the Site. The cuttings were labeled with the borehole identification and the date that the cuttings were initially containerized. Drums were transported daily for storage on-Site in a locked Conex container. Contents and quantities of drums were recorded and labeled on the drums. At the conclusion of field activities, these materials were characterized and, after receiving the necessary approvals, were transported off-Site for treatment and/or disposal at a permitted facility. The drilling contractor (Nature's Way Consultants and Contractors) coordinated the characterization of the IDW for off-Site disposal of IDW with assistance and oversight by Bergmann.

Groundwater
Groundwater produced during development and sampling activities were containerized in 55-gallon drums. The groundwater-containing 55-gallon drums were labeled with the monitoring well identification and the date that the groundwater was initially containerized. Drums were transported daily for storage on-Site in a locked Conex container. Contents and quantities of drums were recorded daily and labeled on each drum. At the conclusion of field activities, these materials were appropriately characterized and, after receiving the necessary approvals, were transported off-Site for treatment and/or disposal at a permitted facility. The drilling contractor coordinated characterization, for off-Site disposal with assistance and oversight by Bergmann.

Decontamination fluids
Decontamination fluids containing non-indigenous materials associated with drilling, and sampling activities were containerized in 55-gallon drums. Drums were transported daily for storage in a locked Conex container on Site. Contents and quantities of drums were recorded daily and labeled on each drum. At the conclusion of field activities, these materials were appropriately characterized and, after receiving the necessary approvals, were transported off-Site for treatment and/or disposal at a permitted facility. The drilling contractor coordinated characterization, transportation, and disposal coordination with assistance and oversight by Bergmann.

2.6 ANALYTICAL LABORATORY TESTING AND QA/QC

Discrete soil and groundwater samples were delivered in a pre-chilled cooler under chain-of-custody control to Paradigm Environmental Services, Inc. (Paradigm), a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified analytical laboratory (ELAP ID #10958). Paradigm performed the analytical laboratory program listed below:

- Sixteen (16) soil samples were collected from soil boring locations for laboratory analysis in accordance with methods EPA 8260 plus CP-51 (VOCs), EPA 8270 base naturals (BN) (SVOCs), EPA 6010/7471 (TAL Metals), EPA 8082 (PCBs), and EPA 8081 (pesticides).
- One (1) blind duplicate soil sample was collected for each of the analyses noted above for QA/QC purposes.

- Six (6) groundwater samples were collected from the monitoring wells for laboratory analysis in accordance with methods EPA 8260 plus CP-51 (VOCs), EPA 8270 base naturals (BN) (SVOCs), EPA 6010/7471 (TAL Metals), EPA 8082 (PCBs), and EPA 8081 (pesticides).
- One (1) trip blank for EPA 8260 plus CP-51 (VOCs) were submitted per batch of groundwater samples submitted; and
- One (1) blind duplicate groundwater sample was collected for each of the analyses noted above for QA/QC purposes.

3.0 SOIL SAMPLE ANALYTICAL SUMMARY

A unique soil sample identification (e.g. RRW-CH-SB-02-050918) that includes Rochester River Wall Cornhill Segment project name, soil boring name and sample date was assigned to each soil sample. However, the soil samples are referred in this report as abbreviated soil sample names according to the soil boring name and sample depth interval in feet (e.g. SB-2 (4.5-5 ft.). Therefore, soil sample identification RRW-CH-SB-05-050918 (10-10.5) is SB-5 (10-10.5 ft.). The following sections summarize the soil quality for VOCs, SVOCs, Metals, PCBs and pesticides.

The sample results are compared to 6 NYCRR Part 375-6.8 (a) Unrestricted Use Soil Cleanup Objectives (UUSCO) for this Site and Phase II ESA level of evaluation. The Unrestricted SCO (UUSCO) includes the lowest levels for soil standards. NYSDEC Part 375 Commercial Use Soil Cleanup Objectives (CUSCOs or Passive Recreational) and NYSDEC Part 375 Restricted-Residential (RRUSCOs or Active Recreational) SCOs are the applied cleanup level standards applicable to the Site in accordance with the proposed future use and discussions with the City regarding future use of the Site.

3.1 VOLATILE ORGANIC COMPOUNDS – VOCS

Volatile organic compounds (VOCs) were detected in the low parts per billion (ppb) range in seven (7) soil samples. These levels are below future Site use cleanup objective levels, however exceed UUSCOs. The VOCs detected were petroleum compounds, ketones, and methylene chloride; see Table 3 - Volatile Organic Compounds Analytical Summary – Soils. Concentrations for VOCs detected with corresponding soil boring locations are presented in the table below.

VOC	Concentration Exceeding UUSCOs (ppm)	Soil Boring Location	UUSCO (ppm)
Acetone	0.175 and 0.0683	SB-5 (10.0-10.5), SB-11 (7.5-8.0)	0.05
VOC	**Concentration Below UUSCOs (ppm)**	**Soil Boring Location**	**UUSCO (ppm)**
Methylene Chloride	0.0312, 0.0411, and 0.0305	SB-2 (4.5-5.0), SB-3 (6.5-7.0), SB-14 (10.0-12.0)	0.05
Carbon Disulfide	0.0221	SB-8 (1.5-2.0)	---
Naphthalene	0.0227	SB-20 (6.0-6.5)	12.0

Acetone slightly exceeds the Part 375 6.8 (a) UUSCOs standard of 0.05 parts per million (ppm) in soil samples SB-5 (10.0-10.5 ft.) and SB-11 (7.5-8.0 ft.). These low levels are below UUSCOs in samples SB-5 (7.5-8.0 ft.), SB-6 (6.5-7.0 ft.), SB-10 (6.5-7.0 ft.), SB-12 (3.5-4.0 ft.), SB-13 (1.5-2.0 ft.), SB-15 (1.0-1.5 ft.), SB-16 (14.5-15.0 ft.), SB-17 (3.5-4.0 ft.), and SB-19 (3.5-4.0 ft.) at non-detect (ND) above the laboratory method limits. Solvent VOCs are not a Contaminant of Concern (COC) based on the lack of frequency of detection and low levels detected. The locations of the soil borings are presented on Figure 2. The VOC laboratory reports are presented in Appendix C – Laboratory Reports. The levels of Acetone that slightly exceed the UUSCO standard of 0.05 ppm are below the Part 375 6.8 (b) Restricted Residential Use Soil Cleanup Objectives (RRUSCOs) standard of 100 parts per million (ppm).

3.2 SEMI-VOLATILE ORGANIC COMPOUNDS - SVOCs

The SVOCs subsurface sample results indicate that four (4) out of the 16 soil samples exceed NYSDEC Part 375 6.8 (a) Unrestricted Soil Cleanup Objectives (UUSCOs) levels for one (1) or more SVOCs from samples SB-2 (4.5-5.0 ft.), SB-13 (1.5-2.0 ft.), SB-15 (1.5-2.0 ft.), SB-17 (3.5-4.0 ft.). Levels in these samples exceed the RRUSCOs and two (2) of those sample locations exceed Commercial Use SCOs; see Table 4 – Semi-Volatile Organic Compounds Analytical Summary – Soils in the Table section of this report. Other SVOCs were detected in samples from SB-12, SB-19, and SB-20 at concentrations below UUSCOs. The following sample locations were ND:

- SB-3 (6.5-7 ft.) consisting of Fill, Brown CINDERS and ASH with coal fragments;
- SB-5 (7.5-8 ft.) consisting of Fill, Brown to gray GRAVEL, some coarse to fine sand, trace silt;
- SB-5 (10-10.5 ft.) consisting of Lacustrine. Black stained SILT, trace clay, wet. Petroleum odor 76 – 90 ppm;
- SB-6 (6.5-7 ft.) consisting of Fill, Brown to gray GRAVEL, some coarse to fine sand, trace silt, with blue slag;
- SB-8 (1.5-2 ft.) consisting of Fill, Black CINDERS and ASH;
- SB-10 (6.5-7 ft.) consisting of Fill, Black CINDERS and ASH, with coal fragments;
- SB-11 (7.5-8 ft.) consisting of Fill, Brown to gray GRAVEL, some coarse to fine sand, trace silt, cinders and ash;
- SB-14 (10-12 ft.) consisting of Fill / Lacustrine, Black CINDERS and ASH, with concrete fragments moist / Light Brown CLAY, trace silt; and
- SB-16 (14.5-15 ft.) consisting of Lacustrine, Brown and gray mottled SILT, little clay.

SVOCs detected that exceed UUSCOs are summarized in the Table below with concentration ranges in parts per million (ppm):

SVOC	Range of Concentration Exceeding UUSCOs (ppm)	Soil Boring Location	Number of Samples That Exceed UUSCOs	UUSCO ppm
Benzo (a) Anthracene	1.86 to 2.50	SB-2 and SB-13	2/16	1
Benzo (a) Pyrene	1.52 to 2.26	SB-2 and SB-13	2/16	1
Benzo (b) Fluoranthene	2.25 to 3.30	SB-2 and SB-13	2/16	1
Benzo (k) Fluoranthene	1.21 to 1.52	SB-2 and SB-13	2/16	0.8

SVOC	Range of Concentration Exceeding UUSCOs (ppm)	Soil Boring Location	Number of Samples That Exceed UUSCOs	UUSCO ppm
Indeno (1,2,3-cd) Pyrene	0.55 to 1.90	SB-2, SB-13, SB-15, and SB-17	4/16	0.5
Chrysene	1.91 to 2.94	SB-2 and SB-13	2/16	1
Dibenz (a,h) Anthracene	0.40	SB-2	1/16	0.33
Benzo (g,h,i) Perylene	0.96 to 0.44	SB-2, SB-13, SB-15, and SB-17	2/16	0.1

The source of the SVOCs may be associated with the historic fill soils that contain cinders, ash, or may contain for petroleum hydro-compounds, commonly referred to as Poly Aromatic hydrocarbons (PAHs). PAHs are a sub-set of SVOCs that occur as a result of incomplete combustion which can be present in the cinders and ash. SVOCs are a COC based on the frequency of detection and levels detected. The locations of the soil borings are presented on Figure 2. The SVOCs characterization data for soil samples are presented in Table 4. The SVOC laboratory reports are presented in Appendix C.

3.3 METALS

The metals soil sample results indicate that eleven (11) out of the 16 soil samples exceed the UUSCOs for 1 to 5 metals. Samples SB-2 (4.5-5 ft.) and SB-13 (1.5-2 ft.) exceed the NYSDEC Part 375 6.8 (b) RRUSCO for Restricted-Residential use for Lead. Samples SB-2 (4.5-5 ft.), SB-5 (10-10.5 ft.) and SB-13 (1.5-2 ft.) exceed Commercial Use Soil Cleanup Objectives level for Arsenic. Other metals were detected at concentrations below UUSCOs. The metals detected that exceed UUSCOs are listed in the Table below with concentration ranges in parts per million (ppm):

Metal	Range of Concentration Exceeding UUSCOs (ppm)	Soil Boring Location	Number of Samples That Exceed UUSCOs	UUSCO ppm
Arsenic	16 to 60.9	SB-2, SB-5,SB-8, SB-13	4/16	16
Lead	63.2 to 622	SB-2, SB-3, SB-5, SB-8, SB-12, SB-13 SB-14, SB-15, SB-17, SB-19	10/16	63
Mercury	0.182 to 0.653	SB-2, SB-3, SB-12, SB-13, SB-17, SB-20	6/16	0.18
Silver	2.32 to 3.07	SB-2, SB-8, SB-13	3/16	2
Zinc	114 to 1,180	SB-2, SB-5, SB-15	3/16	109

The source of the metals is likely associated with Historic Fill that contains cinders, ash, coal and metal fragments. Metals are a COC based on the frequency and levels detected. The locations of the soil borings are presented on Figure 2. The metals characterization data for soil samples are presented in Table 5 – Metals Analytical Summary - Soils. The metals laboratory reports are presented in Appendix C.

3.4 SOILS - PCBS

Polychlorinated biphenyls (PCBs) were not detected above the laboratory method detection limits (ND) in soil samples submitted for laboratory analysis; see Table 6 - Polychlorinated Biphenyls Analytical Summary – Soils. Laboratory reports for PCBs are presented in Appendix C. PCBs are not a contaminant of concern (COC) in soil at the Site.

3.5 SOILS - PESTICIDES

The pesticide soil sample results indicate that five (5) out of the 16 soil samples exceed UUSCOs levels for one (1) or more pesticides from samples SB-2 (4.5-5 ft.), SB-3 (6.5-7 ft.), SB-12 (3.5-4 ft.), SB-13 (1.5-2 ft.) and SB-15 (1.5-2 ft.). Concentrations in these samples are all below RRUSCO; see Table 7 - Pesticides Analytical Summary – Soils. Other pesticides were detected in samples from SB-14 (10-12 ft.) and SB-17 (3.5-4 ft.) at concentrations below UUSCOs. The following sample locations were ND for pesticides: SB-5 (7.5-8 ft.), SB-5 (10-10.5 ft.), SB-6 (6.5-7 ft.), SB-8 (1.5-2 ft.), SB-10 (6.5-7 ft.), SB-11 (7.5-8 ft.), SB-16 (14.5-15 ft.), SB-19 (3.5-4 ft.) and SB-20 (6-6.5 ft.). The pesticide chemical compounds detected that exceed UUSCOs are summarized in the Table below with concentration ranges in parts per million (ppm):

Pesticides	Range of Concentration Exceeding UUSCOs (ppm)	Soil Boring Location	Number of Samples That Exceed UUSCOs	UUSCO ppm
4,4-DDT	0.00344 to 0.0111	SB-2 and SB-15	2/16	0.0033
4,4-DDD	0.00467 to 0.00544	SB-3 and SB-12	2/16	0.0033
4,4-DDE	0.00344	SB-15	1/16	0.0033
Dieldrin	0.00695	SB-13	1/16	0.005

Pesticides are biologically persistent, most likely attributable to historic pesticide use and are not considered to be associated with the Site's historic fill soils. Pesticides are not considered a Site COC based on the frequency and low levels detected. The locations of the soil borings are presented on Figure 2. The pesticide laboratory reports are presented in Appendix C.

3.6 SURFACE SOIL SAMPLING RESULTS

Discrete surface soil sample locations had low level detections for VOCs (levels below UUSCOs) at three (3) of the discrete sample locations (SS-01, SS-02, and SS-06) as detailed in Table 14 – VOC Surface Soil Analytical Results.

Discrete and composite samples analyzed for SVOCs indicated Commercial and/or Industrial Use SCO exceedances in four (4) of the discrete samples (SS-09, SS-10, SS-11, and SS-12) and two (2) of the composited samples (CS-02 and CS-03) collected. Composite sample location CS-01 had low level detections of SVOCs, however, below UUSCOs as detailed in Table 15 – SVOC Surface Soil Analytical Results. All three (3) composite sample locations had low level detections for TAL metals, however, none exceeded future Site use criteria of RRUSCOs as detailed in Table 16 – TAL Metals Surface Soil Analytical Results. One (1) discrete sample location (SS-11) did have exceedances above RRSCOs for Cadmium. CS-01 and CS-02 composite samples had low level pesticide detections, however, below future Site use criteria of RRUSCOs as detailed in Table 17 – PCBs and Pesticides Surface Soil Analytical Results.

4.0 GROUNDWATER MONITORING WELL DEVELOPMENT

The groundwater monitoring wells were developed until the discharged groundwater was relatively sediment-free, however, groundwater samples were noted to be turbid during sample collection as detailed on groundwater sampling field logs. Approximately one (1) to three (3) well volumes of groundwater were removed during the well development process. Development well water was stored in 55-gallon drums for off-Site disposal.

5.0 GROUNDWATER SAMPLING AND ANALYSIS SUMMARY

5.1 SAMPLE COLLECTION

A depth to water measurement was recorded from the top of the PVC well casing to the top of the water surface to the nearest 0.1 ft. during sampling. The elevation of groundwater in feet was calculated and recorded with the surveyed reference elevation of the top of the PVC well casing and depth to water measurement. The depth to groundwater measured on June 11, 2018 is noted on each sample field record; see Appendix B. The depth to groundwater varied widely throughout the Site from approximately 5.92 ft. to 14.89 ft. below ground surface.

Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-8, MW-9, and MW-10 on June 11, 2018, approximately one (1) month after installation of the monitoring wells. Samples were not collected from MW-4, MW-5, MW-6, and MW-7 due to dry conditions or not enough groundwater present at the time of sampling to collect a sample, see Appendix B.

The order of sample collection was VOC, SVOC, Metals, PCBs and Pesticides. A disposable translucent bailer was lowered across the top of the water surface and removed to check for the presence of light non-aqueous phase liquids (LNAPL) prior to collection of groundwater samples. Prior to sampling, a bailer was lowered to the bottom of the well to check for dense non-aqueous phase liquids (DNAPL). Floating petroleum product was not observed on the well water and a DNAPL was not observed in the groundwater from each monitoring well, however, the majority of groundwater samples exhibited high turbidity levels.

Six (6) groundwater samples from monitoring wells MW-1, MW-2, MW-3, MW-8, MW-9, and MW-10 were submitted to Paradigm on June 11, 2018 for laboratory analysis in accordance with methods: U.S. EPA 8260 plus CP-51 list, U.S. EPA 8270 base neutrals, Target Analyte List (TAL) Metals, U.S. EPA 8082 (PCBs) and pesticides. A trip blank sample and blind duplicate sample were also submitted for laboratory QA/QC purposes. A unique

sample name identification (e.g. RRW-CH-MW-01-061118) that includes Rochester River Wall Cornhill project name, well name and sample date was assigned to each groundwater sample. However, the discussion in this report references groundwater samples according to the monitoring well name (e.g. MW-1). Therefore, sample RRW-CH-MW-01-061118 is MW-1.

Seven (7) groundwater samples from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-8, MW-9, and MW-10 were submitted to Paradigm on December 20, 2018 for laboratory analysis in accordance with methods USEPA 6010/7471 for TAL Metals. Samples were not collected from MW-6, MW-7, MW-8 due to dry conditions or not enough groundwater present at the time of sampling to collect a sample, as detailed in Appendix B.

A second round of groundwater samples was collected on December 19, 2018 by low-flow groundwater sampling methodology utilizing a geo-pump electric peristaltic pump. Low-flow methodology was used to determine if previous samples collected had increased metal detections due to high turbidity. Samples parameters were collected at each well including turbidity, temperature, pH, oxygen reduction potential, and conductivity. Additionally, depth to water measurements were collected and total volume purged recorded as detailed in the Low Flow Groundwater Sampling Field Records (Appendix B). Analytical tables including both sampling rounds are included as Tables 8 through 12.

5.2 VOCS

The VOCs characterization data for groundwater samples from MW-1, MW-2, MW-8, and MW-9 indicates non-detect (ND) above the laboratory method detection limits. The groundwater sample from MW-3 had a single detection of p-Isopropyltoluene with a concentration of 4.52 ppb that is below NYSDEC Part 703.5 GA Groundwater Standard/Division of Water Technical and Operational Guidance Series 1.1.1 (groundwater standard) of 5 ppb. Acetone was detected in the sample from MW-10 with a concentration of 9.84 ppb that is below the standard of 50 ppb. It should be noted that the concentration of Acetone in the sample from MW-10 was estimated by the laboratory. Acetone is a common laboratory contaminant/artifact and p-Isopropyltoluene is a compound in gasoline. VOCs do not appear to be COC in groundwater due to the low concentrations and lack of frequency of detection in groundwater samples. It should be noted that VOCs were not detected above the method detection limits in the Trip Blank sample supplied by the laboratory for QA/QC purposes. The VOC sample results are presented in Table 8 – Volatile Organic Compounds Analytical Summary – Groundwater. The locations of the monitoring wells are presented on Figure 2. The laboratory reports for VOCs are presented in Appendix C. VOCs were not sampled for or analyzed during the second groundwater sampling round conducted December 2018.

5.3 SVOCS

The SVOCs were not detected in the groundwater samples above the method detection limits during the June 2018 and were not sampled for during the December 2018 sampling event; see Table 9- Semi-Volatile Organic Compounds Analytical Summary – Groundwater. It appears that SVOCs are not a COC in the groundwater at the locations sampled. The locations of the monitoring wells are presented on Figure 2. The laboratory reports for SVOCs are presented in Appendix C and sampling Field Records are presented in Appendix B.

5.4 METALS

Groundwater samples results for metals from the June 2018 sampling event indicate detection of five (5) to fourteen (14) metals that exceed groundwater standards in six (6) groundwater samples. Antimony, Arsenic,

Beryllium, Chromium, Lead, Mercury and Nickel exceed groundwater standards and are heavy metals that are further summarized below.

Metal	Range of Concentration Exceeding Groundwater Standards (ppb)	Monitoring Well Location	Number of Samples That Exceed Standards	Part 703.5 Groundwater Standard ppb
Antimony	31 to 40	MW-1, MW-8, MW-9 and MW-10	4/6	3
Arsenic	29 to 208	MW-1, MW-2, MW-3, MW-8, MW-9 and MW-10	6/6	25
Beryllium	3.03 to 7.69	MW-1, MW-3, MW-8, MW-9 and MW-10	5/6	3
Chromium	71.4 to 206	MW-1, MW-3, MW-8, MW-9 and MW-10	5/6	50
Lead	63.2 to 622	MW-1, MW-3, MW-8, MW-9 and MW-10	5/6	25
Mercury	1.01 to 15.1	MW-8 and MW-9	2/6	0.7
Nickel	131 to 288	MW-8, MW-9 and MW-10	3/6	100

Groundwater samples results for metals from the December 2018 sampling event indicate detection of three (3) to nine (9) metals that exceed groundwater standards in all seven (7) groundwater samples. Arsenic, Chromium, Iron, Lead, Magnesium, Manganese, Mercury, Selenium, and Sodium exceed groundwater standards and are further summarized below.

Metal	Range of Concentration Exceeding Groundwater Standards (µg/L)	Monitoring Well Location	Number of Samples That Exceed Standards	Part 703.5 Groundwater Standard (µg/L)
Arsenic	49.1 to 61.8	MW-2 and MW-3	2/7	25
Chromium	53.1	MW-3	1/7	50
Iron	6,930 to 61,100	MW-1, MW-2, MW-3, MW-4, MW-5, MW-9, and MW-10	7/7	300

Metal	Range of Concentration Exceeding Groundwater Standards (µg/L)	Monitoring Well Location	Number of Samples That Exceed Standards	Part 703.5 Groundwater Standard (µg/L)
Lead	47.9 to 147	MW-1, MW-2, and MW-3	3/7	25
Magnesium	35,400 to 59,300	MW-1, MW-2, MW-3, MW9, and MW-10	5/7	35000
Manganese	2,250 to 7,210	MW-1, MW-2, MW-3, MW-4, MW-5, MW-9, and MW-10	7/7	300
Mercury	3.32	MW-3	1/7	0.7
Selenium	11.3 to 33.3	MW-1, MW-2, and MW-3	3/7	10
Sodium	27,200 to 572,000	MW-1, MW-2, MW-3, MW-4, MW-5, MW-9, and MW-10	7/7	20,000

Metals are considered a COC in the Site groundwater due to elevated concentrations and frequency detections during both sampling events. The source may be from the Fill deposit that is in contact with groundwater. Full tabulated metals results are included in Table 10 - Metal Analytical Summary – Groundwater. Monitoring well locations are presented on Figure 2. Laboratory reports for metals are presented in Appendix C.

5.5 PCBS

Polychlorinated biphenyls (PCBs) were not detected in the groundwater samples above the method detection limits during either round of sampling; see Table 11- Polychlorinated Biphenyls Analytical Summary – Groundwater. It appears that PCBs are not a COC in the groundwater at the locations sampled. The locations of the monitoring wells are presented on Figure 2. The laboratory reports for PCBs are presented in Appendix C.

5.6 PESTICIDES

Pesticides were not detected in the groundwater samples above the method detection limits in samples from MW-1, MW-2 and MW-3 during the June 2018 sampling event and were not sampled during the December 2018 event. The sample from MW-8 indicates detection of beta-BHC with a concentration of 0.0962 ppb and Endosulfan Sulfate at 0.0516 ppb. There is not a current groundwater standard for these pesticides. Heptachlor epoxide was detected in samples from MW-9 and MW-10 with concentrations of 0.134 ppb and 0.0788 ppb; respectfully. These concentrations exceed the standard of 0.03 ppb. It appears that pesticides are not a COC in groundwater due to low concentrations and limited detections. The results for pesticides are summarized in Table 12 - Chlorinated Pesticides Analytical Summary – Groundwater. The locations of the monitoring wells are presented on Figure 2. The laboratory reports for PCBs are presented in Appendix C.

5.7 PETROLEUM SPILL AREA DELINEATION AT A-6/SB-18

A review of potential subsurface impacts at each soil boring location was completed at the conclusion of the May 2018 drilling program. The review identified the A-6/SB-18 soil boring as suspect for petroleum impacts. This localized area required further subsurface investigations to evaluate potential petroleum conditions that could impact future design/construction for restoration of the river wall and surrounding landscaped areas. A petroleum odor and elevated PID measurements were observed during the installation of soil boring A-6/SB-18 on May 25, 2018. It is noted that this was a geotechnical boring location and no environmental boring was collected during the initial investigation at this boring location. Historical environmental concerns in this area were identified as former National Testing Laboratories/Off-Site gasoline station at Greig Street and Exchange Boulevard; see Table 1. Petroleum odor and elevated PID measurements were not detected at other soil borings that were significant enough for further investigations based on a review of PID measurements, field observations and laboratory analytical results for soil and groundwater samples.

Soil Boring Investigation

The field observations and levels noted above indicate a historic petroleum release that required reporting this petroleum-impacted area to the NYSDEC. The City reported the petroleum release to the NYSDEC on August 14, 2018. NYSDEC issued Petroleum Spill No. 1805258 for the area of the spill on land owned by the City at 102 Violetta Street and Spill No. 1805259 for the area of the impact on land owned by the New York State Canal Corporation (NYSCC) at 350 Exchange Boulevard; see Figures 1 and 5. A copy of the petroleum-impacted report is presented in Appendix D – NYSDEC Spill Reports. The extent of the impacted area extends from the City owned property to the New York State Canal Corporation property; see Figure 5. The New York State Canal Corporation was also notified regarding the petroleum-impacted area. There is potential for further investigation to supplement this Phase II ESA data based on NYSDEC's review of this report. Future remediation may be warranted during construction for rehabilitation of the West River Wall.

The purpose of the soil boring investigation was for the delineation of potential petroleum impacts to soils surrounding the A-6/SB-18 boring for potential petroleum that was completed on August 8, 2018. Ten (10) soil borings named GB-101 through GB-110 were installed using direct push drilling methods to depths ranging from 14 to 21 ft. The soil screening and methods for sample collection were consistent with the procedures in the DSAP. Elevated total organic vapors based on soil screen PID measurements ranging from 50 ppm to 377 ppm were observed from soil samples from GB-101, GB-103, GB-104 and GB-108 from depths of approximately 15 to 20 feet below ground surface. Low level PID measurements were observed in soils for the same depth interval in GB-106 and GB-107 that are in the spill area. PID readings were not detected in GB-102 (up gradient), GB-105 (cross gradient), GB-109 (up gradient) and GB-110 (down gradient). These soil borings appear to indicate non-impacted soils outside the spill area. The impacted soils with elevated PID measurements were from depths below the groundwater table. Field screen PID measurements from soils in each boring at depths above the groundwater table ranged from ND to 1 ppm. A summary of field soil screen PID measurements for total organic vapors is presented in Table 13 - Soil Screen Measurement Summary. The PID measurements are also presented on each test boring log; see Appendix A. The locations of the soil borings in the petroleum spill area are presented on Figure 5 - Petroleum Spill Investigation Area at A-6/SB-18.

Soil Sample Collection

Six (6) soil samples named GB-101 (19-20 ft.), GB-102 (17-18 ft.), GB-103 (17-18 ft.), GB-104 (17-18 ft.), GB-109 (17-18 ft.) and GB-110 (13-14 ft.), were collected based on field soil screen PID measurements and observations. The samples were submitted to the laboratory for analysis in accordance with Method 8260 plus CP-51 list and

8270 CP-51 list to target typical petroleum chemical compounds found at petroleum releases. The purpose of the sample selection and laboratory analysis of the above noted samples was to confirm field soil screen PID measurements at impacted soil areas and at non-impacted areas as part of the overall delineation of petroleum contaminated soils. Therefore, samples were not collected from each soil boring where obvious impacts were observed. Laboratory results were also intended to allow for understanding the type(s) of petroleum released.

Soil Quality

Sample results for VOCs was ND for each soil sample with the exception of the detection of Acetone with a concentration of 0.0817 ppm. This concentration of Acetone (a common solvent and laboratory artifact) slightly exceeds the UUSCO level of 0.05 ppm and is below the RRUSCO level of 100 ppm. Petroleum VOCs were not detected above the laboratory method detection limits. Sample results for SVOCs were non-detect for each soil sample as petroleum SVOCs were not detected above the laboratory method detection limits. It is possible that weathered (old/degraded) petroleum from a historic release(s) is the contaminant. Therefore, Bergmann requested further laboratory analysis on samples GB-101 (19-20 ft.), GB-103 (17-18 ft.), GB-104 (17-18 ft.) and GB-109 (17-18 ft.) for Total Petroleum hydrocarbons (TPH) in accordance with method NYSDOH 310.13 refer to Appendix C for TPH laboratory results. This laboratory method provides a total concentration of petroleum detected and does not identify individual petroleum chemical compounds. The NYSDOH 310.13 results for these samples are summarized below.

Total Petroleum Hydrocarbon Identified	Soil Sample	TPH Concentration (ppm)
Medium Weight Petroleum Hydrocarbon as Diesel	GB-101 (19-20 ft.)	1,470
Medium Weight Petroleum Hydrocarbon as Diesel	GB-103 (17-18 ft.)	911
Medium Weight Petroleum Hydrocarbon as Diesel	GB-104 (17-18 ft.)	1,820
Medium Weight Petroleum Hydrocarbon as Diesel	GB-109 (17-18 ft.)	348

TPH results confirm that petroleum encountered in this portion of the Site is a medium weight petroleum hydrocarbon that correlates closest to diesel fuels. The NYSDEC does not have soil standards for method NYSDOH 310.13. Therefore, there is not a direct way to apply these results to the NYSDEC CP-51 levels for petroleum contaminated sites or UUSCOs. The reference to "Medium Weight Petroleum Hydrocarbon as Diesel" indicates that the result for this laboratory method is best reported as a medium weight petroleum hydrocarbon that is diesel or is a medium weight petroleum hydrocarbon that is in the diesel range of petroleum compounds.

The area of the spill that was delineated is approximately 54 ft. X 28 ft. X 5 ft. from a depth of 15 feet to 20 ft. below ground surface within the spill area. The petroleum-impacted soils underlie approximately 500 cubic

yards of non-petroleum impacted soils located from ground surface to approximately 15 ft. bgs. These overlying soils are Fill soils (Historic Fill Materials) that would be managed as regulated waste as throughout the project area. The results for VOCs and SVOCs in the groundwater sample from MW-9 (installed in A-6/SB-18) was ND. However, the groundwater in this area may contain petroleum constituents should it be encountered during the construction of the West River Wall.

At the time of this report completion and submission, the source of this spill is unknown. Since, the overlying soils are non-impacted and it appears that impacts are in soils below the groundwater table. This indicates that petroleum may have migrated onto the Site in groundwater or the petroleum source is at or near the elevation of the water table on-Site.

6.0 SUMMARY AND CONCLUSIONS

The following summary and conclusions are based on the Phase II ESA field soil sample screening, observations and laboratory sample results. The results are subject to change in the event that further investigation is completed. Our summary and conclusions are from limited sampling locations, sample collection, and subject to our limitations (see Appendix E – Limitations).

1. Three (3) soil deposits were encountered that include a Fill deposit consisting of recent sandy topsoil layer at the ground surface that was placed during the most recent landscaping of the Site and underlying historic fill materials of this deposit that consisted of reworked gavel and soil with lesser amounts of cinders, ash, brick, concrete, wood, metal, coal, gravel and other debris. It appears that the historic fill materials were placed to make land during former historic developments, including a section of a former railroad line and as backfill of the river wall. The Fill deposit is located throughout the entire Site with thickness ranging from approximately eight (8) to 15 feet.

2. SVOCs and Metals are the primary COCs in Site soil (surface and subsurface) based on the frequency of detection of elevated levels that exceed UUSCOs and planned future use SCOs (Restricted-Residential or Active Recreational). The suspected sources of these COCs is from historic fill materials in the Fill deposit that consist of cinders, ash, metals, gravel, wood, concrete, brick and coal fragments. The historic fill materials such as ash, cinders, and slag, in the Fill deposit area as well as in the topsoil/surface soil, are considered non-hazardous regulated waste and volumes that will be disturbed by excavation during the construction of the West River Wall must be included in the design phase and costs associated with proper NYSDEC Part 360 disposal included.

3. The depth to groundwater ranges from approximately six (6) to 15 feet bgs and has been impacted by Metals that are considered Site COCs (exceeding groundwater standards). The majority of metals detected in the Site groundwater samples (overburden groundwater) were also detected in the soil samples. It appears that the source of Metal impact in groundwater is from Fill deposit soils that are in contact with groundwater.

4. A petroleum-impacted area was identified and delineated in the area of A-6/SB-18. The petroleum-impacted area may require remediation to inactive -active NYSDEC Spill No. 1805258 (on City-owned property) and 1805259 (on NYSCC-owned property). The depth of petroleum impacts are below the

groundwater table from approximately 15 to 20 feet. The approximate size of the petroleum spill area is 54 ft. X 28 ft. X 5 ft. The impacted soils underlie approximately 500 cubic yards of non-petroleum impacted soils located from ground surface to approximately 15 feet. These overlying soils are Fill soils that contain historic fill materials to be managed as regulated non-hazardous solid waste throughout the project area when encountered in excavation areas during future construction activates for rehabilitation of the river wall.

7.0 RECOMMENDATIONS

The following recommendations are based on the Phase ll ESA field soil sample screening, observations and laboratory sample results. The results are subject to change in the event that further investigation is completed. Our recommendations are subject to our limitations (see Appendix E – Limitations).

1. Bergmann recommends preparation and implementation of a comprehensive Environmental Management Plan (EMP) to provide the methods and procedures for management of impacted soils and groundwater during the construction phases of the River Wall rehabilitation. The EMP will be prepared prior to future earthwork construction phases. The EMP is intended for contactor and consultants use during all phases of earthwork activities such as grading, excavation and backfilling of Site soils. Remediation of the petroleum spill area at soil boring A6/SB-18 will be coordinated with NYSDEC under Spill No. 1805258 for 102 Violetta Street owned by the City and Spill No. 1805259 for the contiguous parcel at 350 Exchange Street owned by New York State during proposed construction phases.

2. It is recommended that a discussion regarding the petroleum-impacted area be facilitated between the two (2) property owners (City of Rochester and the NYSCC), the NYSDEC, and Bergmann to determine whether or not a remediation plan will be required during project design grades and planned earthwork construction activities for rehabilitation for the River Wall.

3. A primary element for a cover system over the historic fill soils and would likely include maintaining a one-foot soil layer thickness of imported soils to provide a barrier from impacted soils to the environment. Other construction techniques such as installation of sheet piles should be considered to minimize overall excavation of historic fill soils.

4. The historic fill materials (soils) in the Fill deposit are considered non-hazardous regulated waste and volumes that may be disturbed by excavation for the future rehabilitation of the river wall should be calculated in design phases to include the cost of managing or disposing of these soils during construction. At the time of this report submission design plans are not completed for on-Site soil and historic fill materials that may be planned for excavation and removal for off-Site disposal, and or re-used on-Site. When design criteria are finalized, the EMP will be prepared to allow for the proposed remediation, restoration, and rehabilitation of the River Wall and surrounding improvements in compliance with applicable requirements set forth by the NYSDEC 6 New York Code, Rules and Regulations (NYCRR) part 360 Series Solid Waste Management Facility Regulations, effective November 4, 2017. If soil management methods include off-Site soil disposal at a sanitary landfill, then additional analytical parameters under 6 NYCRR Part 375 will be required such as toxicity characteristic leaching procedure (TCLP).

5. Management of Fill soils that are historic fill materials will be required once historic fill materials are excavated from the Site during future construction. The layer of topsoil fill should be separated from the historic fill materials should excavation and off-Site disposal be required. The layer of topsoil fill may be part of the cover barrier (cap) over the historic fill materials should a cover barrio be designed for management of this material. Overall, it is recommended to minimize excavation of fill soils at the Site. Historic fill materials may only be moved to other historically filled sections of this Site that have similar characteristics and to the extent that the elevation of that Site does not exceed surrounding properties or provisions made to collect surface runoff. In addition, the COC concentrations existing where the fill is to be placed must be equal to or greater than the COC concentrations in the historic fill being moved. The historic fill must not be placed in groundwater and must be capped (covered) with either pavement/concrete improvements or a minimum of two feet of uncontaminated soil to meet restricted residential reuse. These restrictions should be included in design phases of the project to cost-effectively be implemented during a construction with respect to achieving the NYSDEC regulatory framework.

6. It is recommended that a beneficial use determination (BUD) under Section 360.12, be submitted to NYSDEC to allow for management of the historic fill materials. If accepted the historic fill is no longer regulated as solid waste and other reuse options may be available on-Site and off-Site. There are two types of BUDs: pre-determined and case-specific. Pre-determined BUDs include materials and uses that have already been found to not pose a threat to the environment and are not prone to abuse, whereas case-specific BUDs allow the City to apply to DEC for BUD determination in individualized circumstances. If there is no available use of historic fill materials meeting all of these requirements, then it generally must be disposed of at a landfill. In order to transport historic fill to a landfill, a party must register under Part 364 (Waste Transporter Permits) and comply with other reporting requirements. However, DEC is open to case-specific beneficial use determinations for historic fill, as described in greater detail below.

TABLES

Table 1

Environmental and Structural Soil Boring Information

Environmental and Structural Boring Boring Information				
***Boring Name**	**Rock Core Length (in feet)**	****Historic Concern/Reason for Boring**	**Current Plat Number (or Nearest Plat Number)**	**Date of Plat Map**
SB1	0	Rochester Lead Works	South East Corner of #301-321, #300	1888-1935
SB2	0	Rochester Lead Works	South East Corner of #301-321, #300	1888-1935
SB3	0	Rochester Lead Works	South East Corner of #301-321, #300	1888-1935
SB4	0	Rochester Lead Works	South East Corner of #301-321, #300	1888-1935
SB5	0	Vacuum Oil Co.	#300, #200, #220	1888-1935
SB6 / A1	25	Vacuum Oil Co.	#300, #200, #220	1888-1935
SB7	0	Vacuum Oil Co.	#128, #132, #136	1910-1935
SB8	0	Vacuum Oil Co.	#128, #132, #136	1910-1935
SB9	0	Marriots French Dry Cleaning Works, Inc.	#128, #132, #136	1910-1935
SB10	0	Marriots French Dry Cleaning Works, Inc.	#128, #132, #136	1910-1935
SB11 / A2	25	Marriots French Dry Cleaning Works, Inc.	#168, #392	1910-1935
SB12	0	Marriots French Dry Cleaning Works, Inc.	#168, #392	1910-1935
SB13	0	Not of Historical Concern	#168, #392	1910-1935
SB14	0	Not of Historical Concern	#168, #392	1910-1935
SB15 / A3	0	Historic Gas Station	South End of #290	1910-1935
SB16	0	Historic Gas Station	South End of #290	1910-1935
SB17 / A4	25	Historic Gas Station	South End of #290	1910-1935
SB18	0	Historic Gas Station	#350, Northern End of #689	1910-1935
A5	25	Not of Historical Concern (Structural Boring Only)	#300	1910-1935
SB19 / A6	0	National Testing Laboratories / Offsite gasoline station at Greig St. and Exchange Blvd.	#496	1910-1935
SB20	0	National Testing Laboratories	#496	1910-1935
A7	25	Not of Historical Concern (Structural Boring Only)	#496	1910-1935

*SB represents Environmental Borings and A represents Structural Borings.

**Historical Concerns based on irformation obtained from EDR Radius Search and City of Rochester Historic Plat Maps.

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Table 2
Groundwater Level Measurements
Phase II Environmental Site Assessment – Segment 1 Cornhill
West River Wall
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Well / Soil Boring	Date	Depth to Water	Well Riser Reference Elevation (ft.)	Groundwater Elevation (ft.)	Ground Surface Elevation (ft.)
MW-1 / SB-3	06/11/2018	8.22 feet	513.12	504.90	513.39
MW-2 / SB-05	06/11/2018	6.62 feet	512.93	506.31	513.20
MW-3 / A-3/SB-7	06/11/2018	6.18 feet	513.12	506.94	513.47
MW-4 / SB-8	06/11/2018	7.13 feet	512.47	505.34	512.90
MW-5 / SB-11	06/11/2018	10.29 feet	513.61	503.32	513.86
MW-6 / SB-14	06/12/2018	14.89 feet	517.77	502.88	518.06
MW-7 / SB-16	06/12/2018	14.55 feet	519.54	504.99	519.78
MW-8 / SB-17	06/11/2018	7.31 feet	522.22	514.91	522.33
MW-9 / A-6 / SB-18	06/12/2018	13.10 feet	519.97	506.87	520.24
MW-10 / A-7	06/12/2018	5.92 feet	514.70	508.78	514.98

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Table 3: Volatile Organic Compound Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 2018

Sample ID and Date				SB-2 (4.5-5) 05/09/18	SB-3 (6.5-7) 05/09/18	SB-5 (7.5-8) 05/09/18	SB-5 (10-10.5) 05/09/18	SB-6 (6.5-7) 05/09/18	SB-8 (1.5-2) 05/09/18	SB-10 (6.5-7) 05/11/18	SB-11 (7.5-8) 05/11/18
EPA 8260 - TCL Volatile Organics Analyzed Parameters[1]	Unrestricted Use[2]	Restricted Residential Use[3]	Commercial Use[3]	RRW-CH-SB-02-050918 (4.5-5)	RRW-CH-SB-03-050918 (6.5-7)	RRW-CH-SB-05-050918 (7.5-8)	RRW-CH-SB-05-050918 (10-10.5)	RRW-CH-SB-06-050918 (6.5-7)	RRW-CH-SB-08-050918 (1.5-2)	RRW-CH-SB-10-051118 (6.5-7)	RRW-CH-SB-11-051118 (7.5-8)
1,1,1-Trichloroethane	0.680	100	500	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.270	26	240	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.330	100	500	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3.6	52	190	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1.1	500	500	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.020	3.1	30	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1.8	100	500	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	130	130	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	0.100	13	130	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	0.120	100	500	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	0.1	500	ND	ND	ND	0.175	ND	ND	ND	0.0683
Benzene	0.060	4.8	44	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	-	-	-	ND	ND	ND	ND	ND	22.1	ND	ND
Carbon Tetrachloride	0.760	2.4	22	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.370	49	350	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.250	100	500	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1.0	41	390	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Methyl acetate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	0.930	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	0.050	100	500	31.2	41.1	ND	ND	ND	ND	ND	ND
o-Xylene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.3	150	150	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.700	100	500	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.470	21	200	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.020	0.9	13	ND	ND	ND	ND	ND	ND	ND	ND
N-Butylbenzene	12.0	100	500	ND	ND	ND	ND	ND	ND	ND	ND
N-Propylbenzene	3.9	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12.0	100	500	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11.0	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (mixed)	0.260	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.470	21	200	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in milligrams per kilogram (mg/Kg) (ppm).
2 - 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs
3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs
ND - Not detected above reporting limit
NA - not analyzed.
J - value is estimated.
D - all compounds identified in an analysis at secondary dilution factor.
M - matrix spike recoveries outside QC limits; matrix bias indicated.

Value Exceeds Unrestricted SCOs
Value Exceeds Restricted Residential Use SCOs
Value Exceeds Commercial Use SCOs

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Table 3: Volatile Organic Compound Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 2018

Sample ID and Date				SB-12 (3.5-4) 05/11/18	SB-13 (1.5-2) 05/11/18	SB-14 (10-12) 05/11/18	SB-15 (1-1.5) 05/11/18	SB-16 (14.5-15) 05/14/18	SB-17 (3.5-4) 05/14/18	SB-3XX18 Blind Duplicate	SB-19 (3.5-4) 05/14/18	SB-20 (6-6.5) 05/14/18
EPA 8260 - TCL Volatile Organics Analyzed Parameters[1]	Unrestricted Use[2]	Restricted Residential Use[3]	Commercial Use[3]	RRW-CH-SB-12-051118 (3.5-4)	RRW-CH-SB-13-051118 (1.5-2)	RRW-CH-SB-14-051118 (10-12)	RRW-CH-SB-15-051118 (1-1.5)	RRW-CH-SB-16-051418 (14.5-15)	RRW-CH-SB-17-051418 (3.5-4)	RRW-CH-SB-03XX18 (4.5-5) Blind Duplicate	RRW-CH-SB-19-051418 (3.5-4)	RRW-CH-SB-20-051418 (6-6.5)
1,1,1-Trichloroethane	0.680	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.270	26	240	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.330	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3.6	52	190	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1.1	500	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.020	3.1	30	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1.8	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	130	130	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	0.100	13	130	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	0.120	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	0.1	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.060	4.8	44	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.760	2.4	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.370	49	350	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.250	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1.0	41	390	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl acetate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	0.930	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	0.050	100	500	ND	ND	30.5	ND	ND	ND	ND	ND	ND
o-Xylene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.3	150	150	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.700	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.470	21	200	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.020	0.9	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Butylbenzene	12.0	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Propylbenzene	3.9	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12.0	100	500	ND	ND	ND	ND	ND	ND	10,400	ND	22.7
o-Xylene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11.0	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (mixed)	0.260	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.470	21	200	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in milligrams per kilogram (mg/Kg) (ppm).
2 - 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs
3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs
ND - Not detected above reporting limit
NA - not analyzed.
J - value is estimated.
D - all compounds identified in an analysis at secondary dilution factor.
M - matrix spike recoveries outside QC limits; matrix bias indicated.

Analytical Reports: 182065
181948
182049

Table 4: Semi-Volatile Organic Compound Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 2018

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Sample ID and Date				SB-2 (4.5-5) 05/09/18	SB-3 (6.5-7) 05/09/18	SB-5 (7.5-8) 05/09/18	SB-5 (10-10.5) 05/09/18	SB-6 (6.5-7) 05/09/18	SB-8 (1.5-2) 05/09/18	SB-10 (6.5-7) 05/11/18	SB-11 (7.5-8) 05/11/18
EPA 8270 - TCL Semi-Volatile Organics Analyzed Parameters[1]	Unrestricted Use[2]	Restricted Residential Use[3]	Commercial Use[3]	RRW-CH-SB-02-050918 (4.5-5)	RRW-CH-SB-03-050918 (6.5-7)	RRW-CH-SB-05-050918 (7.5-8)	RRW-CH-SB-05-050918 (10-10.5)	RRW-CH-SB-06-050918 (6.5-7)	RRW-CH-SB-08-050918 (1.5-2)	RRW-CH-SB-10-051118 (6.5-7)	RRW-CH-SB-11-051118 (7.5-8)
1,1-Biphenyl				ND	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophthalene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
3&4-Methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	20	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	100	500	500	0.618	ND	ND	ND	ND	ND	ND	ND
Acetophenone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	100	100	500	0.563	ND	ND	ND	ND	ND	ND	ND
Atrazine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Benzaldehyde	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	1	5.6	1.86	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	1	1	1	1.52	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	1	1	5.6	2.25	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	0.1	100	500	0.938	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.8	3.9	56	1.52	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy) methane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl) ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl) ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Carprolactam	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Carbozole	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	3.9	56	1.91	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	0.033	0.33	0.56	0.400	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	500	3.03	ND	ND	ND	ND	ND	ND	ND
Fluorene	30	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.5	0.5	5.6	0.954	ND	ND	ND	ND	ND	ND	ND
Isophorone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.8	6.7	6.7	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	500	0.823	ND	ND	ND	ND	ND	ND	ND
Phenol	0.330	100	500	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	500	2.55	ND	ND	ND	ND	ND	ND	ND
Pyridine	100	100	500	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in macrograms per kilogram (Mg/Kg).
2 - 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs
ND - Not detected above reporting limit
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J - value is estimated.
D - all compounds identified in an analysis at secondary dilution factor.
M - matrix spike recoveries outside QC limits; matrix bias indicated.

Value Exceeds Unrestricted SCOs
Value Exceeds Restricted Residential Use SCOs
Value Exceeds Commercial Use SCOs

Table 4: Semi-Volatile Organic Compound Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 2018

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Sample ID and Date				SB-12 (3.5-4) 05/11/18	SB-13 (1.5-2) 05/11/18	SB-14 (10-12) 05/11/18	SB-15 (1-1.5) 05/11/18	SB-16 (14.5-15) 05/14/18	SB-17 (3.5-4) 05/14/18	SB-3XX18 Blind Duplicate	SB-19 (3.5-4) 05/14/18	SB-20 (6-6.5) 05/14/18
EPA 8270 - TCL Semi-Volatile Organics Analyzed Parameters[1]	Unrestricted Use[2]	Restricted Residential Use[3]	Commercial Use[3]	RRW-CH-SB-12-051118 (3.5-4)	RRW-CH-SB-13-051118 (1.5-2)	RRW-CH-SB-14-051118 (10-12)	RRW-CH-SB-15-051118 (1-1.5)	RRW-CH-SB-16-051418 (14.5-15)	RRW-CH-SB-17-051418 (3.5-4)	RRW-CH-SB-03XX18 (4.5-5) Blind Duplicate	RRW-CH-SB-19-051418 (3.5-4)	RRW-CH-SB-20-051418 (6-6.5)
1,1-Biphenyl				ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophthalene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
3&4-Methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	20	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	100	500	500	ND	0.858	ND	ND	ND	ND	ND	ND	ND
Acetophenone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	100	100	500	ND	0.750	ND	ND	ND	0.354	ND	ND	ND
Atrazine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzaldehyde	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	1	5.6	420	**2.50**	ND	0.592	ND	0.661	0.398	ND	ND
Benzo(a)pyrene	1	1	1	392	**2.26**	ND	0.658	ND	0.657	0.394	ND	ND
Benzo(b)fluoranthene	1	1	5.6	505	**3.30**	ND	0.883	ND	0.802	0.458	ND	ND
Benzo(g,h,i)perylene	0.1	100	500	ND	0.962	ND	0.734	ND	0.442	ND	ND	ND
Benzo(k)fluoranthene	0.8	3.9	56	ND	**1.21**	ND	0.289	ND	ND	ND	ND	ND
Bis(2-chloroethoxy) methane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl) ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl) ether	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carprolactam	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbozole	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	3.9	56	502	**2.94**	ND	0.716	ND	0.722	0.421	ND	ND
Dibenzo(a,h)anthracene	0.033	0.33	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	500	824	4.74	ND	1.14	ND	1.44	0.728	1.81	0.402
Fluorene	30	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.5	0.5	5.6	ND	**1.9**	ND	0.641	ND	0.553	ND	ND	ND
Isophorone	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.8	6.7	6.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	500	435	1.45	ND	0.384	ND	1.16	0.343	ND	0.316
Phenol	0.330	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	500	802	3.80	ND	1.02	ND	1.30	0.773	1.90	0.367
Pyridine	100	100	500	ND	ND	ND	ND	ND	ND	ND	ND	ND

1 - All values presented in macrograms per kilogram (Mg/Kg).
2 - 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs
ND - Not detected above reporting limit
NA - not analyzed.
J - value is estimated.
D - all compounds identified in an analysis at secondary dilution factor.
M - matrix spike recoveries outside QC limits; matrix bias indicated.

Analytical Reports: 182065
181948
182049

Table 5: Metals Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
May 2018

Sample ID and Date				SB-2 (4.5-5) 05/09/18	SB-3 (6.5-7) 05/09/18	SB-5 (7.5-8) 05/09/18	SB-5 (10-10.5) 05/09/18	SB-6 (6.5-7) 05/09/18	SB-8 (1.5-2) 05/09/18	SB-10 (6.5-7) 05/11/18	SB-11 (7.5-8) 05/11/18	SB-12 (3.5-4) 05/11/18
TAL Metals Analyzed Parameters[1]	Unrestricted Use[2]	Restricted Residential[3]	Commercial Use[3]	RRW-CH-SB-02-050918 (4.5-5)	RRW-CH-SB-03-050918 (6.5-7)	RRW-CH-SB-05-050918 (7.5-8)	RRW-CH-SB-05-050918 (10-10.5)	RRW-CH-SB-06-050918 (6.5-7)	RRW-CH-SB-08-050918 (1.5-2)	RRW-CH-SB-10-051118 (6.5-7)	RRW-CH-SB-11-051118 (7.5-8)	RRW-CH-SB-12-051118 (3.5-4)
Aluminum	-	-	-	3,920	3,370	7,520	6,940	4,590	3,490	3,590	8,070	6,610
Antimony	-	-	-	13.3	ND	ND	ND	4.48	10.1	ND	ND	ND
Arsenic	13	16	16	**60.9**	8.3	5.69	**17.2**	8.76	**16**	2.75	4.62	11.5
Barium	350	400	400	103	72.7	43.9	477	51.5	126	33.8	54.1	55.7
Beryllium	7.2	72	590	0.664	0.646	0.46	0.515	0.596	1.00	0.587	0.422	0.616
Cadmium	2.5	4.3	9.3	0.98	ND	ND	0.881	ND	ND	ND	ND	ND
Calcium	-	-	-	7,350	12,500	78,500	6,500	15,300	3,140	22,900	12,500	25,600
Chromium, hexavalent	1	110	400	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	30	180	1,500	13.7	8.13	8.96	9.2	10.6	11.1	6.89	10.5	10.8
Cobalt	-	-	-	7.35	7.28	4.36	6.96	6.71	9.42	4.65	6.38	6.33
Copper	-	270	270	126	157	16.5	18.2	42.5	76.1	54.8	19.0	73.2
Cyanide, total	27	27	27	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	-	-	-	28,000	17,700	10,400	19,600	13,200	54,900	8,250	14,500	17,100
Lead	63	400	1,000	**622**	**130**	21.9	**117**	42.5	**101**	13.8	61.3	**123**
Magnesium	-	-	-	1,810	4,200	41,700	3,550	7,700	1,010	13,600	6,500	11,600
Manganese	1,600	2,000	10,000	185	154	278	235	179	95.3	268	235	214
Mercury	0.18	0.81	2.8	**0.182**	**0.653**	0.0573	0.148	0.154	0.0478	0.145	0.136	**0.205**
Nickel	30	310	310	16.5	12.3	9.39	14.7	10.1	14.1	12.5	13.7	12.6
Potassium	-	-	-	754	580	1,610	966	802	460	735	1,240	121
Selenium	3.9	180	1,500	ND	ND	1.11	1.14	ND	ND	ND	ND	ND
Silver	2	180	1,500	**2.32**	0.944	ND	1.14	ND	**3.07**	ND	0.797	1.39
Sodium	-	-	-	200	ND	138	ND	ND	ND	243	ND	232
Thalium	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	-	-	-	17.4	14.6	11.7	12.0	19.2	19.8	13.9	16.0	17.9
Zinc	109	10,000	10,000	**116**	48.5	77.2	**1,180**	30.5	22.7	36.2	48.7	75

Analytical Reports: 182065, 181948, 182049

1 - All values for metals are presented in milligrams per kilograms (mg/kg)

2- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs

ND - Not detected above reporting limit

NA - not analyzed.

J - value is estimated.

D - all compounds identified in an analysis at secondary dilution factor.

M - matrix spike recoveries outside QC limits; matrix bias indicated.

Value Exceeds Unrestricted SCOs

Value Exceeds Restricted Residential Use SCOs

Value Exceeds Commercial Use SCOs

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Table 5: Metals Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
May 2018

Sample ID and Date				SB-13 (1.5-2) 05/11/18	SB-14 (10-12) 05/11/18	SB-15 (1-1.5) 05/11/18	SB-16 (14.5-15) 05/14/18	SB-17 (3.5-4) 05/14/18	SB-3XX18 Blind Duplicate	SB-19 (3.5-4) 05/14/18	SB-20 (6-6.5) 05/14/18
TAL Metals Analyzed Parameters[1]	Unrestricted Use[2]	Restricted Residential[3]	Commercial Use[3]	RRW-CH-SB-13-051118 (1.5-2)	RRW-CH-SB-14-051118 (10-12)	RRW-CH-SB-15-051118 (1-1.5)	RRW-CH-SB-16-051418 (14.5-15)	RRW-CH-SB-17-051418 (3.5-4)	RRW-CH-SB-03XX18 (4.5-5) Blind Duplicate	RRW-CH-SB-19-051418 (3.5-4)	RRW-CH-SB-20-051418 (6-6.5)
Aluminum	-	-	-	6,740	4,600	5,200	7,450	7,690	8,400	8,820	4,730
Antimony	-	-	-	13	ND	ND	ND	ND	ND	ND	ND
Arsenic	13	16	16	**37.7**	5.98	7.03	9.62	4.92	3.68	3.87	2.68
Barium	350	400	400	97.8	55.6	72.8	43.7	55.0	47.7	57.3	23.2
Beryllium	7.2	72	590	0.77	0.562	0.296	0.415	0.325	0.387	0.427	ND
Cadmium	2.5	4.3	9.3	1.08	ND	0.518	ND	0.429	ND	ND	ND
Calcium	-	-	-	18,600	8,780	88,200	1,220	69,700	21,700	17,300	13,900
Chromium, hexavalent	1	110	400	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	30	180	1,500	11.6	7.08	12.9	9.93	11.0	10.1	10.8	6.1
Cobalt	-	-	-	9.29	6.14	3.43	8.71	4.91	5.30	5.38	4.27
Copper	-	270	270	108.0	133.0	40.1	8.8	26.8	13	16	20.5
Cyanide, total	27	27	27	NA	NA	NA	NA	NA	NA	NA	NA
Iron	-	-	-	48,300	9,970	12,600	20,800	13,800	13,200	13,300	8,960
Lead	63	400	1,000	**520**	**134**	**63.2**	**9.45**	**75**	37.1	**71.4**	6.93
Magnesium	-	-	-	8,510	4,180	24,200	2,200	18,100	6,570	5,590	5,570
Manganese	1,600	2,000	10,000	230	140	285	116	331	626	287	148
Mercury	0.18	0.81	2.8	**0.182**	0.0596	0.129	0.0134	**0.25**	0.0944	0.179	**0.19**
Nickel	30	310	310	20.6	12.4	9.85	14.5	11.3	10.3	11.4	7.8
Potassium	-	-	-	1,190	762	1,430	954	1,410	1,600	1,550	836
Selenium	3.9	180	1,500	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	180	1,500	**2.89**	0.705	1.11	1.62	1.84	0.8620	0.7040	ND
Sodium	-	-	-	214	243	147	359	ND	164	ND	ND
Thalium	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	-	-	-	20.7	15.1	14.1	16.3	15.4	17.2	17.9	10.3
Zinc	109	10,000	10,000	144	43.5	**114**	42.5	130	56.4	64.8	33.5

1 - All values for metals are presented in milligrams per kilograms (mg/kg)

2- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs

ND - Not detected above reporting limit

NA - not analyzed.

J - value is estimated.

D - all compounds identified in an analysis at secondary dilution factor.

M - matrix spike recoveries outside QC limits; matrix bias indicated.

Value Exceeds Unrestricted SCOs

Value Exceeds Restricted Residential Use SCOs

Value Exceeds Commercial Use SCOs

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Table 6: Polychlorinated Bihenyls Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 9, 2018

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Sample ID and Date				SB-2 (4.5-5) 05/09/18	SB-3 (6.5-7) 05/09/18	SB-5 (7.5-8) 05/09/18	SB-5 (10-10.5) 05/09/18	SB-6 (6.5-7) 05/09/18	SB-8 (1.5-2) 05/09/18	SB-10 (6.5-7) 05/11/18
Table 6 - PCBs - EPA Method 80821 Analyzed Parameters	Unrestricted Use[3]	Restricted Residential[4]	Commercial Use[4]	RRW-CH-SB-02-050918 (4.5-5)	RRW-CH-SB-03-050918 (6.5-7)	RRW-CH-SB-05-050918 (7.5-8)	RRW-CH-SB-05-050918 (10-10.5)	RRW-CH-SB-06-050918 (6.5-7)	RRW-CH-SB-08-050918 (1.5-2)	RRW-CH-SB-10-051118 (6.5-7)
Aroclor-1016	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1260	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1262	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1268	0.1	1	1	ND	ND	ND	ND	ND	ND	ND

1- All values for PCBs are presented in milligrams per kilograms (mg/kg)
(ug/Kg).
3- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs
4- 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs
NA - not analyzed.
J - value is estimated.
D - all compounds identified in an analysis at secondary dilution factor.
M - matrix spike recoveries outside QC limits; matrix bias indicated.
P - concentration differs by more than 40% between the primary and secondary analytical columns.

Value Exceeds Unrestricted SCOs
Value Exceeds Restricted Residential Use SCOs
Value Exceeds Commercial Use SCOs

Table 6: Polychlorinated Bihenyls Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 9, 2018

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Sample ID and Date				SB-11 (7.5-8) 05/11/18	SB-12 (3.5-4) 05/11/18	SB-13 (1.5-2) 05/11/18	SB-14 (10-12) 05/11/18	SB-15 (1-1.5) 05/11/18	SB-16 (14.5-15) 05/14/18	SB-17 (3.5-4) 05/14/18
Table 6 - PCBs - EPA Method 80821 Analyzed Parameters	Unrestricted Use[3]	Restricted Residential[4]	Commercial Use[4]	RRW-CH-SB-11-051118 (7.5-8)	RRW-CH-SB-12-051118 (3.5-4)	RRW-CH-SB-13-051118 (1.5-2)	RRW-CH-SB-14-051118 (10-12)	RRW-CH-SB-15-051118 (1-1.5)	RRW-CH-SB-16-051418 (14.5-15)	RRW-CH-SB-17-051418 (3.5-4)
Aroclor-1016	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1260	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1262	0.1	1	1	ND	ND	ND	ND	ND	ND	ND
Aroclor-1268	0.1	1	1	ND	ND	ND	ND	ND	ND	ND

1- All values for PCBs are presented in milligrams per kilograms (mg/kg) (ug/Kg).

3- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

4- 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Cor

NA - not analyzed.

J - value is estimated.

D - all compounds identified in an analysis at secondary dilution factor.

M - matrix spike recoveries outside QC limits; matrix bias indicated.

P - concentration differs by more than 40% between the primary and secc

Table 6: Polychlorinated Bihenyls Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 9, 2018

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Sample ID and Date				SB-3XX18 Blind Duplicate	SB-19 (3.5-4) 05/14/18	SB-20 (6-6.5) 05/14/18
Table 6 - PCBs - EPA Method 80821 Analyzed Parameters	Unrestricted Use[3]	Restricted Residential[4]	Commercial Use[4]	RRW-CH-SB-03XX18 (4.5-5) Blind Duplicate	RRW-CH-SB-19-051418 (3.5-4)	RRW-CH-SB-20-051418 (6-6.5)
Aroclor-1016	0.1	1	1	ND	ND	ND
Aroclor-1221	0.1	1	1	ND	ND	ND
Aroclor-1232	0.1	1	1	ND	ND	ND
Aroclor-1242	0.1	1	1	ND	ND	ND
Aroclor-1248	0.1	1	1	ND	ND	ND
Aroclor-1254	0.1	1	1	ND	ND	ND
Aroclor-1260	0.1	1	1	ND	ND	ND
Aroclor-1262	0.1	1	1	ND	ND	ND
Aroclor-1268	0.1	1	1	ND	ND	ND

1- All values for PCBs are presented in milligrams per kilograms (mg/kg) (ug/Kg).
3- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs
4- 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Cor
NA - not analyzed.
J - value is estimated.
D - all compounds identified in an analysis at secondary dilution factor.
M - matrix spike recoveries outside QC limits; matrix bias indicated.
P - concentration differs by more than 40% between the primary and secc

Analytical Reports: 182065
181948
182049

Table 7 - Pesticides Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 9, 2018

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Sample ID and Date				SB-2 (4.5-5) 05/09/18	SB-3 (6.5-7) 05/09/18	SB-5 (7.5-8) 05/09/18	SB-5 (10-10.5) 05/09/18	SB-6 (6.5-7) 05/09/18	SB-8 (1.5-2) 05/09/18	SB-10 (6.5-7) 05/11/18
Table 7 - PCBs - EPA Method 80821 Analyzed Parameters	Unrestricted Use[3]	Restricted Residential[4]	Commercial Use[4]	RRW-CH-SB-02-050918 (4.5-5)	RRW-CH-SB-03-050918 (6.5-7)	RRW-CH-SB-05-050918 (7.5-8)	RRW-CH-SB-05-050918 (10-10.5)	RRW-CH-SB-06-050918 (6.5-7)	RRW-CH-SB-08-050918 (1.5-2)	RRW-CH-SB-10-051118 (6.5-7)
Table 7 - Pesticides Analytical Summary - Soils										
Aldrin	0.005	0.097	0.680	0.00387	ND	ND	ND	ND	ND	ND
Alpha-BHC	0.02	0.480	3.4	0.00467	ND	ND	ND	ND	ND	ND
beta-BHC	0.036	0.360	3.0	0.00379	ND	ND	ND	ND	ND	ND
2,4,5-TP Acid (Silvex)	3.8	100	500	NA	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.0033	13	92	ND	0.00467	ND	ND	ND	ND	ND
4,4'-DDE	0.0033	8.9	62	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.0033	7.9	47	0.0111	ND	ND	ND	ND	ND	ND
cis-Chlordane	0.094	4.2	24	ND	ND	ND	ND	ND	ND	ND
trans-Chlordane	0.094	4.2	24	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.005	0.200	1.4	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	2.4	24	200	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	2.4	24	200	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	2.4	24	200	0.00705	ND	ND	ND	ND	ND	ND
Endrin	0.014	11	89	ND	ND	ND	ND	ND	ND	ND
Endrin Aldelhyde	-	-	-	0.00703	ND	ND	ND	ND	ND	ND
Endrin Ketone	-	-	-	0.0106	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	0.1	1.3	9.2	ND	ND	ND	ND	ND	ND	ND
Heptachlor	-	-	-	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	-	-	-	ND	ND	ND	ND	ND	ND	ND
Methoxychlor[5]	NC	100	NC	0.0138	0.00411	ND	ND	ND	ND	ND
Toxaphene	-	-	-	ND	ND	ND	ND	ND	ND	ND

1- All values for PCBs are presented in milligrams per kilograms (mg/kg)

2- All values for pesticides presented in milligrams per kilogram (ug/Kg).

3- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

4- 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercial Use SCOs

NA - not analyzed.

J - value is estimated.

D - all compounds identified in an analysis at secondary dilution factor.

M - matrix spike recoveries outside QC limits; matrix bias indicated.

P - concentration differs by more than 40% between the primary and secondary analytical columns.

Value Exceeds Unrestricted SCOs
Value Exceeds Restricted Residential Use SCOs
Value Exceeds Commercial Use SCOs

Table 7 - Pesticides Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 9, 2018

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Sample ID and Date				SB-11 (7.5-8) 05/11/18	SB-12 (3.5-4) 05/11/18	SB-13 (1.5-2) 05/11/18	SB-14 (10-12) 05/11/18	SB-15 (1-1.5) 05/11/18	SB-16 (14.5-15) 05/14/18	SB-17 (3.5-4) 05/14/18
Table 7 - PCBs - EPA Method 80821 Analyzed Parameters	Unrestricted Use[3]	Restricted Residential[4]	Commercial Use[4]	RRW-CH-SB-11-051118 (7.5-8)	RRW-CH-SB-12-051118 (3.5-4)	RRW-CH-SB-13-051118 (1.5-2)	RRW-CH-SB-14-051118 (10-12)	RRW-CH-SB-15-051118 (1-1.5)	RRW-CH-SB-16-051418 (14.5-15)	RRW-CH-SB-17-051418 (3.5-4)
Table 7 - Pesticides Analytical Summary - Soils										
Aldrin	0.005	0.097	0.680	ND	0.0042	ND	ND	ND	ND	ND
Alpha-BHC	0.02	0.480	3.4	ND	ND	ND	ND	ND	ND	ND
beta-BHC	0.036	0.360	3.0	ND	0.011	0.0110 P	ND	ND	ND	ND
2,4,5-TP Acid (Silvex)	3.8	100	500	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.0033	13	92	ND	**0.00544**	ND	ND	ND	ND	ND
4,4'-DDE	0.0033	8.9	62	ND	ND	ND	ND	0.0036	ND	ND
4,4'-DDT	0.0033	7.9	47	ND	ND	ND	ND	0.00344	ND	ND
cis-Chlordane	0.094	4.2	24	ND	0.00802	ND	ND	0.0105	ND	0.0074
trans-Chlordane	0.094	4.2	24	ND	ND	ND	ND	ND	ND	0.00329
Dieldrin	0.005	0.200	1.4	ND	ND	**0.00695 P**	ND	0.00395 P	ND	0.00303
Endosulfan I	2.4	24	200	ND	ND	ND	ND	ND	ND	0.00345
Endosulfan II	2.4	24	200	ND	ND	0.00407 P	ND	ND	ND	ND
Endosulfan Sulfate	2.4	24	200	ND	ND	0.00374 P	0.00442 P	ND	ND	ND
Endrin	0.014	11	89	ND	ND	0.00349 P	ND	ND	ND	ND
Endrin Aldelhyde	-	-	-	ND	0.00613	0.00697 P	ND	ND	ND	ND
Endrin Ketone	-	-	-	ND	0.004	0.00513 P	0.00376	ND	ND	ND
gamma-BHC (Lindane)	0.1	1.3	9.2	ND	ND	ND	ND	ND	ND	0.00324
Heptachlor	-	-	-	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	-	-	-	ND	ND	ND	ND	ND	ND	ND
Methoxychlor[5]	NC	100	NC	ND	ND	0.0424 P	ND	0.00310 P	ND	ND
Toxaphene	-	-	-	ND	ND	ND	ND	ND	ND	ND

1- All values for PCBs are presented in milligrams per kilograms (mg/kg)

2- All values for pesticides presented in milligrams per kilogram (ug/Kg).

3- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

4- 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commercia

NA - not analyzed.

J - value is estimated.

D - all compounds identified in an analysis at secondary dilution factor.

M - matrix spike recoveries outside QC limits; matrix bias indicated.

P - concentration differs by more than 40% between the primary and secondary a

Table 7 - Pesticides Analytical Summary - Soils
Phase II Environmental Site Assessment - Segment 1 Cornhill
West River Wall
City of Rochester
May 9, 2018

BERGMANN

Sample ID and Date				SB-3XX18 Blind Duplicate	SB-19 (3.5-4) 05/14/18	SB-20 (6-6.5) 05/14/18
Table 7 - PCBs - EPA Method 80821 Analyzed Parameters	Unrestricted Use[3]	Restricted Residential[4]	Commercial Use[4]	RRW-CH-SB-03XX18 (4.5-5) Blind Duplicate	RRW-CH-SB-19-051418 (3.5-4)	RRW-CH-SB-20-051418 (6-6.5)
Table 7 - Pesticides Analytical Summary - Soils						
Aldrin	0.005	0.097	0.680	ND	ND	ND
Alpha-BHC	0.02	0.480	3.4	ND	ND	ND
beta-BHC	0.036	0.360	3.0	ND	ND	ND
2,4,5-TP Acid (Silvex)	3.8	100	500	ND	ND	ND
4,4'-DDD	0.0033	13	92	ND	ND	ND
4,4'-DDE	0.0033	8.9	62	ND	ND	ND
4,4'-DDT	0.0033	7.9	47	ND	ND	ND
cis-Chlordane	0.094	4.2	24	ND	ND	ND
trans-Chlordane	0.094	4.2	24	ND	ND	ND
Dieldrin	0.005	0.200	1.4	ND	ND	ND
Endosulfan I	2.4	24	200	ND	ND	ND
Endosulfan II	2.4	24	200	ND	0.00371	ND
Endosulfan Sulfate	2.4	24	200	ND	ND	ND
Endrin	0.014	11	89	ND	ND	ND
Endrin Aldelhyde	-	-	-	ND	ND	ND
Endrin Ketone	-	-	-	ND	ND	ND
gamma-BHC (Lindane)	0.1	1.3	9.2	ND	ND	ND
Heptachlor	-	-	-	ND	ND	ND
Heptachlor Epoxide	-	-	-	ND	ND	ND
Methoxychlor[5]	NC	100	NC	0.00327	ND	ND
Toxaphene	-	-	-	ND	ND	ND

1- All values for PCBs are presented in milligrams per kilograms (mg/kg)

2- All values for pesticides presented in milligrams per kilogram (ug/Kg).

3- 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use SCOs

4- 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Residential and Commerci

NA - not analyzed.

J - value is estimated.

D - all compounds identified in an analysis at secondary dilution factor.

M - matrix spike recoveries outside QC limits; matrix bias indicated.

P - concentration differs by more than 40% between the primary and secondary a

Analytical Reports: 182065
181948
182049

Groundwater Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 8 - VOC Groundwater Sample Results

Detected Parameters[1]	NYS Groundwater Standard Class GA[2]	MW-01		MW-02		MW-03		MW-04		MW-05		MW-06		MW-07		MW-08		MW-09		MW-10	
	Date Sampled:	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18
EPA 8260 - Volatile Organics																					
1,1,1-Trichloroethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,1,2,2-Tetrachloroethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,1,2-Trichloroethane	1	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,1-Dichloroethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,1-Dichloroethene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,2,3-Trichlorobenzene	5	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
1,2,4-Trichlorobenzene	5	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
1,2,4-Trimethylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,2-Dibromo-3-Chloropropane	0.04	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,2-Dibromoethane	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,2-Dichlorobenzene	3	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,2-Dichloroethane	0.6	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,2-Dichloropropane	1	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,3,5-Trimethylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,3,-Dichlorobenzene	3	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,4-Dichlorobenzene	3	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
1,4-dioxane	-	<20.00	NS	<20.00	NS	<20.00	NS	<20.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<20.00	NS	<20.00	NS
2-Butanone	50*	<10.00	NS	<10.00	NS	<10.00	NS	<10.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.00	NS	<10.00	NS
2-Hexanone	50	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
4-Methyl-2-pentanone	-	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
Acetone	50*	<10.00	NS	<10.00	NS	<10.00	NS	<10.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.00	NS	**9.84 J**	NS
Benzene	1	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Bromochloromethane	5	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
Bromodichloromethane	50*	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Bromoform	50	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
Bromomethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Carbon disulfied	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Carbon Tetrachloride	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Chlorobenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Cloroethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Chloroform	7	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Chloromethane	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
cis-1,2-Dichloroethene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
cis-1,3-Dichloropropene	0.4	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Cyclohexane	-	<10.00	NS	<10.00	NS	<10.00	NS	<10.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.00	NS	<10.00	NS
Dibromochloromethane	50*	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Dichlorodifluoromethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Ethylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Freon 113	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Isopropylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
m,p-Xylene	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Methyl acetate	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Methyl tert-butyl Ether	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Methylcyclohexane	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Naphthalene	-	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
n-Butylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
n-Propylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
o-Xylene	-	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
p-Isopropyltoluene	-	<2.00	NS	<2.00	NS	<2.00	NS	**4.52**	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
sec-Butylbenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Styrene	5	<5.00	NS	<5.00	NS	<5.00	NS	<5.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	NS	<5.00	NS
tert-Butylebenzene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Tetrachloroethene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Toluene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
trans-1,2-Dichloroethene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
trans-1,3-Dichloropropene	0.4	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Trichloroethene	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Trichlorofluoromethane	5	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS
Vinyl Chloride	2	<2.00	NS	<2.00	NS	<2.00	NS	<2.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<2.00	NS	<2.00	NS

1 - All values presented in micrograms per liter (ug/L)
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)

	~Parameter detected above 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standard or applicable Guidance Value
NS	Not Sampled

* - NYSDEC Guidance Value
J- Result estimated between quantitation limit and half the quantitation limit
< - Analyzed for but not detected at or above the quantitation limit.

Groundwater Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 9 - SVOC Groundwater Sample Results

Detected Parameters[1]	NYS Groundwater Standard Class GA[2]	MW-01		MW-02		MW-03		MW-04		MW-05		MW-06		MW-07		MW-08		MW-09		MW-10	
	Date Sampled:	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18
EPA 8270- Semi-Volatile Organics																					
1,1-Biphenyl	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
1,2,4,5-Tetrachlorobenzene	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
1,2,4-Trichlorobenzene	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
1,2-Dichlorobenzene	3	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
1,3-Dichlorobenzene	3	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
1,4-Dichlorobenzene	3	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
2,2-Oxybis (1-chloropropane)	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
2,4-Dinitrotoluene	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
2,6-Dinitrotoluene	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
2-Chloronaphthalene	10*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
2-Methylnapthalene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
2-Nitroaniline	5	<20.0	NS	<20.0	NS	<20.0	NS	<20.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<20.0	NS	<20.0	NS
3,3'-Dichlorobenzidine	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
3-Nitroaniline	5	<20.0	NS	<20.0	NS	<20.0	NS	<20.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<20.0	NS	<20.0	NS
4-Bromophenyl phenyl ether	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
4-Chloroaniline	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
4-Chlorophenyl phenyl ether	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
4-Nitroaniline	5	<20.0	NS	<20.0	NS	<20.0	NS	<20.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<20.0	NS	<20.0	NS
Acenaphthene	20*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Acenaphthylene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Acetophenone	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Anthracene	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Atrazine	7.5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Benzaldehyde	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Benzo (a) anthracene	0.002*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Benzo (a) pyrene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Benzo (b) fluoranthene	0.002*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Benzo (g,h,i) perylene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Benzo (k) fluoranthene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Bis (2-chloroethoxy) methane	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Bis (2-chloroethyl) ether	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Bis (2-ethylhexyl) phtalate	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Butylbenzylphthalate	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Caprolactam	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Carbazole	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Chrysene	0.002*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Dibenz (a,h) anthracene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Dibenzofuran	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Diethyl phthalate	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Dimethyl phthalate	50*	<20.0	NS	<20.0	NS	<20.0	NS	<20.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<20.0	NS	<20.0	NS
Di-n-butylphthalate	50	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Di-n-octylphthalate	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Fluoranthene	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Fluorene	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Hexachlorobenzene	0.04	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Hexachlorobutadiene	0..5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Hexachloroethane	5	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Indeno (1,2,3-cd) pyrene	0.002*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Isophorone	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Naphthalene	10*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Nitrobenzene	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
N-Nitroso-di-n-propylamine	-	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
N-Nitrosodiphenylamine	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Phenanthrene	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS
Pyrene	50*	<10.0	NS	<10.0	NS	<10.0	NS	<10.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0	NS	<10.0	NS

1 - All values presented in micrograms per liter (ug/L)

2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)

~Parameter detected above 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standard or applicable Guidance Value

NS Not Sampled

* - NYSDEC Guidance Value

< - Analyzed for but not detected at or above the quantitation limit.

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Groundwater Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 10 - Metals Groundwater Sample Results

Detected Parameters	NYS Groundwater Standard Class GA[2]	MW-01		MW-02		MW-03		MW-04		MW-05		MW-06		MW-07		MW-08		MW-09		MW-10	
	Date Sampled:	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18
EPA 6010-Metals[1]																					
Aluminum	-	**53700**	**8150**	**8900 M**	**12600**	**109000**	**16700**	**51500**	**964**	NS	**11500**	NS	NS	NS	NS	NS	NS	**62300**	**3680**	**145000**	**822**
Antimony	3	**31 J**	ND	<.60	ND	**34.6 J**	ND	<.60	ND	NS	ND	NS	NS	NS	NS	NS	NS	**33.4 J**	ND	**40 J**	ND
Arsenic	25	**29**	**9.8 J**	**31.3**	**49.1**	**136**	**61.8**	**48.5**	**8.8**	NS	**21.2**	NS	NS	NS	NS	NS	NS	**92.1**	**24.7**	**208**	**12**
Barium	1,000	**458**	**163**	**456**	**702**	**1500**	**541**	**822**	**146**	NS	**237**	NS	NS	NS	NS	NS	NS	**902**	**220**	**1390**	**462**
Beryllium	3*	**3.03 J**	ND	<5.0	ND	**6.52**	ND	**5.27**	ND	NS	ND	NS	NS	NS	NS	NS	NS	**3.63 J**	ND	**7.69**	ND
Cadmium	5	<5.0	ND	<5.0	ND	**4.05 J**	ND	<5.0	ND	NS	ND	NS	NS	NS	NS	NS	NS	**5.48**	ND	**6.7**	ND
Calcium	-	**284000**	**139000**	**173000**	**171000**	**243000**	**194000**	**415000**	**151000**	NS	**208000**	NS	NS	NS	NS	NS	NS	**326000**	**249000**	**353000**	**208000**
Chromium	50	**76.2**	**14.3**	**20.7 D**	**18.7**	**306**	**53.1**	**71.4**	ND	NS	**16.3**	NS	NS	NS	NS	NS	NS	**106**	ND	**206**	**16**
Cobalt	-	**38.9 J**	ND	<50.0	ND	**109**	ND	**50.9**	ND	NS	ND	NS	NS	NS	NS	NS	NS	**57.8**	ND	**133**	ND
Copper	200	**164**	**38.9**	**27.8**	**35.1**	**687**	**96.7**	**137**	ND	NS	**27.1**	NS	NS	NS	NS	NS	NS	**162**	**12.1**	**363**	ND
Iron	300	**84000**	**12400**	**33000**	**46700**	**236000**	**61100**	**93500**	**10300**	NS	**32300**	NS	NS	NS	NS	NS	NS	**150000**	**14300**	**321000**	**6930**
Lead	25	**214**	**47.9**	**14.6**	**59.3**	**963**	**147**	**138**	ND	NS	**23.2**	NS	NS	NS	NS	NS	NS	**78.9**	ND	**321**	ND
Magnesium	35000*	**76600**	**39600**	**43300**	**43700**	**103000**	**50100**	**124000**	**31900**	NS	**30200**	NS	NS	NS	NS	NS	NS	**98200**	**35400**	**172000**	**59300**
Manganese	300	**2060**	**3570**	**2120**	**2250**	**4980**	**3400**	**6580**	**3460**	NS	**2900**	NS	NS	NS	NS	NS	NS	**6620**	**3000.0**	**10000**	**7210**
Mercury	0.7	**0.313**	ND	<0.20	ND	**15.1**	**3.32**	**0.362**	ND	NS	ND	NS	NS	NS	NS	NS	NS	**0.28**	ND	**1.01**	ND
Nickel	100	**78.4**	**21.8 J**	**20.6 J**	**21.2 J**	**241**	**35.2 J**	**86.8**	ND	NS	**22.1**	NS	NS	NS	NS	NS	NS	**131**	ND	**288**	ND
Potassium	-	**14900**	**7460**	**9950**	**10800**	**19800**	**12700**	**12200**	**5690**	NS	**5040**	NS	NS	NS	NS	NS	NS	**15000**	**8890**	**22700**	**10200**
Selenium	10	<20.0	**33.3**	<20.0	**12.2 J**	<20.0	**15.7 J**	<20.0	ND	NS	ND	NS	NS	NS	NS	NS	NS	<20.0	**11.8**	<20.0	**11.3**
Silver	50	**6.71 J**	ND	<10.0	ND	**16.8**	ND	**7.2 J**	ND	NS	ND	NS	NS	NS	NS	NS	NS	**13.3**	ND	**30.5**	ND
Sodium	20000	**127000**	**65800**	**26900**	**27200**	**164000**	**192000**	**129000**	**120000**	NS	**43300**	NS	NS	NS	NS	NS	NS	**689000**	**237000**	**724000**	**572000**
Thallium	0.5*	<25.0	ND	<25.0	ND	<25.0	ND	<25.0	ND	NS	ND	NS	NS	NS	NS	NS	NS	<25.0	ND	<25.0	ND
Vanadium	-	**95.1**	**17.8 J**	**17.6 J**	**28**	**186**	**34.2**	**125**	ND	NS	**22**	NS	NS	NS	NS	NS	NS	**104**	ND	**223**	ND
Zinc	2000*	**357**	**93.8**	**132**	**443**	**761**	**107**	**317**	ND	NS	**72**	NS	NS	NS	NS	NS	NS	**1130**	**39.1**	**1050**	ND

1 - All values presented in micrograms per liter (ug/L)
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)
~Parameter detected above 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standard or applicable Guidance Value
NS Not Sampled
* - NYSDEC Guidance Value
J- Result estimated between quantitation limit and half the quantitation limit
M- Matrix spike recoveries outside QC limits. Matrix bias indicated
D- sample, laboratory control sample, or matrix spike duplicate results above relative percent difference limit
< - Analyzed for but not detected at or above the quantitation limit.

Groundwater Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 11 - PCBs Groundwater Sample Results

Detected Parameters	NYS Groundwater Standard Class GA[2]	MW-01		MW-02		MW-03		MW-04		MW-05		MW-06		MW-07		MW-08		MW-09		MW-10	
	Date Sampled:	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18
EPA 8082-PCBs[1]																					
PCB-1016	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1221	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1232	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1242	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1248	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1254	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1260	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1262	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
PCB-1268	0.09	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS

1 - All values presented in micrograms per liter (ug/L)
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)
~Parameter detected above 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standard or applicable Guidance Value
NS Not Sampled
* - NYSDEC Guidance Value
J- Result estimated between quantitation limit and half the quantitation limit
P- Concentration differs by more than 40% between the primary and secondary analytical columns
< - Analyzed for but not detected at or above the quantitation limit.

Groundwater Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 12 - Chlorinated Pesticides Groundwater Sample Results

Detected Parameters	NYS Groundwater Standard Class GA[2]	MW-01		MW-02		MW-03		MW-04		MW-05		MW-06		MW-07		MW-08		MW-09		MW-10	
	Date Sampled:	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18
EPA 8081 - Chlorinated Pesticides[1]																					
4,4'-DDD	0.3	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
4,4'-DDE	0.2	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
4,4'-DDT	0.2	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Aldrin	0.002	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
alpha-BHC	0.01	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
beta-BHC	-	<0.100	NS	<0.100	NS	**0.0962 JP**	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
cis-Chlordane	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
delta-BHC	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Dieldrin	0.004	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Endosulfan I	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Endosulfan II	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Endosulfan Sulfate	-	<0.100	NS	<0.100	NS	**0.0516 J**	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Endrin	0.2	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Endrin Aldehyde	5	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Endrin Ketone	5	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
gamma-BHC (Lindane)	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Heptachlor	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Heptachlor epoxide	0.03	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.134**	**NS**	**0.0788 JP**	NS
Methoxychlor	35	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS
Toxaphene	-	<1.00	NS	<1.00	NS	<1.00	NS	<1.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.00	NS	<1.00	NS
trans-Chlordane	-	<0.100	NS	<0.100	NS	<0.100	NS	<0.100	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.100	NS	<0.100	NS

1 - All values presented in micrograms per liter (ug/L)
2 - NYS Ambient Groundwater Standard (6 NYCRR Part 703.5)
~Parameter detected above 6 NYCRR Part 703.5 Class GA Ambient Groundwater Quality Standard or applicable Guidance Value
NS Not Sampled
* - NYSDEC Guidance Value
J- Result estimated between quantitation limit and half the quantitation limit
P- Concentration differs by more than 40% between the primary and secondary analytical columns
< - Analyzed for but not detected at or above the quantitation limit.

TABLE 13
Soil Screen Measurement Summary
Phase II Environmental Site Assessment – Segment 1 Cornhill
West River Wall
City of Rochester

Soil Boring Name	Sample Interval (Feet)	Field Soil Screen Measurement in ppm (PID Measurement)	Petroleum Odors Present	Stained Soils Present	Soil Deposit	Depth to Bottom of Soil Boring	Depth to Groundwater Observed During Drilling
GB-101	16-20	50, 48, 150, 20	Yes	No	Lacustrine	21	10
GB-102	16-20	ND	None	No	Lacustrine	20	16
GB-103	16-20	9, 39, 39	None	Yes	Lacustrine	20	16
GB-104	16-20	134, 170, 200, 50	Yes	Yes	Lacustrine	20	13
GB-105	16-10	ND	None	No	Lacustrine	21	13
GB-106	15-16	1.6, 9	None	Yes	Lacustrine	19	11
GB-106	16-20	39, 3, 2.1	None	Yes	Lacustrine	19	11
GB-107	15-16	1, 5	None	No	Lacustrine	20	11
GB-108	14-15	1	None	No	Lacustrine	20	14
GB-108	15-16	9, 115	None	No	Lacustrine	20	14
GB-108	16-20	216, 136, 230, 377, 139	Yes	No	Lacustrine	20	14
GB-109	16-20	ND	None	No	Lacustrine	20	11
GB-110	16-20	ND	None	No	Lacustrine	14	11

Surface Soil Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 14 - VOC Surface Soil Sample Results

Detected Parameters	Unrestricted Use[2]	Residential Use[3]	Restricted-Residential Use[3]	Commercial Use[3]	Industrial Use[3]	RRW-CH-SS-01-032019	RRW-CH-SS-02-032019	RRW-CH-SS-03-032019	RRW-CH-SS-04-032019	RRW-CH-SS-05-032019	RRW-CH-SS-06-032019	RRW-CH-SS-07-032019	RRW-CH-SS-08-032019	RRW-CH-CS-01-032019	RRW-CH-CS-02-032019	RRW-CH-CS-03-032019
Volatile Organic Compounds[1]																
1,1,1-Trichloroethane	680	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,1,2,2-Tetrachloroethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,1,2-Trichloroethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,1-Dichloroethane	270	190,000	26,000	240,000	480,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,1-Dichloroethene	330	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,2,3-Trichlorobenzene	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
1,2,4-Trichlorobenzene	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
1,2,4-Trimethylbenzene	3,600	47,000	52,000	190,000	380,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,2-Dibromo-3-Chloropropane	--	--	--	--	--	< 20.7	< 26.6	< 25.0	< 27.0	< 22.6	< 23.9	< 23.8	< 26.0	NA	NA	NA
1,2-Dibromoethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,2-Dichlorobenzene	1,100	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,2-Dichloroethane	20	2,300	3,100	30,000	60,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,2-Dichloropropane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,3,5-Trimethylbenzene	8,400	47,000	52,000	190,000	380,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,3-Dichlorobenzene	240	17,000	49,000	280,000	560,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,4-Dichlorobenzene	1,800	9,800	13,000	130,000	250,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
1,4-Dioxane	100	9,800	13,000	130,000	250,000	< 41.3	< 53.1	< 50.0	< 54.0	< 45.1	< 47.7	< 47.5	< 52.1	NA	NA	NA
2-Butanone	--	--	--	--	--	< 20.7	< 26.6	< 25.0	< 27.0	< 22.6	< 23.9	< 23.8	< 26.0	NA	NA	NA
2-Hexanone	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
4-Methyl-2-pentanone	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
Acetone	50	100,000	100,000	500,000	1,000,000	< 20.7	< 26.6	< 25.0	< 27.0	< 22.6	< 23.9	< 23.8	< 26.0	NA	NA	NA
Benzene	60	2,900	4,800	44,000	89,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Bromochloromethane	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
Bromodichloromethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Bromoform	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
Bromomethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Carbon disulfide	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Carbon Tetrachloride	760	1,400	2,400	22,000	44,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Chlorobenzene	1,100	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Chloroethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Chloroform	370	10,000	49,000	350,000	700,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Chloromethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
cis-1,2-Dichloroethene	250	59,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
cis-1,3-Dichloropropene	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Cyclohexane	--	--	--	--	--	< 20.7	< 26.6	< 25.0	< 27.0	< 22.6	< 23.9	< 23.8	< 26.0	NA	NA	NA
Dibromochloromethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Dichlorodifluoromethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Ethylbenzene	1,000	30,000	41,000	390,000	780,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Freon 113	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Isopropylbenzene	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
m,p-Xylene	260	100,000	100,000	500,000	1,000,000	**6.2**	< 5.31	< 5.00	< 5.40	< 4.51	**4.43 J**	< 4.75	< 5.21	NA	NA	NA
Methyl acetate	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Methyl tert-butyl Ether	930	62,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Methylcyclohexane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Methylene chloride	50	51,000	100,000	500,000	1,000,000	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
Naphthalene	12,000	100,000	100,000	500,000	1,000,000	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
n-Butylbenzene	12,000	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
n-Propylbenzene	3,900	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
o-Xylene	260	100,000	100,000	500,000	1,000,000	**2.43 J**	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
p-Isopropyltoluene	--	--	--	--	--	< 4.13	**2.69 J**	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
sec-Butylbenzene	11,000	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Styrene	--	--	--	--	--	< 10.3	< 13.3	< 12.5	< 13.5	< 11.3	< 11.9	< 11.9	< 13.0	NA	NA	NA
tert-Butylbenzene	5,900	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Tetrachloroethene	1,300	5,500	19,000	150,000	300,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Toluene	700	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
trans-1,2-Dichloroethene	190	100,000	100,000	500,000	1,000,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
trans-1,3-Dichloropropene	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Trichloroethene	470	10,000	21,000	200,000	400,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Trichlorofluoromethane	--	--	--	--	--	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA
Vinyl chloride	20	210	900	13,000	27,000	< 4.13	< 5.31	< 5.00	< 5.40	< 4.51	< 4.77	< 4.75	< 5.21	NA	NA	NA

1: Values presented in microgram per kilogram (ug/kg)
2: 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
3: 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Use Soil Cleanup Objectives
J: Result estimated between the quantitation limit and half the quantitation limit.
P: Concentration differs by more than 40% between the primary and secondary analytical columns.
M: Matrix spike recoveries outside QC limits. Matrix bias indicated.
D: Results above relative percent difference limit

	Exceeds Unrestricted Use SCO
	Exceeds Residential Use SCO
	Exceeds Restricted-Residential Use SCO
	Exceeds Commercial Use SCO
	Exceeds Industrial Use SCO
NA	Not analyzed

Surface Soil Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 15 - SVOC Surface Soil Sample Results

Detected Parameters	Unrestricted Use[2]	Residential Use[3]	Restricted-Residential Use[3]	Commercial Use[3]	Industrial Use[3]	RRW-CH-SS-09-070219	RRW-CH-SS-10-070219	RRW-CH-SS-11-070219	RRW-CH-SS-12-070219	RRW-CH-CS-01-032019	RRW-CH-CS-02-032019	RRW-CH-CS-03-032019
Semi-Volatile Organic Compounds[1]												
1,1-Biphenyl	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
1,2,4,5-Tetrachlorobenzene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
1,2,4-Trichlorobenzene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
1,2-Dichlorobenzene	1,100	100,000	100,000	500,000	1,000,000	<294	<290	<311	<331	< 347	< 307	< 333
1,3-Dichlorobenzene	2,400	17,000	49,000	280,000	560,000	<294	<290	<311	<331	< 347	< 307	< 333
1,4-Dichlorobenzene	1,800	9,800	13,000	130,000	250,000	<294	<290	<311	<331	< 347	< 307	< 333
2,2-Oxybis (1-chloropropane)	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
2,4-Dinitrotoluene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
2,6-Dinitrotoluene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
2-Chloronaphthalene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
2-Methylnapthalene	--	--	--	--	--	<294	<290	<311	<331	**469**	< 307	< 333
2-Nitroaniline	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
3,3'-Dichlorobenzidine	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
3-Nitroaniline	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
4-Bromophenyl phenyl ether	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
4-Chloroaniline	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
4-Chlorophenyl phenyl ether	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
4-Nitroaniline	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Acenaphthene	20,000	100,000	100,000	500,000	1,000,000	<294	<290	<311	<331	< 347	< 307	< 333
Acenaphthylene	100,000	100,000	100,000	500,000	1,000,000	**429**	<290	<311	<331	**216 J**	**435**	< 333
Acetophenone	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Anthracene	100,000	100,000	100,000	500,000	1,000,000	**550**	**228 J**	**334**	**175 J**	< 347	**426**	**434**
Atrazine	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Benzaldehyde	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Benzo (a) anthracene	1,000	1,000	1,000	5,600	11,000	**4,200**	**1,050**	**1,470**	**1,380**	**468**	**1040**	**1850**
Benzo (a) pyrene	1,000	1,000	1,000	1,000	1,100	**3,220**	**1,070**	**1,360**	**1,410**	**397**	**1160**	**1670**
Benzo (b) fluoranthene	1,000	1,000	1,000	5,600	11,000	**2,850**	**1,210**	**1,300**	**1,520**	**662**	**1300**	**1730**
Benzo (g,h,i) perylene	100,000	100,000	100,000	500,000	1,000,000	**1,640**	**857**	**948**	**1,230**	**287 J**	**968**	**1210**
Benzo (k) fluoranthene	800	1,000	3,900	56,000	110,000	**2,760**	**739**	**1,150**	**1,190**	**344 J**	**820**	**1350**
Bis (2-chloroethoxy) methane	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Bis (2-chloroethyl) ether	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Bis (2-ethylhexyl) phthalate	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Butylbenzylphthalate	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Caprolactam	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Carbazole	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	**235 J**
Chrysene	1,000	1,000	3,900	56,000	110,000	**3,360**	**1,100**	**1,420**	**1,400**	**708**	**1,020**	**1,730**
Dibenz (a,h) anthracene	330	330	330	560	1,100	**616**	**256 J**	**302 J**	**371**	< 347	**339**	**419**
Dibenzofuran	7,000	14,000	59,000	350,000	1,000,000	<294	<290	<311	<331	< 347	< 307	< 333
Diethyl phthalate	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Dimethyl phthalate	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Di-n-butyl phthalate	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Di-n-octylphthalate	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Fluoranthene	100,000	100,000	100,000	500,000	1,000,000	**5,630**	**1,790**	**2,250**	**1,990**	**721**	**1720**	**3400**
Fluorene	30,000	100,000	100,000	500,000	1,000,000	<294	<290	<311	<331	< 347	< 307	< 333
Hexachlorobenzene	330	330	1,200	6,000	12,000	<294	<290	<311	<331	< 347	< 307	< 333
Hexachlorobutadiene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Hexachlorocyclopentadiene	--	--	--	--	--	<1,180	<1,160	<1,250	<331	< 1390	< 1230	< 1330
Hexachloroethane	--	--	--	--	--	<294	<290	<311	<1,330	< 347	< 307	< 333
Indeno (1,2,3-cd) pyrene	500	500	500	5,600	11,000	**1,720**	**894**	**916**	**1,100**	**360**	**965**	**1180**
Isophorone	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Naphthalene	12,000	100,000	100,000	500,000	1,000,000	<294	<290	<311	<331	**401**	< 307	< 333
Nitrobenzene	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
N-Nitroso-di-n-propylamine	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
N-Nitrosodiphenylamine	--	--	--	--	--	<294	<290	<311	<331	< 347	< 307	< 333
Phenanthrene	100,000	100,000	100,000	500,000	1,000,000	**772**	**882**	**923**	**656**	**864**	**814**	**1,830**
Pyrene	100,000	100,000	100,000	500,000	1,000,000	**4,770**	**1,450**	**2,070**	**1,710**	**647**	**1,500**	**2,680**

1: Values presented in micrograms per kilogram (ug/kg)
2: 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
3: 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Use Soil Cleanup Objectives
J: Result estimated between the quantitation limit and half the quantitation limit.
P: Concentration differs by more than 40% between the primary and secondary analytical columns.
M: Matrix spike recoveries outside QC limits. Matrix bias indicated.
D: Results above relative percent difference limit

Exceeds Unrestricted Use SCO
Exceeds Residential Use SCO
Exceeds Restricted-Residential Use SCO
Exceeds Commercial Use SCO
Exceeds Industrial Use SCO
NA Not analyzed

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Surface Soil Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 16 - TAL Metals Surface Soil Sample Results

Detected Parameters	Unrestricted Use[2]	Residential Use[3]	Restricted-Residential Use[3]	Commercial Use[3]	Industrial Use[3]	RRW-CH-SS-09-070219	RRW-CH-SS-10-070219	RRW-CH-SS-11-070219	RRW-CH-SS-12-070219	RRW-CH-CS-01-032019	RRW-CH-CS-02-032019	RRW-CH-CS-03-032019
TAL Metals[1]												
Mercury	0.18	0.81	0.81	2.8	5.7	**0.079**	**0.235**	**0.311**	**0.325**	**0.132**	**0.168**	**0.213**
Aluminum	--	--	--	--	--	**5,980**	**5,440**	**5,540**	**4,450**	**6140**	**3910**	**6940**
Antimony	--	--	--	--	--	<3.13	**1.99 J**	**2.25 J**	**2.54 J**	**3.69**	**2.85 J**	**2.43 JM**
Arsenic	13	16	16	16	16	**5.13**	**4.05**	**3.68**	**4.56**	**11.6**	**4.72**	**4.17**
Barium	350	350	400	400	10,000	**46.6**	**73.3**	**69.3**	**139**	**68.5**	**105**	**70.7 M**
Beryllium	7.2	14	72	590	2,700	**0.299**	**0.255 J**	**0.284**	**0.219 J**	**0.64**	**0.274**	**0.435 D**
Cadmium	2.5	2.5	4.3	9.3	60	**0.35**	**0.783**	**7.26**	**1.19**	**0.451**	**0.732**	**0.578 D**
Calcium	--	--	--	--	--	**7,310**	**43,300**	**32,100**	**49,600**	**12,300**	**78,600**	**31,800 D**
Chromium	30	36	180	1,500	6,800	**10.7**	**19.6**	**11**	**14.7**	**12.4**	**10.7**	**11.9**
Cobalt	--	--	--	--	--	**5.1**	**4.14**	**4.28**	**3.76**	**7.14**	**3.67**	**4.96**
Copper	50	270	270	270	10,000	**48.9**	**80.2**	**53.6**	**137**	**65**	**60.7**	**39.1 D**
Iron	--	--	--	--	--	**12,100**	**13,800**	**14,100**	**15,900**	**22100**	**13800**	**13600**
Lead	63	400	400	1,000	3,900	**80.9**	**135**	**175**	**207**	**140**	**132**	**112 DM**
Magnesium	--	--	--	--	--	**3,970**	**14,600**	**10,200**	**19,600**	**6230**	**30100**	**12100 D**
Manganese	1,600	2,000	2,000	10,000	10,000	**336**	**323**	**317**	**318**	**389**	**299**	**339 M**
Nickel	30	140	310	310	10,000	**11.9**	**17.8**	**11.1**	**15.2**	**14.1**	**15.1**	**12**
Potassium	--	--	--	--	--	**848**	**1,060**	**1,020**	**904**	**753**	**824**	**1110**
Selenium	3.9	36	180	1,500	6,800	**0.746 J**	**1.58**	**1.72**	**2.2**	**1.14 J**	< 1.04	< 1.20
Silver	2.0	36	180	1,500	6,800	**1.07**	**1.32**	**1.25**	**2.7**	< 0.594	**0.437 J**	**0.527 J**
Sodium	--	--	--	--	--	**81.4 J**	**131**	**93.1 J**	**210**	**114 J**	**193**	**107 J**
Thallium	--	--	--	--	--	<1.30	**2.22**	**0.96 J**	**2.48**	**1.31 J**	**5.16**	**1.91 D**
Vanadium	--	--	--	--	--	**12.4**	**12.8**	**13.3**	**10.8**	**20**	**14.4**	**15.4**
Zinc	109	2,200	10,000	10,000	10,000	**88.9**	**175**	**2,800**	**264**	**66.2**	**200**	**243 DM**
Total Cyanide[1]												
Cyanide, Total	27	27	27	27	10,000	NA	NA	NA	NA	< 0.557	< 0.560	< 0.591

1: Values presented in miligrams per kilogram (mg/kg)
2: 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
3: 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Use Soil Cleanup Objectives
J: Result estimated between the quantitation limit and half the quantitation limit.
P: Concentration differs by more than 40% between the primary and secondary analytical columns.
M: Matrix spike recoveries outside QC limits. Matrix bias indicated.
D: Results above relative percent difference limit

	Exceeds Unrestricted Use SCO
	Exceeds Residential Use SCO
	Exceeds Restricted-Residential Use SCO
	Exceeds Commercial Use SCO
	Exceeds Industrial Use SCO
NA	Not analyzed

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Surface Soil Analytical Results
West River Wall Segment
City of Rochester
Monroe County, NY

Table 17 - PCBs and Pesticides Surface Soil Sample Results

Detected Parameters	Unrestricted Use[3]	Residential Use[4]	Restricted-Residential Use[4]	Commercial Use[4]	Industrial Use[4]	RRW-CH-SS-01-032019	RRW-CH-SS-02-032019	RRW-CH-SS-03-032019	RRW-CH-SS-04-032019	RRW-CH-SS-05-032019	RRW-CH-SS-06-032019	RRW-CH-SS-07-032019	RRW-CH-SS-08-032019	RRW-CH-CS-01-032019	RRW-CH-CS-02-032019	RRW-CH-CS-03-032019
Polychlorinated Biphenyls[1]																
PCB-1016	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1221	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1232	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1242	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1248	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1254	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1260	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1262	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
PCB-1268	0.1	1	1	1	25	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0359	< 0.0309	< 0.0338
Pesticides[2]																
4,4-DDD	3.3	2,600	13,000	92,000	180,000	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	**1.73 JP**	< 3.38
4,4-DDE	3.3	1,800	8,900	62,000	120,000	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	< 3.38
4,4-DDT	3.3	1,700	7,900	47,000	94,000	NA	NA	NA	NA	NA	NA	NA	NA	**3.62**	**7.07**	**3.16 J**
Aldrin	5	19	97	680	1,400	NA	NA	NA	NA	NA	NA	NA	NA	**3.39 JP**	< 3.09	< 3.38
alpha-BHC	20	97	480	3,400	6,800	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	< 3.38
beta-BHC	36	72	360	3,000	14,000	NA	NA	NA	NA	NA	NA	NA	NA	**18**	< 3.09	< 3.38
cis-Chlordane	94	910	4,200	24,000	47,000	NA	NA	NA	NA	NA	NA	NA	NA	**7.21 P**	**7.67**	**15.5**
delta-BHC	40	100,000	100,000	500,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	**14.8 P**	< 3.09	< 3.38
Dieldrin	5	39	200	1,400	2,800	NA	NA	NA	NA	NA	NA	NA	NA	**4.34 P**	**2.94 JP**	**2.43 JP**
Endosulfan I	2,400	4,800	24,000	200,000	920,000	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	< 3.38
Endosulfan II	2,400	4,800	24,000	200,000	920,000	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	< 3.38
Endosulfan Sulfate	2,400	4,800	24,000	200,000	920,000	NA	NA	NA	NA	NA	NA	NA	NA	**7.07 P**	**4.61 P**	**13.4 P**
Endrin	14	2,200	11,000	89,000	410,000	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	< 3.38
Endrin Aldehyde	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	**5.41**	< 3.09	**2.54 JP**
Endrin Ketone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	**2.92 J**	**4.68**
gamma-BHC (Lindane)	100	280	13,00	9,200	23,000	NA	NA	NA	NA	NA	NA	NA	NA	**3.86 P**	< 3.09	< 3.38
Heptachlor	42	420	2,100	15,000	29,000	NA	NA	NA	NA	NA	NA	NA	NA	**7.09**	< 3.09	< 3.38
Heptachlor Epoxide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	**1.74 JP**	**2.39 JP**
Methoxychlor	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	**8.31 P**
Toxaphene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 35.9	< 30.9	< 33.8
trans-Chlordane	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	< 3.59	< 3.09	**2.02 JP**

1: Values presented in miligrams per kilogram (mg/kg)
2: Values presented in micrograms per kilogram (ug/kg)
3: 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
4: 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Use Soil Cleanup Objectives
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	Exceeds Residential Use SCO
	Exceeds Restricted-Residential Use SCO
	Exceeds Commercial Use SCO
	Exceeds Industrial Use SCO
NA	Not analyzed

FIGURES

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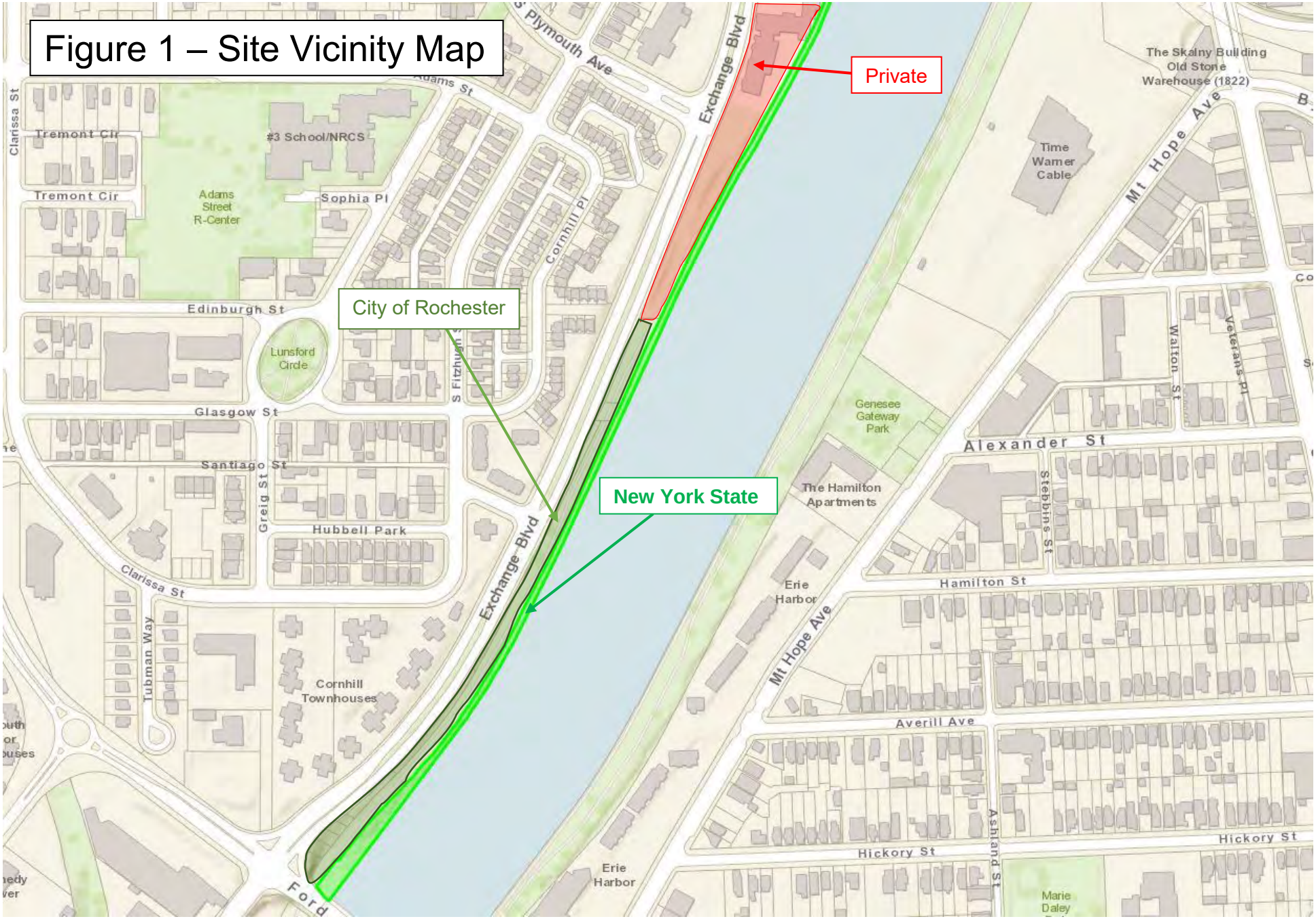
Figure 1 – Site Vicinity Map



75 0 75 150 225 300′

1" = 150′

City of Rochester
Department of
Environmental Services

West River Wall Improvements

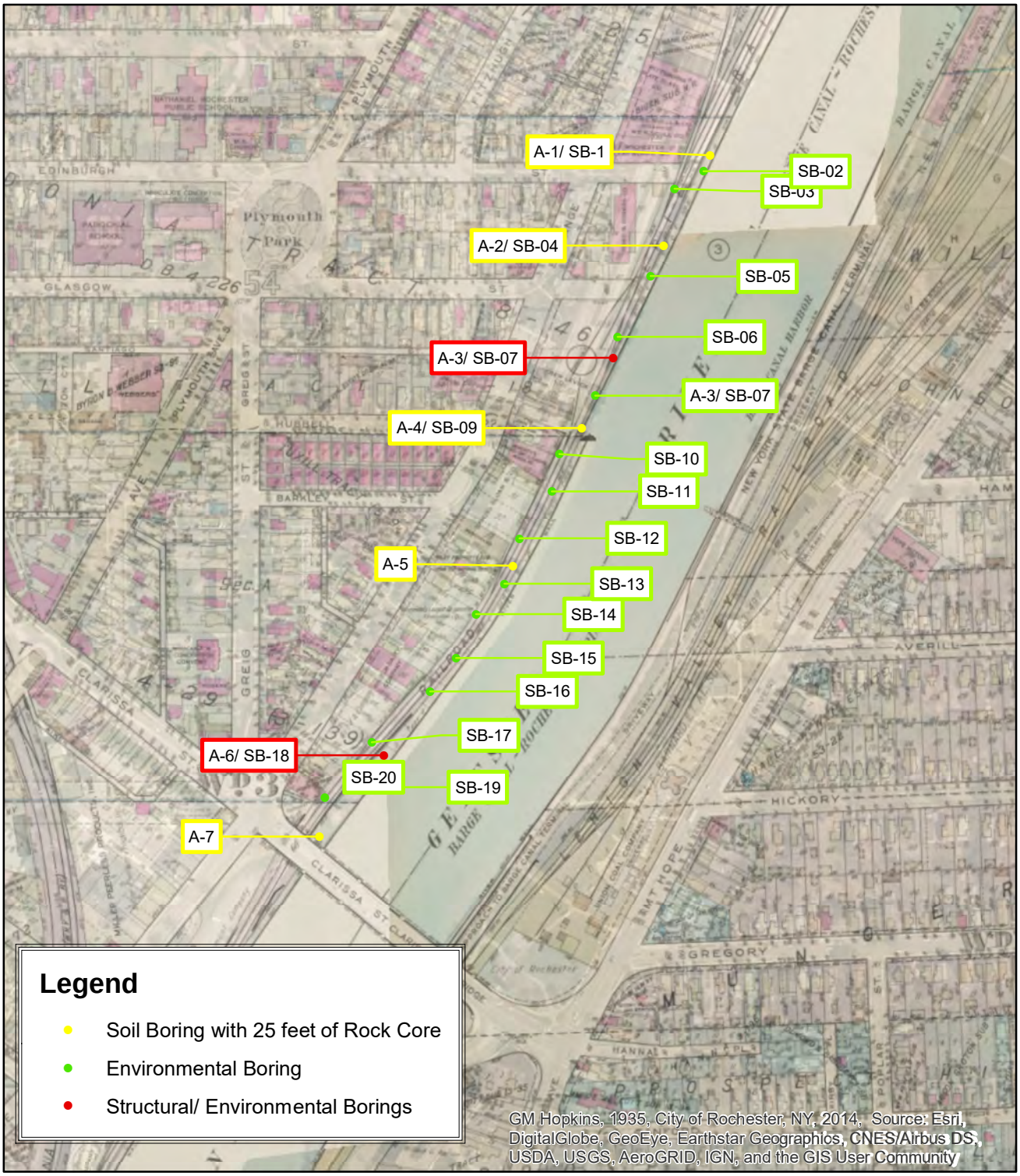
Figure 2
Subsurface Exploration Plan

SHEET NO.	SCALE	DATE	
1	1"=150′	11/18	BERGMANN ARCHITECTS ENGINEERS PLANNERS

Print Date: DGN$SYTIME0123456
File Name: DGN$SPEC0123456

City of Rochester
West River Wall

1 inch = 500 feet



NYS Orthos Online, Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia ©, OpenStreetMap contributors, and the GIS User Community

N W E S

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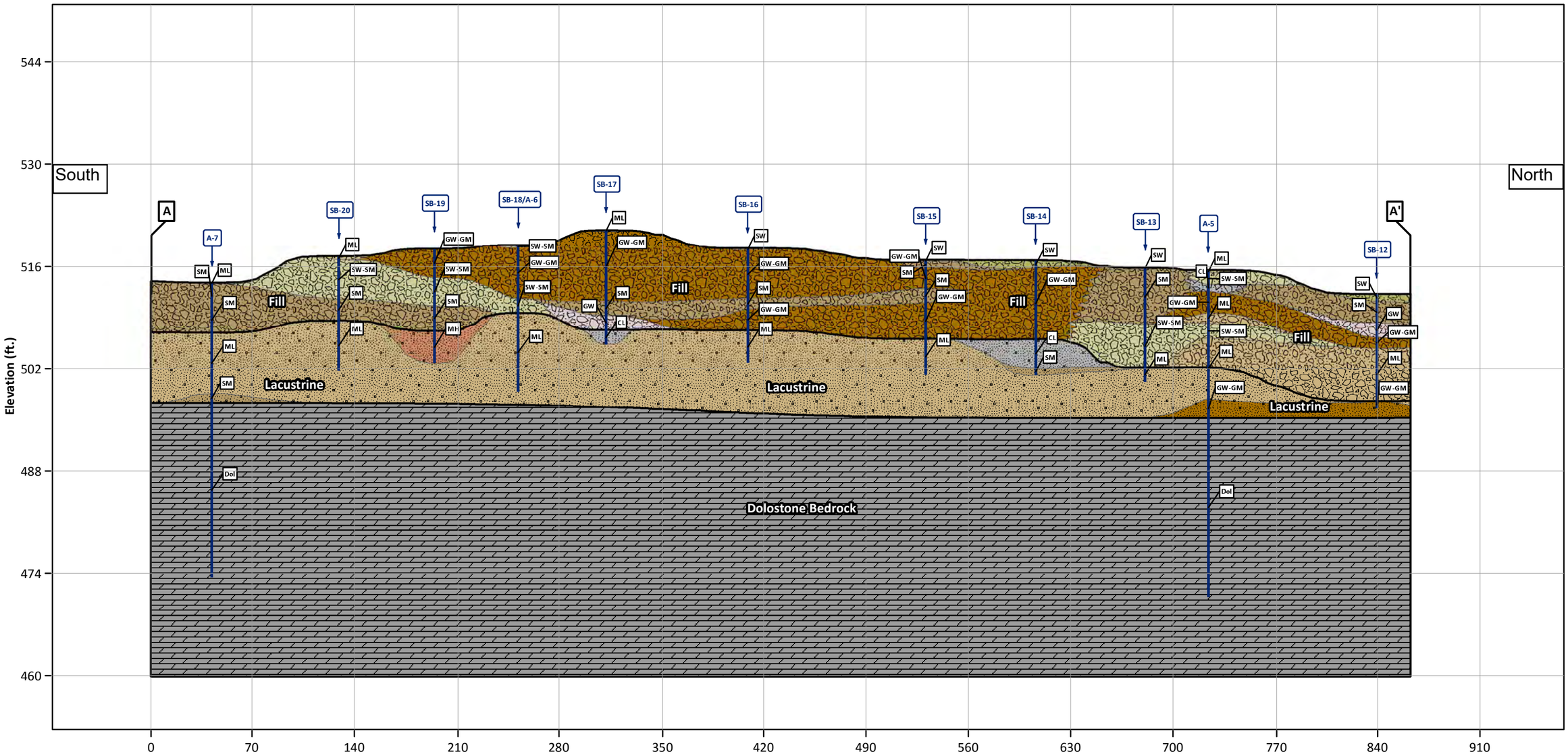

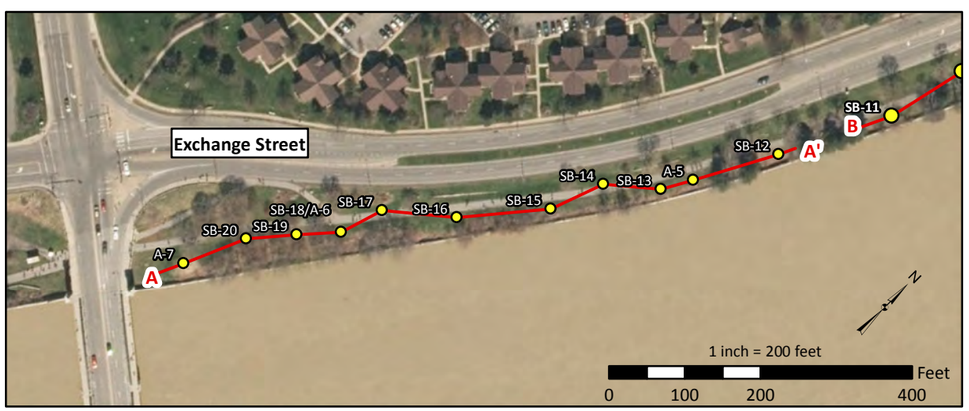

Legend

Unified Soil Classification Symbol

- GW-GM: well-graded gravel; fine to coarse gravel to silty gravel
- GW: well graded gravel; fine to coarse gravel
- SW: well-graded sand; fine to coarse sand
- SW-SM: well-graded sand; fine to coarse sand to silty sand
- ML: silt
- MH: silt of high plasticity; elastic silt
- CL: clay of low plasticity; lean clay

Unit Type

- Fill
- Lacustrine
- Glacial Till
- Dolostone Bedrock

Note:
1 inch = approximately 70 feet horizontal
1 inch = approximately 14 feet vertical

(Vertical Exaggeration: x5)

Prepared For:

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

DATE: October 2018
SCALE: As noted
DRAWN/CHECKED: BGS/GLA, SD
SOURCE: Pictometry
Boring logs provided by Bergmann

FIGURE 3. GEOLOGIC CROSS SECTION A-A'
West River Wall Improvements
City of Rochester
Monroe County, NY

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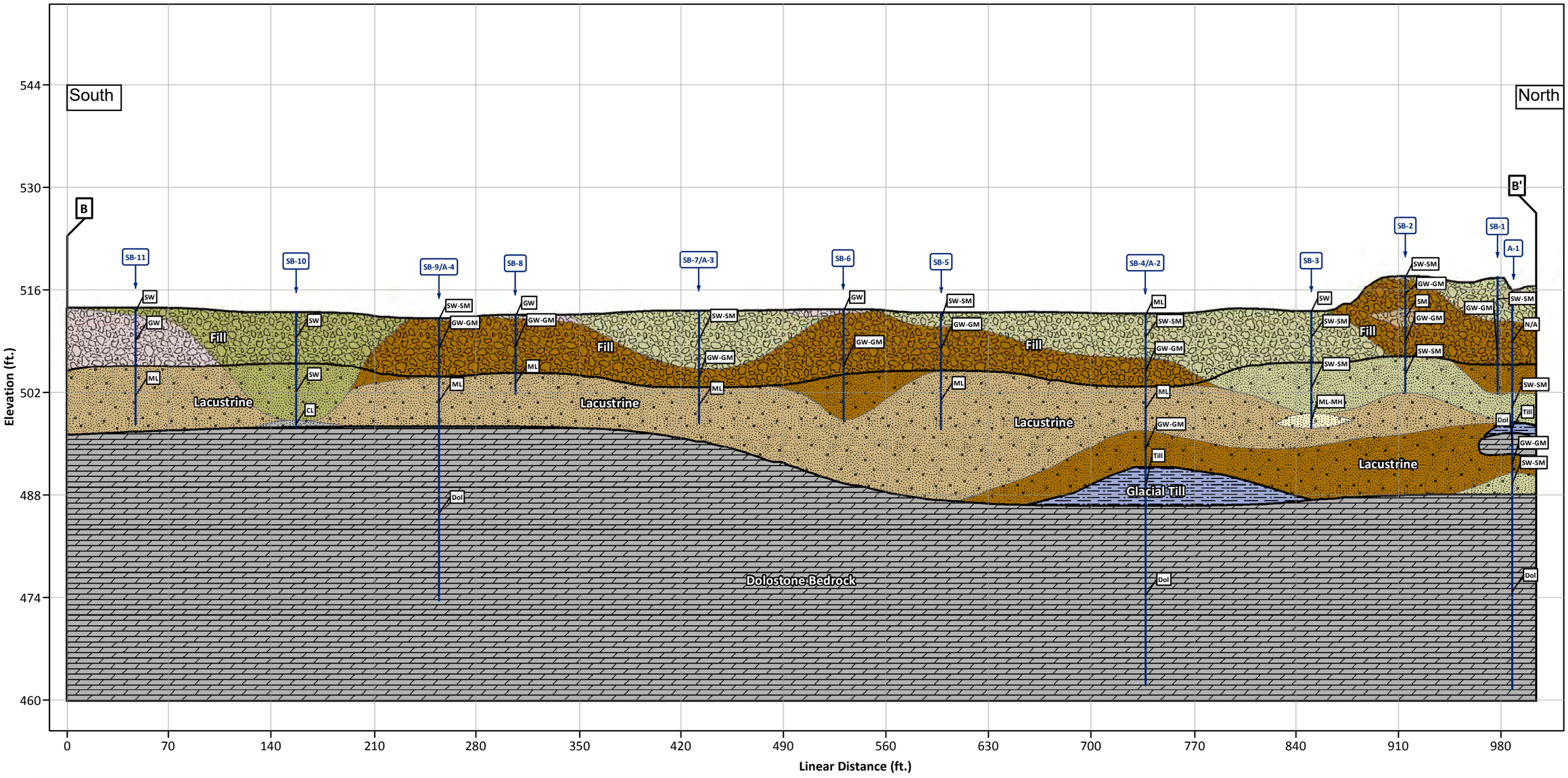


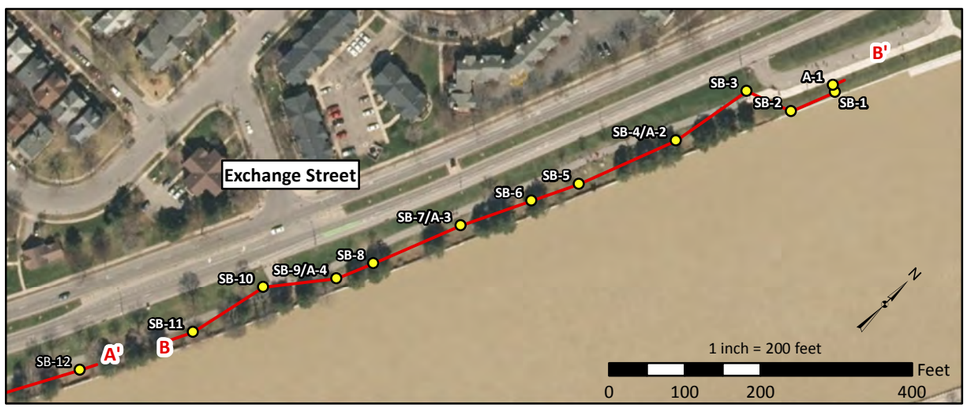
DATE: October 2018

SCALE: As noted

DRAWN/CHECKED: BGS/GLA, SD

SOURCE: Pictometry
Boring logs provided by Bergmann

FIGURE 4. GEOLOGIC CROSS SECTION B-B'
West River Wall Improvements
City of Rochester
Monroe County, NY



Legend

Unified Soil Classification Symbol

- GW-GM: well-graded gravel; fine to coarse gravel to silty gravel
- GW: well graded gravel; fine to coarse gravel
- SW: well-graded sand; fine to coarse sand
- SW-SM: well-graded sand; fine to coarse sand to silty sand
- ML: silt
- MH: silt of high plasticity; elastic silt
- ML-MH: silt; silt of high plasticity
- CL: clay of low plasticity; lean clay

Unit Type

- Fill
- Lacustrine
- Glacial Till
- Dolostone Bedrock

Notes:
1 inch = approximately 70 feet horizontal
1 inch = approximately 14 feet vertical

(Vertical Exaggeration: x5)

Prepared For:

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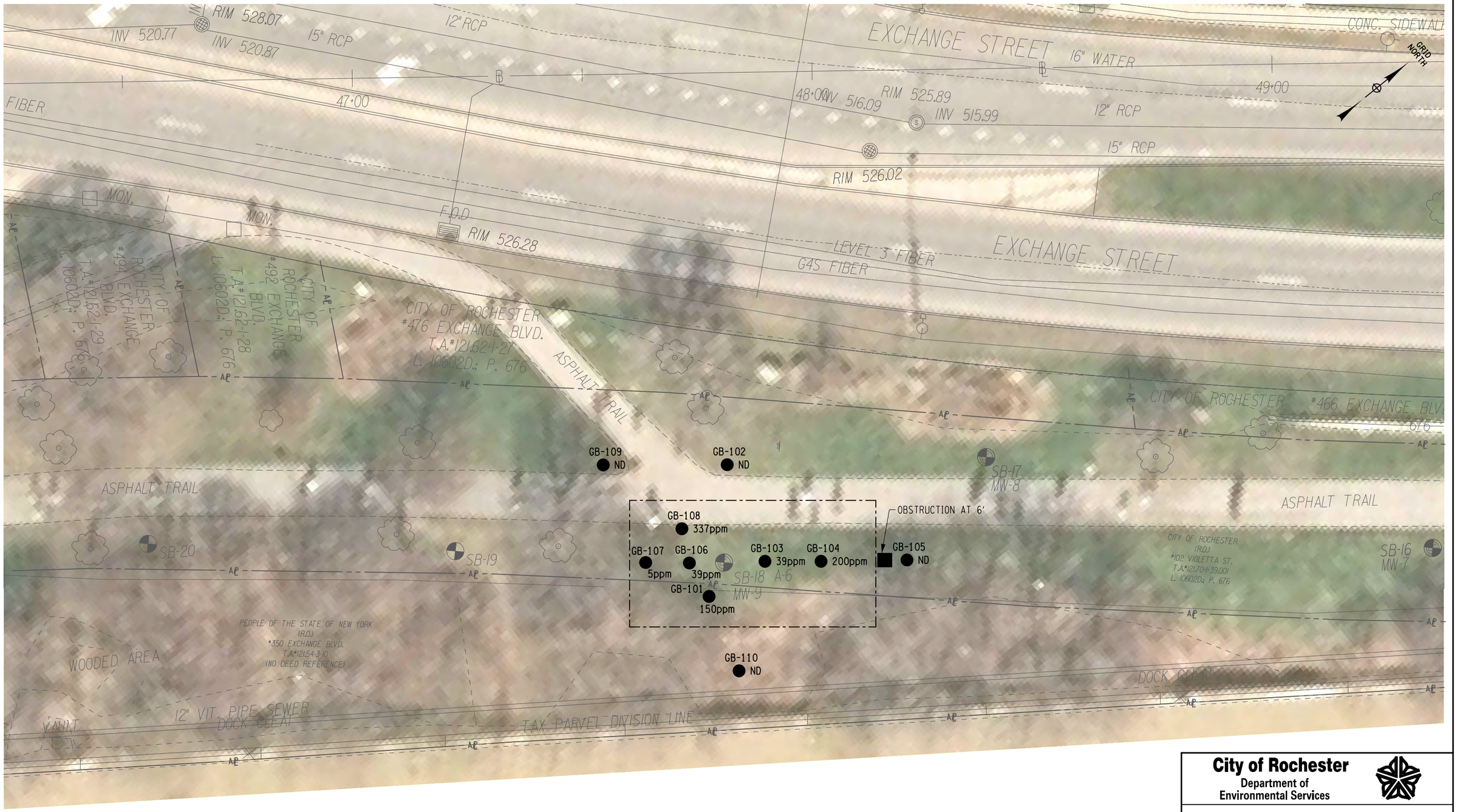

LEGEND:

SB-XX	SOIL BORING LOCATION (INSTALLED 5/14/18)	GB-XXX ●	GEOPROBE BORING LOCATION (INSTALLED AUG. 8&9 2018)
MW-X	MONITORING WELL LOCATION (INSTALLED 5/25/18 TO 5/29/18)	■	OBSTRUCTION
	APPROXIMATE LOCATION OF PETROLEUM SPILL INVESTIGATION AREA	ND	NON-DETECT PID MEASUREMENT
		XXXppm	MXIMUM PID MEASUREMENT IN PARTS PER MILLION FROM 15-20 FT. BELOW GROUND SURFACE

10 0 10 20 30 40'
1" = 20'

City of Rochester
Department of Environmental Services

West River Wall Improvements

Figure 5
Petroleum Spill Investigation Area at A-6/SB-18

SHEET NO.	SCALE	DATE
2	AS SHOWN	10/18

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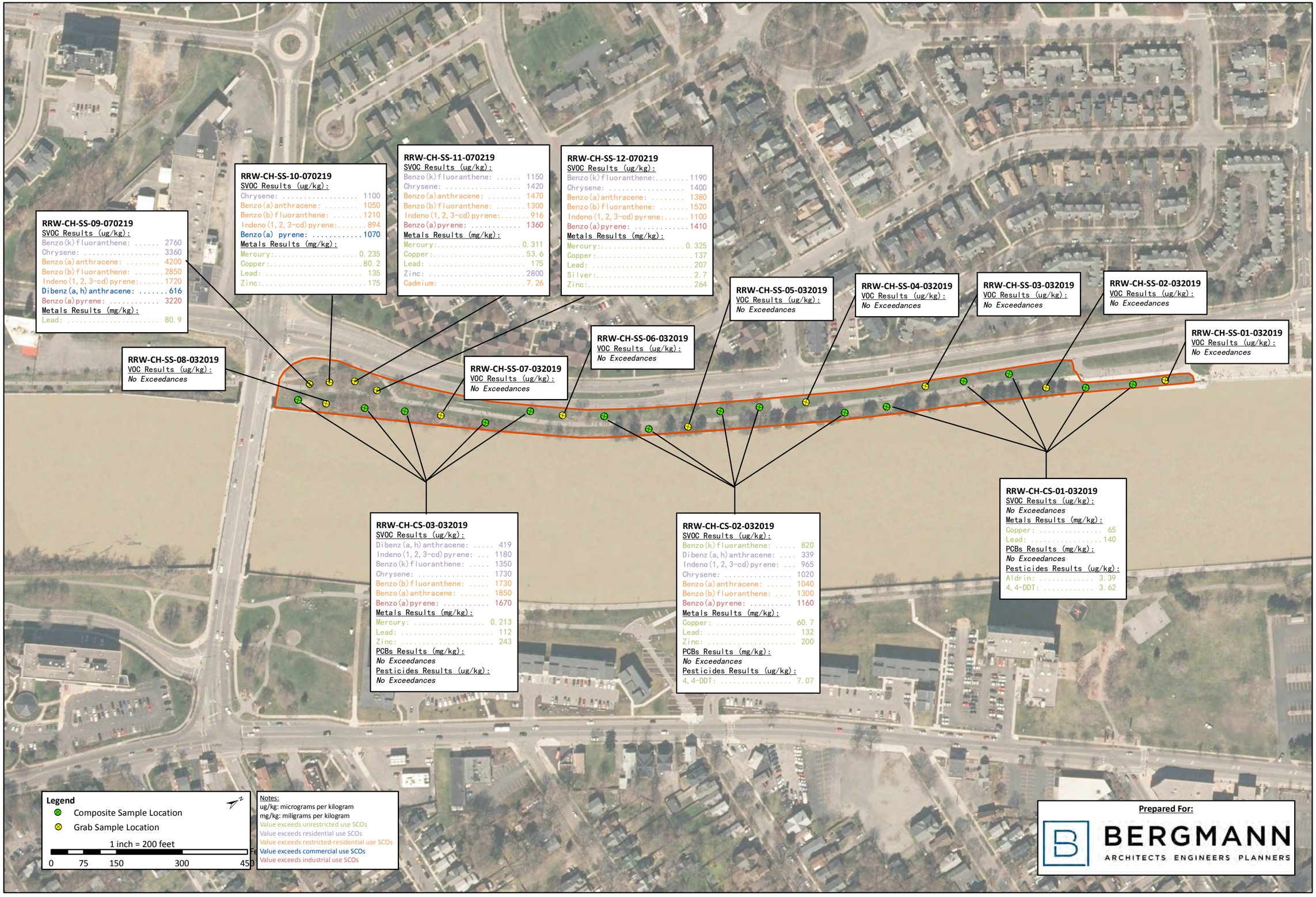
Print Date: 15-OCT-2018 14:45
File Name: 012642_prs_Figure 5-Petroleum Spill.dgn



DATE: July 2019
Project Number: 50378-02
DRAWN/CHECKED: BGS/GLA
DATA SOURCE: ESRI online Basemap

Figure 6. Surface Soil Analytical Results Map
West River Wall
City of Rochester
Monroe County, NY

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APPENDIX A

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

Hole Number: SB-1

DATE: 5/15/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	5						Moist, mixed brown (SANDY-SILT) topsoil with little very fine size sand, compact, with fine size roots (0.3)	0.7'	Topsoil to 0.3 foot over soil fill with wood to 6.0 feet over gravel fill with cobbles and occasional boulders to 12.0 feet over sand and gravel fill to refusal
		18							
			7		25		Soil fill with fibrous wood material (poor recovery)		
				7					
2	7							0.0'	
		9							
			11		20				
				5					
3	6							0.1'	
		5							
			7		12				
				8			(6.0)		
4	3						Wet, gray (GRAVEL) fill with 40 to 60% gravel with cobbles and occasional boulders, very fine to very coarse size sand, loose	0.3'	
		2							
			4		6				
				4					
5	6							0.1'	
		4							
			3		7				
				8					
6	4							0.5'	Note: At 14.0' bent spoon, pounded casing and bent casing with casing refusal at 16.0' bgs. Move approximately 10.0' away from the river (approximately 2.0' lower in elevation) and re-drill SB 1-A
		8							
			11		19				
				7			(12.0)		
7	2						Wet, brown, very gravelly (SILTY-SAND) fill with 40 to 50% gravel and concrete, very fine to medium size sand, little silt, loose, becoming very dense below 14.5' bgs	0.7'	
		2							
			4		6				
				4					
8	9							1.0'	
		15							
			36		51				
				19			(16.0)		
							Auger Refusal at 16.0' bgs		No Water at Completion

LOGGED BY: Dale M. Gramza, P.G.

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

Hole Number: SB-1A

DATE: 5/15/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
							Advanced NW casing without sampling to 14.0' bgs		Below 14.0' - Sandy slack water sediment with some silt to 18.0 feet over water sorted and deposited sand and gravel with little to some silt to 19.4 feet over dolostone boulder to 22.4 feet over silty glacial drift to 25.0 feet over sandy glacial drift to 27.9 feet over dolostone bedrock to end of coring
							14.0		
9	4						Wet, gray (SILTY-SAND) with very fine size sand, some silt, loose to very loose, thinly bedded with fibrous wood material	0.5'	
		2			4				
			2						
				1					
10	2							1.0'	
		1			2				
			1						
				2					
							18.0		
11	16						Wet, gray, very gravelly (SILTY-SAND) with 40 to 50% gravel, very fine size sand, little to some silt, very dense, stratified	0.4'	
		50/5"			>50				
							19.4		
		RUN #1					See next sheet		

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NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC
3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

Hole Number: SB-1A

DATE: 5/15/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
							Dolostone boulder		
		RUN							
			#1						
									▼ Water Level at 21.5' bgs prior to Coring
							22.4		
12	20						Extremely moist, brown, gravelly (SILT) with 15 to 25% gravel, little very fine size sand, very dense, with brittle consistence, massive soil structure to weakly thinly bedded	2.0'	
		50			>100				
			50/5"						
							25.0		
13	68						Wet, brown (SILTY-SAND) with 5 to 10% gravel, very fine size sand, little to some silt, very dense, massive soil structure to weakly thinly bedded	2.0'	
		50			>100				
			50/5"						
14	32							0.8'	
		50/2"			>50				
		RUN							
			#2						
							Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick, occasional small vugs noticed from 27.9' to 30.1'		
		RUN							
			#3						
		RUN							
			#4						

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
1	19.4 to 22.4	3.0	1.3	43	0
2	27.9 to 32.4	4.5	4.3	96	76
3	32.4 to 37.0	4.6	4.6	100	78
4	37.0 to 41.0	4.0	3.8	95	87

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Hole Number: SB-1A

DATE: 5/15/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
		RUN #4					Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick		
		RUN	#5				41.0 Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick		
		RUN	#6						
		RUN	#7				54.5 Coring Completed at 54.5' bgs		

45
50
55
60

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
5	41.0 to 45.8	4.8	4.8	100	92
6	45.8 to 50.6	5.0	5.0	100	80
7	50.6 to 54.5	3.7	3.7	100	92

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SB 1A
RUN #1
RUN #2
RUN #3
RUN #4

SB 1A
RUN #5
RUN #5
RUN #6
RUN #6
RUN #7

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Test Boring Report

SB-02

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 0f 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	518.23
Datum:	City of Rochester
Start:	5/9/2018
Finish	5/9/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	0.5	S1 90%	0.5	Brown to gray coarse to fine SAND, little silt, damp. - FILL - **SW-SM**
2						Brown to gray GRAVEL, some coarse to fine sand, trace silt, damp.**GW-GM**
4	4	NA	2.11		4.5	- FILL -
6	4	NA	0.5	S2 75%		Black CINDERS with coal fragments, damp. - FILL - **SM**
8	8	NA			7.0	Brown GRAVEL, some coarse to fine sand, trace silt, with concrete, damp. **GW-GM**
10	8	NA	ND	S3 90%		- FILL -
12	12	NA			▽ 11.0	- FILL - **GW-GM**
14	12	NA	ND	S4 100%	.	Light brown SAND, some gravel, trace silt with root fibers, wet. LACUSTRINE **SW-SM**
16	16	NA				- LACUSTRINE - **SW-SM**
18					.	Bottom of boring at 16.0 feet.
20						Backfilled soil boring to ground surface with bentonite.

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/9/2018		none	none	12.0	yes 10.5 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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Test Boring Report

SB-03 / MW-1

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	513.39
Datum:	City of Rochester
Start:	5/9/2018
Finish	5/9/2018
Driller:	D. Gramza
Geologist	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 95%	0.1	Brown coarse to fine SAND, trace silt, damp. - FILL - **SW**
2						Black cinders and ash with coal fragments, damp. **SW - SM**
4	4	NA	ND			Same. **SW-SM**
6	4	NA	ND	S2 80%		Same. - FILL -
8	8	NA			7.0 ▽	Brown coarse to fine SAND, little gravel, trace silt, wet. **SW-SM**
8	8	NA	ND	S3 90%		- LACUSTRINE -
10					11.0	- LACUSTRINE -
12	12	NA				Gray coarse to fine SAND, little gravel, trace silt, wet - LACUSTRINE **SW-SM**
12	12	NA	ND	S4 100%	.	
14					.	Gray SILT, trace fine same, with wood fragements, damp **ML-MH**
16	16	NA				- LACUSTRINE -
16						Bottom of boring at 16.0 feet.
18						Monitoring well MW-1 installed in completed borehole, see well report.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/9/2018		none	none	8 ft.	Yes 8 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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Test Boring Report

SB-05 / MW-2

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	513.20
Datum:	City of Rochester
Start:	5/9/2018
Finish	5/9/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0				0.5	Brown coarse to fine SAND, trace silt, with root fibers, damp. - TOPSOIL - **SW-SM**
		NA	ND			Black CINDERS and ASH, damp. - FILL - **SW-SM**
2				S1 80%	2.0	
		NA				Brown to gray GRAVEL, some coarse to fine sand, trace silt, mosit to wet, -FILL - SW-SM
4	4		ND			
	4	NA				Same.
6			ND	S2 90%		
	8	NA				
8					▽	- FILL - **GW-GM**
	8				8.0	
		NA	ND			Brown SILT, trace clay, wet. - LACUSTRINE - **ML**
10			76.0	S3 75%	10.0	
			90.0			Black stained SILT, trace clay, wet. - LACUSTRINE - **ML** Petroleum odor.
	12	NA	20.0			
12						
	12		1.2			
		NA			13.0	
			2.0			Brown SILT, wet - LACUSTRINE - **ML**
14				S4 90%		
			0.5			
		NA				
	16					
16						
						Bottom of boring at 16.0 feet.
						Monitoring well MW-2 installed in borehole, see well report.
18						
20						

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/9/2018		none	none	8 ft.	yes 8 ft.

Summary	
Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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Alden, NY 14004
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www.natureswayenvironmental.com

Hole Number: A-2/SB-4

DATE: 5/18/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	4						Moist, dark gray (SILT) topsoil / fill with trace very fine size sand, loose, with fine size roots (0.4)	1.0'	Topsoil / fill to 0.4 foot over sand and gravel fill with cobbles and occasional boulders to 6.0 feet over silty soil fill with some gravel to 10.0 feet over silty slack water sediment with trace sand to 16.0 feet over water sorted and deposited sand and gravel with little silt to 21.0 feet over silty glacial till to 26.3 feet over dolostone bedrock to end of coring
		5			10				
			5						
				6					
2	8							0.8'	
		11			19				
			8						
				8					
3	9							0.3'	
		7			11				
			4						
				3			(6.0)		
4	4						Extremely moist to wet, brown and dark gray, gravelly (SILT) fill with 20 to 40% gravel with occasional cobbles and boulders, trace very fine size sand, compact	0.8'	
		1			11				
			10						
				11				0.8'	
5	5								
		8			11				▼ Water Level at 8.6' bgs on 5/21/18 in AM
			3						
				3			(10.0)		
6	WH						Extremely moist, gray to brown (SILT) with trace very fine size sand, compact to loose, thinly bedded	1.0'	▼ Water Level at 9.7' bgs at end of day on 5/18/18 with HSA at 16.0'
		1			17				
			16						WH - Sampler Penetration with weight of Rods and Hammer
				6					
7	3							1.0'	
		1			3				
			2						
				3					
8	1							1.2'	
		2			4				
			2						
				10			(16.0)		
9	18						Wet, gray, very gravelly (SILTY-SAND) with 40 to 50% gravel, very fine to medium size sand, little silt, very dense to compact, stratified	1.3'	
		27			60				
			33						
				17					
10	5							1.5'	
		15			25				
			10						
				18					

LOGGED BY: Dale M. Gramza, P.G.

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Hole Number: SB-4

DATE: 5/18/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
11	2						Wet, gray, very gravelly (SILTY-SAND) with 40 to 50% gravel, very fine to medium size sand, little silt, very dense to compact, stratified	0.8'	
		15			57				
			42						
				50/4"					
12	22						Moist, brown (SILT) with 5 to 15% gravel, trace very fine size sand, very dense with brittle consistence, massive soil structure	0.8'	
		50/4"			>50				
								>1"	
13	43								
		50/4"			>50				
		RUN					Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick, small vugs noticed between 26.0' to 28.8', fracture zone between 28.8' and 29.2'		
			#1						
		RUN							
			#2						
		RUN							
			#3						

21.0

26.3

25

30

35

40

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
1	26.3 to 31.7	5.4	5.3	98	77
2	31.7 to 36.4	4.7	4.6	97	97
3	36.4 to 41.1	4.7	4.7	100	94

LOGGED BY: Dale M. Gramza, P.G.

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Hole Number: SB-4

DATE: 5/18/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
		RUN #3					Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick		
		RUN	#4						
		RUN	#5				50.9		
							Coring Completed at 50.9' bgs		

45
50
55
60

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
4	41.1 to 45.9	4.8	4.8	100	100
5	45.9 to 50.9	5.0	5.0	100	80

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SB 4
RUN #1
RUN #1
RUN #2
RUN #2
RUN #3

SB 4
RUN #3
RUN #4
RUN #5
RUN #4
RUN #5
RUN #5

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Test Boring Report

DRAFT

SB-6

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	marco-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	513.66
Datum:	City of Rochester
Start:	5/9/2018
Finish	5/9/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 90%	0.5	Brown coarse to fine SAND, trace silt, with root fibers, damp. - FILL - **GW**
2	4	NA	ND		2.0	Black CINDERS and ASH, damp. - FILL - **GW-GM** Brown to gray GRAVEL, some coarse to fine sand, trace silt, with blue slag, damp. **GW-GM**
4	4 8	NA NA	ND	S2 60%		Same. - FILL - **GW-GM**
6						
8	8 12	NA NA	ND	S3 50%	▽	Same. **GW-GM** Same. - FILL - **GW-GM**
10						
12	12 15.1	NA NA	ND	S4 80%	13.0	Brown to gray GRAVEL, little coarse to fine sand, trace silt, wet. **GW-GM** - FILL -
14						
16						Bottom of soil boring at 15.1 ft. refusal.
18						Backfilled borehole with bentonite to ground surface.
20						

Ground Water Data						Summary	
			Depth			Overburden (Lin FT)	15.1
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered	Rock Cored (Lin FT)	none
5/9/2018		none	none	12 ft.	Yes 10 ft.	Samples:	S4

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HOLE NUMBER: SB-7

DATE: 5/22/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

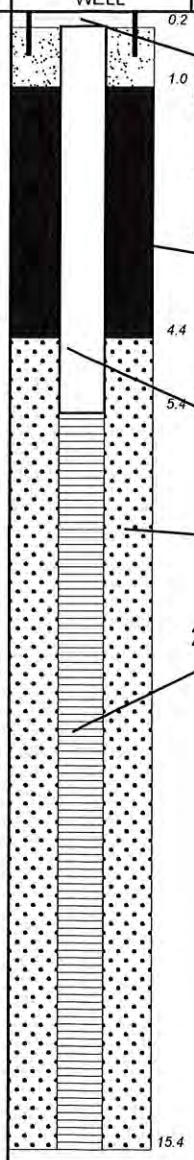
PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N
1	3				
		8			20
			12		
				19	
2	13				
		9			17
			8		
				8	
3	9				
		17			24
			7		
				3	
4	2				
		2			5
			3		
				1	
5	2				
		1			3
			2		
				50/3"	
6	38				
		8			11
			3		
				3	
7	1				
		1			2
			1		
				1	
8	WH				
		WH			<3
			50/2"		

LITH	DESCRIPTION AND CLASSIFICATION	REC
	Moist, dark brown (SILT) topsoil with trace very fine size sand, loose, with fine size roots (0.4)	1.7'
	Moist, light grayish brown, very gravelly (SILTY-SAND) fill with 40 to 50% gravel, very fine to medium size sand, compact (4.0)	1.3'
	Moist, gray to dark gray, very gravelly (SILTY-SAND) fill with 40 to 50% gravel and cinders, very fine to very coarse size sand, trace silt, compact to loose (8.0)	0.8'
	Wet, dark gray to gray (SILT) fill with 5 to 15% gravel with occasional cobbles, trace very fine size sand (10.5)	0.3'
	Wet, olive gray (SILT) with trace to little very fine size sand, compact, thinly bedded (15.4)	1.3'
	Auger Refusal at 15.4' bgs	2.0'
		0.5'
		0.1'

MONITORING WELL



REMARKS

8" Flush mount Road box Encased in Concrete

Bentonite Seal

2" PVC Riser Pipe

#0 Size Sand

2" 10-Slot PVC SCreen

COMMENTS

Topsoil to 0.4 foot over sand and gravel fill to 4.0 feet over sand and gravel fill with trace silt to 8.0 feet over silty soil fill with trace gravel to 10.5 feet over silty slack water sediment with trace to little sand to refusal

▼ Water Level at 13.9' bgs at Completion

WH - Sampler Penetration with weight of Rods and Hammer

LOGGED BY: Dale M. Gramza, P.G.

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Test Boring Report

SB-8 / MW-4

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	512.90
Datum:	City of Rochester
Start:	5/9/2018
Finish	5/9/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 90%	0.5	Brown coarse to fine SAND, trace silt, with root fibers, damp - FILL - **GW**
2						Black CINDERS and ASH, damp. **GW-GM**
4	4	NA	ND			Same. - FILL - **GW-GM**
6	4	NA	ND	S2 90%		Same. - FILL - **GW-GM**
8	8	NA	ND	S3 80%	▽ 8 .	Light brown SILT, some coarse to fine sand, trace fine gravel, wet. - LACUSTRINE-**ML-GW**
10	8	NA	ND			Light brown SILT, trace clay, wet. **ML** - LACUSTRINE -
12	10					Bottom of soil boring at 10.8 ft. refusal. Monitoring well MW-4 installed in completed borehole, see well completion report.

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/9/2018		none	none	8 ft.	Yes 7 ft.

Summary

Overburden (Lin FT)	10.8
Rock Cored (Lin FT)	none
Samples:	S3

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Hole Number: A-4/ SB-9

DATE: 5/22/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	3						Moist, dark gray (SILTY-SAND) topsoil / fill with very fine size sand, little silt, loose, with fine size roots 0.3	0.8'	Topsoil / fill to 0.3 foot over sandy fill with some gravel and cinders to 5.0 feet over silty soil fill with trace gravel to 8.0 feet over silty slack water sediment with trace to little sand to 14.8 feet over dolostone bedrock to end of Coring
		4							
			3		7				
				2					
2	2						Moist, dark gray, gravelly (SAND) fill with 20 to 40% gravel and cinders, loose to compact	0.2'	
		3							
			2		5				
				3					
3	6							0.8'	
		7							
			7		14		5.0		
				5			Extremely moist, faintly mottled, brown (SILT) fill with 5 to 15% gravel, compact to loose		
4	2							0.7'	
		2							
			2		4				
				1			8.0		
5	WH						Wet, gray to olive gray (SILT) with trace to little very fine size sand, very loose, thinly bedded	1.5'	WH - Sampler Penetration with weight of Rods and Hammer
		1							
			12		1				▼ Water Level at 9.5' bgs prior to Coring
				1					
6	WH							2.0'	
		WH							
			2		<3				
				1					
7	1							1.7'	
		1							
			1		2				
				1					
8	50/3"						14.8	0.2'	
		RUN			>50		Dolostone bedrock, gray, very hard, thin to medium bedded, 1" to 8" thick		
			#1						

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
1	14.8 to 19.7	4.9	4.9	100	69

LOGGED BY: Dale M. Gramza, P.G.

NATURE'S WAY
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Hole Number: A-4/ SB-9

DATE: 5/22/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
		RUN	#2				Dolostone bedrock, gray, very hard, thin to medium bedded, 1" to 8" thick		
	X	RUN	#3						
	X	RUN	#4						
	X	RUN	#5						
							38.7 Coring Completed at 38.7' bgs		

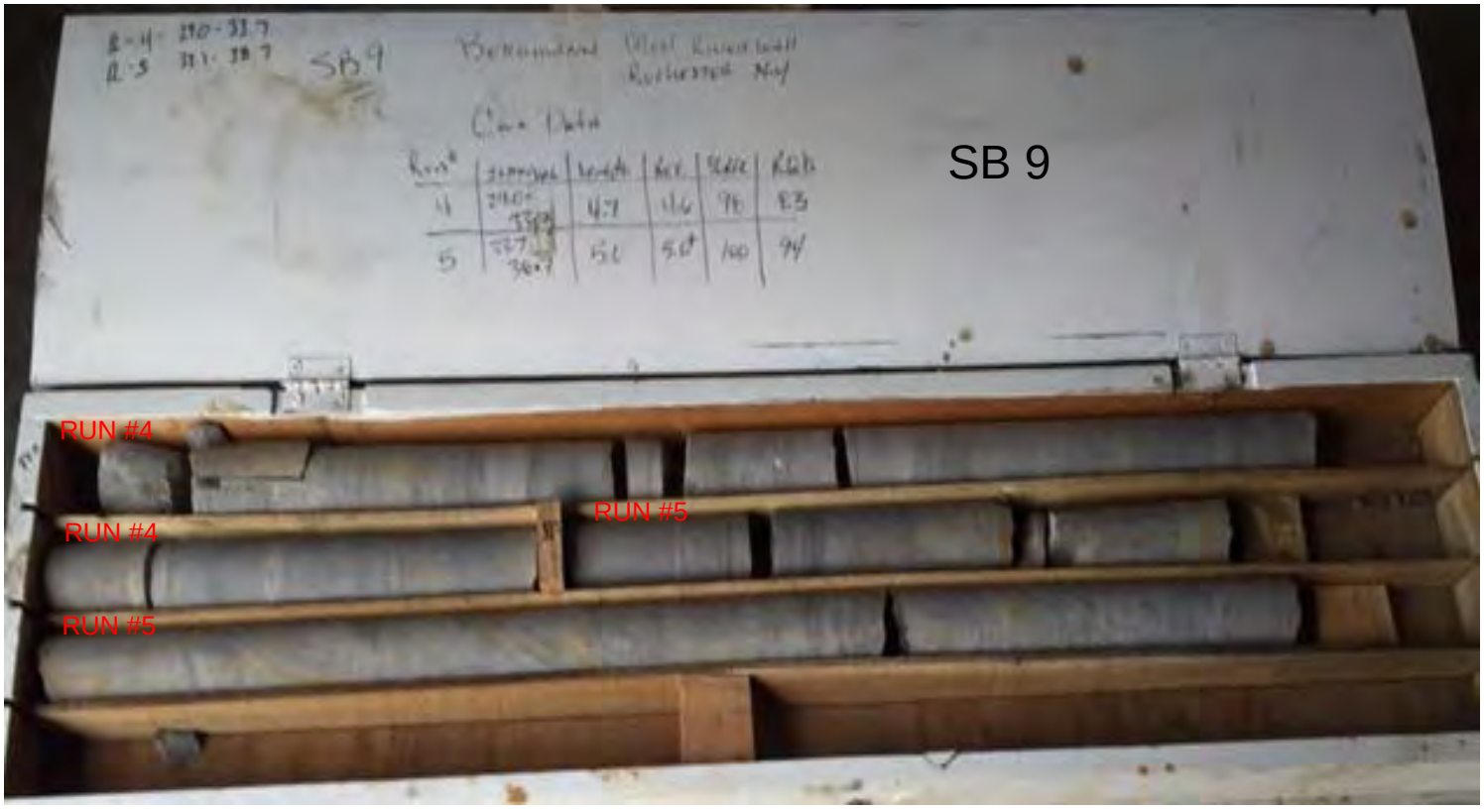
25
30
35
40

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
2	19.7 to 24.2	4.5	4.2	93	77
3	24.2 to 29.0	4.8	4.8	100	79
4	29.0 to 33.7	4.7	4.6	98	83
5	33.7 to 38.7	5.0	5.0	100	94

LOGGED BY: Dale M. Gramza, P.G.

SB 9
RUN #1
RUN #1
RUN #2
RUN #2
RUN #3
RUN #3


SB 9
RUN #4
RUN #4
RUN #5
RUN #5

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

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Hole Number: A-5

DATE: 5/22/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	2						Moist, dark gray (SILT) topsoil / fill with trace very fine size sand, loose, with fine size roots (0.4)	1.2'	Topsoil / fill to 0.4 foot over sandy fill with little gravel to 2.0 feet over silty soil fill with little clay to 3.0 feet over sandy fill with some gravel and cinders to 6.0 feet over silty soil fill with trace bricks to 7.5 feet over cinder and ash fill to 9.5 feet over sandy slack water sediment with some silt to 12.0 feet over silty slack water sediment with trace sand to 16.0 feet over water sorted and deposited sand with little silt to 18.0 feet over gravelly glacial drift to 20.7 feet over dolostone bedrock to end of coring
		4			10				
			6						
				6					
2	5						Moist, brown, gravelly (SILTY-SAND) fill with 15 to 25% gravel, very fine size sand, loose (2.0)	1.3'	
		5							
			3		8		Moist, brown (CLAYEY-SILT) fill with little clay, firm (3.0)		
				6			Moist, dark gray, gravelly (SAND) fill with 20 to 40% gravel and cinders, very fine to very coarse size sand, loose	1.3'	
3	5								
		4							
			4		8				
				3			(6.0)		
4	2						Extremely moist, brown (SILT) fill with 5 to 15% red brick fragments, trace very fine size sand	1.5'	
		4							
			4		8				
				3			(7.5)		
5	2						Cinder and ash fill	1.3'	
		1							
			0		1				
				1			(9.5)		▼ Water Level at 9.5' bgs prior to Coring
6	WH						Wet, olive gray (SILTY-SAND) with very fine size sand, some silt, very loose, thinly bedded	1.5'	WH - Sampler Penetration with weight of Rods and Hammer
		WH							
			WH						
				1			(12.0)		
7	WH						Wet, faintly mottled, olive brown to gray (SILT) with trace very fine size sand, very loose, thinly bedded	2.0'	
		WH							
			WH						
				1				2.0'	
8	WH								
		WH							
			2						
				1			(16.0)		
9	WH						Wet, gray (SILTY-SAND) with very fine size sand, little silt, very loose, thinly bedded	1.8'	
		1							
			6		7				
				47			(18.0)		
10	12						Wet, brown, very gravelly (SILTY-SAND) with 40 to 50% gravel, very fine to coarse size sand, little silt, very dense, massive soil structure to weakly stratified	1.0'	
		52							
			50/4"		>102				

LOGGED BY: Dale M. Gramza, P.G.

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC
3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

Hole Number: A-5

DATE: 5/22/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
11	36						See previous sheet	0.7'	
							20.7		
		50/1"			>50		Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick with occasional small crystal filled vugs from 20.7' to 31.0', encountered small vertical fracture between 26.3' to 26.5'		
		RUN							
			#1						
25									
		RUN							
			#2						
30									
		RUN							
			#3						
35									
		RUN							
			#4						
40									

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
1	20.7 to 25.4	4.7	4.6	98	70
2	25.4 to 30.4	5.0	4.8	96	76
3	30.4 to 35.2	4.8	4.7	98	93
4	35.2 to 40.2	5.0	5.0	100	90

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NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

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Hole Number: A-5

DATE: 5/22/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
		RUN #4					Dolostone bedrock, gray, very hard, very thin to medium bedded, 1" to 8" thick		
		RUN	#5						
		RUN							
45			#6						
							45.7		
							Coring Completed at 45.7' bgs		
50									
55									
60									

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
5	40.2 to 44.0	3.8	3.5	92	89
6	44.0 to 45.7	1.7	1.7	100	94

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A 5
RUN #1
RUN #2
RUN #3
RUN #3
RUN #4

A 5
RUN #5
RUN #6

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

SB-10

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	513.25
Datum:	City of Rochester
Start:	5/11/2018
Finish	5/11/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	0.1	S1 85%	0.5	Brown coarse to fine SAND, trace silt, with root fibers, damp. - FILL - **SW**
2						Black CINDERS and ASH, with coal fragments, damp. - FILL - **SW**
4	4	NA	ND			
6	4	NA	ND	S2 85%		Same. - FILL - **SW**
	8	NA			7.0	
8	8	NA	ND	S3 75%	▽	Gray to light brown SILT, trace clay, moist to wet. - LACUSTRINE - **ML**
10						Same. - LACUSTRINE - **ML**
12	12	NA				
14	12	NA	ND	S4 90%	.	
		NA			14.8	Gray SILT, little clay, wet. - LACUSTRINE - **CL**
16	15.8					
18						Bottom of soil boring at 15.8 ft. refusal. Backfilled borehole with bentoninte to ground surface.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/11/2018		none	none	8.0	Yes 8 ft.

Summary

Overburden (Lin FT)	15.8
Rock Cored (Lin FT)	none
Samples:	S4

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

SB-11 / MW-5

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	513.86
Datum:	City of Rochester
Start:	5/11/2018
Finish	5/11/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 90%	1	Brown coarse to fine SAND, little gravel, trace silt, damp. - FILL - **SW**
2						Black CINDERS and ASH, with blue slag, damp. - FILL - **GM**
4	4	NA	ND			
6	4	NA	ND	S2 80%		Brown to gray GRAVEL, some coarse to fine sand, trace silt, cinders and ash, damp. **GM**
8	8	NA				Same. - FILL - **GM**
10	8	NA	ND	S3 20%	8.0 ▽ yes	Gray SILT, trace clay, wet. - LACUSTRINE - **ML**
12	12	NA				
14	12	NA	ND	S4 70%	.	Same. - LACUSTRINE - **ML**
16	16	NA				Same. - LACUSTRINE - **ML**
18						Bottom of soil boring at 16.0 ft. Monitoring well MW-5 installed in borehole, see well completion report.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/11/2018		none	none	12 ft.	yes at 10 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

DRAFT

SB-12

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	513.33
Datum:	City of Rochester
Start:	5/11/2018
Finish	5/11/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 80%	1.0	Brown coarse to fine SAND, little gravel, trace silt, with root fibers, damp. - FILL - **SW**
2						Black CINDERS and ASH, trace gravel and brick fragments, damp. - FILL - **SM**
4	4	NA	ND		4	- FILL -
6	4	NA	ND	S2 80%		Brown to gray GRAVEL, little coarse to fine sand, with cinders and ash moist to wet. **GW**
8	8	NA	ND	S3 70%	7.5	- FILL - **GW-GM**
10	8	NA	ND	S3 70%		Light brown SILT, trace fine sand, moist. - LACUSTRINE - **ML**
12	12	NA	ND	S4 75%	.	Same. **ML**
14	12	NA	ND	S4 75%		- LACUSTRINE - **ML**
16	15.9				14.9	Light brown GRAVEL, little coarse to fine sand, trace silt, wet. - GLACIAL TILL - **GW-GM**
18						Bottom of soil boring at 15.9 ft. refusal. Backfilled borehole with bentonite to ground surface.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/11/2018		none	none	12 ft.	yes at 11 ft.

Summary

Overburden (Lin FT)	15.9
Rock Cored (Lin FT)	none
Samples:	S4

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

SB-13

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	517.09
Datum:	City of Rochester
Start:	5/11/2018
Finish	5/11/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 50%	0.2	Brown coarse to fine sand, trace silt, damp. - FILL - **SW**
2						Black to Brown CINDERS and ASH, with coal, concrete, brick and wood, damp. - FILL - **SM**
4	4	NA	ND			
6	4	NA	ND	S2 50%		Same. - FILL - **SM**
8	8	NA				
8	8	NA	ND	S3 50%	▽	Gray coarse to fine SAND, some silt, little gravel, with coal and wood, damp.-FILL- **SW-SM**
10						]
12	12	NA				
12	12	NA	ND	S4 10%		Same. - FILL - **SW-SM**
14					14	
14		NA				
16	16					Gray SILT, trace clay, wet. - LACUSTRINE - **ML**
16						Bottom of soil boring at 16.0 ft.
18						Backfilled borehole with bentonite to ground surface.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/11/2018		none	none	12 ft.	yes at 9 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

SB-14 / MW-6

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	518.06
Datum:	City of Rochester
Start:	5/11/2018
Finish	5/11/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 90%	1	Brown coarse to fine SAND, trace gravel, with root fibers, damp. - FILL - **SW**
2						Gray to black CONCRETE and SAND, with brick fragments, damp. - FILL - **GW-GM**
4	4	NA	ND			
6	4	NA	ND	S2 85%		Gray to black CONCRETE and CINDERS, with sand, silt, coal, damp. - FILL- **GW-GM**
8	8	NA	ND	S3 80%		Black CINDERS and ASH, with concrete fragments, moist, **GW-GM**
10						- FILL - **GW-GM**
12	12	NA			11.0 ▽	Light brown CLAY, trace silt, moist. - LACUSTRINE - **CL**
14	12	NA	ND	S4 80%	.	
16	16	NA			15.0	Light brown fine SAND, some silt, wet. - LACUSTRINE - **SM**
18						Bottom of soil boring at 16.0 ft.
20						Monitoring well MW-6 installed in borehole, see well completion report.

Ground Water Data

Date	Time	Elapsed Time (HR)	Depth: Bottom Of Casing	Depth: Bottom Of Hole	Depth: Groundwater Encountered
5/11/2018		none	none	12 ft.	yes at 12 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

SB-15

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	518.11
Datum:	City of Rochester
Start:	5/11/2018
Finish	5/11/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0				0.2	Brown coarse to fine SAND, with root fibers, damp. - FILL - **SW**
		NA			1.0	Black CINDERS and ASH, damp. - FILL - **SM**
2			ND	S1 90%		Brown GRAVEL, some coarse to fine sand, little silt, with brick and concrete, damp. **GW-GM**
						- FILL -
4	4	NA				
6	4	NA	ND	S2 80%	6	Black to gray CINDERS and ASH, trace gravel, trace sand, concrete, brick, damp. **SM**
	8	NA				- FILL -
8						Gray to brown GRAVEL, some coarse to fine sand, little silt, with coal, cinders, wet. **GW-GM**
	8	NA				Same. - FILL - **GW-GM**
10				S3 75%	▽	- FILL - **GW-GM**
	12	NA	ND		11	Red brown GRAVEL, some silt, wet. **GW-GM**
12						Light brown and gray mottled SILT, trace clay, wet. - LACUSTRINE - **ML**
	12	NA			.	
14			ND	S4 90%		Same. - LACUSTRINE - **ML**
	16	NA				
16						Bottom of soil boring at 16.0 ft.
						Backfilled borehole with bentonite to ground surface.
18						
20						

Ground Water Data

	Depth			
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/11/2018		none	none	12 ft.	yes at 10 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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Test Boring Report

SB-16 / MW-7

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	519.78
Datum:	City of Rochester
Start:	5/14/2018
Finish	5/14/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 90%	0.2	Brown fine SAND, trace silt, with root fibers, damp. **SW**
2						Brown to gray GRAVEL, some coarse to fine sand, little silt, trace clay, damp. **GW-GM**
4	4	NA	ND			Same. **GW-GM**
6	4	NA	ND	S2 85%		
8	8	NA			7.0	- FILL - **GW-GM**
						Black CINDER and ASH, damp. **SM**
8	8	NA	ND	S3 90%	8.5	- FILL - **SM**
10						Brown to gray GRAVEL, some coarse to fine sand, trace silt, damp. - FILL - **GW-GM**
12	12	NA			▽ 11.5	- FILL - **GW-GM**
						Light brown SILT, little clay, wet. -LACUSTRINE - **MH**
14	12	NA	8.2 8.6 9.3	S4 100%		Same, except light brown and gray mottled. **MH**
16	16	NA	12.4 2.1			- LACUSTRINE - **MH**
						Bottom of soil boring at 16.0 ft.
18						Monitoring well MW-7 installed in borehole, see well comletion report.
20						

Ground Water Data

	Depth			
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/14/2018		none	none	12 ft.	Yes at 11.5 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples:	S4

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ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

SB-17 / MW-8

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	522.33
Datum:	City of Rochester
Start:	5/14/2018
Finish	5/14/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 95%	0.2	Brown SILT, trace coarse to fine sand, with root fibers, damp. -FILL - **ML**
2						Brown GRAVEL, some coarse to fine sand, trace silt, concrete, brick, coal, damp. **GW-GM**
4	4	NA	87			Petroleum odor.
6	4	NA	ND	S2 90%		Same.
8	8	NA				- FILL -
10	8	NA	ND	S3 95%	10.0	Same. **GW-GM**
12	12	NA				Black CINDERS and ASH, with coal fragments, damp. - FILL - **SM**
14	12	NA	ND	S4 100%	▽ 12 14.0	- FILL- **SM** Gray GRAVEL, some coarse to fine sand, damp. **GW**
16	16	NA				Light brown CLAY, little silt, moist to wet. - LACUSTRINE - **CL**
18						Bottom of soil boring at 16.0 ft. Monitoring well MW-8 installed in borehole, see well completion report.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/14/2018		none	none	12 ft.	Yes at 12 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples: S4	

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NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

HOLE NUMBER: A-6 / SB-18

DATE: 5/25/18

ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	MONITORING WELL	REMARKS	COMMENTS
1	2						Moist, dark brown (SANDY-SILT) topsoil / fill with little very fine size sand, loose (0.3)	0.7'	0.2	8" Flush mount Road box	Topsoil / fill to 0.3 foot over mixed coarse silty soil fill with little gravel to 7.5 feet over sand and gravel fill with concrete to 9.5 feet over silty slack water sediment with trace to little sand to 20.0 feet over sandy glacial till to refusal
		6							1.5	Encased in Concrete	
			50/3"		>56						
2	4						Moist, mixed brown and dark gray, gravelly (SANDY-SILT) fill with 15 to 25% gravel and asphalt, loose to compact	0.7'		Cement / Bentonite Grout	
		3									
			4		7						
				3							
3	6							'0.7			
		8								2" PVC Riser Pipe	
			8		16				5.5		
				8				0.5'		Bentonite Seal	
4	16										
		7									
			50/3"		>57						
							(7.5)				
*							Moist, gray, very gravelly (SILTY-SAND) fill with 40 to 50% gravel and concrete, very fine to coarse size sand, very dense (9.5)		8.5		* Drill past obstruction
5	8							0.3'		#0 Size Sand	
		2			2		Wet, brown to olive gray (SILT) with trace to little very fine size sand, loose to very loose, thinly bedded with occasional (CLAYEY-SILT) layers	1.3'	10.5	2" 10-Slot PVC SCreen	
6	3										
		3									
			2		5						
				3							
7	1							0.7'			
		2									
			2		4						
				1							
8	WH							2.0'			WH - Sampler Penetration with weight of Rods and Hammer
		WH									
			1		<2						
				1							
9	1							1.8'			
		2									
			1		3						
				2							
10	2							1.7'			
		2									
			2		4						
				1			(20.0)				

LOGGED BY: Dale M. Gramza, P.G.

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

HOLE NUMBER: A-6 / SB-18

DATE: 5/25/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	MONITORING WELL	REMARKS	COMMENTS
11	50/2"				>50		Wet, brown, gravelly (SILTY-SAND) with 15 to 25% gravel, very fine size sand, little silt, very dense, massive soil structure (20.5) Auger Refusal at 20.5' bgs	0.2'	20.5	2" 10-Slot PVC SCreen; #0 Size Sand	No Water at Completion

25
30
35
40

LOGGED BY: Dale M. Gramza, P.G.

NATURE'S WAY
ENVIRONMENTAL CONSULTANTS & CONTRACTORS, INC

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.natureswayenvironmental.com

HOLE NUMBER: A-7

DATE: 5/29/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	MONITORING WELL	REMARKS	COMMENTS
1	4	4	9	12	13		Moist, brown (SILT) topsoil with trace to little very fine size sand, loose, with fine size roots (0.2)	1.2'	0.2	8" Flush mount Road box	Topsoil to 0.2 foot over sandy fill with little gravel and concrete to 3.5 feet over apparent silty soil fill with trace gravel to 7.0 feet over silty slack water sediment with trace sand to 15.5 feet over water sorted and deposited sand with little gravel to 16.8 feet over dolostone bedrock to end of coring
2	7	6	4	1	10		Moist, brown, gravelly (SILTY-SAND) fill with 15 to 25% gravel and concrete, very fine size sand, compact to loose (3.5)	>0.1'	1.5	Encased in Concrete	
3	1	1	1	1	2		Wet, gray (SILT) fill with 5 to 15% gravel, trace to little very fine size sand, very loose	0.7'		Bentonite Seal	
4	1	1	2	1	3		(7.0)	0.8'	4.5	2" PVC Riser Pipe	
5	WR	1	1	0	2		Wet, faintly mottled, brown, becoming gray below 14.0' (SILT) with trace very fine size sand, very loose, thinly bedded	1.0'	6.3	#0 Size Sand	WR - Sampler Penetration with weight of Rods
6	WH	2	1	2	3			1.5'		2" 10-Slot PVC SCreen	WH - Sampler Penetration with weight of Rods and Hammer
7	1	1	1	1	2			1.7'			
8	WH	1	0	10	1		(15.5)	1.5'			▼ Water Level at 14.0' bgs on 5/30/18 AM
9	50/3"	RUN	#1		>50		Wet, dark gray, gravelly (SILTY-SAND) with 15 to 25% gravel, very fine to fine size sand, some silt, compact, stratified (16.8) Dolostone bedrock, light gray, very hard, very thin to thinly bedded, 1" to 4" thick, with numerous solution vugs	0.3'	16.3		Note: Move 5.0' and redrill without sampling to 16.3' and install well

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HOLE NUMBER: A-7

DATE: 5/29/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	MONITORING WELL	REMARKS	COMMENTS
		RUN #1					Dolostone bedrock, light gray, very hard, very thin to thinly bedded, 1" to 4" thick, with numerous solution vugs				
		RUN	#2				23.7 Dolostone bedrock, moist, gray, very hard, thin to medium bedded, 1" to 8" thick, noticed gypsum nodule at 28.8' and thin calcite/gypsum layer at 35.2'				
		RUN	#3								
		RUN	#4				1" void at 30.0' - Lost all water returns				
		RUN	#5								

Core Data

Run #	Interval (ft)	Length (ft)	Rec (ft)	% Rec	RQD %
1	16.8 to 21.9	5.1	5.1	100	67
2	21.9 to 27.3	5.4	5.3	98	69
3	27.3 to 32.0	4.7	4.6	98	87
4	32.0 to 35.9	3.9	3.7	95	88
5	35.9 to 41.2	5.3	5.1	96	80

LOGGED BY: Dale M. Gramza, P.G.

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HOLE NUMBER: A-7

DATE: 5/29/18 ELEVATION:

PROJECT: Subsurface Investigation for the Proposed West River Wall Improvements
Exchange Street, Rochester, NY

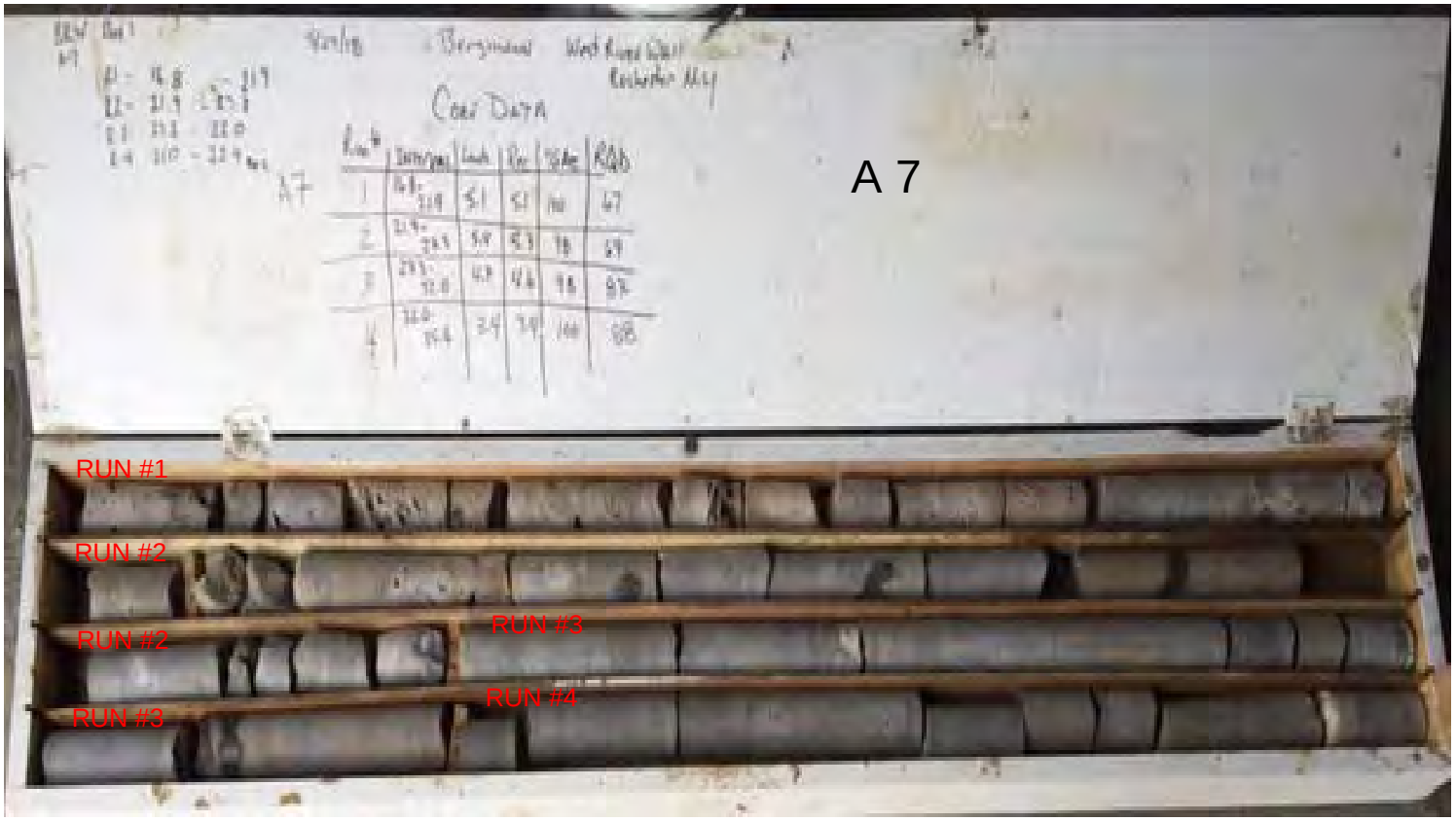
PREPARED FOR:

BORING LOCATION: Bergmann Associates

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	MONITORING WELL	REMARKS	COMMENTS
		RUN #5					Dolostone bedrock, moist, gray, very hard, thin to medium bedded, 1" to 8" thick 41.2 Coring Completed at 41.2' bgs				

45
50
55
60

LOGGED BY: Dale M. Gramza, P.G.


A 7
RUN #1
RUN #2
RUN #2
RUN #3
RUN #3
RUN #4

A 7
RUN #5
RUN #5

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Test Boring Report

DRAFT

SB-19

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	519.71
Datum:	City of Rochester
Start:	5/14/2018
Finish	5/14/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 90%		Brown GRAVEL, some coarse to fine sand, trace silt, with glass, coa, damp. -FILL- **GW-GM**
2		NA				- FILL - **GW-GM**
4	4	NA	ND			Brown to gray coarse to fine SAND, some silt with wood,ash,cinders, moist. -FILL- **SW-SM**
6	4	NA	ND	S2 45%		
8	8	NA			▽ 8.0	- FILL - SM **SW-SM**
10	8	NA	ND	S3 45%		Black CINDERS and ASH, wet. **SM** - FILL - **SM**
12	12	NA			11.5	- FILL - **SM** Gray SILT, little clay, wet. - LACUSTRINE - **MH**
14	12	NA	ND	S4 55%		Same.
16	16	NA				- LACUSTRINE - **MH**
18						Bottom of soil boring at 16.0 ft. Backfilled borehole with bentonite to ground surface.
20						

Ground Water Data

Date	Time	Elapsed Time (HR)	Depth: Bottom Of Casing	Depth: Bottom Of Hole	Depth: Groundwater Encountered
5/14/2018		none	none	8.0 ft.	Yes 8 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples: S4	

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Test Boring Report

SB-20

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	518.66
Datum:	City of Rochester
Start:	5/14/2018
Finish	5/14/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	S1 95%	0.5	Brown SILT, some fine sand, with root fibers, damp. **ML**
2						Brown coarse to fine SAND, little gravel, trace silt, coal and brick, damp.-FILL- **SW-SM**
4	4	NA	ND			Same. - FILL- **SW-SM**
6	4	NA	ND	S2 80%	6.0	Black CINDERS and ASH, damp. - FILL - **SM**
8	8	NA	ND	S3 85%	▽ 9.0	Brown SAND, little gravel, fine silt, wet. - FILL - Brown to gray coarse to fine SAND, little gravel, trace silt, with concrete, wet.-FILL- **SM**
10						Gray SILT, trace clay, wet. - LACUSTRINE - **ML**
12	12	NA	ND	S4 90%	.	Same. - LACUSTRINE - **ML**
14						
16	16	NA				- LACUSTRINE - **ML**
18						Bottom of soil boring at 16.0 ft. Backfilled borehole with bentonite to ground surface.
20						

Ground Water Data

			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
5/14/2018		none	none	12 ft.	Yes at 9 ft.

Summary

Overburden (Lin FT)	16.0
Rock Cored (Lin FT)	none
Samples: S4	

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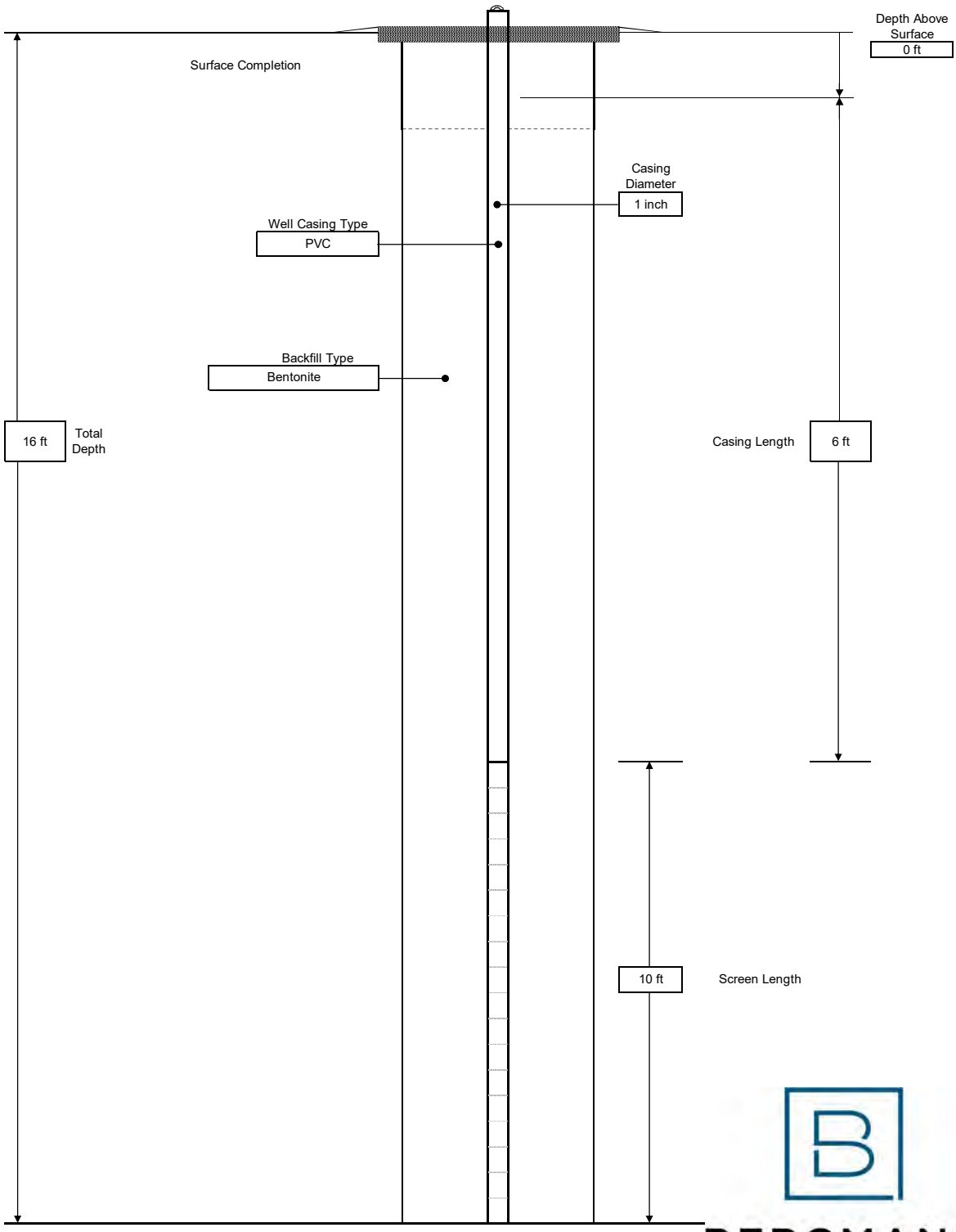
WELL COMPLETION LOG

Project:	City of Rochester West River Wall	**Well Name:**	MW-1		
Job No.:	12642	**Date Installed :**	5/9/2018		
Development:	Bailed approximately 3 well volumes			**GW Depth / Date:**	8.22 feet - 6/11/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	513.12
Comments:	Well installed in SB-03			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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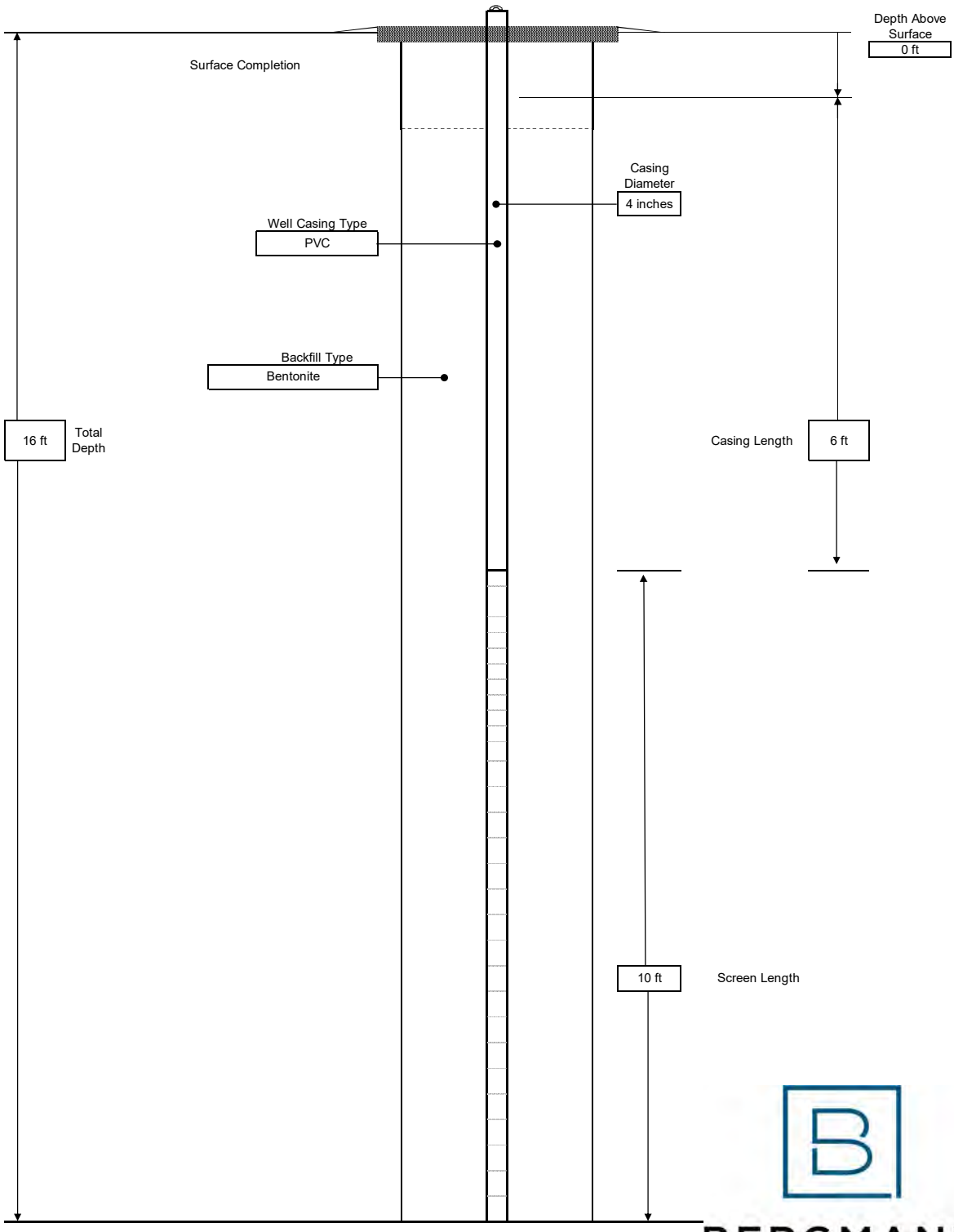
WELL COMPLETION LOG

Project:	City of Rochester West River Wall	**Well Name:**	MW-2		
Job No.:	12642	**Date Installed :**	5/9/2018		
Development:	Bailed until dry			**GW Depth / Date:**	6.62 feet - 6/11/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	512.93
Comments:	Well installed in SB-05			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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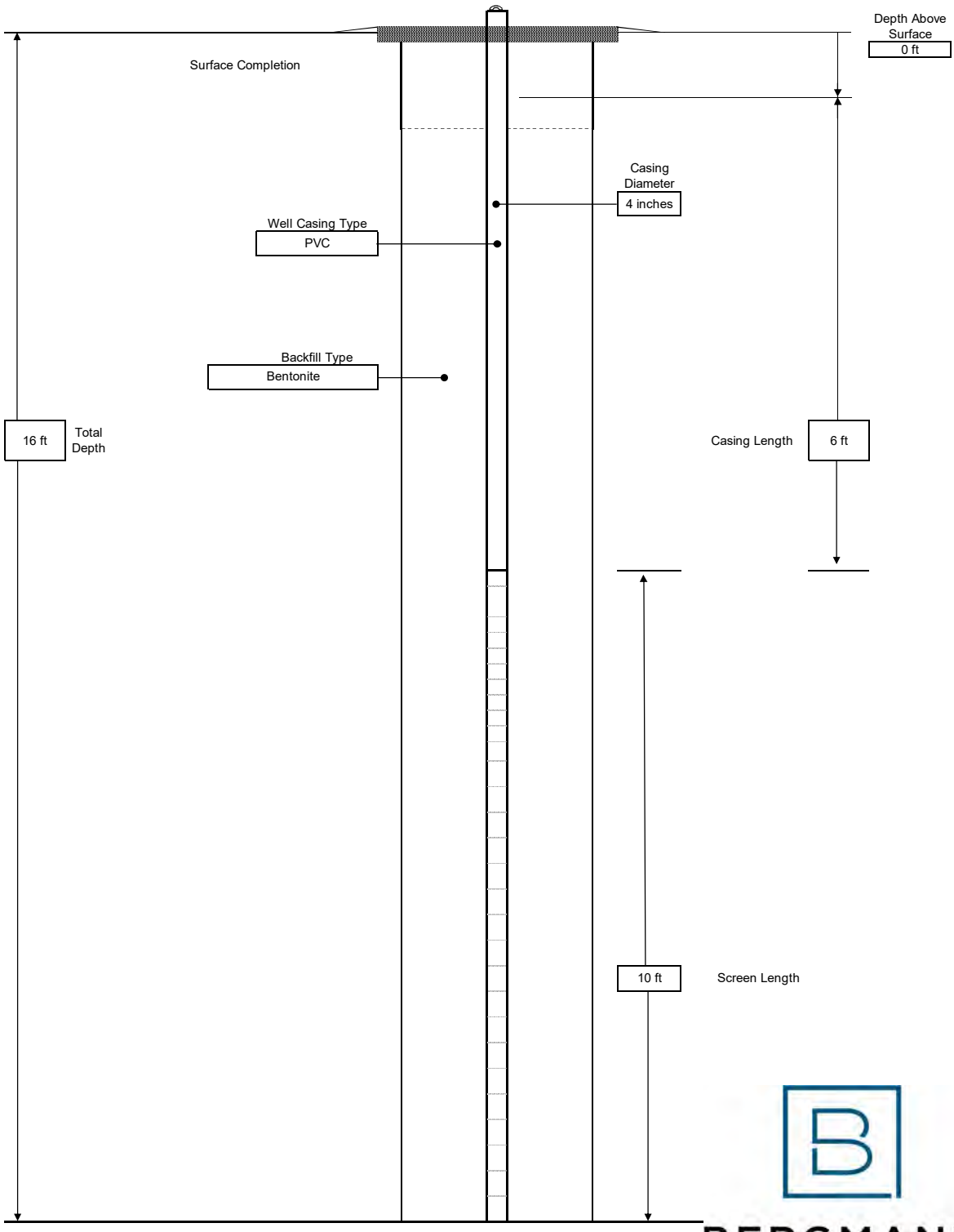
WELL COMPLETION LOG

Project:	City of Rochester West River Wall	**Well Name:**	MW-3		
Job No.:	12642	**Date Installed :**	5/9/2018		
Development:	Aproximately 3 well volumes			**GW Depth / Date:**	6.18 feet - 6/11/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	513.12
Comments:	Well installed in A-3/SB-07			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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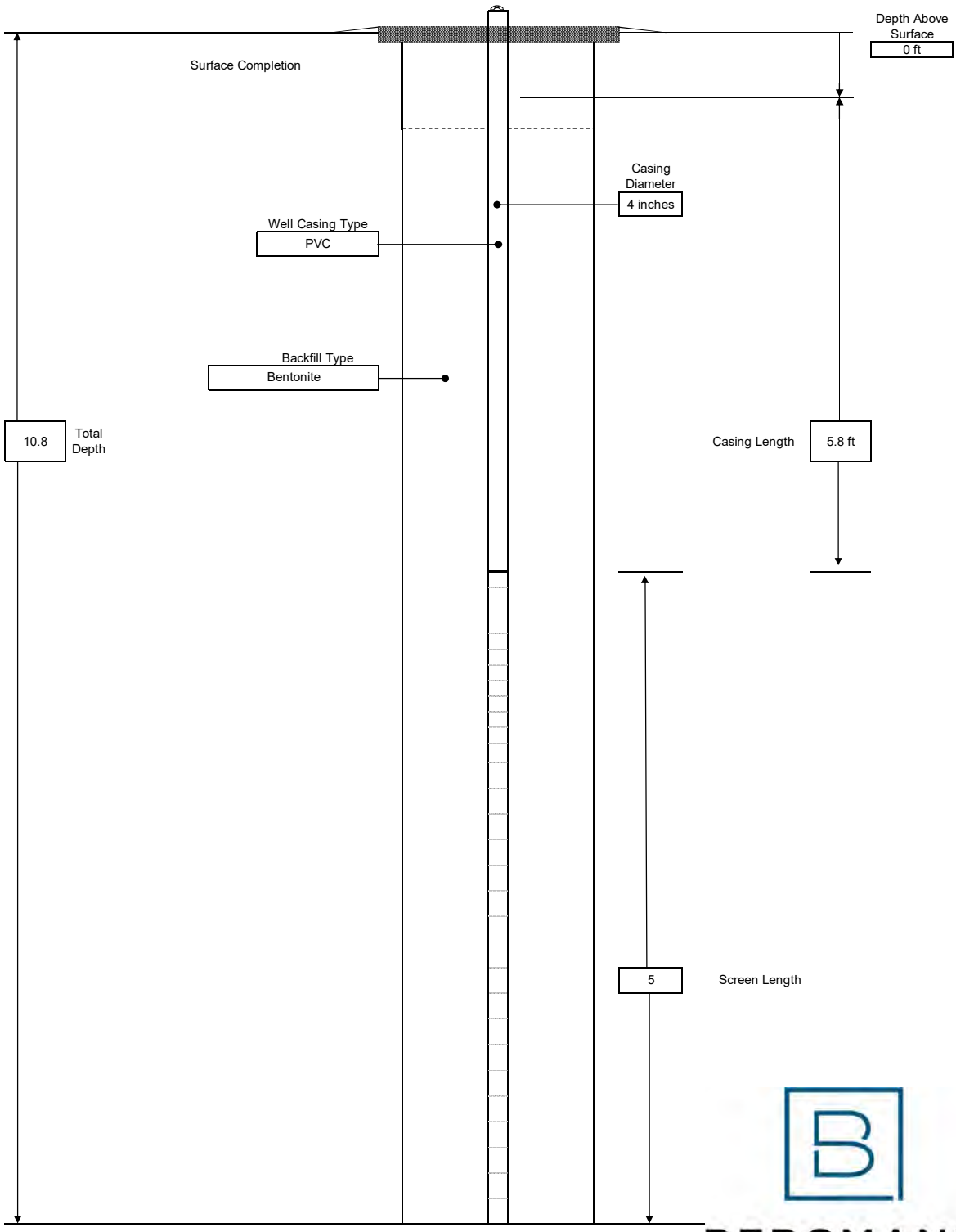
Project:	City of Rochester West River Wall	**Well Name:**	MW-4	***WELL COMPLETION LOG***	
Job No.:	12642	**Date Installed :**	5/9/2018		
Development:	Bailed until dry			**GW Depth / Date:**	7.13 feet - 6/11/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	512.47
Comments:	Well installed in SB-08			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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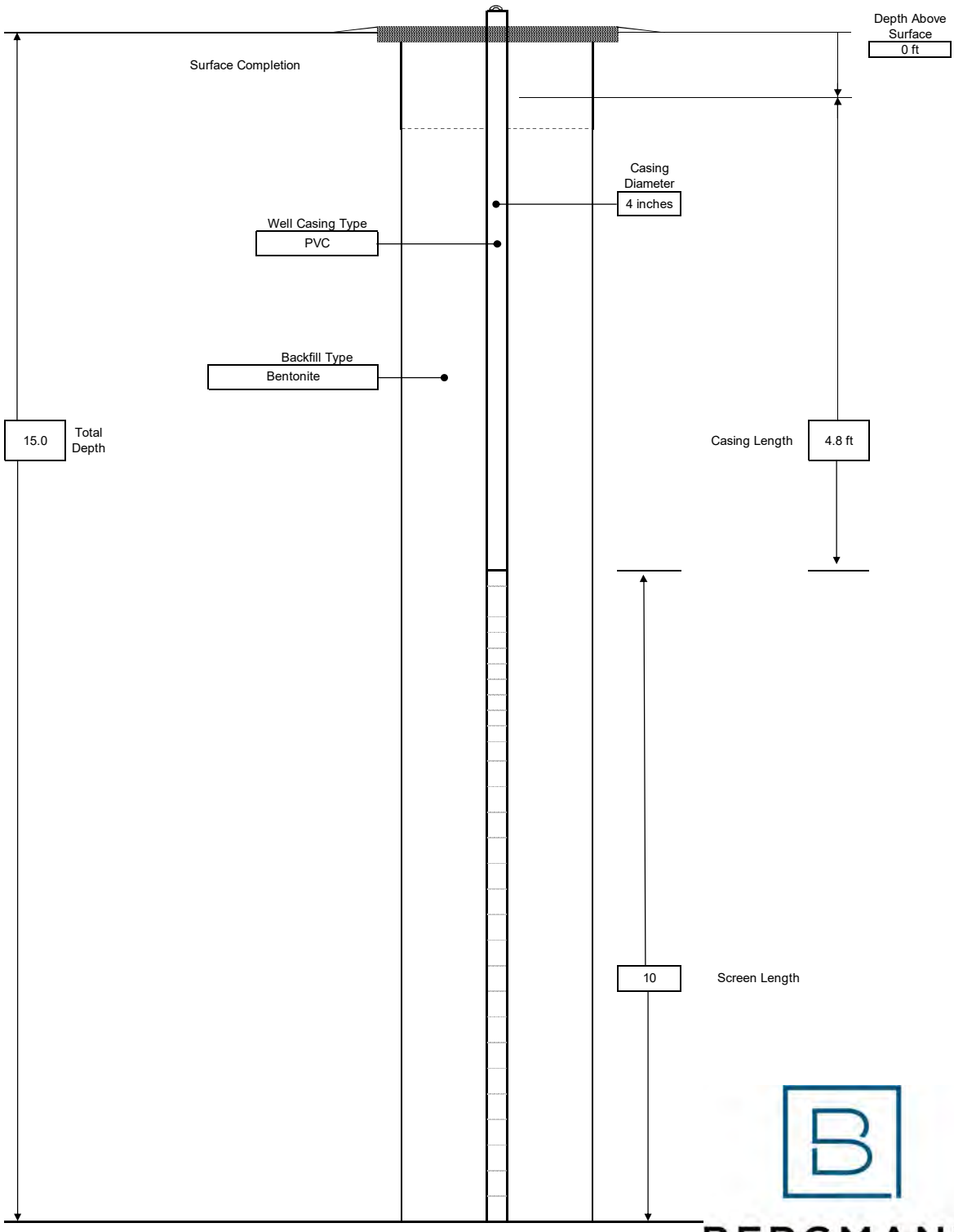
Project:	City of Rochester West River Wall	**Well Name:**	MW-5	***WELL COMPLETION LOG***	
Job No.:	12642	**Date Installed :**	5/11/2018		
Development:	Bailer approximately 3 well volumes			**GW Depth / Date:**	10.29 feet - 6/11/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	513.61
Comments:	Well installed in SB-11			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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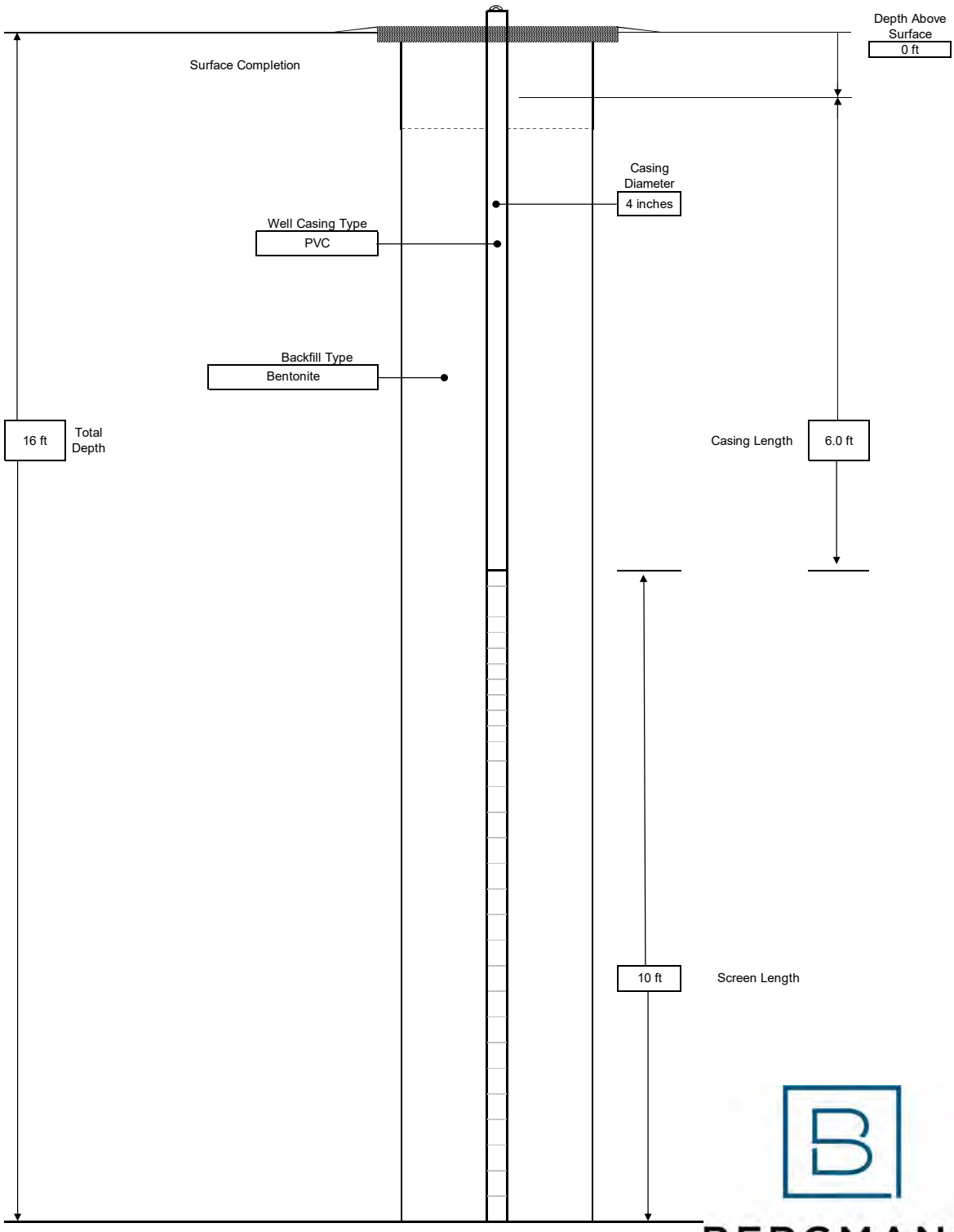
WELL COMPLETION LOG

Project:	City of Rochester West River Wall	**Well Name:**	MW-6		
Job No.:	12642	**Date Installed :**	5/11/2018		
Development:	bailed approximately 3 well volumes			**GW Depth / Date:**	14.89 feet - 5/12/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	517.77
Comments:	Well installed in SB-14			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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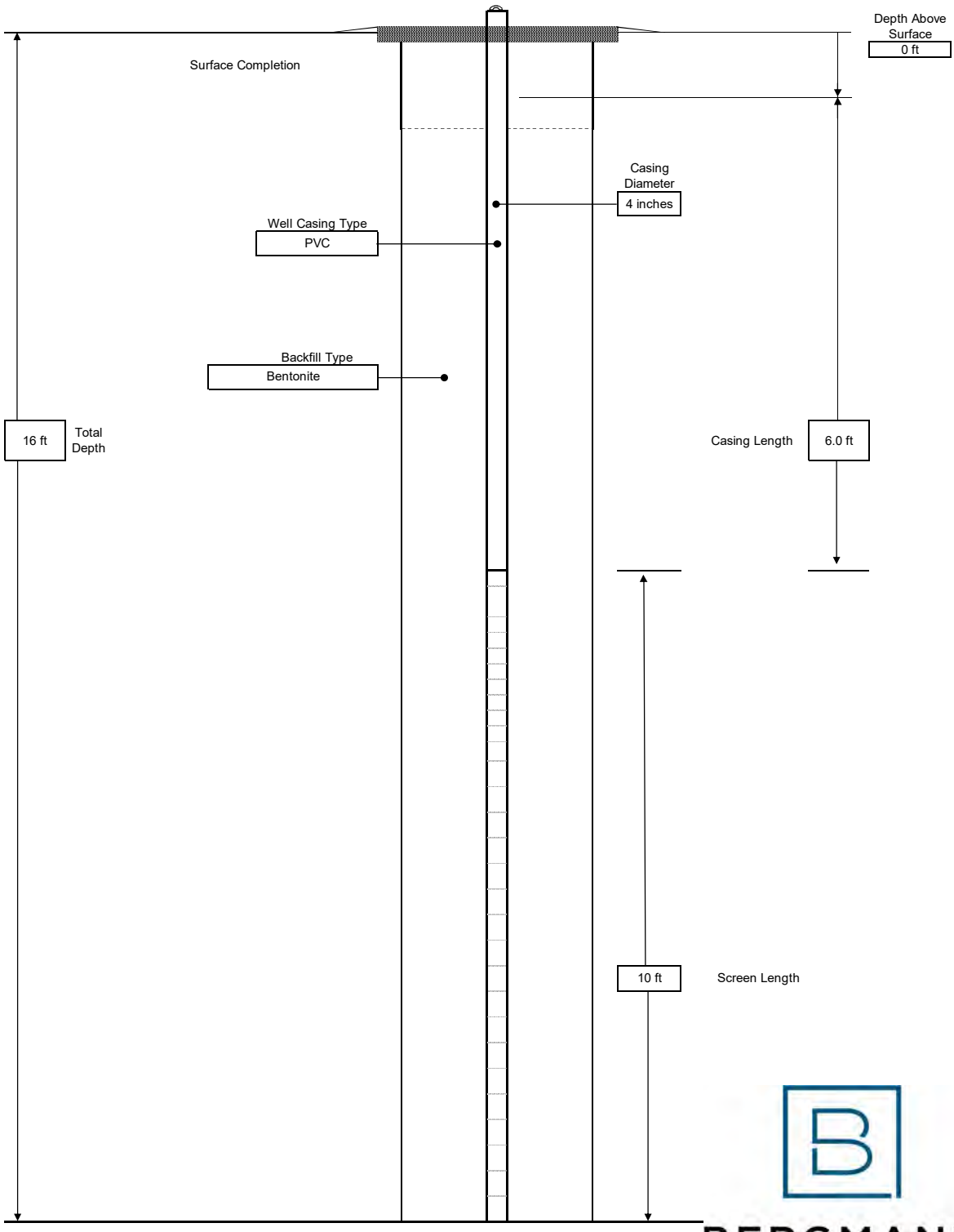
WELL COMPLETION LOG

Project:	City of Rochester West River Wall	**Well Name:**	MW-7		
Job No.:	12642	**Date Installed :**	5/14/2018		
Development:	Bailed approximately 3 well volumes			**GW Depth / Date:**	14.55 feet - 6/12/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	519.54
Comments:	Well installed in SB-16			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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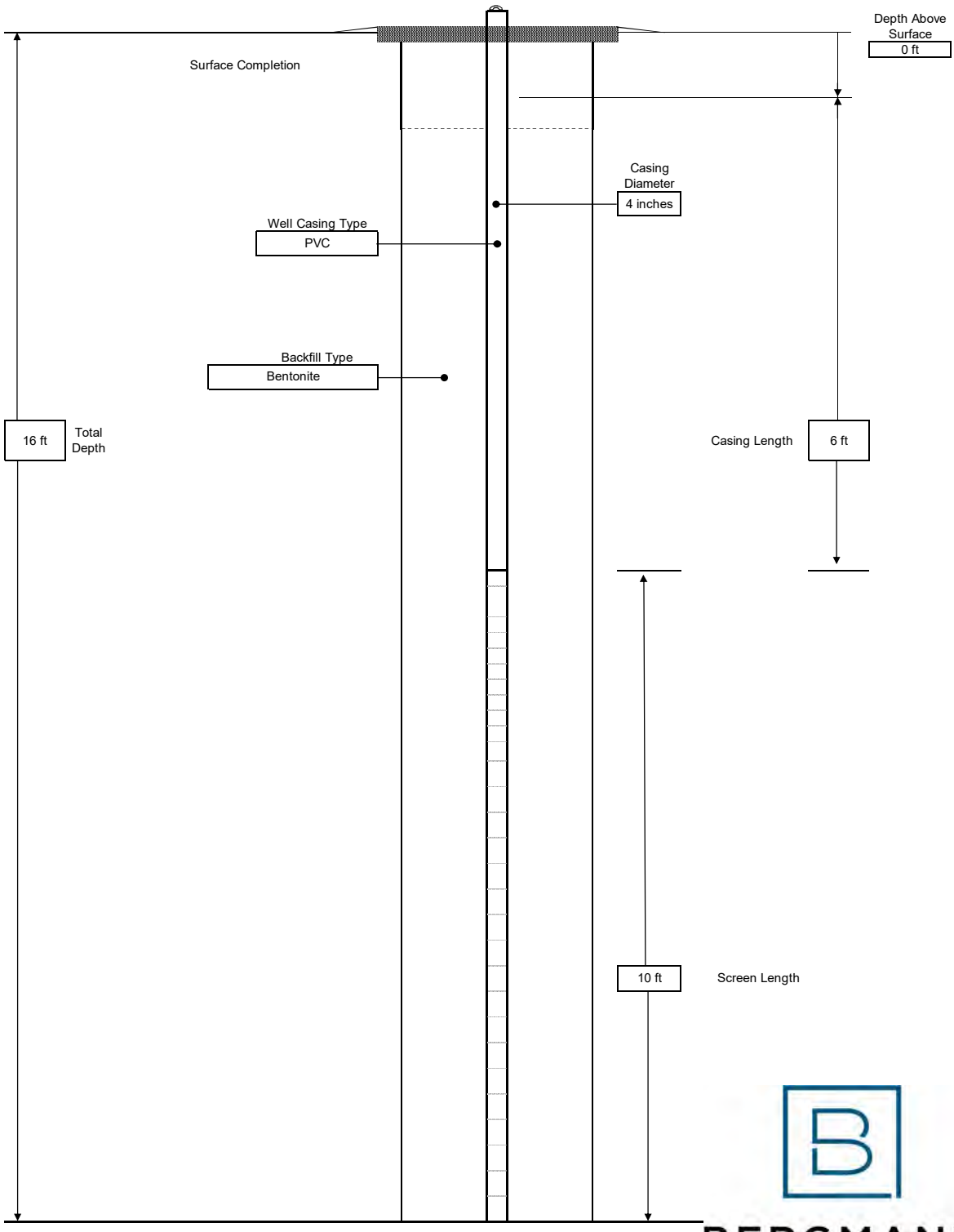
WELL COMPLETION LOG

Project:	City of Rochester West River Wall	**Well Name:**	MW-8		
Job No.:	12642	**Date Installed :**	5/14/2018		
Development:	Bailed approximately 3 well volumes			**GW Depth / Date:**	7.31 feet - 6/11/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	522.22
Comments:	Well installed in SB-17			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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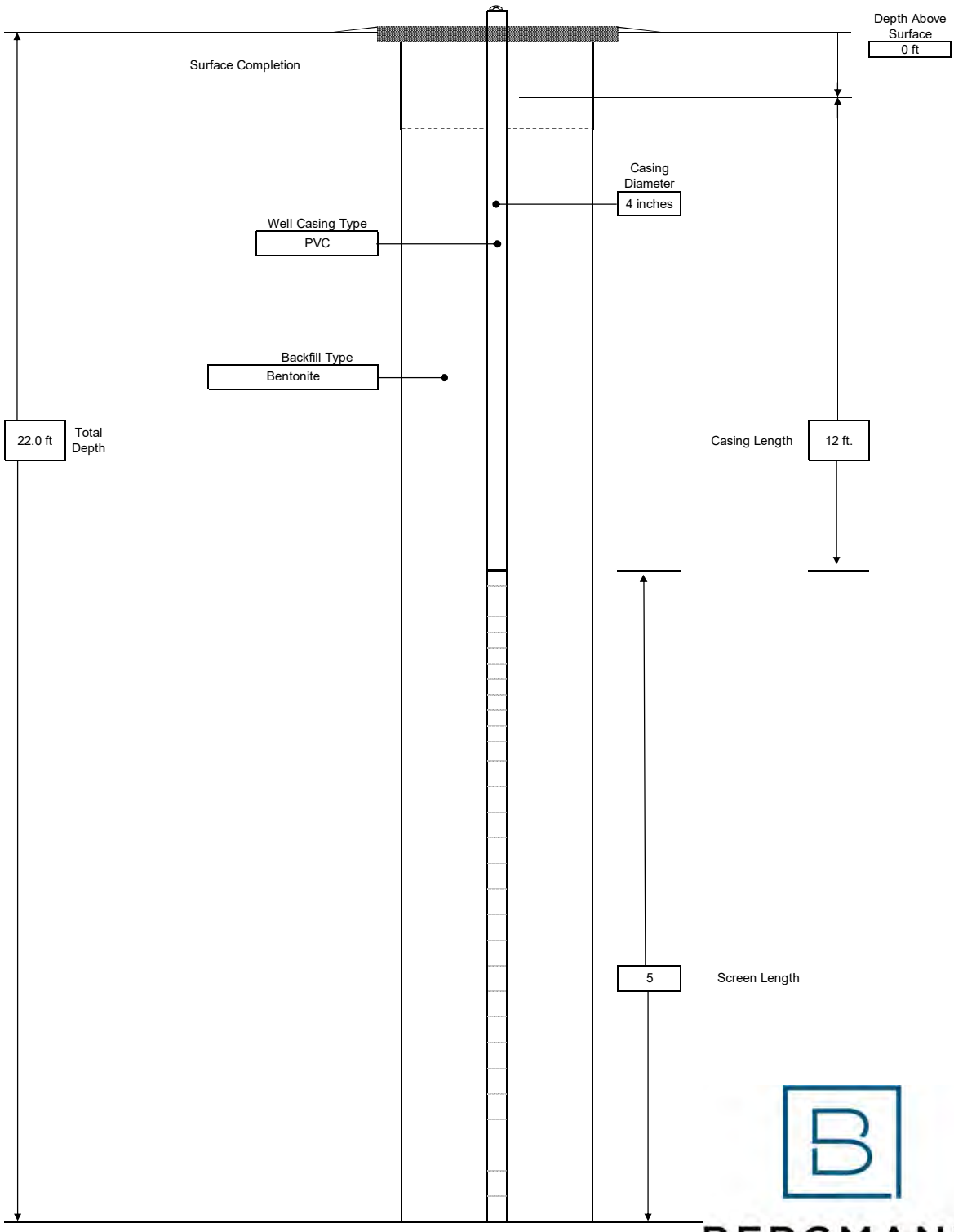
Project:	City of Rochester West River Wall	**Well Name:**	MW-9	***WELL COMPLETION LOG***	
Job No.:	12642	**Date Installed :**	5/22/2018		
Development:	Bailed approximately 3 well volumes			**GW Depth / Date:**	13.10 feet - 6/12/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	519.71
Comments:	Well installed in A-6/SB-09			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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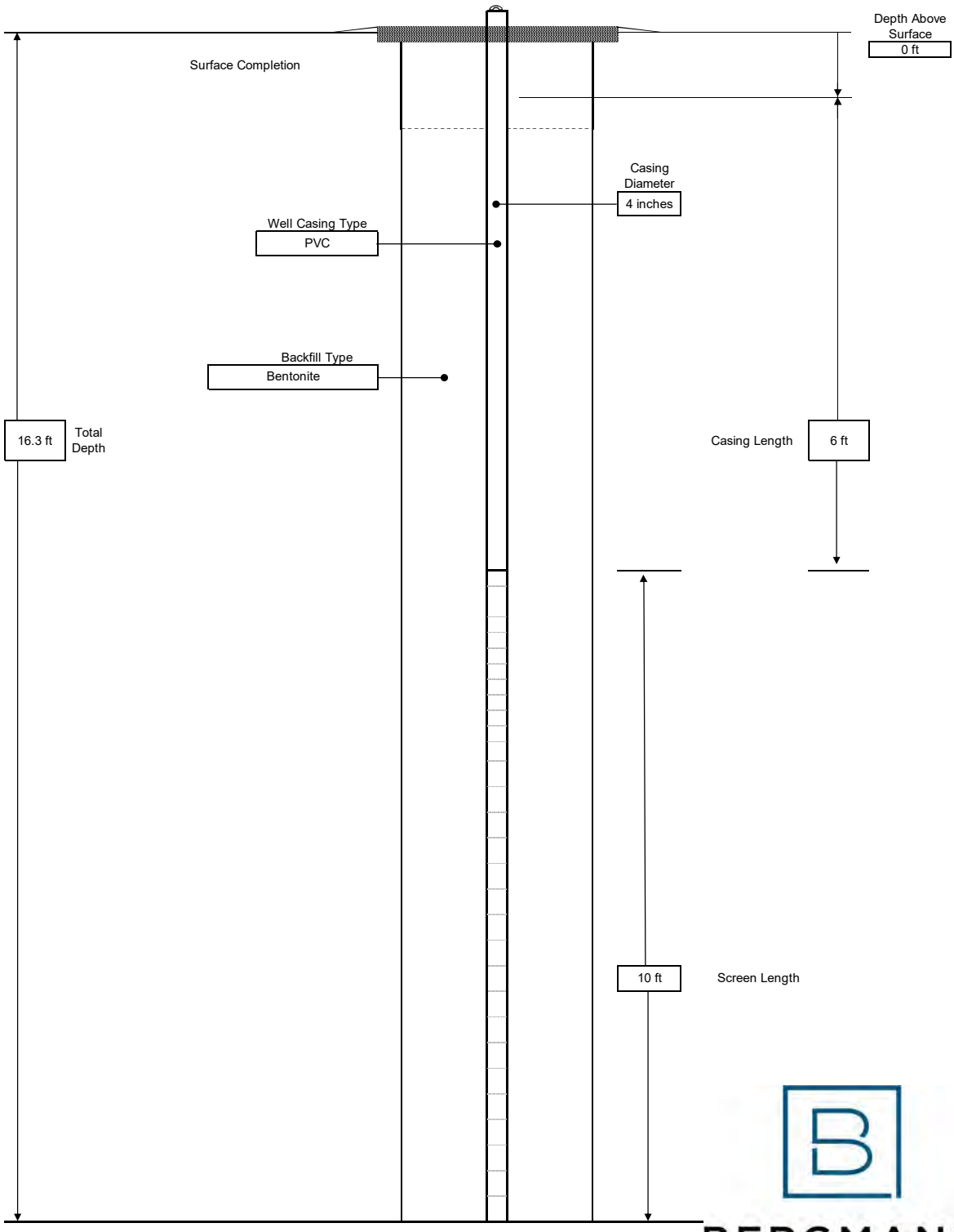
Project:	City of Rochester West River Wall	**Well Name:**	MW-10	***WELL COMPLETION LOG***	
Job No.:	12642	**Date Installed :**	5/29/2018		
Development:	bailed approximately 3 well volumes			**GW Depth / Date:**	5.92 feet - 6/12/2018
Formation of Completion:	Lacustrine			**Top of Casing Elevation:**	514.7
Comments:	Well installed in A-7			**Survey Date:**	
Driller:	Natures Way			**Drill Method**	Direct Push



Note: Not to Scale
All dimensions in feet unless otherwise specified.

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Test Boring Report

GB-101

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/8/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/8/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0				0.5	Dark brown SILT, some fine sand with root fibers, damp. -topsoil- **OH**
		NA				Brown GRAVEL, some coarse to fine sand, little silt, tracy clay, damp.
2			ND	90%		- FILL- **GW-GM**
		NA				
4	4					Same.
	4					
		NA				
6			ND	90%		- FILL - **GW-GM**
	8	NA				
8					8.0	
	8					Black CINDERS and ASH, little coarse to fine sand, damp. **SW**
		NA				
10				80%	10.0	- FILL - **SW**
			ND		▽	Gray to brown coarse to fine SAND, little gravel, trace silt, wet. **SW**
		NA				
12	12					- LACUSTRINE -
	12				12.5	
		NA				Gray CLAY, little silt, wet. - LACUSTRINE - **CL**
			ND			
14				65%		
		NA				
16	16					
	16					Same. - LACUSTRINE - **CL**
			50			
		NA				
18			48	80%		Petroleum odor
		NA				
	20					- LACUSTRINE - **CL**
20	20		150			
	21	NA	20	100%		
						Bottom of the boring at 21.0 ft. refusal of the geoprobe.
						Backfilled soil boring to the groundsurface with bentoinite.

DRAFT

Ground Water Data

Date	Time	Elapsed Time (HR)	Depth: Bottom Of Casing	Depth: Bottom Of Hole	Depth: Groundwater Encountered
8/8/2018		0	12	12.0	yes at 11.0 ft.

Summary

Overburden (Lin FT)	21.0
Rock Cored (Lin FT)	none
Samples:	S6

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Test Boring Report

GB-102

Project: Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client: City of Rochester
Contractor: Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No: 12642.00
Sheet No: 1 of 1
Location: See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:
Datum: City of Rochester
Start: 8/8/2018
Finish 8/8/2018
Driller: D. Gramza
Geologist: S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	90%		Brown coarse to fine SAND, little gravel, with brick fragments, little silts, damp. **SW**
2						- FILL -
4	4	NA	ND		3	- FILL - **SW**
6	4	NA	ND	90%		Brown GRAVEL, some coarse to fine sand, trace silt, damp. **GW-GM**
8	8	NA	ND			- FILL-
10	8	NA	ND	100%		Brown GRAVEL, some coarse to fine sand, with concrete fragments, cinders and ash, damp.
12	12	NA	ND			- FILL - **GW-GM**
14	12	NA	ND	0%	.	No recovery.
16	16	NA	ND		16.0 ▽	Gray SILT and CLAY, wet. - LACUSTRINE - **CL**
18	16	NA	ND	80%		Gray SILT, trace clay, wet. - LACUSTRINE - **ML**
20	20	NA	ND		19	Brown SILT, trace clay, wet. - LACUSTRINE - **ML**
						Bottom of soil boring at 20 ft.
						Backfilled soil boring to the ground surface with bentonite.

Ground Water Data

Date	Time	Elapsed Time (HR)	Depth: Bottom Of Casing	Depth: Bottom Of Hole	Depth: Groundwater Encountered
8/8/2018		none	none	16 ft.	yes at 16 ft.

Summary

Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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BERGMANN ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

GB-103

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/8/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/8/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0				0.5	Brown coarse to fine SAND, little gravel, trace silt, with brick fragments, damp. **SW**
		NA				Brown GRAVEL, some coarse to fine sand, little silt, trace clay, with plastic, damp. **GW-GM**
2			ND	90%		- FILL-
		NA				
4	4					Same, except asphalt fragments **GW-GM**
	4					
6		NA	ND	90%		- FILL-
	8	NA				
8	8					Same, except with layer of cinders and ash. **GW-GM**
		NA				
10				100%		- FILL -
	12	NA	ND			
12						No recovery.
	12					
		NA	ND			
14				0%		
		NA				
16	16					
	16		9		16.0 ▽	Gray SILT and CLAY, wet. - LACUSTRINE - **CL**
		NA	39			Gray and black stained SILT, tracy clay, wet. **ML**
18				80%		Petroleum odor
		NA				
	20		39			- LACUSTRINE -
20						
						Bottom of soil boring at 20 ft.
						Backfilled soil boring to the ground surface with bentoinite.

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	16 ft.	yes at 16 ft.

Summary	
Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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Test Boring Report

GB-104

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/8/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/8/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0				0.3	Brown SILT, with root fibers. - TOPSOIL - **ML**
		NA				Brown GRAVEL, little coarse to fine sand, with brick fragments, damp. - FILL - **GW-GM**
2			ND	90%		- FILL-
		NA				
4	4					Brown GRAVEL, some coarse to fine sand with asphalt and brick fragments, damp **GW-GM**
	4					
		NA				
6			ND	90%		- FILL-
	8	NA				
8	8					Same.
		NA				
10				100%		- FILL -
			ND			
12	12	NA				Same. **GW-GM**
	12				▽	
		NA			13	
			ND			
14				0%		Light Brown SILT, little clay, wet. - LACUSTRINE - **CL**
		NA				
16	16					
	16				16.0	Gray and black stained SILT, trace clay, wet **ML**
			134			
		NA	170			- LACUSTRINE -
18			200	80%		Petroleum odor.
		NA				
	20		50			- LACUSTRINE - **ML**
20						
						Bottom of soil boring at 20 ft.
						Backfilled soil boring to the ground surface with bentonite.

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	13 ft.	yes at 13.0 ft.

Summary	
Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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Test Boring Report

GB-105

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/8/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/8/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0				0.5	Dark brown SILT, trace fine sand, with root fibers, damp. - TOPSOIL - **ML**
		NA				Brown GRAVEL, some coarse to fine sand, trace silt, trace clay with asphalt fragmentsdamp
2			ND	90%		- FILL - **GW-GM**
		NA				
4	4					Same. **GW-GM**
	4					
		NA				
6			ND	90%		- FILL-
	8	NA				
8	8					No recovery
		NA				
10				100%		drill rods dropped to 16 ft.
			ND			
12	12	NA				No recovery
	12				▽	
		NA	ND			
14				0%		
		NA				
16	16					
	16				16.0	Light brown SILT, trace clay, damp. - LACUSTRINE - **ML**
		NA	ND			
18				80%		
		NA				Light brown SILT, trace clay with gray fine sand seams, wet. **ML**
	20		ND			- LACUSTRINE -
20	20 21	NA	ND	100%		Same.
						Bottom of soil boring at 21 ft. refusal.
						Backfilled soil boring to the ground surface with bentonite.

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	21.0	yes at 13 ft.

Summary	
Overburden (Lin FT)	21.0
Rock Cored (Lin FT)	none
Samples:	S6

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Test Boring Report

GB-106

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/9/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/9/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	80%		Brown GRAVEL, some coarse to fine sand, trace silt, damp. - FILL- **GW-GM**
2						- FILL-
4	4	NA				Same. **GW-GM**
6	4	NA	ND	90%		- FILL-
8	8	NA				Same. **GW-GM**
10	8	NA		100%		
12	12	NA	ND		▽ 11	- FILL-
14	12	NA	ND	0%	13	Brown coarse to fine SAND, little gravel, trace silt, wet. **SW** - LACUSTRINE - Brown to gray stained SILT, trace clay, wet. - LACUSTRINE - **ML**
16	16	NA	1.6 9			
18	16 19	NA	39 3 2.1	80%		Same. **ML**
20						Bottom of soil boring at 19 ft. refusal. Backfilled soil boring to the ground surface with bentonite.

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	12.0	yes at 11 ft.

Summary	
Overburden (Lin FT)	19.0
Rock Cored (Lin FT)	none
Samples:	S5

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Test Boring Report

GB-107

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:				Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rocheser
Hemmer Weight (LB):				Drill Mud:	Start:	8/9/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/9/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	80%		Brown GRAVEL, some coarse to fine sand, with wood fragements. - FILL - **GW-GM**
2						- FILL-
4	4	NA				Brown to gray coarse to fine SAND, little gravel, trace silt, damp. **SW-SM**
6	4	NA	ND	90%		- FILL-
8	8	NA				Brown to gray coarse to fine SAND, little gravel, trace silt with cinders and ash, **SW-SM**
10	8	NA	ND	100%	▽	- FILL-
12	12	NA				Brown coarse to fine SAND, little gravel, trace silt, wet. **SW-SM**
14	12	NA	ND	90%		- FILL-
16	16	NA	1 5		14.0	Gray SILT, little clay, wet. - LACUSTRINE - **ML**
18	16	NA	5 5 1 1	100%		Same. **ML**
20	20					- LACUSTRINE - **ML**
						Bottom of soil boring at 20 ft. Backfilled soil boring to the ground surface with bentonite.

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	12.0	yes at 11 ft.

Summary	
Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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BERGMANN ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

GB-108

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/9/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/9/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	80%		Brown GRAVEL, some coarse to fine sand, trace silt, damp. **GW-GM**
2						- FILL-
4	4	NA	ND	90%		Brown cosrse to fine SAND, some gravel, trace silt with wood fragements, damp. **GW-GM**
6	4	NA				- FILL-
8	8	NA	ND	100%		Gray to black GRAVEL, some coarse to fine sand, with asphalt fragements, damp. **GW-GM**
10	8	NA				- FILL-
12	12	NA	ND	90%		Brown coarse to fine SAND, little gravel, trace silt, wet. **SW-SM**
14	12	NA	1		∇ 14.0	Gray SILT, little clay, wet. - LACUSTRINE - **CL**
16	16	NA	9 115		16.0	Gray SILT, trace clay, wet. - LACUSTRINE - **ML**
18	16	NA	216 136 230 377	100%		Petroleum odors
20	20		139			- LACUSTRINE - **ML** Bottom of soil boring at 20 ft. Backfilled soil boring to the ground surface with bentonite.

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	12.0	yes at 11 ft.

Summary	
Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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BERGMANN ARCHITECTS ENGINEERS PLANNERS

Test Boring Report — DRAFT

GB-109

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services
Client:	City of Rochester
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.

File No:	12642.00
Sheet No:	1 of 1
Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig
Inside Diameter (IN):				Bit Type:
Hemmer Weight (LB):				Drill Mud:
Hammer Fall (IN):				Other: Direct Push Method
Other:				

Elevation:	
Datum:	City of Rochester
Start:	8/9/2018
Finish	8/9/2018
Driller:	D. Gramza
Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks
0	0	NA	ND	80%		Brown GRAVEL, some coarse to fine sand, with wood fragements. - FILL - **GW-GM**
2						- FILL-
4	4	NA				Brown to gray coarse to fine SAND, little gravel, trace silt, damp. **SW - SM**
6	4	NA	ND	90%		- FILL-
8	8	NA				Brown to gray coarse to fine SAND, little gravel, with cinders and ash, damp. **SW-SM**
10	8	NA		100%		
12	12	NA	ND		∇ 11	- FILL-
12	12	NA	ND	90%		Brown coarse to fine SAND, little gravel, trace silt, wet. **SW-SM**
14					14.0	Gray SILT, little clay, wet. - LACUSTRINE - **ML**
16	16	NA	ND			
16	16	NA	ND	100%		Same.
18						
20	20		ND			- LACUSTRINE - **ML**
20						Bottom of soil boring at 20 ft.
						Backfilled soil boring to ground surface with bentonite.

Ground Water Data

Date	Time	Elapsed Time (HR)	Depth: Bottom Of Casing	Depth: Bottom Of Hole	Depth: Groundwater Encountered
8/8/2018		none	none	12.0	yes at 11 ft.

Summary

Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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BERGMANN ARCHITECTS ENGINEERS PLANNERS

Test Boring Report

GB-110

Project:	Rochester's West River Wall Planning, Preliminary, and Final Design Services	File No:	12642.00
Client:	City of Rochester	Sheet No:	1 of 1
Contractor	Bergmann Associates, Architects, Engineers, Landscape Architects, and Surveyors. D.P.C.	Location:	See Plan

Item	Casing	Drive Sampler	Core Barrel	Drilling Equipment and Procedures		
Type:	none	na	macro-core sampler	Rig Type: Simco. 3000 Drill Rig	Elevation:	
Inside Diameter (IN):				Bit Type:	Datum:	City of Rochester
Hemmer Weight (LB):				Drill Mud:	Start:	8/9/2018
Hammer Fall (IN):				Other: Direct Push Method	Finish	8/9/2018
Other:					Driller:	D. Gramza
					Geologist:	S. DeMeo

Depth (FT)	Sample Depth (FT)	Sampler Blows Per 6 Inchs	Head Space (PPM)	Sample Number and Recovery	Strata Change (FT)	Visual Classification and Remarks	
0	0	NA	ND	80%		Brown GRAVEL, some coarse to fine sand, with metal fragments, damp.	**GW-GM**
2						- FILL-	
4	4	NA				Brown coarse to fine sand, little gravel, trace silt, with brick fragements, damp.	**GW-GM**
6	4	NA	ND	90%		- FILL-	
8	8	NA				same.	**GW-GM**
10	8	NA		100%			
12	12	NA	ND		11	- FILL-	
	12	NA	ND		▽	Gray SILT, little clay, wet. - LACUSTRINE -	**ML**
14	14					Bottom of soil boring at 14 ft. refusal.	
16						Backfilled soil boring to ground surface with bentonite.	
18							
20							

Ground Water Data					
			Depth		
Date	Time	Elapsed Time (HR)	Bottom Of Casing	Bottom Of Hole	Groundwater Encountered
8/8/2018		none	none	12.0	yes at 11 ft.

Summary	
Overburden (Lin FT)	20.0
Rock Cored (Lin FT)	none
Samples:	S5

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APPENDIX B

Well Development Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-01
Development Date: 06/08/18
Start Time: 11:00
Logged by: Ben Seifert
Installation Date: 05/09/18
End Time: 11:30

Initial Depth to Water: 8.25'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 9.35'
Well Depth before: 13.10'
Well Integrity:
Screen Length: unknown
Well Depth after: 12.39'
Cap ✓
Well Volume: 0.20 gals
Sediment Depth Removed:
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:00	~1.5	14.6	7.49	15.14	-	0.207	116.7	
11:30	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other

Total Gallons Removed: ~3

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get a final reading

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-02
Development Date: 06/08/18
Start Time: 12:20
Logged by: Ben Seifert
Installation Date: 05/09/18
End Time: 12:50

Initial Depth to Water: 7.60'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 8.10'
Well Depth before: 13.50'
Well Integrity:
Screen Length: unknown
Well Depth after: 13.85'
Cap ✓
Well Volume: 0.24 gals
Sediment Depth Removed: 0.35'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
12:20	-	-	-	-	-	-	-	
12:50	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other

Total Gallons Removed: ~2.5

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get a reading

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-03
Development Date: 06/08/18
Start Time: 13:00
Logged by: Ben Seifert
Installation Date: 05/22/18
End Time: 13:30

Initial Depth to Water: 7.30'
Measurement Point: East
Well Diameter: 2"
Final Depth to Water: 14.72'
Well Depth before: 15.0'
Well Integrity:
Screen Length: unknown
Well Depth after: 15.86'
Cap ✓
Well Volume: 1.26 gals
Sediment Depth Removed: 0.86'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
12:20	-	-	-	-	-	-	-	
12:50	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations: Well went dry during development
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other _____

Total Gallons Removed: ~4.5

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get a reading

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name: CoR West River Wall
Job # 50378-02
Well ID: MW-04
Development Date: 06/08/18
Start Time: 13:45
Logged by: Ben Seifert
Installation Date: 05/09/18
End Time: 14:15

Initial Depth to Water: 6.19'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 7.45'
Well Depth before: 9.87'
Well Integrity:
Screen Length: unknown
Well Depth after: 9.81'
Cap ✓
Well Volume: 0.15 gals
Sediment Depth Removed:
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
13:45	-	-	-	-	-	-	-	
14:15	-	14.5	7.45	9.25	-	1.71	-41.5	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other

Total Gallons Removed: ~3

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get an initial reading.

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-05
Development Date: 06/08/18
Start Time: 14:30
Logged by: Ben Seifert
Installation Date: 05/11/18
End Time: 15:00

Initial Depth to Water: 6.90'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 13.80'
Well Depth before: 15.28'
Well Integrity:
Screen Length: unknown
Well Depth after: 15.20'
Cap ✓
Well Volume: 0.34 gals
Sediment Depth Removed: 0.08'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
14:30	-	-	-	-	-	-	-	
15:00	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations: Well went dry during development
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other _____

Total Gallons Removed: ~0.5

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get a reading

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-06
Development Date: 06/08/18
Start Time: 15:15
Logged by: Ben Seifert
Installation Date: 05/11/18
End Time: 15:45

Initial Depth to Water: 10.30'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 10.30'
Well Depth before: 10.42'
Well Integrity:
Screen Length: unknown
Well Depth after: 10.42'
Cap ✓
Well Volume: 0 gals
Sediment Depth Removed: 0'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:15	-	-	-	-	-	-	-	
15:45	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations: Well was dry prior to development
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other _____

Total Gallons Removed: 0

Notes: Well was dry prior to development.

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
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Project Name: CoR West River Wall
Job # 50378-02
Well ID: MW-07
Development Date: 06/08/18
Start Time: 15:45
Logged by: Ben Seifert
Installation Date: 05/14/18
End Time: 16:15

Initial Depth to Water: 11.43'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 14.41'
Well Depth before: 15.20'
Well Integrity:
Screen Length: unknown
Well Depth after: 15.20'
Cap ✓
Well Volume: 0.15 gals
Sediment Depth Removed: 0'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:45	-	16.4	8.83	9.55	-	0.94	-31.8	
16:15	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations: Well went dry during development
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other _____

Total Gallons Removed: 0

Notes: Well went dry after 12min of development.

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
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Project Name: CoR West River Wall
Job # 50378-02
Well ID: MW-08
Development Date: 06/08/18
Start Time: 15:40
Logged by: Ben Seifert
Installation Date: 05/14/18
End Time: 16:10

Initial Depth to Water: 14.57'
Measurement Point: East
Well Diameter: 1"
Final Depth to Water: 14.57'
Well Depth before: 15.58'
Well Integrity:
Screen Length: unknown
Well Depth after: 15.58'
Cap ✓
Well Volume: 0.04 gals
Sediment Depth Removed: 0'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:40	-	-	-	-	-	-	-	
16:10	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations: Well was dry prior to development
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other _____

Total Gallons Removed: 0

Notes: Well was dry.

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
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Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-09
Development Date: 06/08/18
Start Time: 15:20
Logged by: Ben Seifert
Installation Date: 05/25/18
End Time: 16:50

Initial Depth to Water: 13.25'
Measurement Point: East
Well Diameter: 2"
Final Depth to Water: 15.00'
Well Depth before: 20.18'
Well Integrity:
Screen Length: unknown
Well Depth after: 20.19'
Cap ✓
Well Volume: 11.30 gals
Sediment Depth Removed: 0.01'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:20	~6	15.6	7.69	9.09	-	0.095	-25.7	
15:50	~10	13.1	8.33	6.72	-	6.05	-51.16	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations: Slight odor, possibly solvent
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other _____

Total Gallons Removed: ~10

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get a reading. Slight odor, possibly solvent.

Signature: Ben Seifert

Well Development Field Record

Lu Engineers
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Project Name: CoR West River Wall
Job #: 50378-02
Well ID: MW-10
Development Date: 06/08/18
Start Time: 16:00
Logged by: Ben Seifert
Installation Date: 05/30/18
End Time: 16:30

Initial Depth to Water: 5.85'
Measurement Point: East
Well Diameter: 2"
Final Depth to Water: 5.91'
Well Depth before: 15.87'
Well Integrity:
Screen Length: unknown
Well Depth after: 15.97'
Cap ✓
Well Volume: 1.60 gals
Sediment Depth Removed: 0.10'
Casing ✓
(1" diameter = 0.041 gallons per foot of depth, 2" diameter = 0.163 gallons per foot of depth)
Locked ✓
Collar ✓

Protective casing stick-up: N/A
Casing/Well difference: N/A

WATER QUALITY PARAMETERS

Time	Volume Purged (gals)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
16:00	~5	14.8	7.21	5.54	-	1.17	42.9	
16:30	-	-	-	-	-	-	-	

Type of Water Quality Meter: YSI Multiparameter Water Quality Meter
Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

- ❑ Submersible Pump
- ☑ PVC Bailer
- ❑ Surge Block
- ❑ Other

Total Gallons Removed: ~9

Notes: Purged as much water as possible in a half hour time span. Problem with water quality meter, could not get a final reading .

Signature: Ben Seifert

Groundwater Sampling Field Record

Lu Engineers
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Project Name CoR West River Wall
Job # 50378-02
Location ID MW-01
Field Sample ID RRW-CH-MW-01-061118
Sampling Event # _ _
Activity Time 09:40
Sample Time 10:00
Date 06/11/18

SAMPLING NOTES

Initial Depth to Water 8.22 feet
Measurement Point East
Well Diameter: 1”
Final Depth to Water 8.32 feet
Well Depth 12.33 feet
Well Integrity:
Screen Length unknown feet
Pump Intake Depth N/A
Cap ✓
Total Volume Purged 0.51 gallons
PID Well Head N/A
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
09:55	8.32		13.8	5.89	10.99	Over limit	1.11	100.05	

Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	40 mL x2	Yes
TAL Metals	125 mL x1	Yes
PCBs	500 mL x1	Yes
Pesticides	500 mL x1	Yes
Base Naturals	500 mL x1	Yes

Signature: Ben Seifert

LOCATION NOTES

Purged 3 well volumes, then took a reading and sampled. Too turbid to get a reading.

Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 50378-02
Location ID MW-02
Field Sample ID RRW-CH-MW-02-061118
Sampling Event # _ _
Activity Time 10:10
Sample Time 10:30
Date 06/11/18

SAMPLING NOTES

Initial Depth to Water 6.62 feet
Measurement Point East
Well Diameter: 1”
Final Depth to Water 11.28 feet
Well Depth 13.85 feet
Well Integrity:
Screen Length unknown feet
Pump Intake Depth N/A
Cap ✓
Total Volume Purged 0.90 gallons
PID Well Head N/A
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:30	11.28		11.9	7.28	7.70	1429 AU	1.16	-52.3	

Purge Observations: Diesel odor, slight sheen
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	40 mL x2	Yes
TAL Metals	125 mL x1	Yes
PCBs	500 mL x1	Yes
Pesticides	500 mL x1	Yes
Base Naturals	500 mL x1	Yes

Signature: Ben Seifert

LOCATION NOTES

Purged 3 well volumes, then took a reading and sampled. Too turbid to get a reading.

Groundwater Sampling Field Record

Lu Engineers
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Project Name CoR West River Wall Job # 50378-02
Location ID MW-03 Field Sample ID RRW-CH-MW-03-061118 Sampling Event # _ _
Activity Time 10:50 Sample Time 11:00 Date 06/11/18

SAMPLING NOTES

Initial Depth to Water 7.31 feet Measurement Point East Well Diameter: 2”
Final Depth to Water 11.74 feet Well Depth 14.86 feet Well Integrity:
Screen Length unknown feet Pump Intake Depth N/A Cap ✓
Total Volume Purged 3.7 gallons PID Well Head N/A Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
11:00	11.74		13.8	7.48	4.42	Over Limit	1.80	-78.8	

Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	40 mL x2	Yes
TAL Metals	125 mL x1	Yes
PCBs	500 mL x1	Yes
Pesticides	500 mL x1	Yes
Base Naturals	500 mL x1	Yes

Signature: Ben Seifert

LOCATION NOTES

Purged 3 well volumes, then took a reading and sampled. Too turbid to get a reading.

Groundwater Sampling Field Record

Lu Engineers
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Project Name CoR West River Wall Job # 50378-02
Location ID MW-04 Field Sample ID RRW-CH-MW-08-061118 Sampling Event # _ _
Activity Time 14:40 Sample Time 15:00 Date 06/11/18

SAMPLING NOTES

Initial Depth to Water 6.18 feet Measurement Point East Well Diameter: 1”
Final Depth to Water 7.56 feet Well Depth 9.80 feet Well Integrity:
Screen Length unknown feet Pump Intake Depth N/A Cap ✓
Total Volume Purged 0.45 gallons PID Well Head N/A Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
15:00	7.56		12.3	6.99	4.12	Over Limit	1.74	-50.7	

Purge Observations:
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	40 mL x2	Yes
TAL Metals	125 mL x1	Yes
PCBs	500 mL x1	Yes
Pesticides	500 mL x1	Yes
Base Naturals	500 mL x1	Yes

Signature: Ben Seifert

LOCATION NOTES

Purged 3 well volumes, then took a reading and sampled. Too turbid to get a reading.

Groundwater Sampling Field Record

Lu Engineers
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Project Name CoR West River Wall Job # 50378-02
Location ID MW-05 Field Sample ID No Sample Sampling Event # _ _
Activity Time 15:45 Sample Time N/A Date 06/11/18

SAMPLING NOTES

Initial Depth to Water 7.13 feet Measurement Point East Well Diameter: 1”
Final Depth to Water _____ feet Well Depth 15.20 feet Well Integrity:
Screen Length unknown feet Pump Intake Depth N/A Cap ✓
Total Volume Purged 1 gallons PID Well Head N/A Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments

Purge Observations: Well went dry during purge
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		No
TAL Metals		No
PCBs		No
Pesticides		No
Base Naturals		No

Signature: Ben Seifert

LOCATION NOTES

Well went dry after purging 0.75 gallons. Returned later in the day to try and sample, but no water was recovered

Groundwater Sampling
Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall Job # 50378-02
Location ID MW-06 Field Sample ID No Sample Sampling Event # _ _
Activity Time 15:45 Sample Time N/A Date 06/11/18

SAMPLING NOTES

Initial Depth to Water 10.29 feet Measurement Point East Well Diameter: 1”
Final Depth to Water 10.29 feet Well Depth 10.42 feet Well Integrity:
Screen Length unknown feet Pump Intake Depth N/A Cap ✓
Total Volume Purged 0 gallons PID Well Head N/A Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments

Purge Observations: No recovery from first bail
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		No
TAL Metals		No
PCBs		No
Pesticides		No
Base Naturals		No

Signature: Ben Seifert

LOCATION NOTES

Well was dry no recovery at all.

Groundwater Sampling
Field Record

Lu Engineers
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Project Name CoR West River Wall Job # 50378-02
Location ID MW-07 Field Sample ID No Sample Sampling Event # _ _
Activity Time 07:30 Sample Time N/A Date 06/12/18

SAMPLING NOTES

Initial Depth to Water 14.89 feet Measurement Point East Well Diameter: 1”
Final Depth to Water 14.89 feet Well Depth 15.17 feet Well Integrity:
Screen Length unknown feet Pump Intake Depth N/A Cap ✓
Total Volume Purged 0 gallons PID Well Head N/A Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments

Purge Observations: No recovery from first bail
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		No
TAL Metals		No
PCBs		No
Pesticides		No
Base Naturals		No

Signature: Ben Seifert

LOCATION NOTES

Well was dry. No recovery at all.

Groundwater Sampling
Field Record

Lu Engineers
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Project Name CoR West River Wall Job # 50378-02
Location ID MW-08 Field Sample ID No Sample Sampling Event # _ _
Activity Time 07:50 Sample Time N/A Date 06/12/18

SAMPLING NOTES

Initial Depth to Water 14.55 feet Measurement Point East Well Diameter: 1”
Final Depth to Water 14.55 feet Well Depth 15.60 feet Well Integrity:
Screen Length unknown feet Pump Intake Depth N/A Cap ✓
Total Volume Purged 0 gallons PID Well Head N/A Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter] Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments

Purge Observations: No recovery from first bail
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020 Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		No
TAL Metals		No
PCBs		No
Pesticides		No
Base Naturals		No

Signature: Ben Seifert

LOCATION NOTES

Well was dry. No recovery at all.

Groundwater Sampling Field Record

Lu Engineers
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Project Name CoR West River Wall
Job # 50378-02
Location ID MW-09
Field Sample ID RRW-CH-MW-09-061218
Sampling Event # _ _
Activity Time 08:40
Sample Time 09:00
Date 06/12/18

SAMPLING NOTES

Initial Depth to Water 13.10 feet
Measurement Point East
Well Diameter: 2”
Final Depth to Water 13.90 feet
Well Depth 21.60 feet
Well Integrity:
Screen Length unknown feet
Pump Intake Depth N/A
Cap ✓
Total Volume Purged 4.2 gallons
PID Well Head N/A
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
09:00	13.90		14.0	8.54	4.78	Over Limit	5.51	-59.4	

Purge Observations: Started clear, became turbid. Strong odor (solvent?). No sheen.
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	40 mL x 2	Yes
TAL Metals	125 mL x1	Yes
PCBs	500 mL x1	Yes
Pesticides	500 mL x1	Yes
Base Naturals	500 mL x1	Yes

Signature: Ben Seifert

LOCATION NOTES

Purged 3 well volumes, then took reading and sample. Too turbid to get a reading. Strong odor, possibly solvent.

Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 50378-02
Location ID MW-10
Field Sample ID RRW-CH-MW-10-061218
Sampling Event # _ _
Activity Time 09:20
Sample Time 09:45
Date 06/12/18

SAMPLING NOTES

Initial Depth to Water 5.92 feet
Measurement Point East
Well Diameter: 2”
Final Depth to Water 12.78 feet
Well Depth 15.97 feet
Well Integrity:
Screen Length unknown feet
Pump Intake Depth N/A
Cap ✓
Total Volume Purged 4.2 gallons
PID Well Head N/A
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2” diameter = 0.163 gallons per foot of depth, 4” diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
09:45	12.78		14.5	8.86	2.46	Over Limit	5.12	-54.2	

Purge Observations: Slight sulfur odor, no sheen.
Purge Water Containerized: Yes

EQUIPMENT DOCUMENTATION

Type of Pump: N/A (Bailer)
Type of Tubing: N/A
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs	40 mL x 2	Yes
TAL Metals	125 mL x1	Yes
PCBs	500 mL x1	Yes
Pesticides	500 mL x1	Yes
Base Naturals	500 mL x1	Yes

Signature: Ben Seifert

LOCATION NOTES

Purged 3 well volumes, then took reading and sample. Too turbid to get a reading. Strong odor, possibly solvent.

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Location ID SB-3/MW-01
Activity Time 1430

Field Sample ID RRW-CH-MW01-122018
Sample Time 1500

Job # 50378-02
Sampling Event # 02
Date 12/19/20

SAMPLING NOTES

Initial Depth to Water 7.80 feet
Final Depth to Water 7.91 feet
Screen Length _____ feet
Total Volume Purged 0.5 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 12.25 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 1"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
14:50	7.80		11.0	7.40	7.26	86	0.38	-70.5	
14:55	7.91		11.2	7.37	7.34	83	0.45	-72.6	

Purge Observations: No odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Well started to go dry, took sample beforehand

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 50378-02
Location ID MW-02/SB-5
Field Sample ID RBW-CH-MW-02-122018
Sampling Event # 0 2
Activity Time 14:20
Sample Time 14:30
Date 12/19/18

SAMPLING NOTES

Initial Depth to Water 7.10 feet
Measurement Point TOR
Well Diameter 1"
Final Depth to Water 8.75 feet
Well Depth 14.43 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap ✓
Total Volume Purged 0.5 gallons
PID Well Head ____
Casing ✓
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Locked ✓
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
14:25	8.54		11.0	7.03	3.11	734 AU	1.24	-98.6	
14:30	8.75		11.3	6.96	3.15	106	1.27	-100.5	

Purge Observations: No odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Well started to go dry, sampled beforehand

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River WMI
Location ID A-3/SB-7/MW-03
Activity Time 14:00
Field Sample ID RRW-CH-MW-03-122018
Sample Time
Job # 50378-02
Sampling Event # 02
Date 12/19/20

SAMPLING NOTES

Initial Depth to Water 6.85 feet
Final Depth to Water 8.96 / 11.01 feet
Screen Length feet
Total Volume Purged 3/2 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 14.75 feet
Pump Intake Depth
PID Well Head

Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1400	7.07		12.3	7.22	0.54	over limit	2.05	-122.28	
1405	7.35		12.5	7.25	0.52	over limit	2.11	-119.7	
1410	7.60		12.2	7.28	0.54	2693 AU	2.10	-119.1	
1415	8.24		12.1	7.26	0.58	3406 AU	2.10	-121.3	
1420	8.29		12.4	7.26	0.53	1216 AU	2.07	-120.0	
1425	8.49		12.3	7.28	0.56	881 AU	2.05	-119.8	
1430	8.96		12.1	7.24	0.54	774 AU	2.07	-119.4	
12/20/18 ~~0805~~				NEXT	DAY				
1000	7.54		11.6	7.40	0.68	801 AU	1.80	-120.7	
1015	9.67		11.8	7.26	0.64	101 NTU	1.94	-114.6	
10:30	11.01		11.7	7.29	0.69	37 NTU	1.37	-110.8	

Purge Observations: Very turbid (grey silt), no odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Purged roughly 3 gallons day 1 and roughly 2 gallons day 2

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 50378-02
Location ID SB-8 / MW-04
Field Sample ID RBW-CH-MW-04-122018 Sampling Event # 02
Activity Time 1305
Sample Time 1320
Date 12/19/18

SAMPLING NOTES

Initial Depth to Water 5.63 feet
Final Depth to Water 7.68 feet
Screen Length ____ feet
Total Volume Purged 1 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 9.80 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 1"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1310	7.10		11.5	7.15	1.20	639 AU	1.69	-114	
1315	7.49		11.7	6.96	0.77	38.7	1.64	-125.5	
1320	7.68		11.8	6.94	0.68	21.8	1.61	-136.5	

Purge Observations: No odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Purged until clear

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 56378-02
Location ID SB-11/MW-05
Field Sample ID RRW-CH-MW-05-122018
Sampling Event # 02
Activity Time 12:45
Sample Time 13:00
Date 12/19/18

SAMPLING NOTES

Initial Depth to Water 6.21 feet
Final Depth to Water 12.09 feet
Screen Length ____ feet
Total Volume Purged 0.75 gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 15.3 feet
Pump Intake Depth ____
PID Well Head ____

Well Diameter 1"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1250	9.85		12.3	7.28	1.00	2512 AN	1.28	-77.6	
1255	12.09		12.4	6.97	0.97	89	1.28	-79.7	

Purge Observations: No odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Sampled before well could go dry

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West Rim WGW
Location ID SB-14 / MW-06
Activity Time _____
Field Sample ID N/A
Sample Time N/A
Job # 50378-02
Sampling Event # 02
Date 12/19/28

SAMPLING NOTES

Initial Depth to Water _____ feet
Final Depth to Water _____ feet
Screen Length _____ feet
Total Volume Purged _____ gallons
Measurement Point TOR
Well Depth 10.35 feet
Pump Intake Depth _____
PID Well Head _____
Well Diameter 1"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments

Purge Observations: _____
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Well was dry

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name C.R West River Wall
Location ID SB-16/MW-07
Activity Time _____
Field Sample ID N/A
Sample Time N/A
Job # 50378-02
Sampling Event # 2
Date 12/19/20

SAMPLING NOTES

Initial Depth to Water 13.56 feet
Final Depth to Water N/A feet
Screen Length _____ feet
Total Volume Purged _____ gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 15.56 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 1"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1200	14.33		12.2	7.02	1.59	88	4.41	-32.2	

Purge Observations: No odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Went dry at <0.5 gallons purged

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Location ID MW-08 / SB-17
Activity Time 11:50
Field Sample ID N/A
Sample Time N/A
Job # 50378-02
Sampling Event # 02
Date 12/19/18

SAMPLING NOTES

Initial Depth to Water _____ feet
Final Depth to Water _____ feet
Screen Length _____ feet
Total Volume Purged _____ gallons
[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

Measurement Point TOR
Well Depth 15.60 feet
Pump Intake Depth _____
PID Well Head _____

Well Diameter 1"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments

Purge Observations: _____
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Well was dry

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 50378-02
Location ID A-6/SB-18/MW-09
Field Sample ID RRW-CH-MW-09-121920
Sampling Event # __
Activity Time 10:00
Sample Time 1030
Date 12/19/18

SAMPLING NOTES

Initial Depth to Water 13.21 feet
Measurement Point TOR
Well Diameter 2"
Final Depth to Water ~~13.21~~ 14.44 feet
Well Depth 21.60 feet
Well Integrity:
Screen Length ____ feet
Pump Intake Depth ____
Cap ✓
Total Volume Purged ____ gallons
PID Well Head ____
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]

Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
1000	13.21		13.0	6.79	1.96	over limit	1.53	-76.1	
1015	14.02		12.8	6.73	1.60	622 AV	1.54	-77.6	
1020	14.44		13.1	6.73	1.96	116	1.63	-76.7	
1025	14.44		13.0	6.69	1.42	81.7	2.49	-81.4	
1030	14.44		13.1	6.70	0.62	55.7	2.97	-83.2	

Purge Observations: Roughly 0.5 gallon of rusty orange water purged. No odor/sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Purged until clear & sampled

Low Flow Groundwater Sampling Field Record

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Project Name CoR West River Wall
Job # 50378-02
Location ID A-7/MW-10
Field Sample ID RRW-GW-MW-10-122018
Sampling Event # 03
Activity Time 1010
Sample Time 1035
Date 12/19/18

SAMPLING NOTES

Initial Depth to Water 5.69 feet
Final Depth to Water 7.72 feet
Screen Length ____ feet
Total Volume Purged ____ gallons
Measurement Point TOR
Well Depth 15.84 feet
Pump Intake Depth ____
PID Well Head ____
Well Diameter 2"
Well Integrity:
Cap ✓
Casing ✓
Locked ✓
Collar ✓

[purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter]
Volume of Water in casing – 2" diameter = 0.163 gallons per foot of depth, 4" diameter = 0.653 gallons per foot of depth

PURGE DATA

Time	Depth to Water (ft)	Purge Rate (ml/min)	Temp. (deg. C)	pH (units)	Dissolved O2 (mg/L)	Turbidity (NTU)	Cond. (mS/cm)	ORP (mV)	Comments
10:15	5.69		13.1	6.46	5.38	79.2	3.31	-53.3	
1020	6.51		13.6	6.66	3.17	76.9	3.43	-67.0	
1025	6.80		13.5	6.80	3.08	69.3	3.42	-75.0	
1030	7.09		13.6	6.80	2.90	62.8	3.68	-83.4	
1035	7.38		13.5	6.80	2.78	48.7	3.78	-84.5	

Purge Observations: No odor or sheen
Purge Water Containerized: No

EQUIPMENT DOCUMENTATION

Type of Pump: Geotech Geopump
Type of Tubing: ¼" HDPE
Type of Water Quality Meter: YSI Pro Plus Quatro; LaMotte 2020
Calibrated: Yes

ANALYTICAL PARAMETERS

Parameter	Volumes	Sample Collected
VOCs		
TAL Metals	250 mL	x1
PCBs		
Pesticides		

LOCATION NOTES

Purged until clear & sampled

APPENDIX C

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Bergmann Associates

For Lab Project ID

181948

Referencing

Roc River Wall

Prepared

Wednesday, May 16, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-02-050918 (4.5-5)		
Lab Sample ID:	181948-01	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.182**	mg/Kg	DM	5/15/2018 10:15

Method Reference(s): EPA 7471B
Preparation Date: 5/11/2018
Data File: Hg180515A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**3920**	mg/Kg		5/12/2018 16:05
Antimony	**13.3**	mg/Kg		5/12/2018 16:05
Arsenic	**60.9**	mg/Kg		5/12/2018 16:05
Barium	**103**	mg/Kg		5/12/2018 16:05
Beryllium	**0.664**	mg/Kg		5/12/2018 16:05
Cadmium	**0.980**	mg/Kg		5/12/2018 16:05
Calcium	**7350**	mg/Kg		5/12/2018 16:05
Chromium	**13.7**	mg/Kg		5/12/2018 16:05
Cobalt	**7.35**	mg/Kg		5/12/2018 16:05
Copper	**126**	mg/Kg		5/12/2018 16:05
Iron	**28000**	mg/Kg		5/12/2018 16:05
Lead	**622**	mg/Kg		5/12/2018 16:05
Magnesium	**1810**	mg/Kg		5/12/2018 16:05
Manganese	**185**	mg/Kg		5/12/2018 16:05
Nickel	**16.5**	mg/Kg		5/12/2018 16:05
Potassium	**754**	mg/Kg		5/12/2018 16:05
Selenium	< 1.17	mg/Kg		5/12/2018 16:05
Silver	**2.32**	mg/Kg		5/12/2018 16:05
Sodium	**200**	mg/Kg		5/12/2018 16:05
Thallium	< 1.47	mg/Kg		5/12/2018 16:05
Vanadium	**17.4**	mg/Kg		5/12/2018 16:05
Zinc	**116**	mg/Kg		5/12/2018 16:05

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-02-050918 (4.5-5)		
Lab Sample ID:	181948-01	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/11/2018
Data File: 180512A

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1221	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1232	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1242	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1248	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1254	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1260	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1262	< 0.0325	mg/Kg		5/11/2018 06:51
PCB-1268	< 0.0325	mg/Kg		5/11/2018 06:51

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**46.6**	10 - 132		5/11/2018 06:51
Tetrachloro-m-xylene	**19.8**	10 - 119		5/11/2018 06:51

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/11/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.25	ug/Kg		5/10/2018 20:39
4,4-DDE	< 3.25	ug/Kg		5/10/2018 20:39
4,4-DDT	**11.1**	ug/Kg		5/10/2018 20:39
Aldrin	**3.87**	ug/Kg	P	5/10/2018 20:39
alpha-BHC	**4.67**	ug/Kg		5/10/2018 20:39
beta-BHC	**3.79**	ug/Kg	P	5/10/2018 20:39
cis-Chlordane	< 3.25	ug/Kg		5/10/2018 20:39
delta-BHC	< 3.25	ug/Kg		5/10/2018 20:39
Dieldrin	< 3.25	ug/Kg		5/10/2018 20:39

Sample Identifier: RRW-CH-SB-02-050918 (4.5-5)
Lab Sample ID: 181948-01 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Endosulfan I	< 3.25	ug/Kg			5/10/2018 20:39
Endosulfan II	< 3.25	ug/Kg			5/10/2018 20:39
Endosulfan Sulfate	**7.05**	ug/Kg			5/10/2018 20:39
Endrin	< 3.25	ug/Kg			5/10/2018 20:39
Endrin Aldehyde	**7.03**	ug/Kg		P	5/10/2018 20:39
Endrin Ketone	**10.6**	ug/Kg		P	5/10/2018 20:39
gamma-BHC (Lindane)	< 3.25	ug/Kg			5/10/2018 20:39
Heptachlor	< 3.25	ug/Kg			5/10/2018 20:39
Heptachlor Epoxide	< 3.25	ug/Kg			5/10/2018 20:39
Methoxychlor	**13.8**	ug/Kg		P	5/10/2018 20:39
Toxaphene	< 32.5	ug/Kg			5/10/2018 20:39
trans-Chlordane	< 3.25	ug/Kg			5/10/2018 20:39

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**190**	46.4 - 133	*	5/10/2018 20:39
Tetrachloro-m-xylene (1)	**36.2**	24 - 110		5/10/2018 20:39

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/10/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 339	ug/Kg		5/11/2018 19:41
1,2,4,5-Tetrachlorobenzene	< 339	ug/Kg		5/11/2018 19:41
1,2,4-Trichlorobenzene	< 339	ug/Kg		5/11/2018 19:41
1,2-Dichlorobenzene	< 339	ug/Kg		5/11/2018 19:41
1,3-Dichlorobenzene	< 339	ug/Kg		5/11/2018 19:41
1,4-Dichlorobenzene	< 339	ug/Kg		5/11/2018 19:41
2,2-Oxybis (1-chloropropane)	< 339	ug/Kg		5/11/2018 19:41
2,4-Dinitrotoluene	< 339	ug/Kg		5/11/2018 19:41
2,6-Dinitrotoluene	< 339	ug/Kg		5/11/2018 19:41
2-Chloronaphthalene	< 339	ug/Kg		5/11/2018 19:41
2-Methylnapthalene	< 339	ug/Kg		5/11/2018 19:41
2-Nitroaniline	< 678	ug/Kg		5/11/2018 19:41

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-02-050918 (4.5-5)		
Lab Sample ID:	181948-01	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

3,3'-Dichlorobenzidine	< 339	ug/Kg	5/11/2018	19:41
3-Nitroaniline	< 678	ug/Kg	5/11/2018	19:41
4-Bromophenyl phenyl ether	< 339	ug/Kg	5/11/2018	19:41
4-Chloroaniline	< 339	ug/Kg	5/11/2018	19:41
4-Chlorophenyl phenyl ether	< 339	ug/Kg	5/11/2018	19:41
4-Nitroaniline	< 678	ug/Kg	5/11/2018	19:41
Acenaphthene	< 339	ug/Kg	5/11/2018	19:41
Acenaphthylene	**618**	ug/Kg	5/11/2018	19:41
Acetophenone	< 339	ug/Kg	5/11/2018	19:41
Anthracene	**563**	ug/Kg	5/11/2018	19:41
Atrazine	< 339	ug/Kg	5/11/2018	19:41
Benzaldehyde	< 339	ug/Kg	5/11/2018	19:41
Benzo (a) anthracene	**1860**	ug/Kg	5/11/2018	19:41
Benzo (a) pyrene	**1520**	ug/Kg	5/11/2018	19:41
Benzo (b) fluoranthene	**2250**	ug/Kg	5/11/2018	19:41
Benzo (g,h,i) perylene	**938**	ug/Kg	5/11/2018	19:41
Benzo (k) fluoranthene	**1520**	ug/Kg	5/11/2018	19:41
Bis (2-chloroethoxy) methane	< 339	ug/Kg	5/11/2018	19:41
Bis (2-chloroethyl) ether	< 339	ug/Kg	5/11/2018	19:41
Bis (2-ethylhexyl) phthalate	< 339	ug/Kg	5/11/2018	19:41
Butylbenzylphthalate	< 339	ug/Kg	5/11/2018	19:41
Caprolactam	< 339	ug/Kg	5/11/2018	19:41
Carbazole	< 339	ug/Kg	5/11/2018	19:41
Chrysene	**1910**	ug/Kg	5/11/2018	19:41
Dibenz (a,h) anthracene	**400**	ug/Kg	5/11/2018	19:41
Dibenzofuran	< 339	ug/Kg	5/11/2018	19:41
Diethyl phthalate	< 339	ug/Kg	5/11/2018	19:41
Dimethyl phthalate	< 678	ug/Kg	5/11/2018	19:41
Di-n-butyl phthalate	< 339	ug/Kg	5/11/2018	19:41
Di-n-octylphthalate	< 339	ug/Kg	5/11/2018	19:41
Fluoranthene	**3030**	ug/Kg	5/11/2018	19:41
Fluorene	< 339	ug/Kg	5/11/2018	19:41

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-02-050918 (4.5-5)
Lab Sample ID: 181948-01 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Hexachlorobenzene	< 339	ug/Kg		5/11/2018 19:41
Hexachlorobutadiene	< 339	ug/Kg		5/11/2018 19:41
Hexachlorocyclopentadiene	< 339	ug/Kg		5/11/2018 19:41
Hexachloroethane	< 339	ug/Kg		5/11/2018 19:41
Indeno (1,2,3-cd) pyrene	**954**	ug/Kg		5/11/2018 19:41
Isophorone	< 339	ug/Kg		5/11/2018 19:41
Naphthalene	< 339	ug/Kg		5/11/2018 19:41
Nitrobenzene	< 339	ug/Kg		5/11/2018 19:41
N-Nitroso-di-n-propylamine	< 339	ug/Kg		5/11/2018 19:41
N-Nitrosodiphenylamine	< 339	ug/Kg		5/11/2018 19:41
Phenanthrene	**823**	ug/Kg		5/11/2018 19:41
Pyrene	**2550**	ug/Kg		5/11/2018 19:41

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**44.3**	37.7 - 103		5/11/2018 19:41
Nitrobenzene-d5	**52.9**	38.7 - 92.2		5/11/2018 19:41
Terphenyl-d14	**56.9**	69.9 - 113	*	5/11/2018 19:41

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27240.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 8.82	ug/Kg		5/15/2018 19:19
1,1,2,2-Tetrachloroethane	< 8.82	ug/Kg		5/15/2018 19:19
1,1,2-Trichloroethane	< 8.82	ug/Kg		5/15/2018 19:19
1,1-Dichloroethane	< 8.82	ug/Kg		5/15/2018 19:19
1,1-Dichloroethene	< 8.82	ug/Kg		5/15/2018 19:19
1,2,3-Trichlorobenzene	< 22.0	ug/Kg		5/15/2018 19:19
1,2,4-Trichlorobenzene	< 22.0	ug/Kg		5/15/2018 19:19
1,2,4-Trimethylbenzene	< 8.82	ug/Kg		5/15/2018 19:19
1,2-Dibromo-3-Chloropropane	< 44.1	ug/Kg		5/15/2018 19:19
1,2-Dibromoethane	< 8.82	ug/Kg		5/15/2018 19:19

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-02-050918 (4.5-5)		
Lab Sample ID:	181948-01	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

1,2-Dichlorobenzene	< 8.82	ug/Kg	5/15/2018 19:19
1,2-Dichloroethane	< 8.82	ug/Kg	5/15/2018 19:19
1,2-Dichloropropane	< 8.82	ug/Kg	5/15/2018 19:19
1,3,5-Trimethylbenzene	< 8.82	ug/Kg	5/15/2018 19:19
1,3-Dichlorobenzene	< 8.82	ug/Kg	5/15/2018 19:19
1,4-Dichlorobenzene	< 8.82	ug/Kg	5/15/2018 19:19
1,4-dioxane	< 88.2	ug/Kg	5/15/2018 19:19
2-Butanone	< 44.1	ug/Kg	5/15/2018 19:19
2-Hexanone	< 22.0	ug/Kg	5/15/2018 19:19
4-Methyl-2-pentanone	< 22.0	ug/Kg	5/15/2018 19:19
Acetone	< 44.1	ug/Kg	5/15/2018 19:19
Benzene	< 8.82	ug/Kg	5/15/2018 19:19
Bromochloromethane	< 22.0	ug/Kg	5/15/2018 19:19
Bromodichloromethane	< 8.82	ug/Kg	5/15/2018 19:19
Bromoform	< 22.0	ug/Kg	5/15/2018 19:19
Bromomethane	< 8.82	ug/Kg	5/15/2018 19:19
Carbon disulfide	< 8.82	ug/Kg	5/15/2018 19:19
Carbon Tetrachloride	< 8.82	ug/Kg	5/15/2018 19:19
Chlorobenzene	< 8.82	ug/Kg	5/15/2018 19:19
Chloroethane	< 8.82	ug/Kg	5/15/2018 19:19
Chloroform	< 8.82	ug/Kg	5/15/2018 19:19
Chloromethane	< 8.82	ug/Kg	5/15/2018 19:19
cis-1,2-Dichloroethene	< 8.82	ug/Kg	5/15/2018 19:19
cis-1,3-Dichloropropene	< 8.82	ug/Kg	5/15/2018 19:19
Cyclohexane	< 44.1	ug/Kg	5/15/2018 19:19
Dibromochloromethane	< 8.82	ug/Kg	5/15/2018 19:19
Dichlorodifluoromethane	< 8.82	ug/Kg	5/15/2018 19:19
Ethylbenzene	< 8.82	ug/Kg	5/15/2018 19:19
Freon 113	< 8.82	ug/Kg	5/15/2018 19:19
Isopropylbenzene	< 8.82	ug/Kg	5/15/2018 19:19
m,p-Xylene	< 8.82	ug/Kg	5/15/2018 19:19
Methyl acetate	< 8.82	ug/Kg	5/15/2018 19:19

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-02-050918 (4.5-5)
Lab Sample ID: 181948-01 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Methyl tert-butyl Ether	< 8.82	ug/Kg	5/15/2018	19:19
Methylcyclohexane	< 8.82	ug/Kg	5/15/2018	19:19
Methylene chloride	**31.2**	ug/Kg	5/15/2018	19:19
Naphthalene	< 22.0	ug/Kg	5/15/2018	19:19
n-Butylbenzene	< 8.82	ug/Kg	5/15/2018	19:19
n-Propylbenzene	< 8.82	ug/Kg	5/15/2018	19:19
o-Xylene	< 8.82	ug/Kg	5/15/2018	19:19
p-Isopropyltoluene	< 8.82	ug/Kg	5/15/2018	19:19
sec-Butylbenzene	< 8.82	ug/Kg	5/15/2018	19:19
Styrene	< 22.0	ug/Kg	5/15/2018	19:19
tert-Butylbenzene	< 8.82	ug/Kg	5/15/2018	19:19
Tetrachloroethene	< 8.82	ug/Kg	5/15/2018	19:19
Toluene	< 8.82	ug/Kg	5/15/2018	19:19
trans-1,2-Dichloroethene	< 8.82	ug/Kg	5/15/2018	19:19
trans-1,3-Dichloropropene	< 8.82	ug/Kg	5/15/2018	19:19
Trichloroethene	< 8.82	ug/Kg	5/15/2018	19:19
Trichlorofluoromethane	< 8.82	ug/Kg	5/15/2018	19:19
Vinyl chloride	< 8.82	ug/Kg	5/15/2018	19:19

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**130**	77.3 - 129	*	5/15/2018	19:19
4-Bromofluorobenzene	**64.3**	71 - 123	*	5/15/2018	19:19
Pentafluorobenzene	**87.5**	85.1 - 110		5/15/2018	19:19
Toluene-D8	**84.3**	82.7 - 112		5/15/2018	19:19

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50721.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03-050918 (6.5-7)		
Lab Sample ID:	181948-02	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.653**	mg/Kg		5/15/2018 10:49

Method Reference(s): EPA 7471B
Preparation Date: 5/11/2018
Data File: Hg180515A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**3370**	mg/Kg		5/12/2018 16:08
Antimony	< 3.63	mg/Kg		5/12/2018 16:08
Arsenic	**8.30**	mg/Kg		5/12/2018 16:08
Barium	**72.7**	mg/Kg		5/12/2018 16:08
Beryllium	**0.646**	mg/Kg		5/12/2018 16:08
Cadmium	< 0.303	mg/Kg		5/12/2018 16:08
Calcium	**12500**	mg/Kg		5/12/2018 16:08
Chromium	**8.13**	mg/Kg		5/12/2018 16:08
Cobalt	**7.28**	mg/Kg		5/12/2018 16:08
Copper	**157**	mg/Kg		5/12/2018 16:08
Iron	**17700**	mg/Kg		5/12/2018 16:08
Lead	**130**	mg/Kg		5/12/2018 16:08
Magnesium	**4200**	mg/Kg		5/12/2018 16:08
Manganese	**154**	mg/Kg		5/12/2018 16:08
Nickel	**12.3**	mg/Kg		5/12/2018 16:08
Potassium	**580**	mg/Kg		5/12/2018 16:08
Selenium	< 1.21	mg/Kg		5/12/2018 16:08
Silver	**0.944**	mg/Kg		5/12/2018 16:08
Sodium	< 151	mg/Kg		5/12/2018 16:08
Thallium	< 1.51	mg/Kg		5/12/2018 16:08
Vanadium	**14.6**	mg/Kg		5/12/2018 16:08
Zinc	**48.5**	mg/Kg		5/12/2018 16:08

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03-050918 (6.5-7)		
Lab Sample ID:	181948-02	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/11/2018
Data File: 180512A

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1221	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1232	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1242	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1248	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1254	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1260	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1262	< 0.0343	mg/Kg		5/11/2018 07:14
PCB-1268	< 0.0343	mg/Kg		5/11/2018 07:14

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**72.5**	10 - 132		5/11/2018 07:14
Tetrachloro-m-xylene	**39.7**	10 - 119		5/11/2018 07:14

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/11/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	**4.67**	ug/Kg	P	5/10/2018 20:54
4,4-DDE	< 3.43	ug/Kg		5/10/2018 20:54
4,4-DDT	< 3.43	ug/Kg		5/10/2018 20:54
Aldrin	< 3.43	ug/Kg		5/10/2018 20:54
alpha-BHC	< 3.43	ug/Kg		5/10/2018 20:54
beta-BHC	< 3.43	ug/Kg		5/10/2018 20:54
cis-Chlordane	< 3.43	ug/Kg		5/10/2018 20:54
delta-BHC	< 3.43	ug/Kg		5/10/2018 20:54
Dieldrin	< 3.43	ug/Kg		5/10/2018 20:54

Sample Identifier: RRW-CH-SB-03-050918 (6.5-7)
Lab Sample ID: 181948-02 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Endosulfan I	< 3.43	ug/Kg			5/10/2018 20:54
Endosulfan II	< 3.43	ug/Kg			5/10/2018 20:54
Endosulfan Sulfate	< 3.43	ug/Kg			5/10/2018 20:54
Endrin	< 3.43	ug/Kg			5/10/2018 20:54
Endrin Aldehyde	< 3.43	ug/Kg			5/10/2018 20:54
Endrin Ketone	< 3.43	ug/Kg			5/10/2018 20:54
gamma-BHC (Lindane)	< 3.43	ug/Kg			5/10/2018 20:54
Heptachlor	< 3.43	ug/Kg			5/10/2018 20:54
Heptachlor Epoxide	< 3.43	ug/Kg			5/10/2018 20:54
Methoxychlor	**4.11**	ug/Kg		P	5/10/2018 20:54
Toxaphene	< 34.3	ug/Kg			5/10/2018 20:54
trans-Chlordane	< 3.43	ug/Kg			5/10/2018 20:54

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**63.4**	46.4 - 133		5/10/2018 20:54
Tetrachloro-m-xylene (1)	**70.9**	24 - 110		5/10/2018 20:54

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/10/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 343	ug/Kg		5/11/2018 20:10
1,2,4,5-Tetrachlorobenzene	< 343	ug/Kg		5/11/2018 20:10
1,2,4-Trichlorobenzene	< 343	ug/Kg		5/11/2018 20:10
1,2-Dichlorobenzene	< 343	ug/Kg		5/11/2018 20:10
1,3-Dichlorobenzene	< 343	ug/Kg		5/11/2018 20:10
1,4-Dichlorobenzene	< 343	ug/Kg		5/11/2018 20:10
2,2-Oxybis (1-chloropropane)	< 343	ug/Kg		5/11/2018 20:10
2,4-Dinitrotoluene	< 343	ug/Kg		5/11/2018 20:10
2,6-Dinitrotoluene	< 343	ug/Kg		5/11/2018 20:10
2-Chloronaphthalene	< 343	ug/Kg		5/11/2018 20:10
2-Methylnapthalene	< 343	ug/Kg		5/11/2018 20:10
2-Nitroaniline	< 687	ug/Kg		5/11/2018 20:10

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03-050918 (6.5-7)		
Lab Sample ID:	181948-02	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

3,3'-Dichlorobenzidine	< 343	ug/Kg	5/11/2018	20:10
3-Nitroaniline	< 687	ug/Kg	5/11/2018	20:10
4-Bromophenyl phenyl ether	< 343	ug/Kg	5/11/2018	20:10
4-Chloroaniline	< 343	ug/Kg	5/11/2018	20:10
4-Chlorophenyl phenyl ether	< 343	ug/Kg	5/11/2018	20:10
4-Nitroaniline	< 687	ug/Kg	5/11/2018	20:10
Acenaphthene	< 343	ug/Kg	5/11/2018	20:10
Acenaphthylene	< 343	ug/Kg	5/11/2018	20:10
Acetophenone	< 343	ug/Kg	5/11/2018	20:10
Anthracene	< 343	ug/Kg	5/11/2018	20:10
Atrazine	< 343	ug/Kg	5/11/2018	20:10
Benzaldehyde	< 343	ug/Kg	5/11/2018	20:10
Benzo (a) anthracene	< 343	ug/Kg	5/11/2018	20:10
Benzo (a) pyrene	< 343	ug/Kg	5/11/2018	20:10
Benzo (b) fluoranthene	< 343	ug/Kg	5/11/2018	20:10
Benzo (g,h,i) perylene	< 343	ug/Kg	5/11/2018	20:10
Benzo (k) fluoranthene	< 343	ug/Kg	5/11/2018	20:10
Bis (2-chloroethoxy) methane	< 343	ug/Kg	5/11/2018	20:10
Bis (2-chloroethyl) ether	< 343	ug/Kg	5/11/2018	20:10
Bis (2-ethylhexyl) phthalate	< 343	ug/Kg	5/11/2018	20:10
Butylbenzylphthalate	< 343	ug/Kg	5/11/2018	20:10
Caprolactam	< 343	ug/Kg	5/11/2018	20:10
Carbazole	< 343	ug/Kg	5/11/2018	20:10
Chrysene	< 343	ug/Kg	5/11/2018	20:10
Dibenz (a,h) anthracene	< 343	ug/Kg	5/11/2018	20:10
Dibenzofuran	< 343	ug/Kg	5/11/2018	20:10
Diethyl phthalate	< 343	ug/Kg	5/11/2018	20:10
Dimethyl phthalate	< 687	ug/Kg	5/11/2018	20:10
Di-n-butyl phthalate	< 343	ug/Kg	5/11/2018	20:10
Di-n-octylphthalate	< 343	ug/Kg	5/11/2018	20:10
Fluoranthene	< 343	ug/Kg	5/11/2018	20:10
Fluorene	< 343	ug/Kg	5/11/2018	20:10

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-03-050918 (6.5-7)
Lab Sample ID: 181948-02 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Hexachlorobenzene	< 343	ug/Kg		5/11/2018 20:10
Hexachlorobutadiene	< 343	ug/Kg		5/11/2018 20:10
Hexachlorocyclopentadiene	< 343	ug/Kg		5/11/2018 20:10
Hexachloroethane	< 343	ug/Kg		5/11/2018 20:10
Indeno (1,2,3-cd) pyrene	< 343	ug/Kg		5/11/2018 20:10
Isophorone	< 343	ug/Kg		5/11/2018 20:10
Naphthalene	< 343	ug/Kg		5/11/2018 20:10
Nitrobenzene	< 343	ug/Kg		5/11/2018 20:10
N-Nitroso-di-n-propylamine	< 343	ug/Kg		5/11/2018 20:10
N-Nitrosodiphenylamine	< 343	ug/Kg		5/11/2018 20:10
Phenanthrene	< 343	ug/Kg		5/11/2018 20:10
Pyrene	< 343	ug/Kg		5/11/2018 20:10

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**63.0**	37.7 - 103		5/11/2018 20:10
Nitrobenzene-d5	**49.3**	38.7 - 92.2		5/11/2018 20:10
Terphenyl-d14	**73.3**	69.9 - 113		5/11/2018 20:10

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27241.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 7.94	ug/Kg		5/15/2018 19:43
1,1,2,2-Tetrachloroethane	< 7.94	ug/Kg		5/15/2018 19:43
1,1,2-Trichloroethane	< 7.94	ug/Kg		5/15/2018 19:43
1,1-Dichloroethane	< 7.94	ug/Kg		5/15/2018 19:43
1,1-Dichloroethene	< 7.94	ug/Kg		5/15/2018 19:43
1,2,3-Trichlorobenzene	< 19.8	ug/Kg		5/15/2018 19:43
1,2,4-Trichlorobenzene	< 19.8	ug/Kg		5/15/2018 19:43
1,2,4-Trimethylbenzene	< 7.94	ug/Kg		5/15/2018 19:43
1,2-Dibromo-3-Chloropropane	< 39.7	ug/Kg		5/15/2018 19:43
1,2-Dibromoethane	< 7.94	ug/Kg		5/15/2018 19:43

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03-050918 (6.5-7)		
Lab Sample ID:	181948-02	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

1,2-Dichlorobenzene	< 7.94	ug/Kg	5/15/2018	19:43
1,2-Dichloroethane	< 7.94	ug/Kg	5/15/2018	19:43
1,2-Dichloropropane	< 7.94	ug/Kg	5/15/2018	19:43
1,3,5-Trimethylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
1,3-Dichlorobenzene	< 7.94	ug/Kg	5/15/2018	19:43
1,4-Dichlorobenzene	< 7.94	ug/Kg	5/15/2018	19:43
1,4-dioxane	< 79.4	ug/Kg	5/15/2018	19:43
2-Butanone	< 39.7	ug/Kg	5/15/2018	19:43
2-Hexanone	< 19.8	ug/Kg	5/15/2018	19:43
4-Methyl-2-pentanone	< 19.8	ug/Kg	5/15/2018	19:43
Acetone	< 39.7	ug/Kg	5/15/2018	19:43
Benzene	< 7.94	ug/Kg	5/15/2018	19:43
Bromochloromethane	< 19.8	ug/Kg	5/15/2018	19:43
Bromodichloromethane	< 7.94	ug/Kg	5/15/2018	19:43
Bromoform	< 19.8	ug/Kg	5/15/2018	19:43
Bromomethane	< 7.94	ug/Kg	5/15/2018	19:43
Carbon disulfide	< 7.94	ug/Kg	5/15/2018	19:43
Carbon Tetrachloride	< 7.94	ug/Kg	5/15/2018	19:43
Chlorobenzene	< 7.94	ug/Kg	5/15/2018	19:43
Chloroethane	< 7.94	ug/Kg	5/15/2018	19:43
Chloroform	< 7.94	ug/Kg	5/15/2018	19:43
Chloromethane	< 7.94	ug/Kg	5/15/2018	19:43
cis-1,2-Dichloroethene	< 7.94	ug/Kg	5/15/2018	19:43
cis-1,3-Dichloropropene	< 7.94	ug/Kg	5/15/2018	19:43
Cyclohexane	< 39.7	ug/Kg	5/15/2018	19:43
Dibromochloromethane	< 7.94	ug/Kg	5/15/2018	19:43
Dichlorodifluoromethane	< 7.94	ug/Kg	5/15/2018	19:43
Ethylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
Freon 113	< 7.94	ug/Kg	5/15/2018	19:43
Isopropylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
m,p-Xylene	< 7.94	ug/Kg	5/15/2018	19:43
Methyl acetate	< 7.94	ug/Kg	5/15/2018	19:43

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-03-050918 (6.5-7)
Lab Sample ID: 181948-02 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Methyl tert-butyl Ether	< 7.94	ug/Kg	5/15/2018	19:43
Methylcyclohexane	< 7.94	ug/Kg	5/15/2018	19:43
Methylene chloride	**41.1**	ug/Kg	5/15/2018	19:43
Naphthalene	< 19.8	ug/Kg	5/15/2018	19:43
n-Butylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
n-Propylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
o-Xylene	< 7.94	ug/Kg	5/15/2018	19:43
p-Isopropyltoluene	< 7.94	ug/Kg	5/15/2018	19:43
sec-Butylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
Styrene	< 19.8	ug/Kg	5/15/2018	19:43
tert-Butylbenzene	< 7.94	ug/Kg	5/15/2018	19:43
Tetrachloroethene	< 7.94	ug/Kg	5/15/2018	19:43
Toluene	< 7.94	ug/Kg	5/15/2018	19:43
trans-1,2-Dichloroethene	< 7.94	ug/Kg	5/15/2018	19:43
trans-1,3-Dichloropropene	< 7.94	ug/Kg	5/15/2018	19:43
Trichloroethene	< 7.94	ug/Kg	5/15/2018	19:43
Trichlorofluoromethane	< 7.94	ug/Kg	5/15/2018	19:43
Vinyl chloride	< 7.94	ug/Kg	5/15/2018	19:43

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**136**	77.3 - 129	*	5/15/2018	19:43
4-Bromofluorobenzene	**52.6**	71 - 123	*	5/15/2018	19:43
Pentafluorobenzene	**86.4**	85.1 - 110		5/15/2018	19:43
Toluene-D8	**79.2**	82.7 - 112	*	5/15/2018	19:43

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50722.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918 (7.5-8)		
Lab Sample ID:	181948-03	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0573**	mg/Kg		5/15/2018 10:32

Method Reference(s): EPA 7471B
Preparation Date: 5/11/2018
Data File: Hg180515A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**7520**	mg/Kg		5/12/2018 16:12
Antimony	< 3.19	mg/Kg		5/12/2018 16:12
Arsenic	**5.69**	mg/Kg		5/12/2018 16:12
Barium	**43.9**	mg/Kg		5/12/2018 16:12
Beryllium	**0.460**	mg/Kg		5/12/2018 16:12
Cadmium	< 0.265	mg/Kg		5/12/2018 16:12
Calcium	**78500**	mg/Kg		5/14/2018 15:50
Chromium	**8.96**	mg/Kg		5/12/2018 16:12
Cobalt	**4.36**	mg/Kg		5/12/2018 16:12
Copper	**16.5**	mg/Kg		5/12/2018 16:12
Iron	**10400**	mg/Kg		5/12/2018 16:12
Lead	**21.9**	mg/Kg		5/12/2018 16:12
Magnesium	**41700**	mg/Kg		5/14/2018 15:50
Manganese	**278**	mg/Kg		5/12/2018 16:12
Nickel	**9.39**	mg/Kg		5/12/2018 16:12
Potassium	**1610**	mg/Kg		5/12/2018 16:12
Selenium	**1.11**	mg/Kg		5/14/2018 15:54
Silver	< 0.531	mg/Kg		5/12/2018 16:12
Sodium	**138**	mg/Kg		5/12/2018 16:12
Thallium	< 1.33	mg/Kg		5/12/2018 16:12
Vanadium	**11.7**	mg/Kg		5/12/2018 16:12
Zinc	**77.2**	mg/Kg		5/12/2018 16:12

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918 (7.5-8)		
Lab Sample ID:	181948-03	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/11/2018
Data File: 180512A

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1221	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1232	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1242	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1248	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1254	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1260	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1262	< 0.0309	mg/Kg		5/11/2018 07:38
PCB-1268	< 0.0309	mg/Kg		5/11/2018 07:38

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**77.0**	10 - 132		5/11/2018 07:38
Tetrachloro-m-xylene	**40.5**	10 - 119		5/11/2018 07:38

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/11/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.09	ug/Kg		5/10/2018 21:09
4,4-DDE	< 3.09	ug/Kg		5/10/2018 21:09
4,4-DDT	< 3.09	ug/Kg		5/10/2018 21:09
Aldrin	< 3.09	ug/Kg		5/10/2018 21:09
alpha-BHC	< 3.09	ug/Kg		5/10/2018 21:09
beta-BHC	< 3.09	ug/Kg		5/10/2018 21:09
cis-Chlordane	< 3.09	ug/Kg		5/10/2018 21:09
delta-BHC	< 3.09	ug/Kg		5/10/2018 21:09
Dieldrin	< 3.09	ug/Kg		5/10/2018 21:09

Sample Identifier: RRW-CH-SB-05-050918 (7.5-8)
Lab Sample ID: 181948-03 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Endosulfan I	< 3.09	ug/Kg		5/10/2018 21:09
Endosulfan II	< 3.09	ug/Kg		5/10/2018 21:09
Endosulfan Sulfate	< 3.09	ug/Kg		5/10/2018 21:09
Endrin	< 3.09	ug/Kg		5/10/2018 21:09
Endrin Aldehyde	< 3.09	ug/Kg		5/10/2018 21:09
Endrin Ketone	< 3.09	ug/Kg		5/10/2018 21:09
gamma-BHC (Lindane)	< 3.09	ug/Kg		5/10/2018 21:09
Heptachlor	< 3.09	ug/Kg		5/10/2018 21:09
Heptachlor Epoxide	< 3.09	ug/Kg		5/10/2018 21:09
Methoxychlor	< 3.09	ug/Kg		5/10/2018 21:09
Toxaphene	< 30.9	ug/Kg		5/10/2018 21:09
trans-Chlordane	< 3.09	ug/Kg		5/10/2018 21:09

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**52.1**	46.4 - 133		5/10/2018 21:09
Tetrachloro-m-xylene (1)	**73.3**	24 - 110		5/10/2018 21:09

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/10/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 277	ug/Kg		5/11/2018 20:40
1,2,4,5-Tetrachlorobenzene	< 277	ug/Kg		5/11/2018 20:40
1,2,4-Trichlorobenzene	< 277	ug/Kg		5/11/2018 20:40
1,2-Dichlorobenzene	< 277	ug/Kg		5/11/2018 20:40
1,3-Dichlorobenzene	< 277	ug/Kg		5/11/2018 20:40
1,4-Dichlorobenzene	< 277	ug/Kg		5/11/2018 20:40
2,2-Oxybis (1-chloropropane)	< 277	ug/Kg		5/11/2018 20:40
2,4-Dinitrotoluene	< 277	ug/Kg		5/11/2018 20:40
2,6-Dinitrotoluene	< 277	ug/Kg		5/11/2018 20:40
2-Chloronaphthalene	< 277	ug/Kg		5/11/2018 20:40
2-Methylnapthalene	< 277	ug/Kg		5/11/2018 20:40
2-Nitroaniline	< 554	ug/Kg		5/11/2018 20:40

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918 (7.5-8)		
Lab Sample ID:	181948-03	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

3,3'-Dichlorobenzidine	< 277	ug/Kg	5/11/2018 20:40
3-Nitroaniline	< 554	ug/Kg	5/11/2018 20:40
4-Bromophenyl phenyl ether	< 277	ug/Kg	5/11/2018 20:40
4-Chloroaniline	< 277	ug/Kg	5/11/2018 20:40
4-Chlorophenyl phenyl ether	< 277	ug/Kg	5/11/2018 20:40
4-Nitroaniline	< 554	ug/Kg	5/11/2018 20:40
Acenaphthene	< 277	ug/Kg	5/11/2018 20:40
Acenaphthylene	< 277	ug/Kg	5/11/2018 20:40
Acetophenone	< 277	ug/Kg	5/11/2018 20:40
Anthracene	< 277	ug/Kg	5/11/2018 20:40
Atrazine	< 277	ug/Kg	5/11/2018 20:40
Benzaldehyde	< 277	ug/Kg	5/11/2018 20:40
Benzo (a) anthracene	< 277	ug/Kg	5/11/2018 20:40
Benzo (a) pyrene	< 277	ug/Kg	5/11/2018 20:40
Benzo (b) fluoranthene	< 277	ug/Kg	5/11/2018 20:40
Benzo (g,h,i) perylene	< 277	ug/Kg	5/11/2018 20:40
Benzo (k) fluoranthene	< 277	ug/Kg	5/11/2018 20:40
Bis (2-chloroethoxy) methane	< 277	ug/Kg	5/11/2018 20:40
Bis (2-chloroethyl) ether	< 277	ug/Kg	5/11/2018 20:40
Bis (2-ethylhexyl) phthalate	< 277	ug/Kg	5/11/2018 20:40
Butylbenzylphthalate	< 277	ug/Kg	5/11/2018 20:40
Caprolactam	< 277	ug/Kg	5/11/2018 20:40
Carbazole	< 277	ug/Kg	5/11/2018 20:40
Chrysene	< 277	ug/Kg	5/11/2018 20:40
Dibenz (a,h) anthracene	< 277	ug/Kg	5/11/2018 20:40
Dibenzofuran	< 277	ug/Kg	5/11/2018 20:40
Diethyl phthalate	< 277	ug/Kg	5/11/2018 20:40
Dimethyl phthalate	< 554	ug/Kg	5/11/2018 20:40
Di-n-butyl phthalate	< 277	ug/Kg	5/11/2018 20:40
Di-n-octylphthalate	< 277	ug/Kg	5/11/2018 20:40
Fluoranthene	< 277	ug/Kg	5/11/2018 20:40
Fluorene	< 277	ug/Kg	5/11/2018 20:40

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-05-050918 (7.5-8)
Lab Sample ID: 181948-03 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Hexachlorobenzene	< 277	ug/Kg			5/11/2018 20:40
Hexachlorobutadiene	< 277	ug/Kg			5/11/2018 20:40
Hexachlorocyclopentadiene	< 277	ug/Kg			5/11/2018 20:40
Hexachloroethane	< 277	ug/Kg			5/11/2018 20:40
Indeno (1,2,3-cd) pyrene	< 277	ug/Kg			5/11/2018 20:40
Isophorone	< 277	ug/Kg			5/11/2018 20:40
Naphthalene	< 277	ug/Kg			5/11/2018 20:40
Nitrobenzene	< 277	ug/Kg			5/11/2018 20:40
N-Nitroso-di-n-propylamine	< 277	ug/Kg			5/11/2018 20:40
N-Nitrosodiphenylamine	< 277	ug/Kg			5/11/2018 20:40
Phenanthrene	< 277	ug/Kg			5/11/2018 20:40
Pyrene	< 277	ug/Kg			5/11/2018 20:40

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**73.4**	37.7 - 103		5/11/2018 20:40
Nitrobenzene-d5	**69.1**	38.7 - 92.2		5/11/2018 20:40
Terphenyl-d14	**66.6**	69.9 - 113	*	5/11/2018 20:40

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27242.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 7.42	ug/Kg		5/15/2018 20:07
1,1,2,2-Tetrachloroethane	< 7.42	ug/Kg		5/15/2018 20:07
1,1,2-Trichloroethane	< 7.42	ug/Kg		5/15/2018 20:07
1,1-Dichloroethane	< 7.42	ug/Kg		5/15/2018 20:07
1,1-Dichloroethene	< 7.42	ug/Kg		5/15/2018 20:07
1,2,3-Trichlorobenzene	< 18.5	ug/Kg		5/15/2018 20:07
1,2,4-Trichlorobenzene	< 18.5	ug/Kg		5/15/2018 20:07
1,2,4-Trimethylbenzene	< 7.42	ug/Kg		5/15/2018 20:07
1,2-Dibromo-3-Chloropropane	< 37.1	ug/Kg		5/15/2018 20:07
1,2-Dibromoethane	< 7.42	ug/Kg		5/15/2018 20:07

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918 (7.5-8)		
Lab Sample ID:	181948-03	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

1,2-Dichlorobenzene	< 7.42	ug/Kg	5/15/2018	20:07
1,2-Dichloroethane	< 7.42	ug/Kg	5/15/2018	20:07
1,2-Dichloropropane	< 7.42	ug/Kg	5/15/2018	20:07
1,3,5-Trimethylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
1,3-Dichlorobenzene	< 7.42	ug/Kg	5/15/2018	20:07
1,4-Dichlorobenzene	< 7.42	ug/Kg	5/15/2018	20:07
1,4-dioxane	< 74.2	ug/Kg	5/15/2018	20:07
2-Butanone	< 37.1	ug/Kg	5/15/2018	20:07
2-Hexanone	< 18.5	ug/Kg	5/15/2018	20:07
4-Methyl-2-pentanone	< 18.5	ug/Kg	5/15/2018	20:07
Acetone	< 37.1	ug/Kg	5/15/2018	20:07
Benzene	< 7.42	ug/Kg	5/15/2018	20:07
Bromochloromethane	< 18.5	ug/Kg	5/15/2018	20:07
Bromodichloromethane	< 7.42	ug/Kg	5/15/2018	20:07
Bromoform	< 18.5	ug/Kg	5/15/2018	20:07
Bromomethane	< 7.42	ug/Kg	5/15/2018	20:07
Carbon disulfide	< 7.42	ug/Kg	5/15/2018	20:07
Carbon Tetrachloride	< 7.42	ug/Kg	5/15/2018	20:07
Chlorobenzene	< 7.42	ug/Kg	5/15/2018	20:07
Chloroethane	< 7.42	ug/Kg	5/15/2018	20:07
Chloroform	< 7.42	ug/Kg	5/15/2018	20:07
Chloromethane	< 7.42	ug/Kg	5/15/2018	20:07
cis-1,2-Dichloroethene	< 7.42	ug/Kg	5/15/2018	20:07
cis-1,3-Dichloropropene	< 7.42	ug/Kg	5/15/2018	20:07
Cyclohexane	< 37.1	ug/Kg	5/15/2018	20:07
Dibromochloromethane	< 7.42	ug/Kg	5/15/2018	20:07
Dichlorodifluoromethane	< 7.42	ug/Kg	5/15/2018	20:07
Ethylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
Freon 113	< 7.42	ug/Kg	5/15/2018	20:07
Isopropylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
m,p-Xylene	< 7.42	ug/Kg	5/15/2018	20:07
Methyl acetate	< 7.42	ug/Kg	5/15/2018	20:07

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918 (7.5-8)		
Lab Sample ID:	181948-03	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Methyl tert-butyl Ether	< 7.42	ug/Kg	5/15/2018	20:07
Methylcyclohexane	< 7.42	ug/Kg	5/15/2018	20:07
Methylene chloride	< 18.5	ug/Kg	5/15/2018	20:07
Naphthalene	< 18.5	ug/Kg	5/15/2018	20:07
n-Butylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
n-Propylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
o-Xylene	< 7.42	ug/Kg	5/15/2018	20:07
p-Isopropyltoluene	< 7.42	ug/Kg	5/15/2018	20:07
sec-Butylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
Styrene	< 18.5	ug/Kg	5/15/2018	20:07
tert-Butylbenzene	< 7.42	ug/Kg	5/15/2018	20:07
Tetrachloroethene	< 7.42	ug/Kg	5/15/2018	20:07
Toluene	< 7.42	ug/Kg	5/15/2018	20:07
trans-1,2-Dichloroethene	< 7.42	ug/Kg	5/15/2018	20:07
trans-1,3-Dichloropropene	< 7.42	ug/Kg	5/15/2018	20:07
Trichloroethene	< 7.42	ug/Kg	5/15/2018	20:07
Trichlorofluoromethane	< 7.42	ug/Kg	5/15/2018	20:07
Vinyl chloride	< 7.42	ug/Kg	5/15/2018	20:07

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**	
1,2-Dichloroethane-d4	**124**	77.3 - 129		5/15/2018	20:07
4-Bromofluorobenzene	**91.1**	71 - 123		5/15/2018	20:07
Pentafluorobenzene	**86.1**	85.1 - 110		5/15/2018	20:07
Toluene-D8	**91.6**	82.7 - 112		5/15/2018	20:07

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50723.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918A (10-10.5)		
Lab Sample ID:	181948-04	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.148**	mg/Kg		5/15/2018 10:34

Method Reference(s): EPA 7471B
Preparation Date: 5/11/2018
Data File: Hg180515A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**6940**	mg/Kg		5/12/2018 16:25
Antimony	< 3.80	mg/Kg		5/12/2018 16:25
Arsenic	**17.2**	mg/Kg		5/12/2018 16:25
Barium	**477**	mg/Kg		5/12/2018 16:25
Beryllium	**0.515**	mg/Kg		5/12/2018 16:25
Cadmium	**0.881**	mg/Kg		5/12/2018 16:25
Calcium	**6500**	mg/Kg		5/12/2018 16:25
Chromium	**9.20**	mg/Kg		5/12/2018 16:25
Cobalt	**6.96**	mg/Kg		5/12/2018 16:25
Copper	**18.2**	mg/Kg		5/12/2018 16:25
Iron	**19600**	mg/Kg		5/12/2018 16:25
Lead	**117**	mg/Kg		5/12/2018 16:25
Magnesium	**3550**	mg/Kg		5/12/2018 16:25
Manganese	**235**	mg/Kg		5/12/2018 16:25
Nickel	**14.7**	mg/Kg		5/12/2018 16:25
Potassium	**966**	mg/Kg		5/12/2018 16:25
Selenium	< 1.27	mg/Kg		5/12/2018 16:25
Silver	**1.14**	mg/Kg		5/12/2018 16:25
Sodium	< 158	mg/Kg		5/12/2018 16:25
Thallium	< 1.58	mg/Kg		5/12/2018 16:25
Vanadium	**12.0**	mg/Kg		5/12/2018 16:25
Zinc	**1180**	mg/Kg		5/14/2018 15:58

Sample Identifier:	RRW-CH-SB-05-050918A (10-10.5)		
Lab Sample ID:	181948-04	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/11/2018
Data File: 180512A

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1221	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1232	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1242	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1248	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1254	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1260	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1262	< 0.0368	mg/Kg		5/12/2018 03:45
PCB-1268	< 0.0368	mg/Kg		5/12/2018 03:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**45.6**	10 - 132		5/12/2018 03:45
Tetrachloro-m-xylene	**27.5**	10 - 119		5/12/2018 03:45

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/11/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.68	ug/Kg		5/11/2018 14:29
4,4-DDE	< 3.68	ug/Kg		5/11/2018 14:29
4,4-DDT	< 3.68	ug/Kg		5/11/2018 14:29
Aldrin	< 3.68	ug/Kg		5/11/2018 14:29
alpha-BHC	< 3.68	ug/Kg		5/11/2018 14:29
beta-BHC	< 3.68	ug/Kg		5/11/2018 14:29
cis-Chlordane	< 3.68	ug/Kg		5/11/2018 14:29
delta-BHC	< 3.68	ug/Kg		5/11/2018 14:29
Dieldrin	< 3.68	ug/Kg		5/11/2018 14:29

Sample Identifier: RRW-CH-SB-05-050918A (10-10.5)
Lab Sample ID: 181948-04 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Endosulfan I	< 3.68	ug/Kg		5/11/2018 14:29
Endosulfan II	< 3.68	ug/Kg		5/11/2018 14:29
Endosulfan Sulfate	< 3.68	ug/Kg		5/11/2018 14:29
Endrin	< 3.68	ug/Kg		5/11/2018 14:29
Endrin Aldehyde	< 3.68	ug/Kg		5/11/2018 14:29
Endrin Ketone	< 3.68	ug/Kg		5/11/2018 14:29
gamma-BHC (Lindane)	< 3.68	ug/Kg		5/11/2018 14:29
Heptachlor	< 3.68	ug/Kg		5/11/2018 14:29
Heptachlor Epoxide	< 3.68	ug/Kg		5/11/2018 14:29
Methoxychlor	< 3.68	ug/Kg		5/11/2018 14:29
Toxaphene	< 36.8	ug/Kg		5/11/2018 14:29
trans-Chlordane	< 3.68	ug/Kg		5/11/2018 14:29

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**52.1**	46.4 - 133		5/11/2018 14:29
Tetrachloro-m-xylene (1)	**60.4**	24 - 110		5/11/2018 14:29

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/10/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 357	ug/Kg		5/11/2018 21:10
1,2,4,5-Tetrachlorobenzene	< 357	ug/Kg		5/11/2018 21:10
1,2,4-Trichlorobenzene	< 357	ug/Kg		5/11/2018 21:10
1,2-Dichlorobenzene	< 357	ug/Kg		5/11/2018 21:10
1,3-Dichlorobenzene	< 357	ug/Kg		5/11/2018 21:10
1,4-Dichlorobenzene	< 357	ug/Kg		5/11/2018 21:10
2,2-Oxybis (1-chloropropane)	< 357	ug/Kg		5/11/2018 21:10
2,4-Dinitrotoluene	< 357	ug/Kg		5/11/2018 21:10
2,6-Dinitrotoluene	< 357	ug/Kg		5/11/2018 21:10
2-Chloronaphthalene	< 357	ug/Kg		5/11/2018 21:10
2-Methylnapthalene	< 357	ug/Kg		5/11/2018 21:10
2-Nitroaniline	< 714	ug/Kg		5/11/2018 21:10

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Lab Sample ID:	181948-04	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

3,3'-Dichlorobenzidine	< 357	ug/Kg	5/11/2018 21:10
3-Nitroaniline	< 714	ug/Kg	5/11/2018 21:10
4-Bromophenyl phenyl ether	< 357	ug/Kg	5/11/2018 21:10
4-Chloroaniline	< 357	ug/Kg	5/11/2018 21:10
4-Chlorophenyl phenyl ether	< 357	ug/Kg	5/11/2018 21:10
4-Nitroaniline	< 714	ug/Kg	5/11/2018 21:10
Acenaphthene	< 357	ug/Kg	5/11/2018 21:10
Acenaphthylene	< 357	ug/Kg	5/11/2018 21:10
Acetophenone	< 357	ug/Kg	5/11/2018 21:10
Anthracene	< 357	ug/Kg	5/11/2018 21:10
Atrazine	< 357	ug/Kg	5/11/2018 21:10
Benzaldehyde	< 357	ug/Kg	5/11/2018 21:10
Benzo (a) anthracene	< 357	ug/Kg	5/11/2018 21:10
Benzo (a) pyrene	< 357	ug/Kg	5/11/2018 21:10
Benzo (b) fluoranthene	< 357	ug/Kg	5/11/2018 21:10
Benzo (g,h,i) perylene	< 357	ug/Kg	5/11/2018 21:10
Benzo (k) fluoranthene	< 357	ug/Kg	5/11/2018 21:10
Bis (2-chloroethoxy) methane	< 357	ug/Kg	5/11/2018 21:10
Bis (2-chloroethyl) ether	< 357	ug/Kg	5/11/2018 21:10
Bis (2-ethylhexyl) phthalate	< 357	ug/Kg	5/11/2018 21:10
Butylbenzylphthalate	< 357	ug/Kg	5/11/2018 21:10
Caprolactam	< 357	ug/Kg	5/11/2018 21:10
Carbazole	< 357	ug/Kg	5/11/2018 21:10
Chrysene	< 357	ug/Kg	5/11/2018 21:10
Dibenz (a,h) anthracene	< 357	ug/Kg	5/11/2018 21:10
Dibenzofuran	< 357	ug/Kg	5/11/2018 21:10
Diethyl phthalate	< 357	ug/Kg	5/11/2018 21:10
Dimethyl phthalate	< 714	ug/Kg	5/11/2018 21:10
Di-n-butyl phthalate	< 357	ug/Kg	5/11/2018 21:10
Di-n-octylphthalate	< 357	ug/Kg	5/11/2018 21:10
Fluoranthene	< 357	ug/Kg	5/11/2018 21:10
Fluorene	< 357	ug/Kg	5/11/2018 21:10

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Lab Sample ID: 181948-04 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Hexachlorobenzene	< 357	ug/Kg			5/11/2018 21:10
Hexachlorobutadiene	< 357	ug/Kg			5/11/2018 21:10
Hexachlorocyclopentadiene	< 357	ug/Kg			5/11/2018 21:10
Hexachloroethane	< 357	ug/Kg			5/11/2018 21:10
Indeno (1,2,3-cd) pyrene	< 357	ug/Kg			5/11/2018 21:10
Isophorone	< 357	ug/Kg			5/11/2018 21:10
Naphthalene	< 357	ug/Kg			5/11/2018 21:10
Nitrobenzene	< 357	ug/Kg			5/11/2018 21:10
N-Nitroso-di-n-propylamine	< 357	ug/Kg			5/11/2018 21:10
N-Nitrosodiphenylamine	< 357	ug/Kg			5/11/2018 21:10
Phenanthrene	< 357	ug/Kg			5/11/2018 21:10
Pyrene	< 357	ug/Kg			5/11/2018 21:10

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**68.4**	37.7 - 103		5/11/2018 21:10
Nitrobenzene-d5	**59.9**	38.7 - 92.2		5/11/2018 21:10
Terphenyl-d14	**66.1**	69.9 - 113	*	5/11/2018 21:10

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27243.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 13.2	ug/Kg		5/15/2018 22:32
1,1,2,2-Tetrachloroethane	< 13.2	ug/Kg		5/15/2018 22:32
1,1,2-Trichloroethane	< 13.2	ug/Kg		5/15/2018 22:32
1,1-Dichloroethane	< 13.2	ug/Kg		5/15/2018 22:32
1,1-Dichloroethene	< 13.2	ug/Kg		5/15/2018 22:32
1,2,3-Trichlorobenzene	< 33.1	ug/Kg		5/15/2018 22:32
1,2,4-Trichlorobenzene	< 33.1	ug/Kg		5/15/2018 22:32
1,2,4-Trimethylbenzene	< 13.2	ug/Kg		5/15/2018 22:32
1,2-Dibromo-3-Chloropropane	< 66.2	ug/Kg		5/15/2018 22:32
1,2-Dibromoethane	< 13.2	ug/Kg		5/15/2018 22:32

Lab Project ID: 181948

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Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-05-050918A (10-10.5)		
Lab Sample ID:	181948-04	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

1,2-Dichlorobenzene	< 13.2	ug/Kg	5/15/2018	22:32
1,2-Dichloroethane	< 13.2	ug/Kg	5/15/2018	22:32
1,2-Dichloropropane	< 13.2	ug/Kg	5/15/2018	22:32
1,3,5-Trimethylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
1,3-Dichlorobenzene	< 13.2	ug/Kg	5/15/2018	22:32
1,4-Dichlorobenzene	< 13.2	ug/Kg	5/15/2018	22:32
1,4-dioxane	< 132	ug/Kg	5/15/2018	22:32
2-Butanone	< 66.2	ug/Kg	5/15/2018	22:32
2-Hexanone	< 33.1	ug/Kg	5/15/2018	22:32
4-Methyl-2-pentanone	< 33.1	ug/Kg	5/15/2018	22:32
Acetone	**175**	ug/Kg	5/15/2018	22:32
Benzene	< 13.2	ug/Kg	5/15/2018	22:32
Bromochloromethane	< 33.1	ug/Kg	5/15/2018	22:32
Bromodichloromethane	< 13.2	ug/Kg	5/15/2018	22:32
Bromoform	< 33.1	ug/Kg	5/15/2018	22:32
Bromomethane	< 13.2	ug/Kg	5/15/2018	22:32
Carbon disulfide	< 13.2	ug/Kg	5/15/2018	22:32
Carbon Tetrachloride	< 13.2	ug/Kg	5/15/2018	22:32
Chlorobenzene	< 13.2	ug/Kg	5/15/2018	22:32
Chloroethane	< 13.2	ug/Kg	5/15/2018	22:32
Chloroform	< 13.2	ug/Kg	5/15/2018	22:32
Chloromethane	< 13.2	ug/Kg	5/15/2018	22:32
cis-1,2-Dichloroethene	< 13.2	ug/Kg	5/15/2018	22:32
cis-1,3-Dichloropropene	< 13.2	ug/Kg	5/15/2018	22:32
Cyclohexane	< 66.2	ug/Kg	5/15/2018	22:32
Dibromochloromethane	< 13.2	ug/Kg	5/15/2018	22:32
Dichlorodifluoromethane	< 13.2	ug/Kg	5/15/2018	22:32
Ethylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
Freon 113	< 13.2	ug/Kg	5/15/2018	22:32
Isopropylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
m,p-Xylene	< 13.2	ug/Kg	5/15/2018	22:32
Methyl acetate	< 13.2	ug/Kg	5/15/2018	22:32

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-05-050918A (10-10.5)
Lab Sample ID: 181948-04 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Methyl tert-butyl Ether	< 13.2	ug/Kg	5/15/2018	22:32
Methylcyclohexane	< 13.2	ug/Kg	5/15/2018	22:32
Methylene chloride	< 33.1	ug/Kg	5/15/2018	22:32
Naphthalene	< 33.1	ug/Kg	5/15/2018	22:32
n-Butylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
n-Propylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
o-Xylene	< 13.2	ug/Kg	5/15/2018	22:32
p-Isopropyltoluene	< 13.2	ug/Kg	5/15/2018	22:32
sec-Butylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
Styrene	< 33.1	ug/Kg	5/15/2018	22:32
tert-Butylbenzene	< 13.2	ug/Kg	5/15/2018	22:32
Tetrachloroethene	< 13.2	ug/Kg	5/15/2018	22:32
Toluene	< 13.2	ug/Kg	5/15/2018	22:32
trans-1,2-Dichloroethene	< 13.2	ug/Kg	5/15/2018	22:32
trans-1,3-Dichloropropene	< 13.2	ug/Kg	5/15/2018	22:32
Trichloroethene	< 13.2	ug/Kg	5/15/2018	22:32
Trichlorofluoromethane	< 13.2	ug/Kg	5/15/2018	22:32
Vinyl chloride	< 13.2	ug/Kg	5/15/2018	22:32

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**114**	77.3 - 129		5/15/2018	22:32
4-Bromofluorobenzene	**96.9**	71 - 123		5/15/2018	22:32
Pentafluorobenzene	**93.5**	85.1 - 110		5/15/2018	22:32
Toluene-D8	**104**	82.7 - 112		5/15/2018	22:32

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x50729.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-06-050918 (6.5-7.0)		
Lab Sample ID:	181948-05	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.154**	mg/Kg		5/15/2018 10:37

Method Reference(s): EPA 7471B
Preparation Date: 5/11/2018
Data File: Hg180515A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**4590**	mg/Kg		5/12/2018 16:28
Antimony	**4.48**	mg/Kg		5/12/2018 16:28
Arsenic	**8.76**	mg/Kg		5/12/2018 16:28
Barium	**51.5**	mg/Kg		5/12/2018 16:28
Beryllium	**0.596**	mg/Kg		5/12/2018 16:28
Cadmium	< 0.287	mg/Kg		5/12/2018 16:28
Calcium	**15300**	mg/Kg		5/12/2018 16:28
Chromium	**10.6**	mg/Kg		5/12/2018 16:28
Cobalt	**6.71**	mg/Kg		5/12/2018 16:28
Copper	**42.5**	mg/Kg		5/12/2018 16:28
Iron	**13200**	mg/Kg		5/12/2018 16:28
Lead	**42.5**	mg/Kg		5/12/2018 16:28
Magnesium	**7700**	mg/Kg		5/12/2018 16:28
Manganese	**179**	mg/Kg		5/12/2018 16:28
Nickel	**10.1**	mg/Kg		5/12/2018 16:28
Potassium	**802**	mg/Kg		5/12/2018 16:28
Selenium	< 1.15	mg/Kg		5/12/2018 16:28
Silver	< 0.574	mg/Kg		5/12/2018 16:28
Sodium	< 144	mg/Kg		5/12/2018 16:28
Thallium	< 1.44	mg/Kg		5/12/2018 16:28
Vanadium	**19.2**	mg/Kg		5/12/2018 16:28
Zinc	**30.5**	mg/Kg		5/12/2018 16:28

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-06-050918 (6.5-7.0)		
Lab Sample ID:	181948-05	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/11/2018
Data File: 180512A

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1221	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1232	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1242	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1248	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1254	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1260	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1262	< 0.0324	mg/Kg		5/12/2018 04:08
PCB-1268	< 0.0324	mg/Kg		5/12/2018 04:08

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**57.6**	10 - 132		5/12/2018 04:08
Tetrachloro-m-xylene	**44.1**	10 - 119		5/12/2018 04:08

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/11/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.24	ug/Kg		5/11/2018 14:45
4,4-DDE	< 3.24	ug/Kg		5/11/2018 14:45
4,4-DDT	< 3.24	ug/Kg		5/11/2018 14:45
Aldrin	< 3.24	ug/Kg		5/11/2018 14:45
alpha-BHC	< 3.24	ug/Kg		5/11/2018 14:45
beta-BHC	< 3.24	ug/Kg		5/11/2018 14:45
cis-Chlordane	< 3.24	ug/Kg		5/11/2018 14:45
delta-BHC	< 3.24	ug/Kg		5/11/2018 14:45
Dieldrin	< 3.24	ug/Kg		5/11/2018 14:45

Sample Identifier: RRW-CH-SB-06-050918 (6.5-7.0)
Lab Sample ID: 181948-05 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Endosulfan I	< 3.24	ug/Kg		5/11/2018 14:45
Endosulfan II	< 3.24	ug/Kg		5/11/2018 14:45
Endosulfan Sulfate	< 3.24	ug/Kg		5/11/2018 14:45
Endrin	< 3.24	ug/Kg		5/11/2018 14:45
Endrin Aldehyde	< 3.24	ug/Kg		5/11/2018 14:45
Endrin Ketone	< 3.24	ug/Kg		5/11/2018 14:45
gamma-BHC (Lindane)	< 3.24	ug/Kg		5/11/2018 14:45
Heptachlor	< 3.24	ug/Kg		5/11/2018 14:45
Heptachlor Epoxide	< 3.24	ug/Kg		5/11/2018 14:45
Methoxychlor	< 3.24	ug/Kg		5/11/2018 14:45
Toxaphene	< 32.4	ug/Kg		5/11/2018 14:45
trans-Chlordane	< 3.24	ug/Kg		5/11/2018 14:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**63.3**	46.4 - 133		5/11/2018 14:45
Tetrachloro-m-xylene (1)	**72.3**	24 - 110		5/11/2018 14:45

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/10/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 318	ug/Kg		5/11/2018 21:39
1,2,4,5-Tetrachlorobenzene	< 318	ug/Kg		5/11/2018 21:39
1,2,4-Trichlorobenzene	< 318	ug/Kg		5/11/2018 21:39
1,2-Dichlorobenzene	< 318	ug/Kg		5/11/2018 21:39
1,3-Dichlorobenzene	< 318	ug/Kg		5/11/2018 21:39
1,4-Dichlorobenzene	< 318	ug/Kg		5/11/2018 21:39
2,2-Oxybis (1-chloropropane)	< 318	ug/Kg		5/11/2018 21:39
2,4-Dinitrotoluene	< 318	ug/Kg		5/11/2018 21:39
2,6-Dinitrotoluene	< 318	ug/Kg		5/11/2018 21:39
2-Chloronaphthalene	< 318	ug/Kg		5/11/2018 21:39
2-Methylnapthalene	< 318	ug/Kg		5/11/2018 21:39
2-Nitroaniline	< 636	ug/Kg		5/11/2018 21:39

Sample Identifier:	RRW-CH-SB-06-050918 (6.5-7.0)		
Lab Sample ID:	181948-05	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

3,3'-Dichlorobenzidine	< 318	ug/Kg	5/11/2018 21:39
3-Nitroaniline	< 636	ug/Kg	5/11/2018 21:39
4-Bromophenyl phenyl ether	< 318	ug/Kg	5/11/2018 21:39
4-Chloroaniline	< 318	ug/Kg	5/11/2018 21:39
4-Chlorophenyl phenyl ether	< 318	ug/Kg	5/11/2018 21:39
4-Nitroaniline	< 636	ug/Kg	5/11/2018 21:39
Acenaphthene	< 318	ug/Kg	5/11/2018 21:39
Acenaphthylene	< 318	ug/Kg	5/11/2018 21:39
Acetophenone	< 318	ug/Kg	5/11/2018 21:39
Anthracene	< 318	ug/Kg	5/11/2018 21:39
Atrazine	< 318	ug/Kg	5/11/2018 21:39
Benzaldehyde	< 318	ug/Kg	5/11/2018 21:39
Benzo (a) anthracene	< 318	ug/Kg	5/11/2018 21:39
Benzo (a) pyrene	< 318	ug/Kg	5/11/2018 21:39
Benzo (b) fluoranthene	< 318	ug/Kg	5/11/2018 21:39
Benzo (g,h,i) perylene	< 318	ug/Kg	5/11/2018 21:39
Benzo (k) fluoranthene	< 318	ug/Kg	5/11/2018 21:39
Bis (2-chloroethoxy) methane	< 318	ug/Kg	5/11/2018 21:39
Bis (2-chloroethyl) ether	< 318	ug/Kg	5/11/2018 21:39
Bis (2-ethylhexyl) phthalate	< 318	ug/Kg	5/11/2018 21:39
Butylbenzylphthalate	< 318	ug/Kg	5/11/2018 21:39
Caprolactam	< 318	ug/Kg	5/11/2018 21:39
Carbazole	< 318	ug/Kg	5/11/2018 21:39
Chrysene	< 318	ug/Kg	5/11/2018 21:39
Dibenz (a,h) anthracene	< 318	ug/Kg	5/11/2018 21:39
Dibenzofuran	< 318	ug/Kg	5/11/2018 21:39
Diethyl phthalate	< 318	ug/Kg	5/11/2018 21:39
Dimethyl phthalate	< 636	ug/Kg	5/11/2018 21:39
Di-n-butyl phthalate	< 318	ug/Kg	5/11/2018 21:39
Di-n-octylphthalate	< 318	ug/Kg	5/11/2018 21:39
Fluoranthene	< 318	ug/Kg	5/11/2018 21:39
Fluorene	< 318	ug/Kg	5/11/2018 21:39

Sample Identifier: RRW-CH-SB-06-050918 (6.5-7.0)
Lab Sample ID: 181948-05 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Hexachlorobenzene	< 318	ug/Kg		5/11/2018 21:39
Hexachlorobutadiene	< 318	ug/Kg		5/11/2018 21:39
Hexachlorocyclopentadiene	< 318	ug/Kg		5/11/2018 21:39
Hexachloroethane	< 318	ug/Kg		5/11/2018 21:39
Indeno (1,2,3-cd) pyrene	< 318	ug/Kg		5/11/2018 21:39
Isophorone	< 318	ug/Kg		5/11/2018 21:39
Naphthalene	< 318	ug/Kg		5/11/2018 21:39
Nitrobenzene	< 318	ug/Kg		5/11/2018 21:39
N-Nitroso-di-n-propylamine	< 318	ug/Kg		5/11/2018 21:39
N-Nitrosodiphenylamine	< 318	ug/Kg		5/11/2018 21:39
Phenanthrene	< 318	ug/Kg		5/11/2018 21:39
Pyrene	< 318	ug/Kg		5/11/2018 21:39

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**64.8**	37.7 - 103		5/11/2018 21:39
Nitrobenzene-d5	**51.4**	38.7 - 92.2		5/11/2018 21:39
Terphenyl-d14	**62.1**	69.9 - 113	*	5/11/2018 21:39

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27244.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 8.11	ug/Kg		5/15/2018 20:31
1,1,2,2-Tetrachloroethane	< 8.11	ug/Kg		5/15/2018 20:31
1,1,2-Trichloroethane	< 8.11	ug/Kg		5/15/2018 20:31
1,1-Dichloroethane	< 8.11	ug/Kg		5/15/2018 20:31
1,1-Dichloroethene	< 8.11	ug/Kg		5/15/2018 20:31
1,2,3-Trichlorobenzene	< 20.3	ug/Kg		5/15/2018 20:31
1,2,4-Trichlorobenzene	< 20.3	ug/Kg		5/15/2018 20:31
1,2,4-Trimethylbenzene	< 8.11	ug/Kg		5/15/2018 20:31
1,2-Dibromo-3-Chloropropane	< 40.6	ug/Kg		5/15/2018 20:31
1,2-Dibromoethane	< 8.11	ug/Kg		5/15/2018 20:31

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-06-050918 (6.5-7.0)		
Lab Sample ID:	181948-05	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

1,2-Dichlorobenzene	< 8.11	ug/Kg	5/15/2018 20:31
1,2-Dichloroethane	< 8.11	ug/Kg	5/15/2018 20:31
1,2-Dichloropropane	< 8.11	ug/Kg	5/15/2018 20:31
1,3,5-Trimethylbenzene	< 8.11	ug/Kg	5/15/2018 20:31
1,3-Dichlorobenzene	< 8.11	ug/Kg	5/15/2018 20:31
1,4-Dichlorobenzene	< 8.11	ug/Kg	5/15/2018 20:31
1,4-dioxane	< 81.1	ug/Kg	5/15/2018 20:31
2-Butanone	< 40.6	ug/Kg	5/15/2018 20:31
2-Hexanone	< 20.3	ug/Kg	5/15/2018 20:31
4-Methyl-2-pentanone	< 20.3	ug/Kg	5/15/2018 20:31
Acetone	< 40.6	ug/Kg	5/15/2018 20:31
Benzene	< 8.11	ug/Kg	5/15/2018 20:31
Bromochloromethane	< 20.3	ug/Kg	5/15/2018 20:31
Bromodichloromethane	< 8.11	ug/Kg	5/15/2018 20:31
Bromoform	< 20.3	ug/Kg	5/15/2018 20:31
Bromomethane	< 8.11	ug/Kg	5/15/2018 20:31
Carbon disulfide	< 8.11	ug/Kg	5/15/2018 20:31
Carbon Tetrachloride	< 8.11	ug/Kg	5/15/2018 20:31
Chlorobenzene	< 8.11	ug/Kg	5/15/2018 20:31
Chloroethane	< 8.11	ug/Kg	5/15/2018 20:31
Chloroform	< 8.11	ug/Kg	5/15/2018 20:31
Chloromethane	< 8.11	ug/Kg	5/15/2018 20:31
cis-1,2-Dichloroethene	< 8.11	ug/Kg	5/15/2018 20:31
cis-1,3-Dichloropropene	< 8.11	ug/Kg	5/15/2018 20:31
Cyclohexane	< 40.6	ug/Kg	5/15/2018 20:31
Dibromochloromethane	< 8.11	ug/Kg	5/15/2018 20:31
Dichlorodifluoromethane	< 8.11	ug/Kg	5/15/2018 20:31
Ethylbenzene	< 8.11	ug/Kg	5/15/2018 20:31
Freon 113	< 8.11	ug/Kg	5/15/2018 20:31
Isopropylbenzene	< 8.11	ug/Kg	5/15/2018 20:31
m,p-Xylene	< 8.11	ug/Kg	5/15/2018 20:31
Methyl acetate	< 8.11	ug/Kg	5/15/2018 20:31

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-06-050918 (6.5-7.0)
Lab Sample ID: 181948-05 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Methyl tert-butyl Ether	< 8.11	ug/Kg	5/15/2018	20:31
Methylcyclohexane	< 8.11	ug/Kg	5/15/2018	20:31
Methylene chloride	< 20.3	ug/Kg	5/15/2018	20:31
Naphthalene	< 20.3	ug/Kg	5/15/2018	20:31
n-Butylbenzene	< 8.11	ug/Kg	5/15/2018	20:31
n-Propylbenzene	< 8.11	ug/Kg	5/15/2018	20:31
o-Xylene	< 8.11	ug/Kg	5/15/2018	20:31
p-Isopropyltoluene	< 8.11	ug/Kg	5/15/2018	20:31
sec-Butylbenzene	< 8.11	ug/Kg	5/15/2018	20:31
Styrene	< 20.3	ug/Kg	5/15/2018	20:31
tert-Butylbenzene	< 8.11	ug/Kg	5/15/2018	20:31
Tetrachloroethene	< 8.11	ug/Kg	5/15/2018	20:31
Toluene	< 8.11	ug/Kg	5/15/2018	20:31
trans-1,2-Dichloroethene	< 8.11	ug/Kg	5/15/2018	20:31
trans-1,3-Dichloropropene	< 8.11	ug/Kg	5/15/2018	20:31
Trichloroethene	< 8.11	ug/Kg	5/15/2018	20:31
Trichlorofluoromethane	< 8.11	ug/Kg	5/15/2018	20:31
Vinyl chloride	< 8.11	ug/Kg	5/15/2018	20:31

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**132**	77.3 - 129	*	5/15/2018	20:31
4-Bromofluorobenzene	**81.2**	71 - 123		5/15/2018	20:31
Pentafluorobenzene	**86.9**	85.1 - 110		5/15/2018	20:31
Toluene-D8	**87.0**	82.7 - 112		5/15/2018	20:31

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50724.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-08-050918 (1.5-2.0)		
Lab Sample ID:	181948-06	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0478**	mg/Kg		5/15/2018 10:40

Method Reference(s): EPA 7471B
Preparation Date: 5/11/2018
Data File: Hg180515A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**3490**	mg/Kg		5/12/2018 16:33
Antimony	**10.1**	mg/Kg		5/12/2018 16:33
Arsenic	**16.0**	mg/Kg		5/12/2018 16:33
Barium	**126**	mg/Kg		5/12/2018 16:33
Beryllium	**1.00**	mg/Kg		5/12/2018 16:33
Cadmium	< 0.278	mg/Kg		5/12/2018 16:33
Calcium	**3140**	mg/Kg		5/12/2018 16:33
Chromium	**11.1**	mg/Kg		5/12/2018 16:33
Cobalt	**9.42**	mg/Kg		5/12/2018 16:33
Copper	**76.1**	mg/Kg		5/12/2018 16:33
Iron	**54900**	mg/Kg		5/14/2018 16:02
Lead	**101**	mg/Kg		5/12/2018 16:33
Magnesium	**1010**	mg/Kg		5/12/2018 16:33
Manganese	**95.3**	mg/Kg		5/12/2018 16:33
Nickel	**14.1**	mg/Kg		5/12/2018 16:33
Potassium	**460**	mg/Kg		5/12/2018 16:33
Selenium	< 1.11	mg/Kg		5/12/2018 16:33
Silver	**3.07**	mg/Kg		5/12/2018 16:33
Sodium	< 139	mg/Kg		5/12/2018 16:33
Thallium	< 1.39	mg/Kg		5/12/2018 16:33
Vanadium	**19.8**	mg/Kg		5/12/2018 16:33
Zinc	**22.7**	mg/Kg		5/12/2018 16:33

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-08-050918 (1.5-2.0)		
Lab Sample ID:	181948-06	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/11/2018
Data File: 180512A

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1221	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1232	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1242	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1248	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1254	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1260	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1262	< 0.0322	mg/Kg		5/14/2018 16:10
PCB-1268	< 0.0322	mg/Kg		5/14/2018 16:10

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**64.0**	10 - 132		5/14/2018 16:10
Tetrachloro-m-xylene	**33.5**	10 - 119		5/14/2018 16:10

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/11/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 32.2	ug/Kg		5/11/2018 16:00
4,4-DDE	< 32.2	ug/Kg		5/11/2018 16:00
4,4-DDT	< 32.2	ug/Kg		5/11/2018 16:00
Aldrin	< 32.2	ug/Kg		5/11/2018 16:00
alpha-BHC	< 32.2	ug/Kg		5/11/2018 16:00
beta-BHC	< 32.2	ug/Kg		5/11/2018 16:00
cis-Chlordane	< 32.2	ug/Kg		5/11/2018 16:00
delta-BHC	< 32.2	ug/Kg		5/11/2018 16:00
Dieldrin	< 32.2	ug/Kg		5/11/2018 16:00

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-08-050918 (1.5-2.0)
Lab Sample ID: 181948-06 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Endosulfan I	< 32.2	ug/Kg		5/11/2018 16:00
Endosulfan II	< 32.2	ug/Kg		5/11/2018 16:00
Endosulfan Sulfate	< 32.2	ug/Kg		5/11/2018 16:00
Endrin	< 32.2	ug/Kg		5/11/2018 16:00
Endrin Aldehyde	< 32.2	ug/Kg		5/11/2018 16:00
Endrin Ketone	< 32.2	ug/Kg		5/11/2018 16:00
gamma-BHC (Lindane)	< 32.2	ug/Kg		5/11/2018 16:00
Heptachlor	< 32.2	ug/Kg		5/11/2018 16:00
Heptachlor Epoxide	< 32.2	ug/Kg		5/11/2018 16:00
Methoxychlor	< 32.2	ug/Kg		5/11/2018 16:00
Toxaphene	< 161	ug/Kg		5/11/2018 16:00
trans-Chlordane	< 32.2	ug/Kg		5/11/2018 16:00

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	NC	46.4 - 133		5/11/2018 16:00
Tetrachloro-m-xylene (1)	NC	24 - 110		5/11/2018 16:00

Reporting limit elevated due to sample matrix

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/10/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 319	ug/Kg		5/11/2018 22:08
1,2,4,5-Tetrachlorobenzene	< 319	ug/Kg		5/11/2018 22:08
1,2,4-Trichlorobenzene	< 319	ug/Kg		5/11/2018 22:08
1,2-Dichlorobenzene	< 319	ug/Kg		5/11/2018 22:08
1,3-Dichlorobenzene	< 319	ug/Kg		5/11/2018 22:08
1,4-Dichlorobenzene	< 319	ug/Kg		5/11/2018 22:08
2,2-Oxybis (1-chloropropane)	< 319	ug/Kg		5/11/2018 22:08
2,4-Dinitrotoluene	< 319	ug/Kg		5/11/2018 22:08
2,6-Dinitrotoluene	< 319	ug/Kg		5/11/2018 22:08
2-Chloronaphthalene	< 319	ug/Kg		5/11/2018 22:08
2-Methylnapthalene	< 319	ug/Kg		5/11/2018 22:08

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-08-050918 (1.5-2.0)		
Lab Sample ID:	181948-06	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

2-Nitroaniline	< 639	ug/Kg	5/11/2018 22:08
3,3'-Dichlorobenzidine	< 319	ug/Kg	5/11/2018 22:08
3-Nitroaniline	< 639	ug/Kg	5/11/2018 22:08
4-Bromophenyl phenyl ether	< 319	ug/Kg	5/11/2018 22:08
4-Chloroaniline	< 319	ug/Kg	5/11/2018 22:08
4-Chlorophenyl phenyl ether	< 319	ug/Kg	5/11/2018 22:08
4-Nitroaniline	< 639	ug/Kg	5/11/2018 22:08
Acenaphthene	< 319	ug/Kg	5/11/2018 22:08
Acenaphthylene	< 319	ug/Kg	5/11/2018 22:08
Acetophenone	< 319	ug/Kg	5/11/2018 22:08
Anthracene	< 319	ug/Kg	5/11/2018 22:08
Atrazine	< 319	ug/Kg	5/11/2018 22:08
Benzaldehyde	< 319	ug/Kg	5/11/2018 22:08
Benzo (a) anthracene	< 319	ug/Kg	5/11/2018 22:08
Benzo (a) pyrene	< 319	ug/Kg	5/11/2018 22:08
Benzo (b) fluoranthene	< 319	ug/Kg	5/11/2018 22:08
Benzo (g,h,i) perylene	< 319	ug/Kg	5/11/2018 22:08
Benzo (k) fluoranthene	< 319	ug/Kg	5/11/2018 22:08
Bis (2-chloroethoxy) methane	< 319	ug/Kg	5/11/2018 22:08
Bis (2-chloroethyl) ether	< 319	ug/Kg	5/11/2018 22:08
Bis (2-ethylhexyl) phthalate	< 319	ug/Kg	5/11/2018 22:08
Butylbenzylphthalate	< 319	ug/Kg	5/11/2018 22:08
Caprolactam	< 319	ug/Kg	5/11/2018 22:08
Carbazole	< 319	ug/Kg	5/11/2018 22:08
Chrysene	< 319	ug/Kg	5/11/2018 22:08
Dibenz (a,h) anthracene	< 319	ug/Kg	5/11/2018 22:08
Dibenzofuran	< 319	ug/Kg	5/11/2018 22:08
Diethyl phthalate	< 319	ug/Kg	5/11/2018 22:08
Dimethyl phthalate	< 639	ug/Kg	5/11/2018 22:08
Di-n-butyl phthalate	< 319	ug/Kg	5/11/2018 22:08
Di-n-octylphthalate	< 319	ug/Kg	5/11/2018 22:08
Fluoranthene	< 319	ug/Kg	5/11/2018 22:08

Sample Identifier: RRW-CH-SB-08-050918 (1.5-2.0)
Lab Sample ID: 181948-06 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Fluorene	< 319	ug/Kg		5/11/2018 22:08
Hexachlorobenzene	< 319	ug/Kg		5/11/2018 22:08
Hexachlorobutadiene	< 319	ug/Kg		5/11/2018 22:08
Hexachlorocyclopentadiene	< 319	ug/Kg		5/11/2018 22:08
Hexachloroethane	< 319	ug/Kg		5/11/2018 22:08
Indeno (1,2,3-cd) pyrene	< 319	ug/Kg		5/11/2018 22:08
Isophorone	< 319	ug/Kg		5/11/2018 22:08
Naphthalene	< 319	ug/Kg		5/11/2018 22:08
Nitrobenzene	< 319	ug/Kg		5/11/2018 22:08
N-Nitroso-di-n-propylamine	< 319	ug/Kg		5/11/2018 22:08
N-Nitrosodiphenylamine	< 319	ug/Kg		5/11/2018 22:08
Phenanthrene	< 319	ug/Kg		5/11/2018 22:08
Pyrene	< 319	ug/Kg		5/11/2018 22:08

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**34.2**	37.7 - 103	*	5/11/2018 22:08
Nitrobenzene-d5	**34.0**	38.7 - 92.2	*	5/11/2018 22:08
Terphenyl-d14	**36.6**	69.9 - 113	*	5/11/2018 22:08

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27245.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 9.53	ug/Kg		5/15/2018 20:55
1,1,2,2-Tetrachloroethane	< 9.53	ug/Kg		5/15/2018 20:55
1,1,2-Trichloroethane	< 9.53	ug/Kg		5/15/2018 20:55
1,1-Dichloroethane	< 9.53	ug/Kg		5/15/2018 20:55
1,1-Dichloroethene	< 9.53	ug/Kg		5/15/2018 20:55
1,2,3-Trichlorobenzene	< 23.8	ug/Kg		5/15/2018 20:55
1,2,4-Trichlorobenzene	< 23.8	ug/Kg		5/15/2018 20:55
1,2,4-Trimethylbenzene	< 9.53	ug/Kg		5/15/2018 20:55
1,2-Dibromo-3-Chloropropane	< 47.6	ug/Kg		5/15/2018 20:55

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-08-050918 (1.5-2.0)		
Lab Sample ID:	181948-06	**Date Sampled:**	5/9/2018
Matrix:	Soil	**Date Received:**	5/9/2018

1,2-Dibromoethane	< 9.53	ug/Kg	5/15/2018	20:55
1,2-Dichlorobenzene	< 9.53	ug/Kg	5/15/2018	20:55
1,2-Dichloroethane	< 9.53	ug/Kg	5/15/2018	20:55
1,2-Dichloropropane	< 9.53	ug/Kg	5/15/2018	20:55
1,3,5-Trimethylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
1,3-Dichlorobenzene	< 9.53	ug/Kg	5/15/2018	20:55
1,4-Dichlorobenzene	< 9.53	ug/Kg	5/15/2018	20:55
1,4-dioxane	< 95.3	ug/Kg	5/15/2018	20:55
2-Butanone	< 47.6	ug/Kg	5/15/2018	20:55
2-Hexanone	< 23.8	ug/Kg	5/15/2018	20:55
4-Methyl-2-pentanone	< 23.8	ug/Kg	5/15/2018	20:55
Acetone	< 47.6	ug/Kg	5/15/2018	20:55
Benzene	< 9.53	ug/Kg	5/15/2018	20:55
Bromochloromethane	< 23.8	ug/Kg	5/15/2018	20:55
Bromodichloromethane	< 9.53	ug/Kg	5/15/2018	20:55
Bromoform	< 23.8	ug/Kg	5/15/2018	20:55
Bromomethane	< 9.53	ug/Kg	5/15/2018	20:55
Carbon disulfide	**22.1**	ug/Kg	5/15/2018	20:55
Carbon Tetrachloride	< 9.53	ug/Kg	5/15/2018	20:55
Chlorobenzene	< 9.53	ug/Kg	5/15/2018	20:55
Chloroethane	< 9.53	ug/Kg	5/15/2018	20:55
Chloroform	< 9.53	ug/Kg	5/15/2018	20:55
Chloromethane	< 9.53	ug/Kg	5/15/2018	20:55
cis-1,2-Dichloroethene	< 9.53	ug/Kg	5/15/2018	20:55
cis-1,3-Dichloropropene	< 9.53	ug/Kg	5/15/2018	20:55
Cyclohexane	< 47.6	ug/Kg	5/15/2018	20:55
Dibromochloromethane	< 9.53	ug/Kg	5/15/2018	20:55
Dichlorodifluoromethane	< 9.53	ug/Kg	5/15/2018	20:55
Ethylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
Freon 113	< 9.53	ug/Kg	5/15/2018	20:55
Isopropylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
m,p-Xylene	< 9.53	ug/Kg	5/15/2018	20:55

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 181948

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-08-050918 (1.5-2.0)
Lab Sample ID: 181948-06 **Date Sampled:** 5/9/2018
Matrix: Soil **Date Received:** 5/9/2018

Methyl acetate	< 9.53	ug/Kg	5/15/2018	20:55
Methyl tert-butyl Ether	< 9.53	ug/Kg	5/15/2018	20:55
Methylcyclohexane	< 9.53	ug/Kg	5/15/2018	20:55
Methylene chloride	< 23.8	ug/Kg	5/15/2018	20:55
Naphthalene	< 23.8	ug/Kg	5/15/2018	20:55
n-Butylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
n-Propylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
o-Xylene	< 9.53	ug/Kg	5/15/2018	20:55
p-Isopropyltoluene	< 9.53	ug/Kg	5/15/2018	20:55
sec-Butylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
Styrene	< 23.8	ug/Kg	5/15/2018	20:55
tert-Butylbenzene	< 9.53	ug/Kg	5/15/2018	20:55
Tetrachloroethene	< 9.53	ug/Kg	5/15/2018	20:55
Toluene	< 9.53	ug/Kg	5/15/2018	20:55
trans-1,2-Dichloroethene	< 9.53	ug/Kg	5/15/2018	20:55
trans-1,3-Dichloropropene	< 9.53	ug/Kg	5/15/2018	20:55
Trichloroethene	< 9.53	ug/Kg	5/15/2018	20:55
Trichlorofluoromethane	< 9.53	ug/Kg	5/15/2018	20:55
Vinyl chloride	< 9.53	ug/Kg	5/15/2018	20:55

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**136**	77.3 - 129	*	5/15/2018	20:55
4-Bromofluorobenzene	**75.4**	71 - 123		5/15/2018	20:55
Pentafluorobenzene	**86.9**	85.1 - 110		5/15/2018	20:55
Toluene-D8	**87.0**	82.7 - 112		5/15/2018	20:55

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50725.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Method Blank Report

Client: **Bergmann Associates**
Project Reference: Roc River Wall
Lab Project ID: 181948
Matrix: Soil

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1-Biphenyl	<270	ug/Kg		5/15/2018	16:00
1,2,4,5-Tetrachlorobenzene	<270	ug/Kg		5/15/2018	16:00
1,2,4-Trichlorobenzene	<270	ug/Kg		5/15/2018	16:00
1,2-Dichlorobenzene	<270	ug/Kg		5/15/2018	16:00
1,3-Dichlorobenzene	<270	ug/Kg		5/15/2018	16:00
1,4-Dichlorobenzene	<270	ug/Kg		5/15/2018	16:00
2,2-Oxybis (1-chloropropane)	<270	ug/Kg		5/15/2018	16:00
2,4-Dinitrotoluene	<270	ug/Kg		5/15/2018	16:00
2,6-Dinitrotoluene	<270	ug/Kg		5/15/2018	16:00
2-Chloronaphthalene	<270	ug/Kg		5/15/2018	16:00
2-Methylnapthalene	<270	ug/Kg		5/15/2018	16:00
2-Nitroaniline	<541	ug/Kg		5/15/2018	16:00
3,3'-Dichlorobenzidine	<270	ug/Kg		5/15/2018	16:00
3-Nitroaniline	<541	ug/Kg		5/15/2018	16:00
4-Bromophenyl phenyl ether	<270	ug/Kg		5/15/2018	16:00
4-Chloroaniline	<270	ug/Kg		5/15/2018	16:00
4-Chlorophenyl phenyl ether	<270	ug/Kg		5/15/2018	16:00
4-Nitroaniline	<541	ug/Kg		5/15/2018	16:00
Acenaphthene	<270	ug/Kg		5/15/2018	16:00
Acenaphthylene	<270	ug/Kg		5/15/2018	16:00
Acetophenone	<270	ug/Kg		5/15/2018	16:00
Anthracene	<270	ug/Kg		5/15/2018	16:00
Atrazine	<270	ug/Kg		5/15/2018	16:00
Benzaldehyde	<270	ug/Kg		5/15/2018	16:00
Benzo (a) anthracene	<270	ug/Kg		5/15/2018	16:00
Benzo (a) pyrene	<270	ug/Kg		5/15/2018	16:00
Benzo (b) fluoranthene	<270	ug/Kg		5/15/2018	16:00
Benzo (g,h,i) perylene	<270	ug/Kg		5/15/2018	16:00

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, May 15, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Method Blank Report

Client: **Bergmann Associates**
Project Reference: Roc River Wall
Lab Project ID: 181948
Matrix: Soil

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed	
Benzo (k) fluoranthene	<270	ug/Kg		5/15/2018	16:00
Bis (2-chloroethoxy) methane	<270	ug/Kg		5/15/2018	16:00
Bis (2-chloroethyl) ether	<270	ug/Kg		5/15/2018	16:00
Bis (2-ethylhexyl) phthalate	<270	ug/Kg		5/15/2018	16:00
Butylbenzylphthalate	<270	ug/Kg		5/15/2018	16:00
Caprolactam	<270	ug/Kg		5/15/2018	16:00
Carbazole	<270	ug/Kg		5/15/2018	16:00
Chrysene	<270	ug/Kg		5/15/2018	16:00
Dibenz (a,h) anthracene	<270	ug/Kg		5/15/2018	16:00
Dibenzofuran	<270	ug/Kg		5/15/2018	16:00
Diethyl phthalate	<270	ug/Kg		5/15/2018	16:00
Dimethyl phthalate	<541	ug/Kg		5/15/2018	16:00
Di-n-butyl phthalate	<270	ug/Kg		5/15/2018	16:00
Di-n-octylphthalate	<270	ug/Kg		5/15/2018	16:00
Fluoranthene	<270	ug/Kg		5/15/2018	16:00
Fluorene	<270	ug/Kg		5/15/2018	16:00
Hexachlorobenzene	<270	ug/Kg		5/15/2018	16:00
Hexachlorobutadiene	<270	ug/Kg		5/15/2018	16:00
Hexachlorocyclopentadiene	<270	ug/Kg		5/15/2018	16:00
Hexachloroethane	<270	ug/Kg		5/15/2018	16:00
Indeno (1,2,3-cd) pyrene	<270	ug/Kg		5/15/2018	16:00
Isophorone	<270	ug/Kg		5/15/2018	16:00
Naphthalene	<270	ug/Kg		5/15/2018	16:00
Nitrobenzene	<270	ug/Kg		5/15/2018	16:00
N-Nitroso-di-n-propylamine	<270	ug/Kg		5/15/2018	16:00
N-Nitrosodiphenylamine	<270	ug/Kg		5/15/2018	16:00
Phenanthrene	<270	ug/Kg		5/15/2018	16:00
Pyrene	<270	ug/Kg		5/15/2018	16:00

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Report Prepared Tuesday, May 15, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Method Blank Report

Client: **Bergmann Associates**
Project Reference: Roc River Wall
Lab Project ID: 181948
Matrix: Soil

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	**34.7**	46 - 109	*	5/15/2018 16:00
2-Fluorobiphenyl	**51.5**	37.7 - 103		5/15/2018 16:00
2-Fluorophenol	**46.2**	39.9 - 92.7		5/15/2018 16:00
Nitrobenzene-d5	**50.3**	38.7 - 92.2		5/15/2018 16:00
Phenol-d5	**51.1**	42.2 - 96.1		5/15/2018 16:00
Terphenyl-d14	**68.8**	69.9 - 113	*	5/15/2018 16:00

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/11/2018
Data File: B27322.D
QC Batch ID: QC180511ABNS2
QC Number: 1

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Report Prepared Tuesday, May 15, 2018

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM

REPORT TO:		INVOICE TO:		LAB PROJECT ID
CLIENT:	Bergmann	CLIENT:	Bergmann	181948
ADDRESS:	280 E Broad St, Suite 200	ADDRESS:	280 E Broad St, Suite 200	
CITY:	Rochester STATE: NY ZIP 14604	CITY:	Rochester STATE: NY ZIP: 14604	Quotation #: 012642.00
PHONE:	585-498-7950	PHONE:	585-498-7950	Email:
ATTN:	Cash Bleier	ATTN:	Cash Bleier	cbleier@bergmannpc.com

PROJECT REFERENCE

Roc River Wall

Matrix Codes:

AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260+CP51	8270BN	TAL Metals	PCBs	Pesticides						REMARKS	PARADIGM LAB SAMPLE NUMBER
5/9/18	10:30am			RRW-CH-SB-02-050918(4.5-5)	SO	1	X	X	X	X	X							01
5/9/18	11:15am			RRW-CH-SB-03-050918(6.5-7)	SO	1	X	X	X	X	X							02
5/9/18	1:00pm			RRW-CH-SB-05-050918(7.5-8)	SO	1	X	X	X	X	X							03
5/9/18	1:00pm			RRW-CH-SB-05-050918A(10-10.5)	SO	1	X	X	X	X	X							04
5/9/18	2:00pm			RRW-CH-SB-06-050918 (6.5-7.0)	SO	2	X	X	X	X	X							05
5/9/18	2:40pm			RRW-CH-SB-08-050918(1.5-2.0)	SO	2	X	X	X	X	X							06

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required	X	None Required	X
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other		Other		Other EDD	
please indicate date needed:		please indicate package needed:		please indicate EDD needed :	

C. Bleier — 05/09/2018 — Sampled By / Date/Time

C. Bleier — 05/09/2018 - 3:30 — Relinquished By / Date/Time

5/9/18 1530 — Received By / Date/Time

Received @ Lab By — 5/9/18 1530 — Date/Time

5°C iced 5/9/18 15:28

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Bergmann **Completed by:** MVP mail

Lab Project ID: 181948 **Date:** 5/9/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt Yes	No	N/A
Container Type	X	5035	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		met
Comments	5°C iced 5/9/18 1528		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report For

Bergmann Associates

For Lab Project ID

182049

Referencing

Roc River Wall

Prepared

Monday, May 21, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below:

A high percent difference on sample moisture duplicate value indicates a non-homogeneous sample.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

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Report Prepared Monday, May 21, 2018

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-10-051118 (6.5-7.0 ft)		
Lab Sample ID:	182049-01	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.145**	mg/Kg		5/18/2018 09:19

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**3590**	mg/Kg		5/16/2018 23:49
Antimony	< 3.56	mg/Kg		5/16/2018 23:49
Arsenic	**2.75**	mg/Kg		5/16/2018 23:49
Barium	**33.5**	mg/Kg		5/16/2018 23:49
Beryllium	**0.587**	mg/Kg		5/16/2018 23:49
Cadmium	< 0.297	mg/Kg		5/16/2018 23:49
Calcium	**22900**	mg/Kg		5/16/2018 23:49
Chromium	**6.89**	mg/Kg		5/16/2018 23:49
Cobalt	**4.65**	mg/Kg		5/16/2018 23:49
Copper	**54.8**	mg/Kg		5/16/2018 23:49
Iron	**8250**	mg/Kg		5/16/2018 23:49
Lead	**13.8**	mg/Kg		5/16/2018 23:49
Magnesium	**13600**	mg/Kg		5/16/2018 23:49
Manganese	**268**	mg/Kg		5/16/2018 23:49
Nickel	**12.5**	mg/Kg		5/16/2018 23:49
Potassium	**735**	mg/Kg		5/16/2018 23:49
Selenium	< 1.19	mg/Kg		5/18/2018 10:14
Silver	< 0.594	mg/Kg		5/16/2018 23:49
Sodium	**243**	mg/Kg		5/16/2018 23:49
Thallium	< 1.48	mg/Kg		5/16/2018 23:49
Vanadium	**13.9**	mg/Kg		5/16/2018 23:49
Zinc	**36.2**	mg/Kg		5/16/2018 23:49

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-10-051118 (6.5-7.0 ft)		
Lab Sample ID:	182049-01	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1221	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1232	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1242	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1248	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1254	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1260	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1262	< 0.0352	mg/Kg		5/16/2018 13:13
PCB-1268	< 0.0352	mg/Kg		5/16/2018 13:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**73.3**	10 - 132		5/16/2018 13:13
Tetrachloro-m-xylene	**39.5**	10 - 119		5/16/2018 13:13

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/15/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.52	ug/Kg		5/16/2018 18:33
4,4-DDE	< 3.52	ug/Kg		5/16/2018 18:33
4,4-DDT	< 3.52	ug/Kg		5/16/2018 18:33
Aldrin	< 3.52	ug/Kg		5/16/2018 18:33
alpha-BHC	< 3.52	ug/Kg		5/16/2018 18:33
beta-BHC	< 3.52	ug/Kg		5/16/2018 18:33
cis-Chlordane	< 3.52	ug/Kg		5/16/2018 18:33
delta-BHC	< 3.52	ug/Kg		5/16/2018 18:33
Dieldrin	< 3.52	ug/Kg		5/16/2018 18:33

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-10-051118 (6.5-7.0 ft)
Lab Sample ID: 182049-01 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.52	ug/Kg		5/16/2018 18:33
Endosulfan II	< 3.52	ug/Kg		5/16/2018 18:33
Endosulfan Sulfate	< 3.52	ug/Kg		5/16/2018 18:33
Endrin	< 3.52	ug/Kg		5/16/2018 18:33
Endrin Aldehyde	< 3.52	ug/Kg		5/16/2018 18:33
Endrin Ketone	< 3.52	ug/Kg		5/16/2018 18:33
gamma-BHC (Lindane)	< 3.52	ug/Kg		5/16/2018 18:33
Heptachlor	< 3.52	ug/Kg		5/16/2018 18:33
Heptachlor Epoxide	< 3.52	ug/Kg		5/16/2018 18:33
Methoxychlor	< 3.52	ug/Kg		5/16/2018 18:33
Toxaphene	< 17.6	ug/Kg		5/16/2018 18:33
trans-Chlordane	< 3.52	ug/Kg		5/16/2018 18:33

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**57.5**	46.4 - 133		5/16/2018 18:33
Tetrachloro-m-xylene (1)	**65.0**	24 - 110		5/16/2018 18:33

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/15/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 316	ug/Kg		5/19/2018 09:52
1,2,4,5-Tetrachlorobenzene	< 316	ug/Kg		5/19/2018 09:52
1,2,4-Trichlorobenzene	< 316	ug/Kg		5/19/2018 09:52
1,2-Dichlorobenzene	< 316	ug/Kg		5/19/2018 09:52
1,3-Dichlorobenzene	< 316	ug/Kg		5/19/2018 09:52
1,4-Dichlorobenzene	< 316	ug/Kg		5/19/2018 09:52
2,2-Oxybis (1-chloropropane)	< 316	ug/Kg		5/19/2018 09:52
2,4-Dinitrotoluene	< 316	ug/Kg		5/19/2018 09:52
2,6-Dinitrotoluene	< 316	ug/Kg		5/19/2018 09:52
2-Chloronaphthalene	< 316	ug/Kg		5/19/2018 09:52
2-Methylnapthalene	< 316	ug/Kg		5/19/2018 09:52
2-Nitroaniline	< 631	ug/Kg		5/19/2018 09:52

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-10-051118 (6.5-7.0 ft)		
Lab Sample ID:	182049-01	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 316	ug/Kg	5/19/2018	09:52
3-Nitroaniline	< 631	ug/Kg	5/19/2018	09:52
4-Bromophenyl phenyl ether	< 316	ug/Kg	5/19/2018	09:52
4-Chloroaniline	< 316	ug/Kg	5/19/2018	09:52
4-Chlorophenyl phenyl ether	< 316	ug/Kg	5/19/2018	09:52
4-Nitroaniline	< 631	ug/Kg	5/19/2018	09:52
Acenaphthene	< 316	ug/Kg	5/19/2018	09:52
Acenaphthylene	< 316	ug/Kg	5/19/2018	09:52
Acetophenone	< 316	ug/Kg	5/19/2018	09:52
Anthracene	< 316	ug/Kg	5/19/2018	09:52
Atrazine	< 316	ug/Kg	5/19/2018	09:52
Benzaldehyde	< 316	ug/Kg	5/19/2018	09:52
Benzo (a) anthracene	< 316	ug/Kg	5/19/2018	09:52
Benzo (a) pyrene	< 316	ug/Kg	5/19/2018	09:52
Benzo (b) fluoranthene	< 316	ug/Kg	5/19/2018	09:52
Benzo (g,h,i) perylene	< 316	ug/Kg	5/19/2018	09:52
Benzo (k) fluoranthene	< 316	ug/Kg	5/19/2018	09:52
Bis (2-chloroethoxy) methane	< 316	ug/Kg	5/19/2018	09:52
Bis (2-chloroethyl) ether	< 316	ug/Kg	5/19/2018	09:52
Bis (2-ethylhexyl) phthalate	< 316	ug/Kg	5/19/2018	09:52
Butylbenzylphthalate	< 316	ug/Kg	5/19/2018	09:52
Caprolactam	< 316	ug/Kg	5/19/2018	09:52
Carbazole	< 316	ug/Kg	5/19/2018	09:52
Chrysene	< 316	ug/Kg	5/19/2018	09:52
Dibenz (a,h) anthracene	< 316	ug/Kg	5/19/2018	09:52
Dibenzofuran	< 316	ug/Kg	5/19/2018	09:52
Diethyl phthalate	< 316	ug/Kg	5/19/2018	09:52
Dimethyl phthalate	< 631	ug/Kg	5/19/2018	09:52
Di-n-butyl phthalate	< 316	ug/Kg	5/19/2018	09:52
Di-n-octylphthalate	< 316	ug/Kg	5/19/2018	09:52
Fluoranthene	< 316	ug/Kg	5/19/2018	09:52
Fluorene	< 316	ug/Kg	5/19/2018	09:52

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-10-051118 (6.5-7.0 ft)
Lab Sample ID: 182049-01 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 316	ug/Kg		5/19/2018 09:52
Hexachlorobutadiene	< 316	ug/Kg		5/19/2018 09:52
Hexachlorocyclopentadiene	< 316	ug/Kg		5/19/2018 09:52
Hexachloroethane	< 316	ug/Kg		5/19/2018 09:52
Indeno (1,2,3-cd) pyrene	< 316	ug/Kg		5/19/2018 09:52
Isophorone	< 316	ug/Kg		5/19/2018 09:52
Naphthalene	< 316	ug/Kg		5/19/2018 09:52
Nitrobenzene	< 316	ug/Kg		5/19/2018 09:52
N-Nitroso-di-n-propylamine	< 316	ug/Kg		5/19/2018 09:52
N-Nitrosodiphenylamine	< 316	ug/Kg		5/19/2018 09:52
Phenanthrene	< 316	ug/Kg		5/19/2018 09:52
Pyrene	< 316	ug/Kg		5/19/2018 09:52

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**44.3**	37.7 - 103		5/19/2018 09:52
Nitrobenzene-d5	**30.3**	38.7 - 92.2	*	5/19/2018 09:52
Terphenyl-d14	**77.8**	69.9 - 113		5/19/2018 09:52

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27493.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 8.57	ug/Kg		5/16/2018 23:32
1,1,2,2-Tetrachloroethane	< 8.57	ug/Kg		5/16/2018 23:32
1,1,2-Trichloroethane	< 8.57	ug/Kg		5/16/2018 23:32
1,1-Dichloroethane	< 8.57	ug/Kg		5/16/2018 23:32
1,1-Dichloroethene	< 8.57	ug/Kg		5/16/2018 23:32
1,2,3-Trichlorobenzene	< 21.4	ug/Kg		5/16/2018 23:32
1,2,4-Trichlorobenzene	< 21.4	ug/Kg		5/16/2018 23:32
1,2,4-Trimethylbenzene	< 8.57	ug/Kg		5/16/2018 23:32
1,2-Dibromo-3-Chloropropane	< 42.9	ug/Kg		5/16/2018 23:32
1,2-Dibromoethane	< 8.57	ug/Kg		5/16/2018 23:32

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-10-051118 (6.5-7.0 ft)		
Lab Sample ID:	182049-01	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 8.57	ug/Kg	5/16/2018	23:32
1,2-Dichloroethane	< 8.57	ug/Kg	5/16/2018	23:32
1,2-Dichloropropane	< 8.57	ug/Kg	5/16/2018	23:32
1,3,5-Trimethylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
1,3-Dichlorobenzene	< 8.57	ug/Kg	5/16/2018	23:32
1,4-Dichlorobenzene	< 8.57	ug/Kg	5/16/2018	23:32
1,4-dioxane	< 85.7	ug/Kg	5/16/2018	23:32
2-Butanone	< 42.9	ug/Kg	5/16/2018	23:32
2-Hexanone	< 21.4	ug/Kg	5/16/2018	23:32
4-Methyl-2-pentanone	< 21.4	ug/Kg	5/16/2018	23:32
Acetone	< 42.9	ug/Kg	5/16/2018	23:32
Benzene	< 8.57	ug/Kg	5/16/2018	23:32
Bromochloromethane	< 21.4	ug/Kg	5/16/2018	23:32
Bromodichloromethane	< 8.57	ug/Kg	5/16/2018	23:32
Bromoform	< 21.4	ug/Kg	5/16/2018	23:32
Bromomethane	< 8.57	ug/Kg	5/16/2018	23:32
Carbon disulfide	< 8.57	ug/Kg	5/16/2018	23:32
Carbon Tetrachloride	< 8.57	ug/Kg	5/16/2018	23:32
Chlorobenzene	< 8.57	ug/Kg	5/16/2018	23:32
Chloroethane	< 8.57	ug/Kg	5/16/2018	23:32
Chloroform	< 8.57	ug/Kg	5/16/2018	23:32
Chloromethane	< 8.57	ug/Kg	5/16/2018	23:32
cis-1,2-Dichloroethene	< 8.57	ug/Kg	5/16/2018	23:32
cis-1,3-Dichloropropene	< 8.57	ug/Kg	5/16/2018	23:32
Cyclohexane	< 42.9	ug/Kg	5/16/2018	23:32
Dibromochloromethane	< 8.57	ug/Kg	5/16/2018	23:32
Dichlorodifluoromethane	< 8.57	ug/Kg	5/16/2018	23:32
Ethylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
Freon 113	< 8.57	ug/Kg	5/16/2018	23:32
Isopropylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
m,p-Xylene	< 8.57	ug/Kg	5/16/2018	23:32
Methyl acetate	< 8.57	ug/Kg	5/16/2018	23:32

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-10-051118 (6.5-7.0 ft)
Lab Sample ID: 182049-01 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Methyl tert-butyl Ether	< 8.57	ug/Kg	5/16/2018	23:32
Methylcyclohexane	< 8.57	ug/Kg	5/16/2018	23:32
Methylene chloride	< 21.4	ug/Kg	5/16/2018	23:32
Naphthalene	< 21.4	ug/Kg	5/16/2018	23:32
n-Butylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
n-Propylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
o-Xylene	< 8.57	ug/Kg	5/16/2018	23:32
p-Isopropyltoluene	< 8.57	ug/Kg	5/16/2018	23:32
sec-Butylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
Styrene	< 21.4	ug/Kg	5/16/2018	23:32
tert-Butylbenzene	< 8.57	ug/Kg	5/16/2018	23:32
Tetrachloroethene	< 8.57	ug/Kg	5/16/2018	23:32
Toluene	< 8.57	ug/Kg	5/16/2018	23:32
trans-1,2-Dichloroethene	< 8.57	ug/Kg	5/16/2018	23:32
trans-1,3-Dichloropropene	< 8.57	ug/Kg	5/16/2018	23:32
Trichloroethene	< 8.57	ug/Kg	5/16/2018	23:32
Trichlorofluoromethane	< 8.57	ug/Kg	5/16/2018	23:32
Vinyl chloride	< 8.57	ug/Kg	5/16/2018	23:32

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**119**	77.3 - 129		5/16/2018	23:32
4-Bromofluorobenzene	**74.3**	71 - 123		5/16/2018	23:32
Pentafluorobenzene	**91.8**	85.1 - 110		5/16/2018	23:32
Toluene-D8	**91.2**	82.7 - 112		5/16/2018	23:32

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50788.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-11-051118 (7.5-8.0 ft)		
Lab Sample ID:	182049-02	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.136**	mg/Kg		5/18/2018 09:22

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**8070**	mg/Kg		5/16/2018 23:53
Antimony	< 3.54	mg/Kg		5/16/2018 23:53
Arsenic	**4.62**	mg/Kg		5/16/2018 23:53
Barium	**54.1**	mg/Kg		5/16/2018 23:53
Beryllium	**0.422**	mg/Kg		5/16/2018 23:53
Cadmium	< 0.295	mg/Kg		5/16/2018 23:53
Calcium	**12500**	mg/Kg		5/16/2018 23:53
Chromium	**10.5**	mg/Kg		5/16/2018 23:53
Cobalt	**6.38**	mg/Kg		5/16/2018 23:53
Copper	**19.0**	mg/Kg		5/16/2018 23:53
Iron	**14500**	mg/Kg		5/16/2018 23:53
Lead	**61.3**	mg/Kg		5/16/2018 23:53
Magnesium	**6500**	mg/Kg		5/16/2018 23:53
Manganese	**235**	mg/Kg		5/16/2018 23:53
Nickel	**13.7**	mg/Kg		5/16/2018 23:53
Potassium	**1240**	mg/Kg		5/16/2018 23:53
Selenium	< 1.18	mg/Kg		5/16/2018 23:53
Silver	**0.797**	mg/Kg		5/16/2018 23:53
Sodium	< 147	mg/Kg		5/16/2018 23:53
Thallium	< 1.47	mg/Kg		5/16/2018 23:53
Vanadium	**16.0**	mg/Kg		5/16/2018 23:53
Zinc	**48.7**	mg/Kg		5/16/2018 23:53

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-11-051118 (7.5-8.0 ft)		
Lab Sample ID:	182049-02	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1221	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1232	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1242	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1248	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1254	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1260	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1262	< 0.0351	mg/Kg		5/17/2018 18:25
PCB-1268	< 0.0351	mg/Kg		5/17/2018 18:25

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**70.0**	10 - 132		5/17/2018 18:25
Tetrachloro-m-xylene	**44.6**	10 - 119		5/17/2018 18:25

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/15/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.51	ug/Kg		5/18/2018 12:20
4,4-DDE	< 3.51	ug/Kg		5/18/2018 12:20
4,4-DDT	< 3.51	ug/Kg		5/18/2018 12:20
Aldrin	< 3.51	ug/Kg		5/18/2018 12:20
alpha-BHC	< 3.51	ug/Kg		5/18/2018 12:20
beta-BHC	< 3.51	ug/Kg		5/18/2018 12:20
cis-Chlordane	< 3.51	ug/Kg		5/18/2018 12:20
delta-BHC	< 3.51	ug/Kg		5/18/2018 12:20
Dieldrin	< 3.51	ug/Kg		5/18/2018 12:20

Sample Identifier: RRW-CH-SB-11-051118 (7.5-8.0 ft)
Lab Sample ID: 182049-02 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.51	ug/Kg		5/18/2018 12:20
Endosulfan II	< 3.51	ug/Kg		5/18/2018 12:20
Endosulfan Sulfate	< 3.51	ug/Kg		5/18/2018 12:20
Endrin	< 3.51	ug/Kg		5/18/2018 12:20
Endrin Aldehyde	< 3.51	ug/Kg		5/18/2018 12:20
Endrin Ketone	< 3.51	ug/Kg		5/18/2018 12:20
gamma-BHC (Lindane)	< 3.51	ug/Kg		5/18/2018 12:20
Heptachlor	< 3.51	ug/Kg		5/18/2018 12:20
Heptachlor Epoxide	< 3.51	ug/Kg		5/18/2018 12:20
Methoxychlor	< 3.51	ug/Kg		5/18/2018 12:20
Toxaphene	< 17.5	ug/Kg		5/18/2018 12:20
trans-Chlordane	< 3.51	ug/Kg		5/18/2018 12:20

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**63.3**	46.4 - 133		5/18/2018 12:20
Tetrachloro-m-xylene (1)	**71.0**	24 - 110		5/18/2018 12:20

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/15/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 341	ug/Kg		5/19/2018 10:21
1,2,4,5-Tetrachlorobenzene	< 341	ug/Kg		5/19/2018 10:21
1,2,4-Trichlorobenzene	< 341	ug/Kg		5/19/2018 10:21
1,2-Dichlorobenzene	< 341	ug/Kg		5/19/2018 10:21
1,3-Dichlorobenzene	< 341	ug/Kg		5/19/2018 10:21
1,4-Dichlorobenzene	< 341	ug/Kg		5/19/2018 10:21
2,2-Oxybis (1-chloropropane)	< 341	ug/Kg		5/19/2018 10:21
2,4-Dinitrotoluene	< 341	ug/Kg		5/19/2018 10:21
2,6-Dinitrotoluene	< 341	ug/Kg		5/19/2018 10:21
2-Chloronaphthalene	< 341	ug/Kg		5/19/2018 10:21
2-Methylnapthalene	< 341	ug/Kg		5/19/2018 10:21
2-Nitroaniline	< 682	ug/Kg		5/19/2018 10:21

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-11-051118 (7.5-8.0 ft)		
Lab Sample ID:	182049-02	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 341	ug/Kg	5/19/2018	10:21
3-Nitroaniline	< 682	ug/Kg	5/19/2018	10:21
4-Bromophenyl phenyl ether	< 341	ug/Kg	5/19/2018	10:21
4-Chloroaniline	< 341	ug/Kg	5/19/2018	10:21
4-Chlorophenyl phenyl ether	< 341	ug/Kg	5/19/2018	10:21
4-Nitroaniline	< 682	ug/Kg	5/19/2018	10:21
Acenaphthene	< 341	ug/Kg	5/19/2018	10:21
Acenaphthylene	< 341	ug/Kg	5/19/2018	10:21
Acetophenone	< 341	ug/Kg	5/19/2018	10:21
Anthracene	< 341	ug/Kg	5/19/2018	10:21
Atrazine	< 341	ug/Kg	5/19/2018	10:21
Benzaldehyde	< 341	ug/Kg	5/19/2018	10:21
Benzo (a) anthracene	< 341	ug/Kg	5/19/2018	10:21
Benzo (a) pyrene	< 341	ug/Kg	5/19/2018	10:21
Benzo (b) fluoranthene	< 341	ug/Kg	5/19/2018	10:21
Benzo (g,h,i) perylene	< 341	ug/Kg	5/19/2018	10:21
Benzo (k) fluoranthene	< 341	ug/Kg	5/19/2018	10:21
Bis (2-chloroethoxy) methane	< 341	ug/Kg	5/19/2018	10:21
Bis (2-chloroethyl) ether	< 341	ug/Kg	5/19/2018	10:21
Bis (2-ethylhexyl) phthalate	< 341	ug/Kg	5/19/2018	10:21
Butylbenzylphthalate	< 341	ug/Kg	5/19/2018	10:21
Caprolactam	< 341	ug/Kg	5/19/2018	10:21
Carbazole	< 341	ug/Kg	5/19/2018	10:21
Chrysene	< 341	ug/Kg	5/19/2018	10:21
Dibenz (a,h) anthracene	< 341	ug/Kg	5/19/2018	10:21
Dibenzofuran	< 341	ug/Kg	5/19/2018	10:21
Diethyl phthalate	< 341	ug/Kg	5/19/2018	10:21
Dimethyl phthalate	< 682	ug/Kg	5/19/2018	10:21
Di-n-butyl phthalate	< 341	ug/Kg	5/19/2018	10:21
Di-n-octylphthalate	< 341	ug/Kg	5/19/2018	10:21
Fluoranthene	< 341	ug/Kg	5/19/2018	10:21
Fluorene	< 341	ug/Kg	5/19/2018	10:21

Sample Identifier: RRW-CH-SB-11-051118 (7.5-8.0 ft)
Lab Sample ID: 182049-02 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 341	ug/Kg		5/19/2018 10:21
Hexachlorobutadiene	< 341	ug/Kg		5/19/2018 10:21
Hexachlorocyclopentadiene	< 341	ug/Kg		5/19/2018 10:21
Hexachloroethane	< 341	ug/Kg		5/19/2018 10:21
Indeno (1,2,3-cd) pyrene	< 341	ug/Kg		5/19/2018 10:21
Isophorone	< 341	ug/Kg		5/19/2018 10:21
Naphthalene	< 341	ug/Kg		5/19/2018 10:21
Nitrobenzene	< 341	ug/Kg		5/19/2018 10:21
N-Nitroso-di-n-propylamine	< 341	ug/Kg		5/19/2018 10:21
N-Nitrosodiphenylamine	< 341	ug/Kg		5/19/2018 10:21
Phenanthrene	< 341	ug/Kg		5/19/2018 10:21
Pyrene	< 341	ug/Kg		5/19/2018 10:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**44.3**	37.7 - 103		5/19/2018 10:21
Nitrobenzene-d5	**40.3**	38.7 - 92.2		5/19/2018 10:21
Terphenyl-d14	**81.6**	69.9 - 113		5/19/2018 10:21

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27494.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 6.69	ug/Kg		5/17/2018 14:41
1,1,2,2-Tetrachloroethane	< 6.69	ug/Kg		5/17/2018 14:41
1,1,2-Trichloroethane	< 6.69	ug/Kg		5/17/2018 14:41
1,1-Dichloroethane	< 6.69	ug/Kg		5/17/2018 14:41
1,1-Dichloroethene	< 6.69	ug/Kg		5/17/2018 14:41
1,2,3-Trichlorobenzene	< 16.7	ug/Kg		5/17/2018 14:41
1,2,4-Trichlorobenzene	< 16.7	ug/Kg		5/17/2018 14:41
1,2,4-Trimethylbenzene	< 6.69	ug/Kg		5/17/2018 14:41
1,2-Dibromo-3-Chloropropane	< 33.4	ug/Kg		5/17/2018 14:41
1,2-Dibromoethane	< 6.69	ug/Kg		5/17/2018 14:41

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-11-051118 (7.5-8.0 ft)		
Lab Sample ID:	182049-02	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 6.69	ug/Kg	5/17/2018	14:41
1,2-Dichloroethane	< 6.69	ug/Kg	5/17/2018	14:41
1,2-Dichloropropane	< 6.69	ug/Kg	5/17/2018	14:41
1,3,5-Trimethylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
1,3-Dichlorobenzene	< 6.69	ug/Kg	5/17/2018	14:41
1,4-Dichlorobenzene	< 6.69	ug/Kg	5/17/2018	14:41
1,4-dioxane	< 66.9	ug/Kg	5/17/2018	14:41
2-Butanone	< 33.4	ug/Kg	5/17/2018	14:41
2-Hexanone	< 16.7	ug/Kg	5/17/2018	14:41
4-Methyl-2-pentanone	< 16.7	ug/Kg	5/17/2018	14:41
Acetone	**68.3**	ug/Kg	5/17/2018	14:41
Benzene	< 6.69	ug/Kg	5/17/2018	14:41
Bromochloromethane	< 16.7	ug/Kg	5/17/2018	14:41
Bromodichloromethane	< 6.69	ug/Kg	5/17/2018	14:41
Bromoform	< 16.7	ug/Kg	5/17/2018	14:41
Bromomethane	< 6.69	ug/Kg	5/17/2018	14:41
Carbon disulfide	< 6.69	ug/Kg	5/17/2018	14:41
Carbon Tetrachloride	< 6.69	ug/Kg	5/17/2018	14:41
Chlorobenzene	< 6.69	ug/Kg	5/17/2018	14:41
Chloroethane	< 6.69	ug/Kg	5/17/2018	14:41
Chloroform	< 6.69	ug/Kg	5/17/2018	14:41
Chloromethane	< 6.69	ug/Kg	5/17/2018	14:41
cis-1,2-Dichloroethene	< 6.69	ug/Kg	5/17/2018	14:41
cis-1,3-Dichloropropene	< 6.69	ug/Kg	5/17/2018	14:41
Cyclohexane	< 33.4	ug/Kg	5/17/2018	14:41
Dibromochloromethane	< 6.69	ug/Kg	5/17/2018	14:41
Dichlorodifluoromethane	< 6.69	ug/Kg	5/17/2018	14:41
Ethylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
Freon 113	< 6.69	ug/Kg	5/17/2018	14:41
Isopropylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
m,p-Xylene	< 6.69	ug/Kg	5/17/2018	14:41
Methyl acetate	< 6.69	ug/Kg	5/17/2018	14:41

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-11-051118 (7.5-8.0 ft)
Lab Sample ID: 182049-02 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Methyl tert-butyl Ether	< 6.69	ug/Kg	5/17/2018	14:41
Methylcyclohexane	< 6.69	ug/Kg	5/17/2018	14:41
Methylene chloride	< 16.7	ug/Kg	5/17/2018	14:41
Naphthalene	< 16.7	ug/Kg	5/17/2018	14:41
n-Butylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
n-Propylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
o-Xylene	< 6.69	ug/Kg	5/17/2018	14:41
p-Isopropyltoluene	< 6.69	ug/Kg	5/17/2018	14:41
sec-Butylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
Styrene	< 16.7	ug/Kg	5/17/2018	14:41
tert-Butylbenzene	< 6.69	ug/Kg	5/17/2018	14:41
Tetrachloroethene	< 6.69	ug/Kg	5/17/2018	14:41
Toluene	< 6.69	ug/Kg	5/17/2018	14:41
trans-1,2-Dichloroethene	< 6.69	ug/Kg	5/17/2018	14:41
trans-1,3-Dichloropropene	< 6.69	ug/Kg	5/17/2018	14:41
Trichloroethene	< 6.69	ug/Kg	5/17/2018	14:41
Trichlorofluoromethane	< 6.69	ug/Kg	5/17/2018	14:41
Vinyl chloride	< 6.69	ug/Kg	5/17/2018	14:41

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**125**	77.3 - 129		5/17/2018	14:41
4-Bromofluorobenzene	**93.4**	71 - 123		5/17/2018	14:41
Pentafluorobenzene	**92.9**	85.1 - 110		5/17/2018	14:41
Toluene-D8	**94.7**	82.7 - 112		5/17/2018	14:41

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x50806.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-12-051118 (3.5-4.0 ft)		
Lab Sample ID:	182049-03	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.205**	mg/Kg		5/18/2018 09:24

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**6610**	mg/Kg		5/17/2018 00:06
Antimony	< 3.49	mg/Kg		5/17/2018 00:06
Arsenic	**11.5**	mg/Kg		5/17/2018 00:06
Barium	**55.7**	mg/Kg		5/17/2018 00:06
Beryllium	**0.616**	mg/Kg		5/17/2018 00:06
Cadmium	< 0.291	mg/Kg		5/17/2018 00:06
Calcium	**25600**	mg/Kg		5/17/2018 00:06
Chromium	**10.8**	mg/Kg		5/17/2018 00:06
Cobalt	**6.33**	mg/Kg		5/17/2018 00:06
Copper	**73.2**	mg/Kg		5/17/2018 00:06
Iron	**17100**	mg/Kg		5/17/2018 00:06
Lead	**123**	mg/Kg		5/17/2018 00:06
Magnesium	**11600**	mg/Kg		5/17/2018 00:06
Manganese	**214**	mg/Kg		5/17/2018 00:06
Nickel	**12.6**	mg/Kg		5/17/2018 00:06
Potassium	**1210**	mg/Kg		5/17/2018 00:06
Selenium	< 1.16	mg/Kg		5/17/2018 00:06
Silver	**1.39**	mg/Kg		5/17/2018 00:06
Sodium	**232**	mg/Kg		5/17/2018 00:06
Thallium	< 1.46	mg/Kg		5/17/2018 00:06
Vanadium	**17.9**	mg/Kg		5/17/2018 00:06
Zinc	**75.0**	mg/Kg		5/17/2018 00:06

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-12-051118 (3.5-4.0 ft)		
Lab Sample ID:	182049-03	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1221	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1232	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1242	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1248	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1254	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1260	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1262	< 0.0334	mg/Kg		5/16/2018 13:59
PCB-1268	< 0.0334	mg/Kg		5/16/2018 13:59

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**67.2**	10 - 132		5/16/2018 13:59
Tetrachloro-m-xylene	**40.2**	10 - 119		5/16/2018 13:59

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/15/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	**5.44**	ug/Kg		5/16/2018 19:03
4,4-DDE	< 3.34	ug/Kg		5/16/2018 19:03
4,4-DDT	< 3.34	ug/Kg		5/16/2018 19:03
Aldrin	**4.20**	ug/Kg	P	5/16/2018 19:03
alpha-BHC	< 3.34	ug/Kg		5/16/2018 19:03
beta-BHC	< 3.34	ug/Kg		5/16/2018 19:03
cis-Chlordane	**8.02**	ug/Kg		5/16/2018 19:03
delta-BHC	< 3.34	ug/Kg		5/16/2018 19:03
Dieldrin	< 3.34	ug/Kg		5/16/2018 19:03

Sample Identifier: RRW-CH-SB-12-051118 (3.5-4.0 ft)
Lab Sample ID: 182049-03 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.34	ug/Kg			5/16/2018 19:03
Endosulfan II	< 3.34	ug/Kg			5/16/2018 19:03
Endosulfan Sulfate	< 3.34	ug/Kg			5/16/2018 19:03
Endrin	< 3.34	ug/Kg			5/16/2018 19:03
Endrin Aldehyde	**6.13**	ug/Kg			5/16/2018 19:03
Endrin Ketone	**4.00**	ug/Kg		P	5/16/2018 19:03
gamma-BHC (Lindane)	< 3.34	ug/Kg			5/16/2018 19:03
Heptachlor	< 3.34	ug/Kg			5/16/2018 19:03
Heptachlor Epoxide	< 3.34	ug/Kg			5/16/2018 19:03
Methoxychlor	< 3.34	ug/Kg			5/16/2018 19:03
Toxaphene	< 16.7	ug/Kg			5/16/2018 19:03
trans-Chlordane	< 3.34	ug/Kg			5/16/2018 19:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**138**	46.4 - 133	*	5/16/2018 19:03
Tetrachloro-m-xylene (1)	**102**	24 - 110		5/16/2018 19:03

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/15/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 335	ug/Kg		5/19/2018 10:50
1,2,4,5-Tetrachlorobenzene	< 335	ug/Kg		5/19/2018 10:50
1,2,4-Trichlorobenzene	< 335	ug/Kg		5/19/2018 10:50
1,2-Dichlorobenzene	< 335	ug/Kg		5/19/2018 10:50
1,3-Dichlorobenzene	< 335	ug/Kg		5/19/2018 10:50
1,4-Dichlorobenzene	< 335	ug/Kg		5/19/2018 10:50
2,2-Oxybis (1-chloropropane)	< 335	ug/Kg		5/19/2018 10:50
2,4-Dinitrotoluene	< 335	ug/Kg		5/19/2018 10:50
2,6-Dinitrotoluene	< 335	ug/Kg		5/19/2018 10:50
2-Chloronaphthalene	< 335	ug/Kg		5/19/2018 10:50
2-Methylnapthalene	< 335	ug/Kg		5/19/2018 10:50
2-Nitroaniline	< 671	ug/Kg		5/19/2018 10:50

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-12-051118 (3.5-4.0 ft)		
Lab Sample ID:	182049-03	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 335	ug/Kg	5/19/2018	10:50
3-Nitroaniline	< 671	ug/Kg	5/19/2018	10:50
4-Bromophenyl phenyl ether	< 335	ug/Kg	5/19/2018	10:50
4-Chloroaniline	< 335	ug/Kg	5/19/2018	10:50
4-Chlorophenyl phenyl ether	< 335	ug/Kg	5/19/2018	10:50
4-Nitroaniline	< 671	ug/Kg	5/19/2018	10:50
Acenaphthene	< 335	ug/Kg	5/19/2018	10:50
Acenaphthylene	< 335	ug/Kg	5/19/2018	10:50
Acetophenone	< 335	ug/Kg	5/19/2018	10:50
Anthracene	< 335	ug/Kg	5/19/2018	10:50
Atrazine	< 335	ug/Kg	5/19/2018	10:50
Benzaldehyde	< 335	ug/Kg	5/19/2018	10:50
Benzo (a) anthracene	**420**	ug/Kg	5/19/2018	10:50
Benzo (a) pyrene	**392**	ug/Kg	5/19/2018	10:50
Benzo (b) fluoranthene	**505**	ug/Kg	5/19/2018	10:50
Benzo (g,h,i) perylene	< 335	ug/Kg	5/19/2018	10:50
Benzo (k) fluoranthene	< 335	ug/Kg	5/19/2018	10:50
Bis (2-chloroethoxy) methane	< 335	ug/Kg	5/19/2018	10:50
Bis (2-chloroethyl) ether	< 335	ug/Kg	5/19/2018	10:50
Bis (2-ethylhexyl) phthalate	< 335	ug/Kg	5/19/2018	10:50
Butylbenzylphthalate	< 335	ug/Kg	5/19/2018	10:50
Caprolactam	< 335	ug/Kg	5/19/2018	10:50
Carbazole	< 335	ug/Kg	5/19/2018	10:50
Chrysene	**502**	ug/Kg	5/19/2018	10:50
Dibenz (a,h) anthracene	< 335	ug/Kg	5/19/2018	10:50
Dibenzofuran	< 335	ug/Kg	5/19/2018	10:50
Diethyl phthalate	< 335	ug/Kg	5/19/2018	10:50
Dimethyl phthalate	< 671	ug/Kg	5/19/2018	10:50
Di-n-butyl phthalate	< 335	ug/Kg	5/19/2018	10:50
Di-n-octylphthalate	< 335	ug/Kg	5/19/2018	10:50
Fluoranthene	**824**	ug/Kg	5/19/2018	10:50
Fluorene	< 335	ug/Kg	5/19/2018	10:50

Sample Identifier: RRW-CH-SB-12-051118 (3.5-4.0 ft)
Lab Sample ID: 182049-03 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 335	ug/Kg	5/19/2018	10:50
Hexachlorobutadiene	< 335	ug/Kg	5/19/2018	10:50
Hexachlorocyclopentadiene	< 335	ug/Kg	5/19/2018	10:50
Hexachloroethane	< 335	ug/Kg	5/19/2018	10:50
Indeno (1,2,3-cd) pyrene	< 335	ug/Kg	5/19/2018	10:50
Isophorone	< 335	ug/Kg	5/19/2018	10:50
Naphthalene	< 335	ug/Kg	5/19/2018	10:50
Nitrobenzene	< 335	ug/Kg	5/19/2018	10:50
N-Nitroso-di-n-propylamine	< 335	ug/Kg	5/19/2018	10:50
N-Nitrosodiphenylamine	< 335	ug/Kg	5/19/2018	10:50
Phenanthrene	**435**	ug/Kg	5/19/2018	10:50
Pyrene	**802**	ug/Kg	5/19/2018	10:50

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**41.3**	37.7 - 103		5/19/2018	10:50
Nitrobenzene-d5	**45.3**	38.7 - 92.2		5/19/2018	10:50
Terphenyl-d14	**77.1**	69.9 - 113		5/19/2018	10:50

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27495.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1,1-Trichloroethane	< 8.95	ug/Kg		5/17/2018	15:05
1,1,2,2-Tetrachloroethane	< 8.95	ug/Kg		5/17/2018	15:05
1,1,2-Trichloroethane	< 8.95	ug/Kg		5/17/2018	15:05
1,1-Dichloroethane	< 8.95	ug/Kg		5/17/2018	15:05
1,1-Dichloroethene	< 8.95	ug/Kg		5/17/2018	15:05
1,2,3-Trichlorobenzene	< 22.4	ug/Kg		5/17/2018	15:05
1,2,4-Trichlorobenzene	< 22.4	ug/Kg		5/17/2018	15:05
1,2,4-Trimethylbenzene	< 8.95	ug/Kg		5/17/2018	15:05
1,2-Dibromo-3-Chloropropane	< 44.7	ug/Kg		5/17/2018	15:05
1,2-Dibromoethane	< 8.95	ug/Kg		5/17/2018	15:05

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-12-051118 (3.5-4.0 ft)		
Lab Sample ID:	182049-03	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 8.95	ug/Kg	5/17/2018	15:05
1,2-Dichloroethane	< 8.95	ug/Kg	5/17/2018	15:05
1,2-Dichloropropane	< 8.95	ug/Kg	5/17/2018	15:05
1,3,5-Trimethylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
1,3-Dichlorobenzene	< 8.95	ug/Kg	5/17/2018	15:05
1,4-Dichlorobenzene	< 8.95	ug/Kg	5/17/2018	15:05
1,4-dioxane	< 89.5	ug/Kg	5/17/2018	15:05
2-Butanone	< 44.7	ug/Kg	5/17/2018	15:05
2-Hexanone	< 22.4	ug/Kg	5/17/2018	15:05
4-Methyl-2-pentanone	< 22.4	ug/Kg	5/17/2018	15:05
Acetone	< 44.7	ug/Kg	5/17/2018	15:05
Benzene	< 8.95	ug/Kg	5/17/2018	15:05
Bromochloromethane	< 22.4	ug/Kg	5/17/2018	15:05
Bromodichloromethane	< 8.95	ug/Kg	5/17/2018	15:05
Bromoform	< 22.4	ug/Kg	5/17/2018	15:05
Bromomethane	< 8.95	ug/Kg	5/17/2018	15:05
Carbon disulfide	< 8.95	ug/Kg	5/17/2018	15:05
Carbon Tetrachloride	< 8.95	ug/Kg	5/17/2018	15:05
Chlorobenzene	< 8.95	ug/Kg	5/17/2018	15:05
Chloroethane	< 8.95	ug/Kg	5/17/2018	15:05
Chloroform	< 8.95	ug/Kg	5/17/2018	15:05
Chloromethane	< 8.95	ug/Kg	5/17/2018	15:05
cis-1,2-Dichloroethene	< 8.95	ug/Kg	5/17/2018	15:05
cis-1,3-Dichloropropene	< 8.95	ug/Kg	5/17/2018	15:05
Cyclohexane	< 44.7	ug/Kg	5/17/2018	15:05
Dibromochloromethane	< 8.95	ug/Kg	5/17/2018	15:05
Dichlorodifluoromethane	< 8.95	ug/Kg	5/17/2018	15:05
Ethylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
Freon 113	< 8.95	ug/Kg	5/17/2018	15:05
Isopropylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
m,p-Xylene	< 8.95	ug/Kg	5/17/2018	15:05
Methyl acetate	< 8.95	ug/Kg	5/17/2018	15:05

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-12-051118 (3.5-4.0 ft)		
Lab Sample ID:	182049-03	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Methyl tert-butyl Ether	< 8.95	ug/Kg	5/17/2018	15:05
Methylcyclohexane	< 8.95	ug/Kg	5/17/2018	15:05
Methylene chloride	< 22.4	ug/Kg	5/17/2018	15:05
Naphthalene	< 22.4	ug/Kg	5/17/2018	15:05
n-Butylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
n-Propylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
o-Xylene	< 8.95	ug/Kg	5/17/2018	15:05
p-Isopropyltoluene	< 8.95	ug/Kg	5/17/2018	15:05
sec-Butylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
Styrene	< 22.4	ug/Kg	5/17/2018	15:05
tert-Butylbenzene	< 8.95	ug/Kg	5/17/2018	15:05
Tetrachloroethene	< 8.95	ug/Kg	5/17/2018	15:05
Toluene	< 8.95	ug/Kg	5/17/2018	15:05
trans-1,2-Dichloroethene	< 8.95	ug/Kg	5/17/2018	15:05
trans-1,3-Dichloropropene	< 8.95	ug/Kg	5/17/2018	15:05
Trichloroethene	< 8.95	ug/Kg	5/17/2018	15:05
Trichlorofluoromethane	< 8.95	ug/Kg	5/17/2018	15:05
Vinyl chloride	< 8.95	ug/Kg	5/17/2018	15:05

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**	
1,2-Dichloroethane-d4	**125**	77.3 - 129		5/17/2018	15:05
4-Bromofluorobenzene	**80.9**	71 - 123		5/17/2018	15:05
Pentafluorobenzene	**95.4**	85.1 - 110		5/17/2018	15:05
Toluene-D8	**91.5**	82.7 - 112		5/17/2018	15:05

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50807.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-13-051118 (1.5-2.0 ft)		
Lab Sample ID:	182049-04	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.182**	mg/Kg		5/18/2018 09:27

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**6740**	mg/Kg		5/17/2018 00:10
Antimony	**13.0**	mg/Kg		5/17/2018 00:10
Arsenic	**37.7**	mg/Kg		5/17/2018 00:10
Barium	**97.8**	mg/Kg		5/17/2018 00:10
Beryllium	**0.777**	mg/Kg		5/17/2018 00:10
Cadmium	**1.08**	mg/Kg		5/17/2018 00:10
Calcium	**18600**	mg/Kg		5/17/2018 00:10
Chromium	**11.6**	mg/Kg		5/17/2018 00:10
Cobalt	**9.29**	mg/Kg		5/17/2018 00:10
Copper	**108**	mg/Kg		5/17/2018 00:10
Iron	**48300**	mg/Kg		5/17/2018 16:21
Lead	**520**	mg/Kg		5/17/2018 00:10
Magnesium	**8510**	mg/Kg		5/17/2018 00:10
Manganese	**230**	mg/Kg		5/17/2018 00:10
Nickel	**20.6**	mg/Kg		5/17/2018 00:10
Potassium	**1190**	mg/Kg		5/17/2018 00:10
Selenium	< 1.15	mg/Kg		5/17/2018 00:10
Silver	**2.89**	mg/Kg		5/17/2018 00:10
Sodium	**214**	mg/Kg		5/17/2018 00:10
Thallium	< 1.44	mg/Kg		5/17/2018 00:10
Vanadium	**20.7**	mg/Kg		5/17/2018 00:10
Zinc	**144**	mg/Kg		5/17/2018 00:10

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-13-051118 (1.5-2.0 ft)		
Lab Sample ID:	182049-04	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1221	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1232	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1242	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1248	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1254	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1260	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1262	< 0.0321	mg/Kg		5/16/2018 14:22
PCB-1268	< 0.0321	mg/Kg		5/16/2018 14:22

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**70.1**	10 - 132		5/16/2018 14:22
Tetrachloro-m-xylene	**38.3**	10 - 119		5/16/2018 14:22

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/15/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.21	ug/Kg		5/17/2018 10:56
4,4-DDE	< 3.21	ug/Kg		5/17/2018 10:56
4,4-DDT	< 3.21	ug/Kg		5/17/2018 10:56
Aldrin	< 3.21	ug/Kg		5/17/2018 10:56
alpha-BHC	< 3.21	ug/Kg		5/17/2018 10:56
beta-BHC	**11.0**	ug/Kg		5/17/2018 10:56
cis-Chlordane	< 3.21	ug/Kg		5/17/2018 10:56
delta-BHC	< 3.21	ug/Kg		5/17/2018 10:56
Dieldrin	**6.95**	ug/Kg	P	5/17/2018 10:56

Sample Identifier: RRW-CH-SB-13-051118 (1.5-2.0 ft)
Lab Sample ID: 182049-04 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.21	ug/Kg		5/17/2018	10:56
Endosulfan II	**4.07**	ug/Kg	P	5/17/2018	10:56
Endosulfan Sulfate	**6.74**	ug/Kg	P	5/17/2018	10:56
Endrin	**3.49**	ug/Kg	P	5/17/2018	10:56
Endrin Aldehyde	**6.97**	ug/Kg	P	5/17/2018	10:56
Endrin Ketone	**5.13**	ug/Kg	P	5/17/2018	10:56
gamma-BHC (Lindane)	< 3.21	ug/Kg		5/17/2018	10:56
Heptachlor	< 3.21	ug/Kg		5/17/2018	10:56
Heptachlor Epoxide	< 3.21	ug/Kg		5/17/2018	10:56
Methoxychlor	**42.4**	ug/Kg	P	5/17/2018	10:56
Toxaphene	< 16.0	ug/Kg		5/17/2018	10:56
trans-Chlordane	< 3.21	ug/Kg		5/17/2018	10:56

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
Decachlorobiphenyl (1)	**78.4**	46.4 - 133		5/17/2018	10:56
Tetrachloro-m-xylene (1)	**75.1**	24 - 110		5/17/2018	10:56

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/15/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1-Biphenyl	< 330	ug/Kg		5/19/2018	11:19
1,2,4,5-Tetrachlorobenzene	< 330	ug/Kg		5/19/2018	11:19
1,2,4-Trichlorobenzene	< 330	ug/Kg		5/19/2018	11:19
1,2-Dichlorobenzene	< 330	ug/Kg		5/19/2018	11:19
1,3-Dichlorobenzene	< 330	ug/Kg		5/19/2018	11:19
1,4-Dichlorobenzene	< 330	ug/Kg		5/19/2018	11:19
2,2-Oxybis (1-chloropropane)	< 330	ug/Kg		5/19/2018	11:19
2,4-Dinitrotoluene	< 330	ug/Kg		5/19/2018	11:19
2,6-Dinitrotoluene	< 330	ug/Kg		5/19/2018	11:19
2-Chloronaphthalene	< 330	ug/Kg		5/19/2018	11:19
2-Methylnapthalene	< 330	ug/Kg		5/19/2018	11:19
2-Nitroaniline	< 660	ug/Kg		5/19/2018	11:19

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-13-051118 (1.5-2.0 ft)		
Lab Sample ID:	182049-04	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 330	ug/Kg	5/19/2018	11:19
3-Nitroaniline	< 660	ug/Kg	5/19/2018	11:19
4-Bromophenyl phenyl ether	< 330	ug/Kg	5/19/2018	11:19
4-Chloroaniline	< 330	ug/Kg	5/19/2018	11:19
4-Chlorophenyl phenyl ether	< 330	ug/Kg	5/19/2018	11:19
4-Nitroaniline	< 660	ug/Kg	5/19/2018	11:19
Acenaphthene	< 330	ug/Kg	5/19/2018	11:19
Acenaphthylene	**858**	ug/Kg	5/19/2018	11:19
Acetophenone	< 330	ug/Kg	5/19/2018	11:19
Anthracene	**750**	ug/Kg	5/19/2018	11:19
Atrazine	< 330	ug/Kg	5/19/2018	11:19
Benzaldehyde	< 330	ug/Kg	5/19/2018	11:19
Benzo (a) anthracene	**2500**	ug/Kg	5/19/2018	11:19
Benzo (a) pyrene	**2260**	ug/Kg	5/19/2018	11:19
Benzo (b) fluoranthene	**3300**	ug/Kg	5/19/2018	11:19
Benzo (g,h,i) perylene	**962**	ug/Kg	5/19/2018	11:19
Benzo (k) fluoranthene	**1210**	ug/Kg	5/19/2018	11:19
Bis (2-chloroethoxy) methane	< 330	ug/Kg	5/19/2018	11:19
Bis (2-chloroethyl) ether	< 330	ug/Kg	5/19/2018	11:19
Bis (2-ethylhexyl) phthalate	< 330	ug/Kg	5/19/2018	11:19
Butylbenzylphthalate	< 330	ug/Kg	5/19/2018	11:19
Caprolactam	< 330	ug/Kg	5/19/2018	11:19
Carbazole	< 330	ug/Kg	5/19/2018	11:19
Chrysene	**2940**	ug/Kg	5/19/2018	11:19
Dibenz (a,h) anthracene	< 330	ug/Kg	5/19/2018	11:19
Dibenzofuran	< 330	ug/Kg	5/19/2018	11:19
Diethyl phthalate	< 330	ug/Kg	5/19/2018	11:19
Dimethyl phthalate	< 660	ug/Kg	5/19/2018	11:19
Di-n-butyl phthalate	< 330	ug/Kg	5/19/2018	11:19
Di-n-octylphthalate	< 330	ug/Kg	5/19/2018	11:19
Fluoranthene	**4740**	ug/Kg	5/19/2018	11:19
Fluorene	< 330	ug/Kg	5/19/2018	11:19

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-13-051118 (1.5-2.0 ft)
Lab Sample ID: 182049-04 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 330	ug/Kg	5/19/2018	11:19
Hexachlorobutadiene	< 330	ug/Kg	5/19/2018	11:19
Hexachlorocyclopentadiene	< 330	ug/Kg	5/19/2018	11:19
Hexachloroethane	< 330	ug/Kg	5/19/2018	11:19
Indeno (1,2,3-cd) pyrene	**1900**	ug/Kg	5/21/2018	11:55
Isophorone	< 330	ug/Kg	5/19/2018	11:19
Naphthalene	< 330	ug/Kg	5/19/2018	11:19
Nitrobenzene	< 330	ug/Kg	5/19/2018	11:19
N-Nitroso-di-n-propylamine	< 330	ug/Kg	5/19/2018	11:19
N-Nitrosodiphenylamine	< 330	ug/Kg	5/19/2018	11:19
Phenanthrene	**1450**	ug/Kg	5/19/2018	11:19
Pyrene	**3800**	ug/Kg	5/19/2018	11:19

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**58.7**	37.7 - 103		5/19/2018	11:19
Nitrobenzene-d5	**60.4**	38.7 - 92.2		5/19/2018	11:19
Terphenyl-d14	**62.1**	69.9 - 113	*	5/19/2018	11:19

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27496.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1,1-Trichloroethane	< 8.08	ug/Kg		5/16/2018	23:56
1,1,2,2-Tetrachloroethane	< 8.08	ug/Kg		5/16/2018	23:56
1,1,2-Trichloroethane	< 8.08	ug/Kg		5/16/2018	23:56
1,1-Dichloroethane	< 8.08	ug/Kg		5/16/2018	23:56
1,1-Dichloroethene	< 8.08	ug/Kg		5/16/2018	23:56
1,2,3-Trichlorobenzene	< 20.2	ug/Kg		5/16/2018	23:56
1,2,4-Trichlorobenzene	< 20.2	ug/Kg		5/16/2018	23:56
1,2,4-Trimethylbenzene	< 8.08	ug/Kg		5/16/2018	23:56
1,2-Dibromo-3-Chloropropane	< 40.4	ug/Kg		5/16/2018	23:56
1,2-Dibromoethane	< 8.08	ug/Kg		5/16/2018	23:56

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-13-051118 (1.5-2.0 ft)		
Lab Sample ID:	182049-04	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 8.08	ug/Kg	5/16/2018	23:56
1,2-Dichloroethane	< 8.08	ug/Kg	5/16/2018	23:56
1,2-Dichloropropane	< 8.08	ug/Kg	5/16/2018	23:56
1,3,5-Trimethylbenzene	< 8.08	ug/Kg	5/16/2018	23:56
1,3-Dichlorobenzene	< 8.08	ug/Kg	5/16/2018	23:56
1,4-Dichlorobenzene	< 8.08	ug/Kg	5/16/2018	23:56
1,4-dioxane	< 80.8	ug/Kg	5/16/2018	23:56
2-Butanone	< 40.4	ug/Kg	5/16/2018	23:56
2-Hexanone	< 20.2	ug/Kg	5/16/2018	23:56
4-Methyl-2-pentanone	< 20.2	ug/Kg	5/16/2018	23:56
Acetone	< 40.4	ug/Kg	5/16/2018	23:56
Benzene	< 8.08	ug/Kg	5/16/2018	23:56
Bromochloromethane	< 20.2	ug/Kg	5/16/2018	23:56
Bromodichloromethane	< 8.08	ug/Kg	5/16/2018	23:56
Bromoform	< 20.2	ug/Kg	5/16/2018	23:56
Bromomethane	< 8.08	ug/Kg	5/16/2018	23:56
Carbon disulfide	< 8.08	ug/Kg	5/16/2018	23:56
Carbon Tetrachloride	< 8.08	ug/Kg	5/16/2018	23:56
Chlorobenzene	< 8.08	ug/Kg	5/16/2018	23:56
Chloroethane	< 8.08	ug/Kg	5/16/2018	23:56
Chloroform	< 8.08	ug/Kg	5/16/2018	23:56
Chloromethane	< 8.08	ug/Kg	5/16/2018	23:56
cis-1,2-Dichloroethene	< 8.08	ug/Kg	5/16/2018	23:56
cis-1,3-Dichloropropene	< 8.08	ug/Kg	5/16/2018	23:56
Cyclohexane	< 40.4	ug/Kg	5/16/2018	23:56
Dibromochloromethane	< 8.08	ug/Kg	5/16/2018	23:56
Dichlorodifluoromethane	< 8.08	ug/Kg	5/16/2018	23:56
Ethylbenzene	< 8.08	ug/Kg	5/16/2018	23:56
Freon 113	< 8.08	ug/Kg	5/16/2018	23:56
Isopropylbenzene	< 8.08	ug/Kg	5/16/2018	23:56
m,p-Xylene	< 8.08	ug/Kg	5/16/2018	23:56
Methyl acetate	< 8.08	ug/Kg	5/16/2018	23:56

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-13-051118 (1.5-2.0 ft)		
Lab Sample ID:	182049-04	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Methyl tert-butyl Ether	< 8.08	ug/Kg		5/16/2018 23:56
Methylcyclohexane	< 8.08	ug/Kg		5/16/2018 23:56
Methylene chloride	< 20.2	ug/Kg		5/16/2018 23:56
Naphthalene	< 20.2	ug/Kg		5/16/2018 23:56
n-Butylbenzene	< 8.08	ug/Kg		5/16/2018 23:56
n-Propylbenzene	< 8.08	ug/Kg		5/16/2018 23:56
o-Xylene	< 8.08	ug/Kg		5/16/2018 23:56
p-Isopropyltoluene	< 8.08	ug/Kg		5/16/2018 23:56
sec-Butylbenzene	< 8.08	ug/Kg		5/16/2018 23:56
Styrene	< 20.2	ug/Kg		5/16/2018 23:56
tert-Butylbenzene	< 8.08	ug/Kg		5/16/2018 23:56
Tetrachloroethene	< 8.08	ug/Kg		5/16/2018 23:56
Toluene	< 8.08	ug/Kg		5/16/2018 23:56
trans-1,2-Dichloroethene	< 8.08	ug/Kg		5/16/2018 23:56
trans-1,3-Dichloropropene	< 8.08	ug/Kg		5/16/2018 23:56
Trichloroethene	< 8.08	ug/Kg		5/16/2018 23:56
Trichlorofluoromethane	< 8.08	ug/Kg		5/16/2018 23:56
Vinyl chloride	< 8.08	ug/Kg		5/16/2018 23:56

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**
1,2-Dichloroethane-d4	**118**	77.3 - 129		5/16/2018 23:56
4-Bromofluorobenzene	**89.5**	71 - 123		5/16/2018 23:56
Pentafluorobenzene	**94.7**	85.1 - 110		5/16/2018 23:56
Toluene-D8	**93.0**	82.7 - 112		5/16/2018 23:56

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50789.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-14-051118 (10.0-12.0 ft)		
Lab Sample ID:	182049-05	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0596**	mg/Kg		5/18/2018 09:36

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**4600**	mg/Kg		5/17/2018 00:13
Antimony	< 3.93	mg/Kg		5/17/2018 00:13
Arsenic	**5.98**	mg/Kg		5/17/2018 00:13
Barium	**55.6**	mg/Kg		5/17/2018 00:13
Beryllium	**0.562**	mg/Kg		5/17/2018 00:13
Cadmium	< 0.328	mg/Kg		5/17/2018 00:13
Calcium	**8780**	mg/Kg		5/17/2018 00:13
Chromium	**7.08**	mg/Kg		5/17/2018 00:13
Cobalt	**6.14**	mg/Kg		5/17/2018 00:13
Copper	**133**	mg/Kg		5/17/2018 00:13
Iron	**9970**	mg/Kg		5/17/2018 00:13
Lead	**134**	mg/Kg		5/17/2018 00:13
Magnesium	**4180**	mg/Kg		5/17/2018 00:13
Manganese	**140**	mg/Kg		5/17/2018 00:13
Nickel	**12.4**	mg/Kg		5/17/2018 00:13
Potassium	**762**	mg/Kg		5/17/2018 00:13
Selenium	< 1.31	mg/Kg		5/18/2018 10:18
Silver	**0.705**	mg/Kg		5/17/2018 00:13
Sodium	**243**	mg/Kg		5/17/2018 00:13
Thallium	< 1.64	mg/Kg		5/17/2018 00:13
Vanadium	**15.1**	mg/Kg		5/17/2018 00:13
Zinc	**43.5**	mg/Kg		5/17/2018 00:13

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-14-051118 (10.0-12.0 ft)		
Lab Sample ID:	182049-05	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1221	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1232	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1242	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1248	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1254	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1260	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1262	< 0.0367	mg/Kg		5/16/2018 14:45
PCB-1268	< 0.0367	mg/Kg		5/16/2018 14:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**66.8**	10 - 132		5/16/2018 14:45
Tetrachloro-m-xylene	**27.7**	10 - 119		5/16/2018 14:45

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/15/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.67	ug/Kg		5/17/2018 11:12
4,4-DDE	< 3.67	ug/Kg		5/17/2018 11:12
4,4-DDT	< 3.67	ug/Kg		5/17/2018 11:12
Aldrin	< 3.67	ug/Kg		5/17/2018 11:12
alpha-BHC	< 3.67	ug/Kg		5/17/2018 11:12
beta-BHC	< 3.67	ug/Kg		5/17/2018 11:12
cis-Chlordane	< 3.67	ug/Kg		5/17/2018 11:12
delta-BHC	< 3.67	ug/Kg		5/17/2018 11:12
Dieldrin	< 3.67	ug/Kg		5/17/2018 11:12

Sample Identifier: RRW-CH-SB-14-051118 (10.0-12.0 ft)
Lab Sample ID: 182049-05 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.67	ug/Kg			5/17/2018 11:12
Endosulfan II	< 3.67	ug/Kg			5/17/2018 11:12
Endosulfan Sulfate	**4.42**	ug/Kg		P	5/17/2018 11:12
Endrin	< 3.67	ug/Kg			5/17/2018 11:12
Endrin Aldehyde	< 3.67	ug/Kg			5/17/2018 11:12
Endrin Ketone	**3.76**	ug/Kg			5/17/2018 11:12
gamma-BHC (Lindane)	< 3.67	ug/Kg			5/17/2018 11:12
Heptachlor	< 3.67	ug/Kg			5/17/2018 11:12
Heptachlor Epoxide	< 3.67	ug/Kg			5/17/2018 11:12
Methoxychlor	< 3.67	ug/Kg			5/17/2018 11:12
Toxaphene	< 18.4	ug/Kg			5/17/2018 11:12
trans-Chlordane	< 3.67	ug/Kg			5/17/2018 11:12

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**95.7**	46.4 - 133		5/17/2018 11:12
Tetrachloro-m-xylene (1)	**85.3**	24 - 110		5/17/2018 11:12

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/15/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 332	ug/Kg		5/19/2018 11:48
1,2,4,5-Tetrachlorobenzene	< 332	ug/Kg		5/19/2018 11:48
1,2,4-Trichlorobenzene	< 332	ug/Kg		5/19/2018 11:48
1,2-Dichlorobenzene	< 332	ug/Kg		5/19/2018 11:48
1,3-Dichlorobenzene	< 332	ug/Kg		5/19/2018 11:48
1,4-Dichlorobenzene	< 332	ug/Kg		5/19/2018 11:48
2,2-Oxybis (1-chloropropane)	< 332	ug/Kg		5/19/2018 11:48
2,4-Dinitrotoluene	< 332	ug/Kg		5/19/2018 11:48
2,6-Dinitrotoluene	< 332	ug/Kg		5/19/2018 11:48
2-Chloronaphthalene	< 332	ug/Kg		5/19/2018 11:48
2-Methylnapthalene	< 332	ug/Kg		5/19/2018 11:48
2-Nitroaniline	< 663	ug/Kg		5/19/2018 11:48

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-14-051118 (10.0-12.0 ft)		
Lab Sample ID:	182049-05	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 332	ug/Kg	5/19/2018	11:48
3-Nitroaniline	< 663	ug/Kg	5/19/2018	11:48
4-Bromophenyl phenyl ether	< 332	ug/Kg	5/19/2018	11:48
4-Chloroaniline	< 332	ug/Kg	5/19/2018	11:48
4-Chlorophenyl phenyl ether	< 332	ug/Kg	5/19/2018	11:48
4-Nitroaniline	< 663	ug/Kg	5/19/2018	11:48
Acenaphthene	< 332	ug/Kg	5/19/2018	11:48
Acenaphthylene	< 332	ug/Kg	5/19/2018	11:48
Acetophenone	< 332	ug/Kg	5/19/2018	11:48
Anthracene	< 332	ug/Kg	5/19/2018	11:48
Atrazine	< 332	ug/Kg	5/19/2018	11:48
Benzaldehyde	< 332	ug/Kg	5/19/2018	11:48
Benzo (a) anthracene	< 332	ug/Kg	5/19/2018	11:48
Benzo (a) pyrene	< 332	ug/Kg	5/19/2018	11:48
Benzo (b) fluoranthene	< 332	ug/Kg	5/19/2018	11:48
Benzo (g,h,i) perylene	< 332	ug/Kg	5/19/2018	11:48
Benzo (k) fluoranthene	< 332	ug/Kg	5/19/2018	11:48
Bis (2-chloroethoxy) methane	< 332	ug/Kg	5/19/2018	11:48
Bis (2-chloroethyl) ether	< 332	ug/Kg	5/19/2018	11:48
Bis (2-ethylhexyl) phthalate	< 332	ug/Kg	5/19/2018	11:48
Butylbenzylphthalate	< 332	ug/Kg	5/19/2018	11:48
Caprolactam	< 332	ug/Kg	5/19/2018	11:48
Carbazole	< 332	ug/Kg	5/19/2018	11:48
Chrysene	< 332	ug/Kg	5/19/2018	11:48
Dibenz (a,h) anthracene	< 332	ug/Kg	5/19/2018	11:48
Dibenzofuran	< 332	ug/Kg	5/19/2018	11:48
Diethyl phthalate	< 332	ug/Kg	5/19/2018	11:48
Dimethyl phthalate	< 663	ug/Kg	5/19/2018	11:48
Di-n-butyl phthalate	< 332	ug/Kg	5/19/2018	11:48
Di-n-octylphthalate	< 332	ug/Kg	5/19/2018	11:48
Fluoranthene	< 332	ug/Kg	5/19/2018	11:48
Fluorene	< 332	ug/Kg	5/19/2018	11:48

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-14-051118 (10.0-12.0 ft)
Lab Sample ID: 182049-05 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 332	ug/Kg		5/19/2018	11:48
Hexachlorobutadiene	< 332	ug/Kg		5/19/2018	11:48
Hexachlorocyclopentadiene	< 332	ug/Kg		5/19/2018	11:48
Hexachloroethane	< 332	ug/Kg		5/19/2018	11:48
Indeno (1,2,3-cd) pyrene	< 332	ug/Kg		5/19/2018	11:48
Isophorone	< 332	ug/Kg		5/19/2018	11:48
Naphthalene	< 332	ug/Kg		5/19/2018	11:48
Nitrobenzene	< 332	ug/Kg		5/19/2018	11:48
N-Nitroso-di-n-propylamine	< 332	ug/Kg		5/19/2018	11:48
N-Nitrosodiphenylamine	< 332	ug/Kg		5/19/2018	11:48
Phenanthrene	< 332	ug/Kg		5/19/2018	11:48
Pyrene	< 332	ug/Kg		5/19/2018	11:48

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**54.5**	37.7 - 103		5/19/2018	11:48
Nitrobenzene-d5	**56.2**	38.7 - 92.2		5/19/2018	11:48
Terphenyl-d14	**54.6**	69.9 - 113	*	5/19/2018	11:48

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27497.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1,1-Trichloroethane	< 10.4	ug/Kg		5/17/2018	15:30
1,1,2,2-Tetrachloroethane	< 10.4	ug/Kg		5/17/2018	15:30
1,1,2-Trichloroethane	< 10.4	ug/Kg		5/17/2018	15:30
1,1-Dichloroethane	< 10.4	ug/Kg		5/17/2018	15:30
1,1-Dichloroethene	< 10.4	ug/Kg		5/17/2018	15:30
1,2,3-Trichlorobenzene	< 26.1	ug/Kg		5/17/2018	15:30
1,2,4-Trichlorobenzene	< 26.1	ug/Kg		5/17/2018	15:30
1,2,4-Trimethylbenzene	< 10.4	ug/Kg		5/17/2018	15:30
1,2-Dibromo-3-Chloropropane	< 52.2	ug/Kg		5/17/2018	15:30
1,2-Dibromoethane	< 10.4	ug/Kg		5/17/2018	15:30

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-14-051118 (10.0-12.0 ft)		
Lab Sample ID:	182049-05	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 10.4	ug/Kg	5/17/2018	15:30
1,2-Dichloroethane	< 10.4	ug/Kg	5/17/2018	15:30
1,2-Dichloropropane	< 10.4	ug/Kg	5/17/2018	15:30
1,3,5-Trimethylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
1,3-Dichlorobenzene	< 10.4	ug/Kg	5/17/2018	15:30
1,4-Dichlorobenzene	< 10.4	ug/Kg	5/17/2018	15:30
1,4-dioxane	< 104	ug/Kg	5/17/2018	15:30
2-Butanone	< 52.2	ug/Kg	5/17/2018	15:30
2-Hexanone	< 26.1	ug/Kg	5/17/2018	15:30
4-Methyl-2-pentanone	< 26.1	ug/Kg	5/17/2018	15:30
Acetone	< 52.2	ug/Kg	5/17/2018	15:30
Benzene	< 10.4	ug/Kg	5/17/2018	15:30
Bromochloromethane	< 26.1	ug/Kg	5/17/2018	15:30
Bromodichloromethane	< 10.4	ug/Kg	5/17/2018	15:30
Bromoform	< 26.1	ug/Kg	5/17/2018	15:30
Bromomethane	< 10.4	ug/Kg	5/17/2018	15:30
Carbon disulfide	< 10.4	ug/Kg	5/17/2018	15:30
Carbon Tetrachloride	< 10.4	ug/Kg	5/17/2018	15:30
Chlorobenzene	< 10.4	ug/Kg	5/17/2018	15:30
Chloroethane	< 10.4	ug/Kg	5/17/2018	15:30
Chloroform	< 10.4	ug/Kg	5/17/2018	15:30
Chloromethane	< 10.4	ug/Kg	5/17/2018	15:30
cis-1,2-Dichloroethene	< 10.4	ug/Kg	5/17/2018	15:30
cis-1,3-Dichloropropene	< 10.4	ug/Kg	5/17/2018	15:30
Cyclohexane	< 52.2	ug/Kg	5/17/2018	15:30
Dibromochloromethane	< 10.4	ug/Kg	5/17/2018	15:30
Dichlorodifluoromethane	< 10.4	ug/Kg	5/17/2018	15:30
Ethylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
Freon 113	< 10.4	ug/Kg	5/17/2018	15:30
Isopropylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
m,p-Xylene	< 10.4	ug/Kg	5/17/2018	15:30
Methyl acetate	< 10.4	ug/Kg	5/17/2018	15:30

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-14-051118 (10.0-12.0 ft)
Lab Sample ID: 182049-05 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Methyl tert-butyl Ether	< 10.4	ug/Kg	5/17/2018	15:30
Methylcyclohexane	< 10.4	ug/Kg	5/17/2018	15:30
Methylene chloride	**30.5**	ug/Kg	5/17/2018	15:30
Naphthalene	< 26.1	ug/Kg	5/17/2018	15:30
n-Butylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
n-Propylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
o-Xylene	< 10.4	ug/Kg	5/17/2018	15:30
p-Isopropyltoluene	< 10.4	ug/Kg	5/17/2018	15:30
sec-Butylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
Styrene	< 26.1	ug/Kg	5/17/2018	15:30
tert-Butylbenzene	< 10.4	ug/Kg	5/17/2018	15:30
Tetrachloroethene	< 10.4	ug/Kg	5/17/2018	15:30
Toluene	< 10.4	ug/Kg	5/17/2018	15:30
trans-1,2-Dichloroethene	< 10.4	ug/Kg	5/17/2018	15:30
trans-1,3-Dichloropropene	< 10.4	ug/Kg	5/17/2018	15:30
Trichloroethene	< 10.4	ug/Kg	5/17/2018	15:30
Trichlorofluoromethane	< 10.4	ug/Kg	5/17/2018	15:30
Vinyl chloride	< 10.4	ug/Kg	5/17/2018	15:30

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**131**	77.3 - 129	*	5/17/2018	15:30
4-Bromofluorobenzene	**67.1**	71 - 123	*	5/17/2018	15:30
Pentafluorobenzene	**88.2**	85.1 - 110		5/17/2018	15:30
Toluene-D8	**90.4**	82.7 - 112		5/17/2018	15:30

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50808.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-15-051118 (1.0-1.5 ft)		
Lab Sample ID:	182049-06	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.129**	mg/Kg		5/18/2018 09:38

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**5200**	mg/Kg		5/17/2018 00:18
Antimony	< 3.10	mg/Kg		5/17/2018 00:18
Arsenic	**7.03**	mg/Kg		5/17/2018 00:18
Barium	**72.8**	mg/Kg		5/17/2018 00:18
Beryllium	**0.296**	mg/Kg		5/17/2018 00:18
Cadmium	**0.518**	mg/Kg		5/17/2018 00:18
Calcium	**88200**	mg/Kg		5/17/2018 16:38
Chromium	**12.9**	mg/Kg		5/17/2018 00:18
Cobalt	**3.43**	mg/Kg		5/17/2018 00:18
Copper	**40.1**	mg/Kg		5/17/2018 00:18
Iron	**12600**	mg/Kg		5/17/2018 00:18
Lead	**63.2**	mg/Kg		5/17/2018 00:18
Magnesium	**24200**	mg/Kg		5/17/2018 00:18
Manganese	**285**	mg/Kg		5/17/2018 00:18
Nickel	**9.85**	mg/Kg		5/17/2018 00:18
Potassium	**1430**	mg/Kg		5/17/2018 00:18
Selenium	< 1.03	mg/Kg		5/17/2018 00:18
Silver	**1.11**	mg/Kg		5/17/2018 00:18
Sodium	**147**	mg/Kg		5/17/2018 00:18
Thallium	< 1.29	mg/Kg		5/17/2018 00:18
Vanadium	**14.1**	mg/Kg		5/17/2018 00:18
Zinc	**114**	mg/Kg		5/17/2018 00:18

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-15-051118 (1.0-1.5 ft)		
Lab Sample ID:	182049-06	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1221	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1232	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1242	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1248	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1254	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1260	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1262	< 0.0302	mg/Kg		5/16/2018 15:09
PCB-1268	< 0.0302	mg/Kg		5/16/2018 15:09

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**82.1**	10 - 132		5/16/2018 15:09
Tetrachloro-m-xylene	**53.8**	10 - 119		5/16/2018 15:09

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/15/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.02	ug/Kg		5/17/2018 11:27
4,4-DDE	**3.60**	ug/Kg		5/17/2018 11:27
4,4-DDT	**3.44**	ug/Kg		5/17/2018 11:27
Aldrin	< 3.02	ug/Kg		5/17/2018 11:27
alpha-BHC	< 3.02	ug/Kg		5/17/2018 11:27
beta-BHC	< 3.02	ug/Kg		5/17/2018 11:27
cis-Chlordane	**10.5**	ug/Kg		5/17/2018 11:27
delta-BHC	< 3.02	ug/Kg		5/17/2018 11:27
Dieldrin	**3.95**	ug/Kg	P	5/17/2018 11:27

Sample Identifier: RRW-CH-SB-15-051118 (1.0-1.5 ft)
Lab Sample ID: 182049-06 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.02	ug/Kg			5/17/2018 11:27
Endosulfan II	< 3.02	ug/Kg			5/17/2018 11:27
Endosulfan Sulfate	< 3.02	ug/Kg			5/17/2018 11:27
Endrin	< 3.02	ug/Kg			5/17/2018 11:27
Endrin Aldehyde	< 3.02	ug/Kg			5/17/2018 11:27
Endrin Ketone	< 3.02	ug/Kg			5/17/2018 11:27
gamma-BHC (Lindane)	< 3.02	ug/Kg			5/17/2018 11:27
Heptachlor	< 3.02	ug/Kg			5/17/2018 11:27
Heptachlor Epoxide	< 3.02	ug/Kg			5/17/2018 11:27
Methoxychlor	**3.10**	ug/Kg		P	5/17/2018 11:27
Toxaphene	< 15.1	ug/Kg			5/17/2018 11:27
trans-Chlordane	< 3.02	ug/Kg			5/17/2018 11:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**37.5**	46.4 - 133	*	5/17/2018 11:27
Tetrachloro-m-xylene (1)	**68.0**	24 - 110		5/17/2018 11:27

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/15/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 288	ug/Kg		5/19/2018 12:17
1,2,4,5-Tetrachlorobenzene	< 288	ug/Kg		5/19/2018 12:17
1,2,4-Trichlorobenzene	< 288	ug/Kg		5/19/2018 12:17
1,2-Dichlorobenzene	< 288	ug/Kg		5/19/2018 12:17
1,3-Dichlorobenzene	< 288	ug/Kg		5/19/2018 12:17
1,4-Dichlorobenzene	< 288	ug/Kg		5/19/2018 12:17
2,2-Oxybis (1-chloropropane)	< 288	ug/Kg		5/19/2018 12:17
2,4-Dinitrotoluene	< 288	ug/Kg		5/19/2018 12:17
2,6-Dinitrotoluene	< 288	ug/Kg		5/19/2018 12:17
2-Chloronaphthalene	< 288	ug/Kg		5/19/2018 12:17
2-Methylnapthalene	< 288	ug/Kg		5/19/2018 12:17
2-Nitroaniline	< 575	ug/Kg		5/19/2018 12:17

Sample Identifier:	RRW-CH-SB-15-051118 (1.0-1.5 ft)		
Lab Sample ID:	182049-06	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 288	ug/Kg	5/19/2018	12:17
3-Nitroaniline	< 575	ug/Kg	5/19/2018	12:17
4-Bromophenyl phenyl ether	< 288	ug/Kg	5/19/2018	12:17
4-Chloroaniline	< 288	ug/Kg	5/19/2018	12:17
4-Chlorophenyl phenyl ether	< 288	ug/Kg	5/19/2018	12:17
4-Nitroaniline	< 575	ug/Kg	5/19/2018	12:17
Acenaphthene	< 288	ug/Kg	5/19/2018	12:17
Acenaphthylene	< 288	ug/Kg	5/19/2018	12:17
Acetophenone	< 288	ug/Kg	5/19/2018	12:17
Anthracene	< 288	ug/Kg	5/19/2018	12:17
Atrazine	< 288	ug/Kg	5/19/2018	12:17
Benzaldehyde	< 288	ug/Kg	5/19/2018	12:17
Benzo (a) anthracene	**592**	ug/Kg	5/19/2018	12:17
Benzo (a) pyrene	**658**	ug/Kg	5/19/2018	12:17
Benzo (b) fluoranthene	**883**	ug/Kg	5/19/2018	12:17
Benzo (g,h,i) perylene	**734**	ug/Kg	5/19/2018	12:17
Benzo (k) fluoranthene	**289**	ug/Kg	5/19/2018	12:17
Bis (2-chloroethoxy) methane	< 288	ug/Kg	5/19/2018	12:17
Bis (2-chloroethyl) ether	< 288	ug/Kg	5/19/2018	12:17
Bis (2-ethylhexyl) phthalate	< 288	ug/Kg	5/19/2018	12:17
Butylbenzylphthalate	< 288	ug/Kg	5/19/2018	12:17
Caprolactam	< 288	ug/Kg	5/19/2018	12:17
Carbazole	< 288	ug/Kg	5/19/2018	12:17
Chrysene	**716**	ug/Kg	5/19/2018	12:17
Dibenz (a,h) anthracene	< 288	ug/Kg	5/19/2018	12:17
Dibenzofuran	< 288	ug/Kg	5/19/2018	12:17
Diethyl phthalate	< 288	ug/Kg	5/19/2018	12:17
Dimethyl phthalate	< 575	ug/Kg	5/19/2018	12:17
Di-n-butyl phthalate	< 288	ug/Kg	5/19/2018	12:17
Di-n-octylphthalate	< 288	ug/Kg	5/19/2018	12:17
Fluoranthene	**1140**	ug/Kg	5/19/2018	12:17
Fluorene	< 288	ug/Kg	5/19/2018	12:17

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-15-051118 (1.0-1.5 ft)
Lab Sample ID: 182049-06 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 288	ug/Kg		5/19/2018 12:17
Hexachlorobutadiene	< 288	ug/Kg		5/19/2018 12:17
Hexachlorocyclopentadiene	< 288	ug/Kg		5/19/2018 12:17
Hexachloroethane	< 288	ug/Kg		5/19/2018 12:17
Indeno (1,2,3-cd) pyrene	**641**	ug/Kg		5/21/2018 12:17
Isophorone	< 288	ug/Kg		5/19/2018 12:17
Naphthalene	< 288	ug/Kg		5/19/2018 12:17
Nitrobenzene	< 288	ug/Kg		5/19/2018 12:17
N-Nitroso-di-n-propylamine	< 288	ug/Kg		5/19/2018 12:17
N-Nitrosodiphenylamine	< 288	ug/Kg		5/19/2018 12:17
Phenanthrene	**384**	ug/Kg		5/19/2018 12:17
Pyrene	**1020**	ug/Kg		5/19/2018 12:17

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**80.1**	37.7 - 103		5/19/2018 12:17
Nitrobenzene-d5	**70.8**	38.7 - 92.2		5/19/2018 12:17
Terphenyl-d14	**74.2**	69.9 - 113		5/19/2018 12:17

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27498.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 8.79	ug/Kg		5/17/2018 00:20
1,1,2,2-Tetrachloroethane	< 8.79	ug/Kg		5/17/2018 00:20
1,1,2-Trichloroethane	< 8.79	ug/Kg		5/17/2018 00:20
1,1-Dichloroethane	< 8.79	ug/Kg		5/17/2018 00:20
1,1-Dichloroethene	< 8.79	ug/Kg		5/17/2018 00:20
1,2,3-Trichlorobenzene	< 22.0	ug/Kg		5/17/2018 00:20
1,2,4-Trichlorobenzene	< 22.0	ug/Kg		5/17/2018 00:20
1,2,4-Trimethylbenzene	< 8.79	ug/Kg		5/17/2018 00:20
1,2-Dibromo-3-Chloropropane	< 43.9	ug/Kg		5/17/2018 00:20
1,2-Dibromoethane	< 8.79	ug/Kg		5/17/2018 00:20

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-15-051118 (1.0-1.5 ft)		
Lab Sample ID:	182049-06	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 8.79	ug/Kg	5/17/2018	00:20
1,2-Dichloroethane	< 8.79	ug/Kg	5/17/2018	00:20
1,2-Dichloropropane	< 8.79	ug/Kg	5/17/2018	00:20
1,3,5-Trimethylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
1,3-Dichlorobenzene	< 8.79	ug/Kg	5/17/2018	00:20
1,4-Dichlorobenzene	< 8.79	ug/Kg	5/17/2018	00:20
1,4-dioxane	< 87.9	ug/Kg	5/17/2018	00:20
2-Butanone	< 43.9	ug/Kg	5/17/2018	00:20
2-Hexanone	< 22.0	ug/Kg	5/17/2018	00:20
4-Methyl-2-pentanone	< 22.0	ug/Kg	5/17/2018	00:20
Acetone	< 43.9	ug/Kg	5/17/2018	00:20
Benzene	< 8.79	ug/Kg	5/17/2018	00:20
Bromochloromethane	< 22.0	ug/Kg	5/17/2018	00:20
Bromodichloromethane	< 8.79	ug/Kg	5/17/2018	00:20
Bromoform	< 22.0	ug/Kg	5/17/2018	00:20
Bromomethane	< 8.79	ug/Kg	5/17/2018	00:20
Carbon disulfide	< 8.79	ug/Kg	5/17/2018	00:20
Carbon Tetrachloride	< 8.79	ug/Kg	5/17/2018	00:20
Chlorobenzene	< 8.79	ug/Kg	5/17/2018	00:20
Chloroethane	< 8.79	ug/Kg	5/17/2018	00:20
Chloroform	< 8.79	ug/Kg	5/17/2018	00:20
Chloromethane	< 8.79	ug/Kg	5/17/2018	00:20
cis-1,2-Dichloroethene	< 8.79	ug/Kg	5/17/2018	00:20
cis-1,3-Dichloropropene	< 8.79	ug/Kg	5/17/2018	00:20
Cyclohexane	< 43.9	ug/Kg	5/17/2018	00:20
Dibromochloromethane	< 8.79	ug/Kg	5/17/2018	00:20
Dichlorodifluoromethane	< 8.79	ug/Kg	5/17/2018	00:20
Ethylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
Freon 113	< 8.79	ug/Kg	5/17/2018	00:20
Isopropylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
m,p-Xylene	< 8.79	ug/Kg	5/17/2018	00:20
Methyl acetate	< 8.79	ug/Kg	5/17/2018	00:20

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182049

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-15-051118 (1.0-1.5 ft)		
Lab Sample ID:	182049-06	**Date Sampled:**	5/11/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Methyl tert-butyl Ether	< 8.79	ug/Kg	5/17/2018	00:20
Methylcyclohexane	< 8.79	ug/Kg	5/17/2018	00:20
Methylene chloride	< 22.0	ug/Kg	5/17/2018	00:20
Naphthalene	< 22.0	ug/Kg	5/17/2018	00:20
n-Butylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
n-Propylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
o-Xylene	< 8.79	ug/Kg	5/17/2018	00:20
p-Isopropyltoluene	< 8.79	ug/Kg	5/17/2018	00:20
sec-Butylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
Styrene	< 22.0	ug/Kg	5/17/2018	00:20
tert-Butylbenzene	< 8.79	ug/Kg	5/17/2018	00:20
Tetrachloroethene	< 8.79	ug/Kg	5/17/2018	00:20
Toluene	< 8.79	ug/Kg	5/17/2018	00:20
trans-1,2-Dichloroethene	< 8.79	ug/Kg	5/17/2018	00:20
trans-1,3-Dichloropropene	< 8.79	ug/Kg	5/17/2018	00:20
Trichloroethene	< 8.79	ug/Kg	5/17/2018	00:20
Trichlorofluoromethane	< 8.79	ug/Kg	5/17/2018	00:20
Vinyl chloride	< 8.79	ug/Kg	5/17/2018	00:20

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**120**	77.3 - 129		5/17/2018	00:20
4-Bromofluorobenzene	**85.2**	71 - 123		5/17/2018	00:20
Pentafluorobenzene	**93.0**	85.1 - 110		5/17/2018	00:20
Toluene-D8	**93.8**	82.7 - 112		5/17/2018	00:20

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50790.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM

CHAIN OF CUSTODY

REPORT TO:	INVOICE TO:	
CLIENT: Bergmann	CLIENT: Bergmann	LAB PROJECT ID: 182049
ADDRESS: 280 E Broad St. Suite 200	ADDRESS: 280 E Broad St. Suite 200	Quotation #: 012642.06
CITY: Rochester STATE: NY ZIP: 14604	CITY: Rochester STATE: NY ZIP: 14604	
PHONE: 585-498-7950	PHONE: 585-498-7950	Email: cbleier@bergmannpc.com
ATTN: Cash Bleier	ATTN: Cash Bleier	

PROJECT REFERENCE

Roc River Wall

Matrix Codes:

AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260 + CPSI	8270 BN	TAL Metals	PCBs	Pesticides	REMARKS	PARADIGM LAB SAMPLE NUMBER
5/11/2018	9:20 am			RRW-CH-SB-10-051118 (6.5-7.0ft)	SO	2	X	X	X	X	X		01
5/11/2018	10:05am			RRW-CH-SB-11-051118 (7.5-8.0ft.)	SO	2	X	X	X	X	X		02
5/11/2018	11:05am			RRW-CH-SB-12-051118 (3.5-4.0ft)	SO	2	X	X	X	X	X		03
5/11/2018	12:40pm			RRW-CH-SB-13-051118 (1.5-2.0ft)	SO	2	X	X	X	X	X		04
5/11/2018	1:30pm			RRW-CH-SB-14-051118 (10.0-12.0ft)	SO	2	X	X	X	X	X		05
5/11/2018	2:10pm			RRW-CH-SB-15-051118 (1.0-1.5ft)	SO	2	X	X	X	X	X		06

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required	X	None Required	X
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other		Other		Other EDD	
please indicate date needed:		please indicate package needed:		please indicate EDD needed :	

C. Bleier — Sampled By — 05/11/2018 — Date/Time

C. Bleier — Relinquished By — 05/11/2018 — Date/Time

Received By — 5/11/18 1515 — Date/Time

Received @ Lab By — 5/14/18 0940 — Date/Time

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

5°C Iced 5/11/18 15:09

See additional page for sample conditions.

PARADIGM

Chain of Custody Supplement

Client: Bergmann **Completed by:** MolPaid

Lab Project ID: 182049 **Date:** 5/14/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt Yes	No	N/A
Container Type	X	5035	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		met
Comments	5°C ind 5/11/18 1509		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report For

Bergmann Associates

For Lab Project ID

182065

Referencing

Roc River Wall

Prepared

Monday, May 21, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-16-051418 (14.5-15 ft)		
Lab Sample ID:	182065-01	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0134**	mg/Kg		5/18/2018 09:41

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**7450**	mg/Kg		5/17/2018 00:22
Antimony	< 3.35	mg/Kg		5/17/2018 00:22
Arsenic	**9.62**	mg/Kg		5/17/2018 00:22
Barium	**43.7**	mg/Kg		5/17/2018 00:22
Beryllium	**0.415**	mg/Kg		5/17/2018 00:22
Cadmium	< 0.280	mg/Kg		5/17/2018 00:22
Calcium	**1220**	mg/Kg		5/17/2018 00:22
Chromium	**9.93**	mg/Kg		5/17/2018 00:22
Cobalt	**8.71**	mg/Kg		5/17/2018 00:22
Copper	**8.84**	mg/Kg		5/17/2018 00:22
Iron	**20800**	mg/Kg		5/17/2018 00:22
Lead	**9.45**	mg/Kg		5/17/2018 00:22
Magnesium	**2200**	mg/Kg		5/17/2018 00:22
Manganese	**116**	mg/Kg		5/17/2018 00:22
Nickel	**14.5**	mg/Kg		5/17/2018 00:22
Potassium	**954**	mg/Kg		5/17/2018 00:22
Selenium	< 1.12	mg/Kg		5/17/2018 00:22
Silver	**1.62**	mg/Kg		5/17/2018 00:22
Sodium	**359**	mg/Kg		5/17/2018 00:22
Thallium	< 1.40	mg/Kg		5/17/2018 00:22
Vanadium	**16.3**	mg/Kg		5/17/2018 00:22
Zinc	**42.5**	mg/Kg		5/17/2018 00:22

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-16-051418 (14.5-15 ft)		
Lab Sample ID:	182065-01	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1221	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1232	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1242	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1248	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1254	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1260	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1262	< 0.0325	mg/Kg		5/16/2018 16:18
PCB-1268	< 0.0325	mg/Kg		5/16/2018 16:18

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**54.1**	10 - 132		5/16/2018 16:18
Tetrachloro-m-xylene	**27.9**	10 - 119		5/16/2018 16:18

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/16/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.25	ug/Kg		5/18/2018 12:35
4,4-DDE	< 3.25	ug/Kg		5/18/2018 12:35
4,4-DDT	< 3.25	ug/Kg		5/18/2018 12:35
Aldrin	< 3.25	ug/Kg		5/18/2018 12:35
alpha-BHC	< 3.25	ug/Kg		5/18/2018 12:35
beta-BHC	< 3.25	ug/Kg		5/18/2018 12:35
cis-Chlordane	< 3.25	ug/Kg		5/18/2018 12:35
delta-BHC	< 3.25	ug/Kg		5/18/2018 12:35
Dieldrin	< 3.25	ug/Kg		5/18/2018 12:35

Sample Identifier: RRW-CH-SB-16-051418 (14.5-15 ft)
Lab Sample ID: 182065-01 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.25	ug/Kg		5/18/2018 12:35
Endosulfan II	< 3.25	ug/Kg		5/18/2018 12:35
Endosulfan Sulfate	< 3.25	ug/Kg		5/18/2018 12:35
Endrin	< 3.25	ug/Kg		5/18/2018 12:35
Endrin Aldehyde	< 3.25	ug/Kg		5/18/2018 12:35
Endrin Ketone	< 3.25	ug/Kg		5/18/2018 12:35
gamma-BHC (Lindane)	< 3.25	ug/Kg		5/18/2018 12:35
Heptachlor	< 3.25	ug/Kg		5/18/2018 12:35
Heptachlor Epoxide	< 3.25	ug/Kg		5/18/2018 12:35
Methoxychlor	< 3.25	ug/Kg		5/18/2018 12:35
Toxaphene	< 16.2	ug/Kg		5/18/2018 12:35
trans-Chlordane	< 3.25	ug/Kg		5/18/2018 12:35

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**97.2**	46.4 - 133		5/18/2018 12:35
Tetrachloro-m-xylene (1)	**63.1**	24 - 110		5/18/2018 12:35

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/16/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 343	ug/Kg		5/19/2018 15:11
1,2,4,5-Tetrachlorobenzene	< 343	ug/Kg		5/19/2018 15:11
1,2,4-Trichlorobenzene	< 343	ug/Kg		5/19/2018 15:11
1,2-Dichlorobenzene	< 343	ug/Kg		5/19/2018 15:11
1,3-Dichlorobenzene	< 343	ug/Kg		5/19/2018 15:11
1,4-Dichlorobenzene	< 343	ug/Kg		5/19/2018 15:11
2,2-Oxybis (1-chloropropane)	< 343	ug/Kg		5/19/2018 15:11
2,4-Dinitrotoluene	< 343	ug/Kg		5/19/2018 15:11
2,6-Dinitrotoluene	< 343	ug/Kg		5/19/2018 15:11
2-Chloronaphthalene	< 343	ug/Kg		5/19/2018 15:11
2-Methylnapthalene	< 343	ug/Kg		5/19/2018 15:11
2-Nitroaniline	< 686	ug/Kg		5/19/2018 15:11

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-16-051418 (14.5-15 ft)		
Lab Sample ID:	182065-01	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 343	ug/Kg	5/19/2018	15:11
3-Nitroaniline	< 686	ug/Kg	5/19/2018	15:11
4-Bromophenyl phenyl ether	< 343	ug/Kg	5/19/2018	15:11
4-Chloroaniline	< 343	ug/Kg	5/19/2018	15:11
4-Chlorophenyl phenyl ether	< 343	ug/Kg	5/19/2018	15:11
4-Nitroaniline	< 686	ug/Kg	5/19/2018	15:11
Acenaphthene	< 343	ug/Kg	5/19/2018	15:11
Acenaphthylene	< 343	ug/Kg	5/19/2018	15:11
Acetophenone	< 343	ug/Kg	5/19/2018	15:11
Anthracene	< 343	ug/Kg	5/19/2018	15:11
Atrazine	< 343	ug/Kg	5/19/2018	15:11
Benzaldehyde	< 343	ug/Kg	5/19/2018	15:11
Benzo (a) anthracene	< 343	ug/Kg	5/19/2018	15:11
Benzo (a) pyrene	< 343	ug/Kg	5/19/2018	15:11
Benzo (b) fluoranthene	< 343	ug/Kg	5/19/2018	15:11
Benzo (g,h,i) perylene	< 343	ug/Kg	5/19/2018	15:11
Benzo (k) fluoranthene	< 343	ug/Kg	5/19/2018	15:11
Bis (2-chloroethoxy) methane	< 343	ug/Kg	5/19/2018	15:11
Bis (2-chloroethyl) ether	< 343	ug/Kg	5/19/2018	15:11
Bis (2-ethylhexyl) phthalate	< 343	ug/Kg	5/19/2018	15:11
Butylbenzylphthalate	< 343	ug/Kg	5/19/2018	15:11
Caprolactam	< 343	ug/Kg	5/19/2018	15:11
Carbazole	< 343	ug/Kg	5/19/2018	15:11
Chrysene	< 343	ug/Kg	5/19/2018	15:11
Dibenz (a,h) anthracene	< 343	ug/Kg	5/19/2018	15:11
Dibenzofuran	< 343	ug/Kg	5/19/2018	15:11
Diethyl phthalate	< 343	ug/Kg	5/19/2018	15:11
Dimethyl phthalate	< 686	ug/Kg	5/19/2018	15:11
Di-n-butyl phthalate	< 343	ug/Kg	5/19/2018	15:11
Di-n-octylphthalate	< 343	ug/Kg	5/19/2018	15:11
Fluoranthene	< 343	ug/Kg	5/19/2018	15:11
Fluorene	< 343	ug/Kg	5/19/2018	15:11

Sample Identifier: RRW-CH-SB-16-051418 (14.5-15 ft)
Lab Sample ID: 182065-01 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 343	ug/Kg		5/19/2018 15:11
Hexachlorobutadiene	< 343	ug/Kg		5/19/2018 15:11
Hexachlorocyclopentadiene	< 343	ug/Kg		5/19/2018 15:11
Hexachloroethane	< 343	ug/Kg		5/19/2018 15:11
Indeno (1,2,3-cd) pyrene	< 343	ug/Kg		5/19/2018 15:11
Isophorone	< 343	ug/Kg		5/19/2018 15:11
Naphthalene	< 343	ug/Kg		5/19/2018 15:11
Nitrobenzene	< 343	ug/Kg		5/19/2018 15:11
N-Nitroso-di-n-propylamine	< 343	ug/Kg		5/19/2018 15:11
N-Nitrosodiphenylamine	< 343	ug/Kg		5/19/2018 15:11
Phenanthrene	< 343	ug/Kg		5/19/2018 15:11
Pyrene	< 343	ug/Kg		5/19/2018 15:11

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**42.1**	37.7 - 103		5/19/2018 15:11
Nitrobenzene-d5	**43.0**	38.7 - 92.2		5/19/2018 15:11
Terphenyl-d14	**73.7**	69.9 - 113		5/19/2018 15:11

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27504.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 11.2	ug/Kg		5/17/2018 16:18
1,1,2,2-Tetrachloroethane	< 11.2	ug/Kg		5/17/2018 16:18
1,1,2-Trichloroethane	< 11.2	ug/Kg		5/17/2018 16:18
1,1-Dichloroethane	< 11.2	ug/Kg		5/17/2018 16:18
1,1-Dichloroethene	< 11.2	ug/Kg		5/17/2018 16:18
1,2,3-Trichlorobenzene	< 28.0	ug/Kg		5/17/2018 16:18
1,2,4-Trichlorobenzene	< 28.0	ug/Kg		5/17/2018 16:18
1,2,4-Trimethylbenzene	< 11.2	ug/Kg		5/17/2018 16:18
1,2-Dibromo-3-Chloropropane	< 55.9	ug/Kg		5/17/2018 16:18
1,2-Dibromoethane	< 11.2	ug/Kg		5/17/2018 16:18

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-16-051418 (14.5-15 ft)		
Lab Sample ID:	182065-01	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 11.2	ug/Kg	5/17/2018	16:18
1,2-Dichloroethane	< 11.2	ug/Kg	5/17/2018	16:18
1,2-Dichloropropane	< 11.2	ug/Kg	5/17/2018	16:18
1,3,5-Trimethylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
1,3-Dichlorobenzene	< 11.2	ug/Kg	5/17/2018	16:18
1,4-Dichlorobenzene	< 11.2	ug/Kg	5/17/2018	16:18
1,4-dioxane	< 112	ug/Kg	5/17/2018	16:18
2-Butanone	< 55.9	ug/Kg	5/17/2018	16:18
2-Hexanone	< 28.0	ug/Kg	5/17/2018	16:18
4-Methyl-2-pentanone	< 28.0	ug/Kg	5/17/2018	16:18
Acetone	< 55.9	ug/Kg	5/17/2018	16:18
Benzene	< 11.2	ug/Kg	5/17/2018	16:18
Bromochloromethane	< 28.0	ug/Kg	5/17/2018	16:18
Bromodichloromethane	< 11.2	ug/Kg	5/17/2018	16:18
Bromoform	< 28.0	ug/Kg	5/17/2018	16:18
Bromomethane	< 11.2	ug/Kg	5/17/2018	16:18
Carbon disulfide	< 11.2	ug/Kg	5/17/2018	16:18
Carbon Tetrachloride	< 11.2	ug/Kg	5/17/2018	16:18
Chlorobenzene	< 11.2	ug/Kg	5/17/2018	16:18
Chloroethane	< 11.2	ug/Kg	5/17/2018	16:18
Chloroform	< 11.2	ug/Kg	5/17/2018	16:18
Chloromethane	< 11.2	ug/Kg	5/17/2018	16:18
cis-1,2-Dichloroethene	< 11.2	ug/Kg	5/17/2018	16:18
cis-1,3-Dichloropropene	< 11.2	ug/Kg	5/17/2018	16:18
Cyclohexane	< 55.9	ug/Kg	5/17/2018	16:18
Dibromochloromethane	< 11.2	ug/Kg	5/17/2018	16:18
Dichlorodifluoromethane	< 11.2	ug/Kg	5/17/2018	16:18
Ethylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
Freon 113	< 11.2	ug/Kg	5/17/2018	16:18
Isopropylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
m,p-Xylene	< 11.2	ug/Kg	5/17/2018	16:18
Methyl acetate	< 11.2	ug/Kg	5/17/2018	16:18

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-16-051418 (14.5-15 ft)
Lab Sample ID: 182065-01 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Methyl tert-butyl Ether	< 11.2	ug/Kg	5/17/2018	16:18
Methylcyclohexane	< 11.2	ug/Kg	5/17/2018	16:18
Methylene chloride	< 28.0	ug/Kg	5/17/2018	16:18
Naphthalene	< 28.0	ug/Kg	5/17/2018	16:18
n-Butylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
n-Propylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
o-Xylene	< 11.2	ug/Kg	5/17/2018	16:18
p-Isopropyltoluene	< 11.2	ug/Kg	5/17/2018	16:18
sec-Butylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
Styrene	< 28.0	ug/Kg	5/17/2018	16:18
tert-Butylbenzene	< 11.2	ug/Kg	5/17/2018	16:18
Tetrachloroethene	< 11.2	ug/Kg	5/17/2018	16:18
Toluene	< 11.2	ug/Kg	5/17/2018	16:18
trans-1,2-Dichloroethene	< 11.2	ug/Kg	5/17/2018	16:18
trans-1,3-Dichloropropene	< 11.2	ug/Kg	5/17/2018	16:18
Trichloroethene	< 11.2	ug/Kg	5/17/2018	16:18
Trichlorofluoromethane	< 11.2	ug/Kg	5/17/2018	16:18
Vinyl chloride	< 11.2	ug/Kg	5/17/2018	16:18

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**125**	77.3 - 129		5/17/2018	16:18
4-Bromofluorobenzene	**103**	71 - 123		5/17/2018	16:18
Pentafluorobenzene	**96.0**	85.1 - 110		5/17/2018	16:18
Toluene-D8	**96.2**	82.7 - 112		5/17/2018	16:18

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x50810.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-17-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-02	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.250**	mg/Kg		5/18/2018 09:44

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**7690**	mg/Kg		5/17/2018 00:26
Antimony	< 3.33	mg/Kg		5/17/2018 00:26
Arsenic	**4.92**	mg/Kg		5/17/2018 00:26
Barium	**55.0**	mg/Kg		5/17/2018 00:26
Beryllium	**0.325**	mg/Kg		5/17/2018 00:26
Cadmium	**0.429**	mg/Kg		5/17/2018 00:26
Calcium	**69700**	mg/Kg		5/17/2018 16:42
Chromium	**11.0**	mg/Kg		5/17/2018 00:26
Cobalt	**4.91**	mg/Kg		5/17/2018 00:26
Copper	**26.8**	mg/Kg		5/17/2018 00:26
Iron	**13800**	mg/Kg		5/17/2018 00:26
Lead	**75.0**	mg/Kg		5/17/2018 00:26
Magnesium	**18100**	mg/Kg		5/17/2018 00:26
Manganese	**331**	mg/Kg		5/17/2018 00:26
Nickel	**11.3**	mg/Kg		5/17/2018 00:26
Potassium	**1410**	mg/Kg		5/17/2018 00:26
Selenium	< 1.11	mg/Kg		5/17/2018 00:26
Silver	**1.84**	mg/Kg		5/17/2018 00:26
Sodium	< 139	mg/Kg		5/17/2018 00:26
Thallium	< 1.39	mg/Kg		5/17/2018 00:26
Vanadium	**15.4**	mg/Kg		5/17/2018 00:26
Zinc	**130**	mg/Kg		5/17/2018 00:26

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-17-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-02	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1221	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1232	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1242	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1248	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1254	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1260	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1262	< 0.0289	mg/Kg		5/16/2018 16:42
PCB-1268	< 0.0289	mg/Kg		5/16/2018 16:42

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**57.5**	10 - 132		5/16/2018 16:42
Tetrachloro-m-xylene	**49.5**	10 - 119		5/16/2018 16:42

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/16/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 2.89	ug/Kg		5/17/2018 13:05
4,4-DDE	< 2.89	ug/Kg		5/17/2018 13:05
4,4-DDT	< 2.89	ug/Kg		5/17/2018 13:05
Aldrin	< 2.89	ug/Kg		5/17/2018 13:05
alpha-BHC	< 2.89	ug/Kg		5/17/2018 13:05
beta-BHC	< 2.89	ug/Kg		5/17/2018 13:05
cis-Chlordane	**7.40**	ug/Kg		5/17/2018 13:05
delta-BHC	< 2.89	ug/Kg		5/17/2018 13:05
Dieldrin	**3.03**	ug/Kg		5/17/2018 13:05

Sample Identifier: RRW-CH-SB-17-051418 (3.5-4.0 ft)
Lab Sample ID: 182065-02 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 2.89	ug/Kg		5/17/2018	13:05
Endosulfan II	**3.45**	ug/Kg		5/17/2018	13:05
Endosulfan Sulfate	< 2.89	ug/Kg		5/17/2018	13:05
Endrin	< 2.89	ug/Kg		5/17/2018	13:05
Endrin Aldehyde	< 2.89	ug/Kg		5/17/2018	13:05
Endrin Ketone	< 2.89	ug/Kg		5/17/2018	13:05
gamma-BHC (Lindane)	**3.24**	ug/Kg		5/17/2018	13:05
Heptachlor	< 2.89	ug/Kg		5/17/2018	13:05
Heptachlor Epoxide	< 2.89	ug/Kg		5/17/2018	13:05
Methoxychlor	< 2.89	ug/Kg		5/17/2018	13:05
Toxaphene	< 14.4	ug/Kg		5/17/2018	13:05
trans-Chlordane	**3.29**	ug/Kg		5/17/2018	13:05

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
Decachlorobiphenyl (1)	**59.8**	46.4 - 133		5/17/2018	13:05
Tetrachloro-m-xylene (1)	**86.3**	24 - 110		5/17/2018	13:05

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/16/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1-Biphenyl	< 301	ug/Kg		5/19/2018	15:40
1,2,4,5-Tetrachlorobenzene	< 301	ug/Kg		5/19/2018	15:40
1,2,4-Trichlorobenzene	< 301	ug/Kg		5/19/2018	15:40
1,2-Dichlorobenzene	< 301	ug/Kg		5/19/2018	15:40
1,3-Dichlorobenzene	< 301	ug/Kg		5/19/2018	15:40
1,4-Dichlorobenzene	< 301	ug/Kg		5/19/2018	15:40
2,2-Oxybis (1-chloropropane)	< 301	ug/Kg		5/19/2018	15:40
2,4-Dinitrotoluene	< 301	ug/Kg		5/19/2018	15:40
2,6-Dinitrotoluene	< 301	ug/Kg		5/19/2018	15:40
2-Chloronaphthalene	< 301	ug/Kg		5/19/2018	15:40
2-Methylnapthalene	< 301	ug/Kg		5/19/2018	15:40
2-Nitroaniline	< 603	ug/Kg		5/19/2018	15:40

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-17-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-02	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 301	ug/Kg	5/19/2018	15:40
3-Nitroaniline	< 603	ug/Kg	5/19/2018	15:40
4-Bromophenyl phenyl ether	< 301	ug/Kg	5/19/2018	15:40
4-Chloroaniline	< 301	ug/Kg	5/19/2018	15:40
4-Chlorophenyl phenyl ether	< 301	ug/Kg	5/19/2018	15:40
4-Nitroaniline	< 603	ug/Kg	5/19/2018	15:40
Acenaphthene	< 301	ug/Kg	5/19/2018	15:40
Acenaphthylene	< 301	ug/Kg	5/19/2018	15:40
Acetophenone	< 301	ug/Kg	5/19/2018	15:40
Anthracene	**354**	ug/Kg	5/19/2018	15:40
Atrazine	< 301	ug/Kg	5/19/2018	15:40
Benzaldehyde	< 301	ug/Kg	5/19/2018	15:40
Benzo (a) anthracene	**661**	ug/Kg	5/19/2018	15:40
Benzo (a) pyrene	**657**	ug/Kg	5/19/2018	15:40
Benzo (b) fluoranthene	**802**	ug/Kg	5/19/2018	15:40
Benzo (g,h,i) perylene	**442**	ug/Kg	5/19/2018	15:40
Benzo (k) fluoranthene	< 301	ug/Kg	5/19/2018	15:40
Bis (2-chloroethoxy) methane	< 301	ug/Kg	5/19/2018	15:40
Bis (2-chloroethyl) ether	< 301	ug/Kg	5/19/2018	15:40
Bis (2-ethylhexyl) phthalate	< 301	ug/Kg	5/19/2018	15:40
Butylbenzylphthalate	< 301	ug/Kg	5/19/2018	15:40
Caprolactam	< 301	ug/Kg	5/19/2018	15:40
Carbazole	< 301	ug/Kg	5/19/2018	15:40
Chrysene	**722**	ug/Kg	5/19/2018	15:40
Dibenz (a,h) anthracene	< 301	ug/Kg	5/19/2018	15:40
Dibenzofuran	< 301	ug/Kg	5/19/2018	15:40
Diethyl phthalate	< 301	ug/Kg	5/19/2018	15:40
Dimethyl phthalate	< 603	ug/Kg	5/19/2018	15:40
Di-n-butyl phthalate	< 301	ug/Kg	5/19/2018	15:40
Di-n-octylphthalate	< 301	ug/Kg	5/19/2018	15:40
Fluoranthene	**1440**	ug/Kg	5/19/2018	15:40
Fluorene	< 301	ug/Kg	5/19/2018	15:40

Sample Identifier: RRW-CH-SB-17-051418 (3.5-4.0 ft)
Lab Sample ID: 182065-02 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 301	ug/Kg		5/19/2018 15:40
Hexachlorobutadiene	< 301	ug/Kg		5/19/2018 15:40
Hexachlorocyclopentadiene	< 301	ug/Kg		5/19/2018 15:40
Hexachloroethane	< 301	ug/Kg		5/19/2018 15:40
Indeno (1,2,3-cd) pyrene	**553**	ug/Kg		5/21/2018 12:53
Isophorone	< 301	ug/Kg		5/19/2018 15:40
Naphthalene	< 301	ug/Kg		5/19/2018 15:40
Nitrobenzene	< 301	ug/Kg		5/19/2018 15:40
N-Nitroso-di-n-propylamine	< 301	ug/Kg		5/19/2018 15:40
N-Nitrosodiphenylamine	< 301	ug/Kg		5/19/2018 15:40
Phenanthrene	**1160**	ug/Kg		5/19/2018 15:40
Pyrene	**1300**	ug/Kg		5/19/2018 15:40

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**88.6**	37.7 - 103		5/19/2018 15:40
Nitrobenzene-d5	**49.3**	38.7 - 92.2		5/19/2018 15:40
Terphenyl-d14	**79.3**	69.9 - 113		5/19/2018 15:40

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27505.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 8.97	ug/Kg		5/17/2018 16:42
1,1,2,2-Tetrachloroethane	< 8.97	ug/Kg		5/17/2018 16:42
1,1,2-Trichloroethane	< 8.97	ug/Kg		5/17/2018 16:42
1,1-Dichloroethane	< 8.97	ug/Kg		5/17/2018 16:42
1,1-Dichloroethene	< 8.97	ug/Kg		5/17/2018 16:42
1,2,3-Trichlorobenzene	< 22.4	ug/Kg		5/17/2018 16:42
1,2,4-Trichlorobenzene	< 22.4	ug/Kg		5/17/2018 16:42
1,2,4-Trimethylbenzene	< 8.97	ug/Kg		5/17/2018 16:42
1,2-Dibromo-3-Chloropropane	< 44.8	ug/Kg		5/17/2018 16:42
1,2-Dibromoethane	< 8.97	ug/Kg		5/17/2018 16:42

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-17-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-02	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 8.97	ug/Kg	5/17/2018	16:42
1,2-Dichloroethane	< 8.97	ug/Kg	5/17/2018	16:42
1,2-Dichloropropane	< 8.97	ug/Kg	5/17/2018	16:42
1,3,5-Trimethylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
1,3-Dichlorobenzene	< 8.97	ug/Kg	5/17/2018	16:42
1,4-Dichlorobenzene	< 8.97	ug/Kg	5/17/2018	16:42
1,4-dioxane	< 89.7	ug/Kg	5/17/2018	16:42
2-Butanone	< 44.8	ug/Kg	5/17/2018	16:42
2-Hexanone	< 22.4	ug/Kg	5/17/2018	16:42
4-Methyl-2-pentanone	< 22.4	ug/Kg	5/17/2018	16:42
Acetone	< 44.8	ug/Kg	5/17/2018	16:42
Benzene	< 8.97	ug/Kg	5/17/2018	16:42
Bromochloromethane	< 22.4	ug/Kg	5/17/2018	16:42
Bromodichloromethane	< 8.97	ug/Kg	5/17/2018	16:42
Bromoform	< 22.4	ug/Kg	5/17/2018	16:42
Bromomethane	< 8.97	ug/Kg	5/17/2018	16:42
Carbon disulfide	< 8.97	ug/Kg	5/17/2018	16:42
Carbon Tetrachloride	< 8.97	ug/Kg	5/17/2018	16:42
Chlorobenzene	< 8.97	ug/Kg	5/17/2018	16:42
Chloroethane	< 8.97	ug/Kg	5/17/2018	16:42
Chloroform	< 8.97	ug/Kg	5/17/2018	16:42
Chloromethane	< 8.97	ug/Kg	5/17/2018	16:42
cis-1,2-Dichloroethene	< 8.97	ug/Kg	5/17/2018	16:42
cis-1,3-Dichloropropene	< 8.97	ug/Kg	5/17/2018	16:42
Cyclohexane	< 44.8	ug/Kg	5/17/2018	16:42
Dibromochloromethane	< 8.97	ug/Kg	5/17/2018	16:42
Dichlorodifluoromethane	< 8.97	ug/Kg	5/17/2018	16:42
Ethylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
Freon 113	< 8.97	ug/Kg	5/17/2018	16:42
Isopropylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
m,p-Xylene	< 8.97	ug/Kg	5/17/2018	16:42
Methyl acetate	< 8.97	ug/Kg	5/17/2018	16:42

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-17-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-02	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Methyl tert-butyl Ether	< 8.97	ug/Kg	5/17/2018	16:42
Methylcyclohexane	< 8.97	ug/Kg	5/17/2018	16:42
Methylene chloride	< 22.4	ug/Kg	5/17/2018	16:42
Naphthalene	< 22.4	ug/Kg	5/17/2018	16:42
n-Butylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
n-Propylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
o-Xylene	< 8.97	ug/Kg	5/17/2018	16:42
p-Isopropyltoluene	< 8.97	ug/Kg	5/17/2018	16:42
sec-Butylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
Styrene	< 22.4	ug/Kg	5/17/2018	16:42
tert-Butylbenzene	< 8.97	ug/Kg	5/17/2018	16:42
Tetrachloroethene	< 8.97	ug/Kg	5/17/2018	16:42
Toluene	< 8.97	ug/Kg	5/17/2018	16:42
trans-1,2-Dichloroethene	< 8.97	ug/Kg	5/17/2018	16:42
trans-1,3-Dichloropropene	< 8.97	ug/Kg	5/17/2018	16:42
Trichloroethene	< 8.97	ug/Kg	5/17/2018	16:42
Trichlorofluoromethane	< 8.97	ug/Kg	5/17/2018	16:42
Vinyl chloride	< 8.97	ug/Kg	5/17/2018	16:42

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**	
1,2-Dichloroethane-d4	**118**	77.3 - 129		5/17/2018	16:42
4-Bromofluorobenzene	**106**	71 - 123		5/17/2018	16:42
Pentafluorobenzene	**95.4**	85.1 - 110		5/17/2018	16:42
Toluene-D8	**100**	82.7 - 112		5/17/2018	16:42

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50811.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03XX18 (4.5-5.0 ft)		
Lab Sample ID:	182065-03	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0944**	mg/Kg		5/18/2018 09:47

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**8400**	mg/Kg		5/17/2018 00:30
Antimony	< 3.10	mg/Kg		5/17/2018 00:30
Arsenic	**3.68**	mg/Kg		5/17/2018 00:30
Barium	**47.7**	mg/Kg		5/17/2018 00:30
Beryllium	**0.387**	mg/Kg		5/17/2018 00:30
Cadmium	< 0.258	mg/Kg		5/17/2018 00:30
Calcium	**21700**	mg/Kg		5/17/2018 00:30
Chromium	**10.1**	mg/Kg		5/17/2018 00:30
Cobalt	**5.30**	mg/Kg		5/17/2018 00:30
Copper	**13.1**	mg/Kg		5/17/2018 00:30
Iron	**13200**	mg/Kg		5/17/2018 00:30
Lead	**37.1**	mg/Kg		5/17/2018 00:30
Magnesium	**6570**	mg/Kg		5/17/2018 00:30
Manganese	**626**	mg/Kg		5/17/2018 00:30
Nickel	**10.3**	mg/Kg		5/17/2018 00:30
Potassium	**1600**	mg/Kg		5/17/2018 00:30
Selenium	< 1.03	mg/Kg		5/17/2018 00:30
Silver	**0.862**	mg/Kg		5/17/2018 00:30
Sodium	**164**	mg/Kg		5/17/2018 00:30
Thallium	< 1.29	mg/Kg		5/17/2018 00:30
Vanadium	**17.2**	mg/Kg		5/17/2018 00:30
Zinc	**56.4**	mg/Kg		5/17/2018 00:30

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03XX18 (4.5-5.0 ft)		
Lab Sample ID:	182065-03	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1221	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1232	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1242	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1248	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1254	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1260	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1262	< 0.0314	mg/Kg		5/16/2018 17:05
PCB-1268	< 0.0314	mg/Kg		5/16/2018 17:05

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**59.6**	10 - 132		5/16/2018 17:05
Tetrachloro-m-xylene	**41.0**	10 - 119		5/16/2018 17:05

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/16/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.14	ug/Kg		5/17/2018 13:21
4,4-DDE	< 3.14	ug/Kg		5/17/2018 13:21
4,4-DDT	< 3.14	ug/Kg		5/17/2018 13:21
Aldrin	< 3.14	ug/Kg		5/17/2018 13:21
alpha-BHC	< 3.14	ug/Kg		5/17/2018 13:21
beta-BHC	< 3.14	ug/Kg		5/17/2018 13:21
cis-Chlordane	< 3.14	ug/Kg		5/17/2018 13:21
delta-BHC	< 3.14	ug/Kg		5/17/2018 13:21
Dieldrin	< 3.14	ug/Kg		5/17/2018 13:21

Sample Identifier: RRW-CH-SB-03XX18 (4.5-5.0 ft)
Lab Sample ID: 182065-03 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.14	ug/Kg		5/17/2018 13:21
Endosulfan II	< 3.14	ug/Kg		5/17/2018 13:21
Endosulfan Sulfate	< 3.14	ug/Kg		5/17/2018 13:21
Endrin	< 3.14	ug/Kg		5/17/2018 13:21
Endrin Aldehyde	< 3.14	ug/Kg		5/17/2018 13:21
Endrin Ketone	< 3.14	ug/Kg		5/17/2018 13:21
gamma-BHC (Lindane)	< 3.14	ug/Kg		5/17/2018 13:21
Heptachlor	< 3.14	ug/Kg		5/17/2018 13:21
Heptachlor Epoxide	< 3.14	ug/Kg		5/17/2018 13:21
Methoxychlor	**3.27**	ug/Kg		5/17/2018 13:21
Toxaphene	< 15.7	ug/Kg		5/17/2018 13:21
trans-Chlordane	< 3.14	ug/Kg		5/17/2018 13:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**58.0**	46.4 - 133		5/17/2018 13:21
Tetrachloro-m-xylene (1)	**69.3**	24 - 110		5/17/2018 13:21

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/16/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 311	ug/Kg		5/19/2018 16:09
1,2,4,5-Tetrachlorobenzene	< 311	ug/Kg		5/19/2018 16:09
1,2,4-Trichlorobenzene	< 311	ug/Kg		5/19/2018 16:09
1,2-Dichlorobenzene	< 311	ug/Kg		5/19/2018 16:09
1,3-Dichlorobenzene	< 311	ug/Kg		5/19/2018 16:09
1,4-Dichlorobenzene	< 311	ug/Kg		5/19/2018 16:09
2,2-Oxybis (1-chloropropane)	< 311	ug/Kg		5/19/2018 16:09
2,4-Dinitrotoluene	< 311	ug/Kg		5/19/2018 16:09
2,6-Dinitrotoluene	< 311	ug/Kg		5/19/2018 16:09
2-Chloronaphthalene	< 311	ug/Kg		5/19/2018 16:09
2-Methylnapthalene	< 311	ug/Kg		5/19/2018 16:09
2-Nitroaniline	< 623	ug/Kg		5/19/2018 16:09

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03XX18 (4.5-5.0 ft)		
Lab Sample ID:	182065-03	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 311	ug/Kg	5/19/2018	16:09
3-Nitroaniline	< 623	ug/Kg	5/19/2018	16:09
4-Bromophenyl phenyl ether	< 311	ug/Kg	5/19/2018	16:09
4-Chloroaniline	< 311	ug/Kg	5/19/2018	16:09
4-Chlorophenyl phenyl ether	< 311	ug/Kg	5/19/2018	16:09
4-Nitroaniline	< 623	ug/Kg	5/19/2018	16:09
Acenaphthene	< 311	ug/Kg	5/19/2018	16:09
Acenaphthylene	< 311	ug/Kg	5/19/2018	16:09
Acetophenone	< 311	ug/Kg	5/19/2018	16:09
Anthracene	< 311	ug/Kg	5/19/2018	16:09
Atrazine	< 311	ug/Kg	5/19/2018	16:09
Benzaldehyde	< 311	ug/Kg	5/19/2018	16:09
Benzo (a) anthracene	**398**	ug/Kg	5/19/2018	16:09
Benzo (a) pyrene	**394**	ug/Kg	5/19/2018	16:09
Benzo (b) fluoranthene	**458**	ug/Kg	5/19/2018	16:09
Benzo (g,h,i) perylene	< 311	ug/Kg	5/19/2018	16:09
Benzo (k) fluoranthene	< 311	ug/Kg	5/19/2018	16:09
Bis (2-chloroethoxy) methane	< 311	ug/Kg	5/19/2018	16:09
Bis (2-chloroethyl) ether	< 311	ug/Kg	5/19/2018	16:09
Bis (2-ethylhexyl) phthalate	< 311	ug/Kg	5/19/2018	16:09
Butylbenzylphthalate	< 311	ug/Kg	5/19/2018	16:09
Caprolactam	< 311	ug/Kg	5/19/2018	16:09
Carbazole	< 311	ug/Kg	5/19/2018	16:09
Chrysene	**421**	ug/Kg	5/19/2018	16:09
Dibenz (a,h) anthracene	< 311	ug/Kg	5/19/2018	16:09
Dibenzofuran	< 311	ug/Kg	5/19/2018	16:09
Diethyl phthalate	< 311	ug/Kg	5/19/2018	16:09
Dimethyl phthalate	< 623	ug/Kg	5/19/2018	16:09
Di-n-butyl phthalate	< 311	ug/Kg	5/19/2018	16:09
Di-n-octylphthalate	< 311	ug/Kg	5/19/2018	16:09
Fluoranthene	**728**	ug/Kg	5/19/2018	16:09
Fluorene	< 311	ug/Kg	5/19/2018	16:09

Sample Identifier: RRW-CH-SB-03XX18 (4.5-5.0 ft)
Lab Sample ID: 182065-03 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 311	ug/Kg			5/19/2018 16:09
Hexachlorobutadiene	< 311	ug/Kg			5/19/2018 16:09
Hexachlorocyclopentadiene	< 311	ug/Kg			5/19/2018 16:09
Hexachloroethane	< 311	ug/Kg			5/19/2018 16:09
Indeno (1,2,3-cd) pyrene	< 311	ug/Kg			5/19/2018 16:09
Isophorone	< 311	ug/Kg			5/19/2018 16:09
Naphthalene	< 311	ug/Kg			5/19/2018 16:09
Nitrobenzene	< 311	ug/Kg			5/19/2018 16:09
N-Nitroso-di-n-propylamine	< 311	ug/Kg			5/19/2018 16:09
N-Nitrosodiphenylamine	< 311	ug/Kg			5/19/2018 16:09
Phenanthrene	**343**	ug/Kg			5/19/2018 16:09
Pyrene	**773**	ug/Kg			5/19/2018 16:09

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**67.5**	37.7 - 103		5/19/2018 16:09
Nitrobenzene-d5	**37.1**	38.7 - 92.2	*	5/19/2018 16:09
Terphenyl-d14	**80.7**	69.9 - 113		5/19/2018 16:09

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27506.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 107	ug/Kg		5/17/2018 15:54
1,1,2,2-Tetrachloroethane	< 107	ug/Kg		5/17/2018 15:54
1,1,2-Trichloroethane	< 107	ug/Kg		5/17/2018 15:54
1,1-Dichloroethane	< 107	ug/Kg		5/17/2018 15:54
1,1-Dichloroethene	< 107	ug/Kg		5/17/2018 15:54
1,2,3-Trichlorobenzene	< 268	ug/Kg		5/17/2018 15:54
1,2,4-Trichlorobenzene	< 268	ug/Kg		5/17/2018 15:54
1,2,4-Trimethylbenzene	< 107	ug/Kg		5/17/2018 15:54
1,2-Dibromo-3-Chloropropane	< 536	ug/Kg		5/17/2018 15:54
1,2-Dibromoethane	< 107	ug/Kg		5/17/2018 15:54

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03XX18 (4.5-5.0 ft)		
Lab Sample ID:	182065-03	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 107	ug/Kg	5/17/2018	15:54
1,2-Dichloroethane	< 107	ug/Kg	5/17/2018	15:54
1,2-Dichloropropane	< 107	ug/Kg	5/17/2018	15:54
1,3,5-Trimethylbenzene	< 107	ug/Kg	5/17/2018	15:54
1,3-Dichlorobenzene	< 107	ug/Kg	5/17/2018	15:54
1,4-Dichlorobenzene	< 107	ug/Kg	5/17/2018	15:54
1,4-dioxane	< 1070	ug/Kg	5/17/2018	15:54
2-Butanone	< 536	ug/Kg	5/17/2018	15:54
2-Hexanone	< 268	ug/Kg	5/17/2018	15:54
4-Methyl-2-pentanone	< 268	ug/Kg	5/17/2018	15:54
Acetone	< 536	ug/Kg	5/17/2018	15:54
Benzene	< 107	ug/Kg	5/17/2018	15:54
Bromochloromethane	< 268	ug/Kg	5/17/2018	15:54
Bromodichloromethane	< 107	ug/Kg	5/17/2018	15:54
Bromoform	< 268	ug/Kg	5/17/2018	15:54
Bromomethane	< 107	ug/Kg	5/17/2018	15:54
Carbon disulfide	< 107	ug/Kg	5/17/2018	15:54
Carbon Tetrachloride	< 107	ug/Kg	5/17/2018	15:54
Chlorobenzene	< 107	ug/Kg	5/17/2018	15:54
Chloroethane	< 107	ug/Kg	5/17/2018	15:54
Chloroform	< 107	ug/Kg	5/17/2018	15:54
Chloromethane	< 107	ug/Kg	5/17/2018	15:54
cis-1,2-Dichloroethene	< 107	ug/Kg	5/17/2018	15:54
cis-1,3-Dichloropropene	< 107	ug/Kg	5/17/2018	15:54
Cyclohexane	< 536	ug/Kg	5/17/2018	15:54
Dibromochloromethane	< 107	ug/Kg	5/17/2018	15:54
Dichlorodifluoromethane	< 107	ug/Kg	5/17/2018	15:54
Ethylbenzene	< 107	ug/Kg	5/17/2018	15:54
Freon 113	< 107	ug/Kg	5/17/2018	15:54
Isopropylbenzene	< 107	ug/Kg	5/17/2018	15:54
m,p-Xylene	< 107	ug/Kg	5/17/2018	15:54
Methyl acetate	< 107	ug/Kg	5/17/2018	15:54

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-03XX18 (4.5-5.0 ft)		
Lab Sample ID:	182065-03	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Methyl tert-butyl Ether	< 107	ug/Kg	5/17/2018	15:54
Methylcyclohexane	< 107	ug/Kg	5/17/2018	15:54
Methylene chloride	< 268	ug/Kg	5/17/2018	15:54
Naphthalene	**10400**	ug/Kg	5/17/2018	15:54
n-Butylbenzene	< 107	ug/Kg	5/17/2018	15:54
n-Propylbenzene	< 107	ug/Kg	5/17/2018	15:54
o-Xylene	< 107	ug/Kg	5/17/2018	15:54
p-Isopropyltoluene	< 107	ug/Kg	5/17/2018	15:54
sec-Butylbenzene	< 107	ug/Kg	5/17/2018	15:54
Styrene	< 268	ug/Kg	5/17/2018	15:54
tert-Butylbenzene	< 107	ug/Kg	5/17/2018	15:54
Tetrachloroethene	< 107	ug/Kg	5/17/2018	15:54
Toluene	< 107	ug/Kg	5/17/2018	15:54
trans-1,2-Dichloroethene	< 107	ug/Kg	5/17/2018	15:54
trans-1,3-Dichloropropene	< 107	ug/Kg	5/17/2018	15:54
Trichloroethene	< 107	ug/Kg	5/17/2018	15:54
Trichlorofluoromethane	< 107	ug/Kg	5/17/2018	15:54
Vinyl chloride	< 107	ug/Kg	5/17/2018	15:54

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**	
1,2-Dichloroethane-d4	**124**	77.3 - 129		5/17/2018	15:54
4-Bromofluorobenzene	**95.3**	71 - 123		5/17/2018	15:54
Pentafluorobenzene	**93.8**	85.1 - 110		5/17/2018	15:54
Toluene-D8	**95.3**	82.7 - 112		5/17/2018	15:54

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50809.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-19-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-04	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.179**	mg/Kg		5/18/2018 09:49

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**8820**	mg/Kg		5/17/2018 00:34
Antimony	< 3.52	mg/Kg		5/17/2018 00:34
Arsenic	**3.87**	mg/Kg		5/17/2018 00:34
Barium	**57.3**	mg/Kg		5/17/2018 00:34
Beryllium	**0.427**	mg/Kg		5/17/2018 00:34
Cadmium	< 0.294	mg/Kg		5/17/2018 00:34
Calcium	**17300**	mg/Kg		5/17/2018 00:34
Chromium	**10.8**	mg/Kg		5/17/2018 00:34
Cobalt	**5.38**	mg/Kg		5/17/2018 00:34
Copper	**16.0**	mg/Kg		5/17/2018 00:34
Iron	**13300**	mg/Kg		5/17/2018 00:34
Lead	**71.4**	mg/Kg		5/17/2018 00:34
Magnesium	**5590**	mg/Kg		5/17/2018 00:34
Manganese	**287**	mg/Kg		5/17/2018 00:34
Nickel	**11.4**	mg/Kg		5/17/2018 00:34
Potassium	**1550**	mg/Kg		5/17/2018 00:34
Selenium	< 1.17	mg/Kg		5/17/2018 00:34
Silver	**0.704**	mg/Kg		5/17/2018 00:34
Sodium	< 147	mg/Kg		5/17/2018 00:34
Thallium	< 1.47	mg/Kg		5/17/2018 00:34
Vanadium	**17.9**	mg/Kg		5/17/2018 00:34
Zinc	**64.8**	mg/Kg		5/17/2018 00:34

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-19-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-04	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1221	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1232	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1242	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1248	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1254	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1260	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1262	< 0.0334	mg/Kg		5/16/2018 17:28
PCB-1268	< 0.0334	mg/Kg		5/16/2018 17:28

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**54.6**	10 - 132		5/16/2018 17:28
Tetrachloro-m-xylene	**41.6**	10 - 119		5/16/2018 17:28

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/16/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.34	ug/Kg		5/17/2018 13:36
4,4-DDE	< 3.34	ug/Kg		5/17/2018 13:36
4,4-DDT	< 3.34	ug/Kg		5/17/2018 13:36
Aldrin	< 3.34	ug/Kg		5/17/2018 13:36
alpha-BHC	< 3.34	ug/Kg		5/17/2018 13:36
beta-BHC	< 3.34	ug/Kg		5/17/2018 13:36
cis-Chlordane	< 3.34	ug/Kg		5/17/2018 13:36
delta-BHC	< 3.34	ug/Kg		5/17/2018 13:36
Dieldrin	< 3.34	ug/Kg		5/17/2018 13:36

Sample Identifier: RRW-CH-SB-19-051418 (3.5-4.0 ft)
Lab Sample ID: 182065-04 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Endosulfan I	< 3.34	ug/Kg			5/17/2018 13:36
Endosulfan II	**3.71**	ug/Kg			5/17/2018 13:36
Endosulfan Sulfate	< 3.34	ug/Kg			5/17/2018 13:36
Endrin	< 3.34	ug/Kg			5/17/2018 13:36
Endrin Aldehyde	< 3.34	ug/Kg			5/17/2018 13:36
Endrin Ketone	< 3.34	ug/Kg			5/17/2018 13:36
gamma-BHC (Lindane)	< 3.34	ug/Kg			5/17/2018 13:36
Heptachlor	< 3.34	ug/Kg			5/17/2018 13:36
Heptachlor Epoxide	< 3.34	ug/Kg			5/17/2018 13:36
Methoxychlor	< 3.34	ug/Kg			5/17/2018 13:36
Toxaphene	< 16.7	ug/Kg			5/17/2018 13:36
trans-Chlordane	< 3.34	ug/Kg			5/17/2018 13:36

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**42.6**	46.4 - 133	*	5/17/2018 13:36
Tetrachloro-m-xylene (1)	**83.5**	24 - 110		5/17/2018 13:36

Method Reference(s): EPA 8081B
EPA 3550C
Preparation Date: 5/16/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 1470	ug/Kg		5/19/2018 16:38
1,2,4,5-Tetrachlorobenzene	< 1470	ug/Kg		5/19/2018 16:38
1,2,4-Trichlorobenzene	< 1470	ug/Kg		5/19/2018 16:38
1,2-Dichlorobenzene	< 1470	ug/Kg		5/19/2018 16:38
1,3-Dichlorobenzene	< 1470	ug/Kg		5/19/2018 16:38
1,4-Dichlorobenzene	< 1470	ug/Kg		5/19/2018 16:38
2,2-Oxybis (1-chloropropane)	< 1470	ug/Kg		5/19/2018 16:38
2,4-Dinitrotoluene	< 1470	ug/Kg		5/19/2018 16:38
2,6-Dinitrotoluene	< 1470	ug/Kg		5/19/2018 16:38
2-Chloronaphthalene	< 1470	ug/Kg		5/19/2018 16:38
2-Methylnapthalene	< 1470	ug/Kg		5/19/2018 16:38
2-Nitroaniline	< 2940	ug/Kg		5/19/2018 16:38

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-19-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-04	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 1470	ug/Kg	5/19/2018	16:38
3-Nitroaniline	< 2940	ug/Kg	5/19/2018	16:38
4-Bromophenyl phenyl ether	< 1470	ug/Kg	5/19/2018	16:38
4-Chloroaniline	< 1470	ug/Kg	5/19/2018	16:38
4-Chlorophenyl phenyl ether	< 1470	ug/Kg	5/19/2018	16:38
4-Nitroaniline	< 2940	ug/Kg	5/19/2018	16:38
Acenaphthene	< 1470	ug/Kg	5/19/2018	16:38
Acenaphthylene	< 1470	ug/Kg	5/19/2018	16:38
Acetophenone	< 1470	ug/Kg	5/19/2018	16:38
Anthracene	< 1470	ug/Kg	5/19/2018	16:38
Atrazine	< 1470	ug/Kg	5/19/2018	16:38
Benzaldehyde	< 1470	ug/Kg	5/19/2018	16:38
Benzo (a) anthracene	< 1470	ug/Kg	5/19/2018	16:38
Benzo (a) pyrene	< 1470	ug/Kg	5/19/2018	16:38
Benzo (b) fluoranthene	< 1470	ug/Kg	5/19/2018	16:38
Benzo (g,h,i) perylene	< 1470	ug/Kg	5/19/2018	16:38
Benzo (k) fluoranthene	< 1470	ug/Kg	5/19/2018	16:38
Bis (2-chloroethoxy) methane	< 1470	ug/Kg	5/19/2018	16:38
Bis (2-chloroethyl) ether	< 1470	ug/Kg	5/19/2018	16:38
Bis (2-ethylhexyl) phthalate	< 1470	ug/Kg	5/19/2018	16:38
Butylbenzylphthalate	< 1470	ug/Kg	5/19/2018	16:38
Caprolactam	< 1470	ug/Kg	5/19/2018	16:38
Carbazole	< 1470	ug/Kg	5/19/2018	16:38
Chrysene	< 1470	ug/Kg	5/19/2018	16:38
Dibenz (a,h) anthracene	< 1470	ug/Kg	5/19/2018	16:38
Dibenzofuran	< 1470	ug/Kg	5/19/2018	16:38
Diethyl phthalate	< 1470	ug/Kg	5/19/2018	16:38
Dimethyl phthalate	< 2940	ug/Kg	5/19/2018	16:38
Di-n-butyl phthalate	< 1470	ug/Kg	5/19/2018	16:38
Di-n-octylphthalate	< 1470	ug/Kg	5/19/2018	16:38
Fluoranthene	**1810**	ug/Kg	5/19/2018	16:38
Fluorene	< 1470	ug/Kg	5/19/2018	16:38

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-19-051418 (3.5-4.0 ft)
Lab Sample ID: 182065-04 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 1470	ug/Kg		5/19/2018	16:38
Hexachlorobutadiene	< 1470	ug/Kg		5/19/2018	16:38
Hexachlorocyclopentadiene	< 1470	ug/Kg		5/19/2018	16:38
Hexachloroethane	< 1470	ug/Kg		5/19/2018	16:38
Indeno (1,2,3-cd) pyrene	< 1470	ug/Kg		5/19/2018	16:38
Isophorone	< 1470	ug/Kg		5/19/2018	16:38
Naphthalene	< 1470	ug/Kg		5/19/2018	16:38
Nitrobenzene	< 1470	ug/Kg		5/19/2018	16:38
N-Nitroso-di-n-propylamine	< 1470	ug/Kg		5/19/2018	16:38
N-Nitrosodiphenylamine	< 1470	ug/Kg		5/19/2018	16:38
Phenanthrene	< 1470	ug/Kg		5/19/2018	16:38
Pyrene	**1900**	ug/Kg		5/19/2018	16:38

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**64.6**	37.7 - 103		5/19/2018	16:38
Nitrobenzene-d5	**58.9**	38.7 - 92.2		5/19/2018	16:38
Terphenyl-d14	**78.2**	69.9 - 113		5/19/2018	16:38

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27507.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed	
1,1,1-Trichloroethane	< 7.65	ug/Kg		5/17/2018	17:06
1,1,2,2-Tetrachloroethane	< 7.65	ug/Kg		5/17/2018	17:06
1,1,2-Trichloroethane	< 7.65	ug/Kg		5/17/2018	17:06
1,1-Dichloroethane	< 7.65	ug/Kg		5/17/2018	17:06
1,1-Dichloroethene	< 7.65	ug/Kg		5/17/2018	17:06
1,2,3-Trichlorobenzene	< 19.1	ug/Kg		5/17/2018	17:06
1,2,4-Trichlorobenzene	< 19.1	ug/Kg		5/17/2018	17:06
1,2,4-Trimethylbenzene	< 7.65	ug/Kg		5/17/2018	17:06
1,2-Dibromo-3-Chloropropane	< 38.3	ug/Kg		5/17/2018	17:06
1,2-Dibromoethane	< 7.65	ug/Kg		5/17/2018	17:06

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-19-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-04	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 7.65	ug/Kg	5/17/2018	17:06
1,2-Dichloroethane	< 7.65	ug/Kg	5/17/2018	17:06
1,2-Dichloropropane	< 7.65	ug/Kg	5/17/2018	17:06
1,3,5-Trimethylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
1,3-Dichlorobenzene	< 7.65	ug/Kg	5/17/2018	17:06
1,4-Dichlorobenzene	< 7.65	ug/Kg	5/17/2018	17:06
1,4-dioxane	< 76.5	ug/Kg	5/17/2018	17:06
2-Butanone	< 38.3	ug/Kg	5/17/2018	17:06
2-Hexanone	< 19.1	ug/Kg	5/17/2018	17:06
4-Methyl-2-pentanone	< 19.1	ug/Kg	5/17/2018	17:06
Acetone	< 38.3	ug/Kg	5/17/2018	17:06
Benzene	< 7.65	ug/Kg	5/17/2018	17:06
Bromochloromethane	< 19.1	ug/Kg	5/17/2018	17:06
Bromodichloromethane	< 7.65	ug/Kg	5/17/2018	17:06
Bromoform	< 19.1	ug/Kg	5/17/2018	17:06
Bromomethane	< 7.65	ug/Kg	5/17/2018	17:06
Carbon disulfide	< 7.65	ug/Kg	5/17/2018	17:06
Carbon Tetrachloride	< 7.65	ug/Kg	5/17/2018	17:06
Chlorobenzene	< 7.65	ug/Kg	5/17/2018	17:06
Chloroethane	< 7.65	ug/Kg	5/17/2018	17:06
Chloroform	< 7.65	ug/Kg	5/17/2018	17:06
Chloromethane	< 7.65	ug/Kg	5/17/2018	17:06
cis-1,2-Dichloroethene	< 7.65	ug/Kg	5/17/2018	17:06
cis-1,3-Dichloropropene	< 7.65	ug/Kg	5/17/2018	17:06
Cyclohexane	< 38.3	ug/Kg	5/17/2018	17:06
Dibromochloromethane	< 7.65	ug/Kg	5/17/2018	17:06
Dichlorodifluoromethane	< 7.65	ug/Kg	5/17/2018	17:06
Ethylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
Freon 113	< 7.65	ug/Kg	5/17/2018	17:06
Isopropylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
m,p-Xylene	< 7.65	ug/Kg	5/17/2018	17:06
Methyl acetate	< 7.65	ug/Kg	5/17/2018	17:06

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-19-051418 (3.5-4.0 ft)		
Lab Sample ID:	182065-04	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Methyl tert-butyl Ether	< 7.65	ug/Kg	5/17/2018	17:06
Methylcyclohexane	< 7.65	ug/Kg	5/17/2018	17:06
Methylene chloride	< 19.1	ug/Kg	5/17/2018	17:06
Naphthalene	< 19.1	ug/Kg	5/17/2018	17:06
n-Butylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
n-Propylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
o-Xylene	< 7.65	ug/Kg	5/17/2018	17:06
p-Isopropyltoluene	< 7.65	ug/Kg	5/17/2018	17:06
sec-Butylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
Styrene	< 19.1	ug/Kg	5/17/2018	17:06
tert-Butylbenzene	< 7.65	ug/Kg	5/17/2018	17:06
Tetrachloroethene	< 7.65	ug/Kg	5/17/2018	17:06
Toluene	< 7.65	ug/Kg	5/17/2018	17:06
trans-1,2-Dichloroethene	< 7.65	ug/Kg	5/17/2018	17:06
trans-1,3-Dichloropropene	< 7.65	ug/Kg	5/17/2018	17:06
Trichloroethene	< 7.65	ug/Kg	5/17/2018	17:06
Trichlorofluoromethane	< 7.65	ug/Kg	5/17/2018	17:06
Vinyl chloride	< 7.65	ug/Kg	5/17/2018	17:06

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**	
1,2-Dichloroethane-d4	**121**	77.3 - 129		5/17/2018	17:06
4-Bromofluorobenzene	**96.7**	71 - 123		5/17/2018	17:06
Pentafluorobenzene	**95.0**	85.1 - 110		5/17/2018	17:06
Toluene-D8	**97.6**	82.7 - 112		5/17/2018	17:06

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50812.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-20-051418 (6.0-6.5 ft)		
Lab Sample ID:	182065-05	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.190**	mg/Kg		5/18/2018 09:52

Method Reference(s): EPA 7471B
Preparation Date: 5/17/2018
Data File: Hg180518A

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**4730**	mg/Kg		5/17/2018 00:39
Antimony	< 3.44	mg/Kg		5/17/2018 00:39
Arsenic	**2.68**	mg/Kg		5/17/2018 00:39
Barium	**23.2**	mg/Kg		5/17/2018 00:39
Beryllium	< 0.286	mg/Kg		5/17/2018 00:39
Cadmium	< 0.286	mg/Kg		5/17/2018 00:39
Calcium	**13900**	mg/Kg		5/17/2018 00:39
Chromium	**6.10**	mg/Kg		5/17/2018 00:39
Cobalt	**4.27**	mg/Kg		5/17/2018 00:39
Copper	**20.5**	mg/Kg		5/17/2018 00:39
Iron	**8960**	mg/Kg		5/17/2018 00:39
Lead	**6.93**	mg/Kg		5/17/2018 00:39
Magnesium	**5570**	mg/Kg		5/17/2018 00:39
Manganese	**148**	mg/Kg		5/17/2018 00:39
Nickel	**7.82**	mg/Kg		5/17/2018 00:39
Potassium	**836**	mg/Kg		5/17/2018 00:39
Selenium	< 1.15	mg/Kg		5/17/2018 00:39
Silver	< 0.573	mg/Kg		5/17/2018 00:39
Sodium	< 143	mg/Kg		5/17/2018 00:39
Thallium	< 1.43	mg/Kg		5/17/2018 00:39
Vanadium	**10.3**	mg/Kg		5/17/2018 00:39
Zinc	**33.5**	mg/Kg		5/17/2018 00:39

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-20-051418 (6.0-6.5 ft)		
Lab Sample ID:	182065-05	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 5/16/2018
Data File: 180516C

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1221	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1232	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1242	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1248	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1254	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1260	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1262	< 0.0312	mg/Kg		5/16/2018 17:51
PCB-1268	< 0.0312	mg/Kg		5/16/2018 17:51

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**48.9**	10 - 132		5/16/2018 17:51
Tetrachloro-m-xylene	**32.6**	10 - 119		5/16/2018 17:51

Method Reference(s): EPA 8082A
EPA 3550C
Preparation Date: 5/16/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.12	ug/Kg		5/17/2018 13:51
4,4-DDE	< 3.12	ug/Kg		5/17/2018 13:51
4,4-DDT	< 3.12	ug/Kg		5/17/2018 13:51
Aldrin	< 3.12	ug/Kg		5/17/2018 13:51
alpha-BHC	< 3.12	ug/Kg		5/17/2018 13:51
beta-BHC	< 3.12	ug/Kg		5/17/2018 13:51
cis-Chlordane	< 3.12	ug/Kg		5/17/2018 13:51
delta-BHC	< 3.12	ug/Kg		5/17/2018 13:51
Dieldrin	< 3.12	ug/Kg		5/17/2018 13:51

Sample Identifier:	RRW-CH-SB-20-051418 (6.0-6.5 ft)		
Lab Sample ID:	182065-05	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

Endosulfan I	< 3.12	ug/Kg		5/17/2018 13:51
Endosulfan II	< 3.12	ug/Kg		5/17/2018 13:51
Endosulfan Sulfate	< 3.12	ug/Kg		5/17/2018 13:51
Endrin	< 3.12	ug/Kg		5/17/2018 13:51
Endrin Aldehyde	< 3.12	ug/Kg		5/17/2018 13:51
Endrin Ketone	< 3.12	ug/Kg		5/17/2018 13:51
gamma-BHC (Lindane)	< 3.12	ug/Kg		5/17/2018 13:51
Heptachlor	< 3.12	ug/Kg		5/17/2018 13:51
Heptachlor Epoxide	< 3.12	ug/Kg		5/17/2018 13:51
Methoxychlor	< 3.12	ug/Kg		5/17/2018 13:51
Toxaphene	< 15.6	ug/Kg		5/17/2018 13:51
trans-Chlordane	< 3.12	ug/Kg		5/17/2018 13:51

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**
Decachlorobiphenyl (1)	**34.6**	46.4 - 133	*	5/17/2018 13:51
Tetrachloro-m-xylene (1)	**63.2**	24 - 110		5/17/2018 13:51

Method Reference(s): EPA 8081B
EPA 3550C

Preparation Date: 5/16/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	**Result**	**Units**	**Qualifier**	**Date Analyzed**
1,1-Biphenyl	< 309	ug/Kg		5/19/2018 17:07
1,2,4,5-Tetrachlorobenzene	< 309	ug/Kg		5/19/2018 17:07
1,2,4-Trichlorobenzene	< 309	ug/Kg		5/19/2018 17:07
1,2-Dichlorobenzene	< 309	ug/Kg		5/19/2018 17:07
1,3-Dichlorobenzene	< 309	ug/Kg		5/19/2018 17:07
1,4-Dichlorobenzene	< 309	ug/Kg		5/19/2018 17:07
2,2-Oxybis (1-chloropropane)	< 309	ug/Kg		5/19/2018 17:07
2,4-Dinitrotoluene	< 309	ug/Kg		5/19/2018 17:07
2,6-Dinitrotoluene	< 309	ug/Kg		5/19/2018 17:07
2-Chloronaphthalene	< 309	ug/Kg		5/19/2018 17:07
2-Methylnapthalene	< 309	ug/Kg		5/19/2018 17:07
2-Nitroaniline	< 618	ug/Kg		5/19/2018 17:07

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-20-051418 (6.0-6.5 ft)		
Lab Sample ID:	182065-05	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

3,3'-Dichlorobenzidine	< 309	ug/Kg	5/19/2018	17:07
3-Nitroaniline	< 618	ug/Kg	5/19/2018	17:07
4-Bromophenyl phenyl ether	< 309	ug/Kg	5/19/2018	17:07
4-Chloroaniline	< 309	ug/Kg	5/19/2018	17:07
4-Chlorophenyl phenyl ether	< 309	ug/Kg	5/19/2018	17:07
4-Nitroaniline	< 618	ug/Kg	5/19/2018	17:07
Acenaphthene	< 309	ug/Kg	5/19/2018	17:07
Acenaphthylene	< 309	ug/Kg	5/19/2018	17:07
Acetophenone	< 309	ug/Kg	5/19/2018	17:07
Anthracene	< 309	ug/Kg	5/19/2018	17:07
Atrazine	< 309	ug/Kg	5/19/2018	17:07
Benzaldehyde	< 309	ug/Kg	5/19/2018	17:07
Benzo (a) anthracene	< 309	ug/Kg	5/19/2018	17:07
Benzo (a) pyrene	< 309	ug/Kg	5/19/2018	17:07
Benzo (b) fluoranthene	< 309	ug/Kg	5/19/2018	17:07
Benzo (g,h,i) perylene	< 309	ug/Kg	5/19/2018	17:07
Benzo (k) fluoranthene	< 309	ug/Kg	5/19/2018	17:07
Bis (2-chloroethoxy) methane	< 309	ug/Kg	5/19/2018	17:07
Bis (2-chloroethyl) ether	< 309	ug/Kg	5/19/2018	17:07
Bis (2-ethylhexyl) phthalate	< 309	ug/Kg	5/19/2018	17:07
Butylbenzylphthalate	< 309	ug/Kg	5/19/2018	17:07
Caprolactam	< 309	ug/Kg	5/19/2018	17:07
Carbazole	< 309	ug/Kg	5/19/2018	17:07
Chrysene	< 309	ug/Kg	5/19/2018	17:07
Dibenz (a,h) anthracene	< 309	ug/Kg	5/19/2018	17:07
Dibenzofuran	< 309	ug/Kg	5/19/2018	17:07
Diethyl phthalate	< 309	ug/Kg	5/19/2018	17:07
Dimethyl phthalate	< 618	ug/Kg	5/19/2018	17:07
Di-n-butyl phthalate	< 309	ug/Kg	5/19/2018	17:07
Di-n-octylphthalate	< 309	ug/Kg	5/19/2018	17:07
Fluoranthene	**402**	ug/Kg	5/19/2018	17:07
Fluorene	< 309	ug/Kg	5/19/2018	17:07

Sample Identifier: RRW-CH-SB-20-051418 (6.0-6.5 ft)
Lab Sample ID: 182065-05 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Hexachlorobenzene	< 309	ug/Kg			5/19/2018 17:07
Hexachlorobutadiene	< 309	ug/Kg			5/19/2018 17:07
Hexachlorocyclopentadiene	< 309	ug/Kg			5/19/2018 17:07
Hexachloroethane	< 309	ug/Kg			5/19/2018 17:07
Indeno (1,2,3-cd) pyrene	< 309	ug/Kg			5/19/2018 17:07
Isophorone	< 309	ug/Kg			5/19/2018 17:07
Naphthalene	< 309	ug/Kg			5/19/2018 17:07
Nitrobenzene	< 309	ug/Kg			5/19/2018 17:07
N-Nitroso-di-n-propylamine	< 309	ug/Kg			5/19/2018 17:07
N-Nitrosodiphenylamine	< 309	ug/Kg			5/19/2018 17:07
Phenanthrene	**316**	ug/Kg			5/19/2018 17:07
Pyrene	**367**	ug/Kg			5/19/2018 17:07

Surrogate	**Percent Recovery**	**Limits**	**Outliers**	**Date Analyzed**
2-Fluorobiphenyl	**59.6**	37.7 - 103		5/19/2018 17:07
Nitrobenzene-d5	**55.7**	38.7 - 92.2		5/19/2018 17:07
Terphenyl-d14	**79.8**	69.9 - 113		5/19/2018 17:07

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/17/2018
Data File: B27508.D

Volatile Organics

Analyte	**Result**	**Units**	**Qualifier**	**Date Analyzed**
1,1,1-Trichloroethane	< 8.85	ug/Kg		5/17/2018 17:30
1,1,2,2-Tetrachloroethane	< 8.85	ug/Kg		5/17/2018 17:30
1,1,2-Trichloroethane	< 8.85	ug/Kg		5/17/2018 17:30
1,1-Dichloroethane	< 8.85	ug/Kg		5/17/2018 17:30
1,1-Dichloroethene	< 8.85	ug/Kg		5/17/2018 17:30
1,2,3-Trichlorobenzene	< 22.1	ug/Kg		5/17/2018 17:30
1,2,4-Trichlorobenzene	< 22.1	ug/Kg		5/17/2018 17:30
1,2,4-Trimethylbenzene	< 8.85	ug/Kg		5/17/2018 17:30
1,2-Dibromo-3-Chloropropane	< 44.3	ug/Kg		5/17/2018 17:30
1,2-Dibromoethane	< 8.85	ug/Kg		5/17/2018 17:30

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier:	RRW-CH-SB-20-051418 (6.0-6.5 ft)		
Lab Sample ID:	182065-05	**Date Sampled:**	5/14/2018
Matrix:	Soil	**Date Received:**	5/14/2018

1,2-Dichlorobenzene	< 8.85	ug/Kg	5/17/2018	17:30
1,2-Dichloroethane	< 8.85	ug/Kg	5/17/2018	17:30
1,2-Dichloropropane	< 8.85	ug/Kg	5/17/2018	17:30
1,3,5-Trimethylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
1,3-Dichlorobenzene	< 8.85	ug/Kg	5/17/2018	17:30
1,4-Dichlorobenzene	< 8.85	ug/Kg	5/17/2018	17:30
1,4-dioxane	< 88.5	ug/Kg	5/17/2018	17:30
2-Butanone	< 44.3	ug/Kg	5/17/2018	17:30
2-Hexanone	< 22.1	ug/Kg	5/17/2018	17:30
4-Methyl-2-pentanone	< 22.1	ug/Kg	5/17/2018	17:30
Acetone	< 44.3	ug/Kg	5/17/2018	17:30
Benzene	< 8.85	ug/Kg	5/17/2018	17:30
Bromochloromethane	< 22.1	ug/Kg	5/17/2018	17:30
Bromodichloromethane	< 8.85	ug/Kg	5/17/2018	17:30
Bromoform	< 22.1	ug/Kg	5/17/2018	17:30
Bromomethane	< 8.85	ug/Kg	5/17/2018	17:30
Carbon disulfide	< 8.85	ug/Kg	5/17/2018	17:30
Carbon Tetrachloride	< 8.85	ug/Kg	5/17/2018	17:30
Chlorobenzene	< 8.85	ug/Kg	5/17/2018	17:30
Chloroethane	< 8.85	ug/Kg	5/17/2018	17:30
Chloroform	< 8.85	ug/Kg	5/17/2018	17:30
Chloromethane	< 8.85	ug/Kg	5/17/2018	17:30
cis-1,2-Dichloroethene	< 8.85	ug/Kg	5/17/2018	17:30
cis-1,3-Dichloropropene	< 8.85	ug/Kg	5/17/2018	17:30
Cyclohexane	< 44.3	ug/Kg	5/17/2018	17:30
Dibromochloromethane	< 8.85	ug/Kg	5/17/2018	17:30
Dichlorodifluoromethane	< 8.85	ug/Kg	5/17/2018	17:30
Ethylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
Freon 113	< 8.85	ug/Kg	5/17/2018	17:30
Isopropylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
m,p-Xylene	< 8.85	ug/Kg	5/17/2018	17:30
Methyl acetate	< 8.85	ug/Kg	5/17/2018	17:30

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182065

Client: **Bergmann Associates**

Project Reference: Roc River Wall

Sample Identifier: RRW-CH-SB-20-051418 (6.0-6.5 ft)
Lab Sample ID: 182065-05 **Date Sampled:** 5/14/2018
Matrix: Soil **Date Received:** 5/14/2018

Methyl tert-butyl Ether	< 8.85	ug/Kg	5/17/2018	17:30
Methylcyclohexane	< 8.85	ug/Kg	5/17/2018	17:30
Methylene chloride	< 22.1	ug/Kg	5/17/2018	17:30
Naphthalene	**22.7**	ug/Kg	5/17/2018	17:30
n-Butylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
n-Propylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
o-Xylene	< 8.85	ug/Kg	5/17/2018	17:30
p-Isopropyltoluene	< 8.85	ug/Kg	5/17/2018	17:30
sec-Butylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
Styrene	< 22.1	ug/Kg	5/17/2018	17:30
tert-Butylbenzene	< 8.85	ug/Kg	5/17/2018	17:30
Tetrachloroethene	< 8.85	ug/Kg	5/17/2018	17:30
Toluene	< 8.85	ug/Kg	5/17/2018	17:30
trans-1,2-Dichloroethene	< 8.85	ug/Kg	5/17/2018	17:30
trans-1,3-Dichloropropene	< 8.85	ug/Kg	5/17/2018	17:30
Trichloroethene	< 8.85	ug/Kg	5/17/2018	17:30
Trichlorofluoromethane	< 8.85	ug/Kg	5/17/2018	17:30
Vinyl chloride	< 8.85	ug/Kg	5/17/2018	17:30

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**123**	77.3 - 129		5/17/2018	17:30
4-Bromofluorobenzene	**66.8**	71 - 123	*	5/17/2018	17:30
Pentafluorobenzene	**88.2**	85.1 - 110		5/17/2018	17:30
Toluene-D8	**85.4**	82.7 - 112		5/17/2018	17:30

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x50813.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC.

REPORT TO:		INVOICE TO:		
CLIENT:	Bergmann	CLIENT:	Bergmann	LAB PROJECT ID: 182065
ADDRESS:	280 E Broad St, Suite 200	ADDRESS:	280 E Broad St, Suite 200	
CITY:	Rochester STATE: NY ZIP 14604	CITY:	Rochester STATE: NY ZIP: 14604	Quotation #: 012642-00
PHONE:	585-498-7950	PHONE:	585-498-7950	Email: cbleier@bergmannpc.com
ATTN:	Cash Bleier	ATTN:	Cash Bleier	

PROJECT REFERENCE

Roc River Wall

Matrix Codes:

AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260+CS2	8270 BN	TAL Metals	PCBs	Pesticides	REMARKS	PARADIGM LAB SAMPLE NUMBER
5/14/2018	9:45am			RRW-CH-SB-16-051418 (14.5-15 Ft)	SO	2	X	X	X	X	X		01
5/14/2018	10:45am			RRW-CH-SB-17-051418 (3.5-4.0Ft)	SO	2	X	X	X	X	X		02
~~5/14/2018~~				~~RRW-CH-SB-X-051418~~ COC 05-14-2018									
5/14/2018	11:20am			RRW-CH-SB-03X18 (4.5-5.0Ft)	SO	2	X	X	X	X	X		03
5/14/2018	1:35pm			RRW-CH-SB-19-051418 (3.5-4.0Ft)	SO	2	X	X	X	X	X		04
5/14/2018	2:00 pm			RRW-CH-SB-20-051418 (6.0-6.5Ft)	SO	2	X	X	X	X	X		05

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required	X	None Required	X
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other please indicate date needed:		Other please indicate package needed:		Other EDD please indicate EDD needed :	

C. Bleier — Sampled By — 5/14/2018 — Date/Time

C. Bleier — Relinquished By — 5/14/2018 — Date/Time

Received By — 5/14/18 1430 — Date/Time

Received @ Lab By — 5/14/18 15:00 — Date/Time

3°C iced 5/14/18 14:31

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Chain of Custody Supplement

Client: Bergmann Associates **Completed by:** Glenn Pezzulo

Lab Project ID: 182065 **Date:** 5/14/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	☒	☒ 5035	☐
Comments			
Transferred to method-compliant container	☐	☐	☒
Headspace (<1 mL)	☐	☐	☒
Comments			
Preservation	☐	☐	☒
Comments			
Chlorine Absent (<0.10 ppm per test strip)	☐	☐	☒
Comments			
Holding Time	☒	☐	☐
Comments			
Temperature	☒	☐	☒ Metals
Comments	3°C iced		
Sufficient Sample Quantity	☒	☐	☐
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000313**	mg/L		6/18/2018 11:25

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**53.7**	mg/L		6/15/2018 16:05
Antimony	**0.0310**	mg/L	J	6/15/2018 16:05
Arsenic	**0.0290**	mg/L		6/18/2018 13:28
Barium	**0.458**	mg/L		6/15/2018 16:05
Beryllium	**0.00303**	mg/L	J	6/15/2018 16:05
Cadmium	< 0.00500	mg/L		6/15/2018 16:05
Calcium	**284**	mg/L		6/15/2018 16:05
Chromium	**0.0762**	mg/L		6/15/2018 16:05
Cobalt	**0.0389**	mg/L	J	6/15/2018 16:05
Copper	**0.164**	mg/L		6/15/2018 16:05
Iron	**84.0**	mg/L		6/15/2018 16:05
Lead	**0.214**	mg/L		6/15/2018 16:05
Magnesium	**76.6**	mg/L		6/15/2018 16:05
Manganese	**2.06**	mg/L		6/15/2018 16:05
Nickel	**0.0784**	mg/L		6/15/2018 16:05
Potassium	**14.9**	mg/L		6/15/2018 16:05
Selenium	< 0.0200	mg/L		6/15/2018 16:05
Silver	**0.00671**	mg/L	J	6/15/2018 16:05
Sodium	**127**	mg/L		6/15/2018 16:05
Thallium	< 0.0250	mg/L		6/15/2018 16:05
Vanadium	**0.0951**	mg/L		6/15/2018 16:05
Zinc	**0.357**	mg/L		6/15/2018 16:05

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 00:03
PCB-1221	< 1.00	ug/L		6/14/2018 00:03
PCB-1232	< 1.00	ug/L		6/14/2018 00:03
PCB-1242	< 1.00	ug/L		6/14/2018 00:03
PCB-1248	< 1.00	ug/L		6/14/2018 00:03
PCB-1254	< 1.00	ug/L		6/14/2018 00:03
PCB-1260	< 1.00	ug/L		6/14/2018 00:03
PCB-1262	< 1.00	ug/L		6/14/2018 00:03
PCB-1268	< 1.00	ug/L		6/14/2018 00:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**28.6**	10 - 104		6/14/2018 00:03
Tetrachloro-m-xylene	**43.7**	10 - 87.9		6/14/2018 00:03

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016768.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 18:13
4,4-DDE	< 0.100	ug/L		6/15/2018 18:13
4,4-DDT	< 0.100	ug/L		6/15/2018 18:13
Aldrin	< 0.100	ug/L		6/15/2018 18:13
alpha-BHC	< 0.100	ug/L		6/15/2018 18:13
beta-BHC	< 0.100	ug/L		6/15/2018 18:13
cis-Chlordane	< 0.100	ug/L		6/15/2018 18:13
delta-BHC	< 0.100	ug/L		6/15/2018 18:13
Dieldrin	< 0.100	ug/L		6/15/2018 18:13
Endosulfan I	< 0.100	ug/L		6/15/2018 18:13
Endosulfan II	< 0.100	ug/L		6/15/2018 18:13
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 18:13
Endrin	< 0.100	ug/L		6/15/2018 18:13
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 18:13
Endrin Ketone	< 0.100	ug/L		6/15/2018 18:13
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 18:13
Heptachlor	< 0.100	ug/L		6/15/2018 18:13
Heptachlor Epoxide	< 0.100	ug/L		6/15/2018 18:13
Methoxychlor	< 0.100	ug/L		6/15/2018 18:13
Toxaphene	< 1.00	ug/L		6/15/2018 18:13
trans-Chlordane	< 0.100	ug/L		6/15/2018 18:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**69.3**	15.9 - 138		6/15/2018 18:13
Tetrachloro-m-xylene (1)	**73.1**	20 - 112		6/15/2018 18:13

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030724.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 01:43
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 01:43
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 01:43
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 01:43
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 01:43
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 01:43
2-Nitroaniline	< 20.0	ug/L		6/16/2018 01:43
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 01:43
3-Nitroaniline	< 20.0	ug/L		6/16/2018 01:43
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 01:43
4-Chloroaniline	< 10.0	ug/L		6/16/2018 01:43
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 01:43
4-Nitroaniline	< 20.0	ug/L		6/16/2018 01:43
Acenaphthene	< 10.0	ug/L		6/16/2018 01:43
Acenaphthylene	< 10.0	ug/L		6/16/2018 01:43
Acetophenone	< 10.0	ug/L		6/16/2018 01:43
Anthracene	< 10.0	ug/L		6/16/2018 01:43
Atrazine	< 10.0	ug/L		6/16/2018 01:43
Benzaldehyde	< 10.0	ug/L		6/16/2018 01:43
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 01:43
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 01:43
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 01:43

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118
Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	01:43
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	01:43
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	01:43
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	01:43
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	01:43
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	01:43
Caprolactam	< 10.0	ug/L	6/16/2018	01:43
Carbazole	< 10.0	ug/L	6/16/2018	01:43
Chrysene	< 10.0	ug/L	6/16/2018	01:43
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	01:43
Dibenzofuran	< 10.0	ug/L	6/16/2018	01:43
Diethyl phthalate	< 10.0	ug/L	6/16/2018	01:43
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	01:43
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	01:43
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	01:43
Fluoranthene	< 10.0	ug/L	6/16/2018	01:43
Fluorene	< 10.0	ug/L	6/16/2018	01:43
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	01:43
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	01:43
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	01:43
Hexachloroethane	< 10.0	ug/L	6/16/2018	01:43
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	01:43
Isophorone	< 10.0	ug/L	6/16/2018	01:43
Naphthalene	< 10.0	ug/L	6/16/2018	01:43
Nitrobenzene	< 10.0	ug/L	6/16/2018	01:43
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	01:43
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	01:43
Phenanthrene	< 10.0	ug/L	6/16/2018	01:43
Pyrene	< 10.0	ug/L	6/16/2018	01:43

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118

Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.1**	31.2 - 108		6/16/2018	01:43
Nitrobenzene-d5	**60.8**	48.3 - 106		6/16/2018	01:43
Terphenyl-d14	**79.1**	52.2 - 117		6/16/2018	01:43

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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ENVIRONMENTAL SERVICES, INC.

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Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 16:40
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:40
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:40
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:40
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 16:40
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 16:40
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:40
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 16:40
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:40
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:40
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:40
1,4-dioxane	< 20.0	ug/L		6/14/2018 16:40
2-Butanone	< 10.0	ug/L		6/14/2018 16:40
2-Hexanone	< 5.00	ug/L		6/14/2018 16:40
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 16:40
Acetone	< 10.0	ug/L		6/14/2018 16:40
Benzene	< 1.00	ug/L		6/14/2018 16:40
Bromochloromethane	< 5.00	ug/L		6/14/2018 16:40
Bromodichloromethane	< 2.00	ug/L		6/14/2018 16:40
Bromoform	< 5.00	ug/L		6/14/2018 16:40
Bromomethane	< 2.00	ug/L		6/14/2018 16:40
Carbon disulfide	< 2.00	ug/L		6/14/2018 16:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118
Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	16:40
Chlorobenzene	< 2.00	ug/L	6/14/2018	16:40
Chloroethane	< 2.00	ug/L	6/14/2018	16:40
Chloroform	< 2.00	ug/L	6/14/2018	16:40
Chloromethane	< 2.00	ug/L	6/14/2018	16:40
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:40
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:40
Cyclohexane	< 10.0	ug/L	6/14/2018	16:40
Dibromochloromethane	< 2.00	ug/L	6/14/2018	16:40
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	16:40
Ethylbenzene	< 2.00	ug/L	6/14/2018	16:40
Freon 113	< 2.00	ug/L	6/14/2018	16:40
Isopropylbenzene	< 2.00	ug/L	6/14/2018	16:40
m,p-Xylene	< 2.00	ug/L	6/14/2018	16:40
Methyl acetate	< 2.00	ug/L	6/14/2018	16:40
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	16:40
Methylcyclohexane	< 2.00	ug/L	6/14/2018	16:40
Methylene chloride	< 5.00	ug/L	6/14/2018	16:40
Naphthalene	< 5.00	ug/L	6/14/2018	16:40
n-Butylbenzene	< 2.00	ug/L	6/14/2018	16:40
n-Propylbenzene	< 2.00	ug/L	6/14/2018	16:40
o-Xylene	< 2.00	ug/L	6/14/2018	16:40
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	16:40
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	16:40
Styrene	< 5.00	ug/L	6/14/2018	16:40
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	16:40
Tetrachloroethene	< 2.00	ug/L	6/14/2018	16:40
Toluene	< 2.00	ug/L	6/14/2018	16:40
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:40
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118
Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 16:40
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 16:40
Vinyl chloride	< 2.00	ug/L			6/14/2018 16:40

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**118**	77.2 - 121		6/14/2018 16:40
4-Bromofluorobenzene	**93.0**	70 - 123		6/14/2018 16:40
Pentafluorobenzene	**87.2**	85.4 - 110		6/14/2018 16:40
Toluene-D8	**93.4**	83.8 - 112		6/14/2018 16:40

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51637.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		6/18/2018 11:28

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**8.90**	mg/L	M	6/15/2018 16:10
Antimony	< 0.0600	mg/L		6/15/2018 16:10
Arsenic	**0.0313**	mg/L		6/18/2018 13:33
Barium	**0.456**	mg/L		6/15/2018 16:10
Beryllium	< 0.00500	mg/L		6/15/2018 16:10
Cadmium	< 0.00500	mg/L		6/15/2018 16:10
Calcium	**173**	mg/L		6/15/2018 16:10
Chromium	**0.0207**	mg/L	D	6/15/2018 16:10
Cobalt	< 0.0500	mg/L		6/15/2018 16:10
Copper	**0.0278**	mg/L		6/15/2018 16:10
Iron	**33.0**	mg/L		6/15/2018 16:10
Lead	**0.0146**	mg/L		6/15/2018 16:10
Magnesium	**43.3**	mg/L		6/15/2018 16:10
Manganese	**2.12**	mg/L		6/15/2018 16:10
Nickel	**0.0206**	mg/L	J	6/15/2018 16:10
Potassium	**9.95**	mg/L		6/15/2018 16:10
Selenium	< 0.0200	mg/L		6/15/2018 16:10
Silver	< 0.0100	mg/L		6/15/2018 16:10
Sodium	**26.9**	mg/L		6/15/2018 16:10
Thallium	< 0.0250	mg/L		6/15/2018 16:10
Vanadium	**0.0176**	mg/L	J	6/15/2018 16:10
Zinc	**0.132**	mg/L		6/15/2018 16:10

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 00:26
PCB-1221	< 1.00	ug/L		6/14/2018 00:26
PCB-1232	< 1.00	ug/L		6/14/2018 00:26
PCB-1242	< 1.00	ug/L		6/14/2018 00:26
PCB-1248	< 1.00	ug/L		6/14/2018 00:26
PCB-1254	< 1.00	ug/L		6/14/2018 00:26
PCB-1260	< 1.00	ug/L		6/14/2018 00:26
PCB-1262	< 1.00	ug/L		6/14/2018 00:26
PCB-1268	< 1.00	ug/L		6/14/2018 00:26

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**23.8**	10 - 104		6/14/2018 00:26
Tetrachloro-m-xylene	**46.5**	10 - 87.9		6/14/2018 00:26

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016769.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 18:29
4,4-DDE	< 0.100	ug/L		6/15/2018 18:29
4,4-DDT	< 0.100	ug/L		6/15/2018 18:29
Aldrin	< 0.100	ug/L		6/15/2018 18:29
alpha-BHC	< 0.100	ug/L		6/15/2018 18:29
beta-BHC	< 0.100	ug/L		6/15/2018 18:29
cis-Chlordane	< 0.100	ug/L		6/15/2018 18:29
delta-BHC	< 0.100	ug/L		6/15/2018 18:29
Dieldrin	< 0.100	ug/L		6/15/2018 18:29
Endosulfan I	< 0.100	ug/L		6/15/2018 18:29
Endosulfan II	< 0.100	ug/L		6/15/2018 18:29
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 18:29
Endrin	< 0.100	ug/L		6/15/2018 18:29
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 18:29
Endrin Ketone	< 0.100	ug/L		6/15/2018 18:29
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 18:29
Heptachlor	< 0.100	ug/L		6/15/2018 18:29
Heptachlor Epoxide	< 0.100	ug/L		6/15/2018 18:29
Methoxychlor	< 0.100	ug/L		6/15/2018 18:29
Toxaphene	< 1.00	ug/L		6/15/2018 18:29
trans-Chlordane	< 0.100	ug/L		6/15/2018 18:29

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**48.2**	15.9 - 138		6/15/2018 18:29
Tetrachloro-m-xylene (1)	**75.6**	20 - 112		6/15/2018 18:29

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030725.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118
Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 02:11
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 02:11
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:11
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:11
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 02:11
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 02:11
2-Nitroaniline	< 20.0	ug/L		6/16/2018 02:11
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 02:11
3-Nitroaniline	< 20.0	ug/L		6/16/2018 02:11
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:11
4-Chloroaniline	< 10.0	ug/L		6/16/2018 02:11
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:11
4-Nitroaniline	< 20.0	ug/L		6/16/2018 02:11
Acenaphthene	< 10.0	ug/L		6/16/2018 02:11
Acenaphthylene	< 10.0	ug/L		6/16/2018 02:11
Acetophenone	< 10.0	ug/L		6/16/2018 02:11
Anthracene	< 10.0	ug/L		6/16/2018 02:11
Atrazine	< 10.0	ug/L		6/16/2018 02:11
Benzaldehyde	< 10.0	ug/L		6/16/2018 02:11
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 02:11
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 02:11
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 02:11

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118
Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	02:11
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	02:11
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	02:11
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	02:11
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	02:11
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	02:11
Caprolactam	< 10.0	ug/L	6/16/2018	02:11
Carbazole	< 10.0	ug/L	6/16/2018	02:11
Chrysene	< 10.0	ug/L	6/16/2018	02:11
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	02:11
Dibenzofuran	< 10.0	ug/L	6/16/2018	02:11
Diethyl phthalate	< 10.0	ug/L	6/16/2018	02:11
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	02:11
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	02:11
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	02:11
Fluoranthene	< 10.0	ug/L	6/16/2018	02:11
Fluorene	< 10.0	ug/L	6/16/2018	02:11
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	02:11
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	02:11
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	02:11
Hexachloroethane	< 10.0	ug/L	6/16/2018	02:11
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	02:11
Isophorone	< 10.0	ug/L	6/16/2018	02:11
Naphthalene	< 10.0	ug/L	6/16/2018	02:11
Nitrobenzene	< 10.0	ug/L	6/16/2018	02:11
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	02:11
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	02:11
Phenanthrene	< 10.0	ug/L	6/16/2018	02:11
Pyrene	< 10.0	ug/L	6/16/2018	02:11

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118

Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.2**	31.2 - 108		6/16/2018	02:11
Nitrobenzene-d5	**61.6**	48.3 - 106		6/16/2018	02:11
Terphenyl-d14	**80.0**	52.2 - 117		6/16/2018	02:11

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 17:03
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:03
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:03
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:03
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 17:03
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 17:03
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:03
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 17:03
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:03
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:03
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:03
1,4-dioxane	< 20.0	ug/L		6/14/2018 17:03
2-Butanone	< 10.0	ug/L		6/14/2018 17:03
2-Hexanone	< 5.00	ug/L		6/14/2018 17:03
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 17:03
Acetone	< 10.0	ug/L		6/14/2018 17:03
Benzene	< 1.00	ug/L		6/14/2018 17:03
Bromochloromethane	< 5.00	ug/L		6/14/2018 17:03
Bromodichloromethane	< 2.00	ug/L		6/14/2018 17:03
Bromoform	< 5.00	ug/L		6/14/2018 17:03
Bromomethane	< 2.00	ug/L		6/14/2018 17:03
Carbon disulfide	< 2.00	ug/L		6/14/2018 17:03

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118
Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	17:03
Chlorobenzene	< 2.00	ug/L	6/14/2018	17:03
Chloroethane	< 2.00	ug/L	6/14/2018	17:03
Chloroform	< 2.00	ug/L	6/14/2018	17:03
Chloromethane	< 2.00	ug/L	6/14/2018	17:03
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:03
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:03
Cyclohexane	< 10.0	ug/L	6/14/2018	17:03
Dibromochloromethane	< 2.00	ug/L	6/14/2018	17:03
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	17:03
Ethylbenzene	< 2.00	ug/L	6/14/2018	17:03
Freon 113	< 2.00	ug/L	6/14/2018	17:03
Isopropylbenzene	< 2.00	ug/L	6/14/2018	17:03
m,p-Xylene	< 2.00	ug/L	6/14/2018	17:03
Methyl acetate	< 2.00	ug/L	6/14/2018	17:03
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	17:03
Methylcyclohexane	< 2.00	ug/L	6/14/2018	17:03
Methylene chloride	< 5.00	ug/L	6/14/2018	17:03
Naphthalene	< 5.00	ug/L	6/14/2018	17:03
n-Butylbenzene	< 2.00	ug/L	6/14/2018	17:03
n-Propylbenzene	< 2.00	ug/L	6/14/2018	17:03
o-Xylene	< 2.00	ug/L	6/14/2018	17:03
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	17:03
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	17:03
Styrene	< 5.00	ug/L	6/14/2018	17:03
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	17:03
Tetrachloroethene	< 2.00	ug/L	6/14/2018	17:03
Toluene	< 2.00	ug/L	6/14/2018	17:03
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:03
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:03

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118

Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 17:03
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 17:03
Vinyl chloride	< 2.00	ug/L			6/14/2018 17:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**107**	77.2 - 121		6/14/2018 17:03
4-Bromofluorobenzene	**102**	70 - 123		6/14/2018 17:03
Pentafluorobenzene	**93.7**	85.4 - 110		6/14/2018 17:03
Toluene-D8	**104**	83.8 - 112		6/14/2018 17:03

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x51638.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0151**	mg/L		6/18/2018 12:38

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**109**	mg/L		6/15/2018 16:29
Antimony	**0.0346**	mg/L	J	6/15/2018 16:29
Arsenic	**0.136**	mg/L		6/15/2018 16:29
Barium	**1.50**	mg/L		6/15/2018 16:29
Beryllium	**0.00652**	mg/L		6/15/2018 16:29
Cadmium	**0.00405**	mg/L	J	6/15/2018 16:29
Calcium	**243**	mg/L		6/15/2018 16:29
Chromium	**0.306**	mg/L		6/15/2018 16:29
Cobalt	**0.109**	mg/L		6/15/2018 16:29
Copper	**0.687**	mg/L		6/15/2018 16:29
Iron	**236**	mg/L		6/15/2018 16:29
Lead	**0.963**	mg/L		6/15/2018 16:29
Magnesium	**103**	mg/L		6/15/2018 16:29
Manganese	**4.98**	mg/L		6/15/2018 16:29
Nickel	**0.241**	mg/L		6/15/2018 16:29
Potassium	**19.8**	mg/L		6/15/2018 16:29
Selenium	< 0.0200	mg/L		6/15/2018 16:29
Silver	**0.0168**	mg/L		6/15/2018 16:29
Sodium	**164**	mg/L		6/15/2018 16:29
Thallium	< 0.0250	mg/L		6/15/2018 16:29
Vanadium	**0.186**	mg/L		6/15/2018 16:29
Zinc	**0.761**	mg/L		6/15/2018 16:29

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/15/2018 13:16
PCB-1221	< 1.00	ug/L		6/15/2018 13:16
PCB-1232	< 1.00	ug/L		6/15/2018 13:16
PCB-1242	< 1.00	ug/L		6/15/2018 13:16
PCB-1248	< 1.00	ug/L		6/15/2018 13:16
PCB-1254	< 1.00	ug/L		6/15/2018 13:16
PCB-1260	< 1.00	ug/L		6/15/2018 13:16
PCB-1262	< 1.00	ug/L		6/15/2018 13:16
PCB-1268	< 1.00	ug/L		6/15/2018 13:16

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**21.6**	10 - 104		6/15/2018 13:16
Tetrachloro-m-xylene	**37.2**	10 - 87.9		6/15/2018 13:16

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016846.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/18/2018 17:58
4,4-DDE	< 0.100	ug/L		6/18/2018 17:58
4,4-DDT	< 0.100	ug/L		6/18/2018 17:58
Aldrin	< 0.100	ug/L		6/18/2018 17:58
alpha-BHC	< 0.100	ug/L		6/18/2018 17:58
beta-BHC	**0.0962**	ug/L	JP	6/18/2018 17:58
cis-Chlordane	< 0.100	ug/L		6/18/2018 17:58
delta-BHC	< 0.100	ug/L		6/18/2018 17:58
Dieldrin	< 0.100	ug/L		6/18/2018 17:58
Endosulfan I	< 0.100	ug/L		6/18/2018 17:58
Endosulfan II	< 0.100	ug/L		6/18/2018 17:58
Endosulfan Sulfate	**0.0516**	ug/L	J	6/18/2018 17:58
Endrin	< 0.100	ug/L		6/18/2018 17:58
Endrin Aldehyde	< 0.100	ug/L		6/18/2018 17:58
Endrin Ketone	< 0.100	ug/L		6/18/2018 17:58
gamma-BHC (Lindane)	< 0.100	ug/L		6/18/2018 17:58
Heptachlor	< 0.100	ug/L		6/18/2018 17:58
Heptachlor Epoxide	< 0.100	ug/L		6/18/2018 17:58
Methoxychlor	< 0.100	ug/L		6/18/2018 17:58
Toxaphene	< 1.00	ug/L		6/18/2018 17:58
trans-Chlordane	< 0.100	ug/L		6/18/2018 17:58

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**41.9**	15.9 - 138		6/18/2018 17:58
Tetrachloro-m-xylene (1)	**70.4**	20 - 112		6/18/2018 17:58

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030758.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 02:40
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 02:40
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:40
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:40
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 02:40
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 02:40
2-Nitroaniline	< 20.0	ug/L		6/16/2018 02:40
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 02:40
3-Nitroaniline	< 20.0	ug/L		6/16/2018 02:40
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:40
4-Chloroaniline	< 10.0	ug/L		6/16/2018 02:40
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:40
4-Nitroaniline	< 20.0	ug/L		6/16/2018 02:40
Acenaphthene	< 10.0	ug/L		6/16/2018 02:40
Acenaphthylene	< 10.0	ug/L		6/16/2018 02:40
Acetophenone	< 10.0	ug/L		6/16/2018 02:40
Anthracene	< 10.0	ug/L		6/16/2018 02:40
Atrazine	< 10.0	ug/L		6/16/2018 02:40
Benzaldehyde	< 10.0	ug/L		6/16/2018 02:40
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 02:40
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 02:40
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 02:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118
Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	02:40
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	02:40
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	02:40
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	02:40
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	02:40
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	02:40
Caprolactam	< 10.0	ug/L	6/16/2018	02:40
Carbazole	< 10.0	ug/L	6/16/2018	02:40
Chrysene	< 10.0	ug/L	6/16/2018	02:40
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	02:40
Dibenzofuran	< 10.0	ug/L	6/16/2018	02:40
Diethyl phthalate	< 10.0	ug/L	6/16/2018	02:40
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	02:40
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	02:40
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	02:40
Fluoranthene	< 10.0	ug/L	6/16/2018	02:40
Fluorene	< 10.0	ug/L	6/16/2018	02:40
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	02:40
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	02:40
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	02:40
Hexachloroethane	< 10.0	ug/L	6/16/2018	02:40
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	02:40
Isophorone	< 10.0	ug/L	6/16/2018	02:40
Naphthalene	< 10.0	ug/L	6/16/2018	02:40
Nitrobenzene	< 10.0	ug/L	6/16/2018	02:40
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	02:40
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	02:40
Phenanthrene	< 10.0	ug/L	6/16/2018	02:40
Pyrene	< 10.0	ug/L	6/16/2018	02:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118

Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**45.5**	31.2 - 108		6/16/2018	02:40
Nitrobenzene-d5	**56.8**	48.3 - 106		6/16/2018	02:40
Terphenyl-d14	**76.5**	52.2 - 117		6/16/2018	02:40

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 17:27
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:27
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:27
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:27
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 17:27
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 17:27
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:27
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 17:27
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:27
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:27
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:27
1,4-dioxane	< 20.0	ug/L		6/14/2018 17:27
2-Butanone	< 10.0	ug/L		6/14/2018 17:27
2-Hexanone	< 5.00	ug/L		6/14/2018 17:27
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 17:27
Acetone	< 10.0	ug/L		6/14/2018 17:27
Benzene	< 1.00	ug/L		6/14/2018 17:27
Bromochloromethane	< 5.00	ug/L		6/14/2018 17:27
Bromodichloromethane	< 2.00	ug/L		6/14/2018 17:27
Bromoform	< 5.00	ug/L		6/14/2018 17:27
Bromomethane	< 2.00	ug/L		6/14/2018 17:27
Carbon disulfide	< 2.00	ug/L		6/14/2018 17:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118
Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	17:27
Chlorobenzene	< 2.00	ug/L	6/14/2018	17:27
Chloroethane	< 2.00	ug/L	6/14/2018	17:27
Chloroform	< 2.00	ug/L	6/14/2018	17:27
Chloromethane	< 2.00	ug/L	6/14/2018	17:27
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:27
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:27
Cyclohexane	< 10.0	ug/L	6/14/2018	17:27
Dibromochloromethane	< 2.00	ug/L	6/14/2018	17:27
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	17:27
Ethylbenzene	< 2.00	ug/L	6/14/2018	17:27
Freon 113	< 2.00	ug/L	6/14/2018	17:27
Isopropylbenzene	< 2.00	ug/L	6/14/2018	17:27
m,p-Xylene	< 2.00	ug/L	6/14/2018	17:27
Methyl acetate	< 2.00	ug/L	6/14/2018	17:27
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	17:27
Methylcyclohexane	< 2.00	ug/L	6/14/2018	17:27
Methylene chloride	< 5.00	ug/L	6/14/2018	17:27
Naphthalene	< 5.00	ug/L	6/14/2018	17:27
n-Butylbenzene	< 2.00	ug/L	6/14/2018	17:27
n-Propylbenzene	< 2.00	ug/L	6/14/2018	17:27
o-Xylene	< 2.00	ug/L	6/14/2018	17:27
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	17:27
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	17:27
Styrene	< 5.00	ug/L	6/14/2018	17:27
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	17:27
Tetrachloroethene	< 2.00	ug/L	6/14/2018	17:27
Toluene	< 2.00	ug/L	6/14/2018	17:27
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:27
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118
Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 17:27
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 17:27
Vinyl chloride	< 2.00	ug/L			6/14/2018 17:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**104**	77.2 - 121		6/14/2018 17:27
4-Bromofluorobenzene	**96.2**	70 - 123		6/14/2018 17:27
Pentafluorobenzene	**92.2**	85.4 - 110		6/14/2018 17:27
Toluene-D8	**98.3**	83.8 - 112		6/14/2018 17:27

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51639.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000362**	mg/L		6/18/2018 11:33

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**51.5**	mg/L		6/15/2018 16:42
Antimony	< 0.0600	mg/L		6/15/2018 16:42
Arsenic	**0.0485**	mg/L		6/18/2018 13:53
Barium	**0.822**	mg/L		6/15/2018 16:42
Beryllium	**0.00527**	mg/L		6/15/2018 16:42
Cadmium	< 0.00500	mg/L		6/15/2018 16:42
Calcium	**415**	mg/L		6/15/2018 16:42
Chromium	**0.0714**	mg/L		6/15/2018 16:42
Cobalt	**0.0509**	mg/L		6/15/2018 16:42
Copper	**0.137**	mg/L		6/15/2018 16:42
Iron	**93.5**	mg/L		6/15/2018 16:42
Lead	**0.138**	mg/L		6/15/2018 16:42
Magnesium	**124**	mg/L		6/15/2018 16:42
Manganese	**6.58**	mg/L		6/15/2018 16:42
Nickel	**0.0868**	mg/L		6/15/2018 16:42
Potassium	**12.2**	mg/L		6/15/2018 16:42
Selenium	< 0.0200	mg/L		6/15/2018 16:42
Silver	**0.00720**	mg/L	J	6/15/2018 16:42
Sodium	**129**	mg/L		6/15/2018 16:42
Thallium	< 0.0250	mg/L		6/15/2018 16:42
Vanadium	**0.125**	mg/L		6/15/2018 16:42
Zinc	**0.317**	mg/L		6/15/2018 16:42

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 01:13
PCB-1221	< 1.00	ug/L		6/14/2018 01:13
PCB-1232	< 1.00	ug/L		6/14/2018 01:13
PCB-1242	< 1.00	ug/L		6/14/2018 01:13
PCB-1248	< 1.00	ug/L		6/14/2018 01:13
PCB-1254	< 1.00	ug/L		6/14/2018 01:13
PCB-1260	< 1.00	ug/L		6/14/2018 01:13
PCB-1262	< 1.00	ug/L		6/14/2018 01:13
PCB-1268	< 1.00	ug/L		6/14/2018 01:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**22.5**	10 - 104		6/14/2018 01:13
Tetrachloro-m-xylene	**51.9**	10 - 87.9		6/14/2018 01:13

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016771.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 19:00
4,4-DDE	< 0.100	ug/L		6/15/2018 19:00
4,4-DDT	< 0.100	ug/L		6/15/2018 19:00
Aldrin	< 0.100	ug/L		6/15/2018 19:00
alpha-BHC	< 0.100	ug/L		6/15/2018 19:00
beta-BHC	< 0.100	ug/L		6/15/2018 19:00
cis-Chlordane	< 0.100	ug/L		6/15/2018 19:00
delta-BHC	< 0.100	ug/L		6/15/2018 19:00
Dieldrin	< 0.100	ug/L		6/15/2018 19:00
Endosulfan I	< 0.100	ug/L		6/15/2018 19:00
Endosulfan II	< 0.100	ug/L		6/15/2018 19:00
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 19:00
Endrin	< 0.100	ug/L		6/15/2018 19:00
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 19:00
Endrin Ketone	< 0.100	ug/L		6/15/2018 19:00
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 19:00
Heptachlor	< 0.100	ug/L		6/15/2018 19:00
Heptachlor Epoxide	< 0.100	ug/L		6/15/2018 19:00
Methoxychlor	< 0.100	ug/L		6/15/2018 19:00
Toxaphene	< 1.00	ug/L		6/15/2018 19:00
trans-Chlordane	< 0.100	ug/L		6/15/2018 19:00

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**42.3**	15.9 - 138		6/15/2018 19:00
Tetrachloro-m-xylene (1)	**75.3**	20 - 112		6/15/2018 19:00

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030727.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 03:09
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 03:09
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:09
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:09
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 03:09
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 03:09
2-Nitroaniline	< 20.0	ug/L		6/16/2018 03:09
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 03:09
3-Nitroaniline	< 20.0	ug/L		6/16/2018 03:09
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:09
4-Chloroaniline	< 10.0	ug/L		6/16/2018 03:09
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:09
4-Nitroaniline	< 20.0	ug/L		6/16/2018 03:09
Acenaphthene	< 10.0	ug/L		6/16/2018 03:09
Acenaphthylene	< 10.0	ug/L		6/16/2018 03:09
Acetophenone	< 10.0	ug/L		6/16/2018 03:09
Anthracene	< 10.0	ug/L		6/16/2018 03:09
Atrazine	< 10.0	ug/L		6/16/2018 03:09
Benzaldehyde	< 10.0	ug/L		6/16/2018 03:09
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 03:09
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 03:09
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 03:09

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118
Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	03:09
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	03:09
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	03:09
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	03:09
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	03:09
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	03:09
Caprolactam	< 10.0	ug/L	6/16/2018	03:09
Carbazole	< 10.0	ug/L	6/16/2018	03:09
Chrysene	< 10.0	ug/L	6/16/2018	03:09
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	03:09
Dibenzofuran	< 10.0	ug/L	6/16/2018	03:09
Diethyl phthalate	< 10.0	ug/L	6/16/2018	03:09
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	03:09
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	03:09
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	03:09
Fluoranthene	< 10.0	ug/L	6/16/2018	03:09
Fluorene	< 10.0	ug/L	6/16/2018	03:09
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	03:09
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	03:09
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	03:09
Hexachloroethane	< 10.0	ug/L	6/16/2018	03:09
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	03:09
Isophorone	< 10.0	ug/L	6/16/2018	03:09
Naphthalene	< 10.0	ug/L	6/16/2018	03:09
Nitrobenzene	< 10.0	ug/L	6/16/2018	03:09
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	03:09
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	03:09
Phenanthrene	< 10.0	ug/L	6/16/2018	03:09
Pyrene	< 10.0	ug/L	6/16/2018	03:09

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118

Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.9**	31.2 - 108		6/16/2018	03:09
Nitrobenzene-d5	**59.1**	48.3 - 106		6/16/2018	03:09
Terphenyl-d14	**78.0**	52.2 - 117		6/16/2018	03:09

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 17:50
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:50
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:50
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:50
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 17:50
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 17:50
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:50
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 17:50
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:50
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:50
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:50
1,4-dioxane	< 20.0	ug/L		6/14/2018 17:50
2-Butanone	< 10.0	ug/L		6/14/2018 17:50
2-Hexanone	< 5.00	ug/L		6/14/2018 17:50
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 17:50
Acetone	< 10.0	ug/L		6/14/2018 17:50
Benzene	< 1.00	ug/L		6/14/2018 17:50
Bromochloromethane	< 5.00	ug/L		6/14/2018 17:50
Bromodichloromethane	< 2.00	ug/L		6/14/2018 17:50
Bromoform	< 5.00	ug/L		6/14/2018 17:50
Bromomethane	< 2.00	ug/L		6/14/2018 17:50
Carbon disulfide	< 2.00	ug/L		6/14/2018 17:50

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118
Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	17:50
Chlorobenzene	< 2.00	ug/L	6/14/2018	17:50
Chloroethane	< 2.00	ug/L	6/14/2018	17:50
Chloroform	< 2.00	ug/L	6/14/2018	17:50
Chloromethane	< 2.00	ug/L	6/14/2018	17:50
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:50
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:50
Cyclohexane	< 10.0	ug/L	6/14/2018	17:50
Dibromochloromethane	< 2.00	ug/L	6/14/2018	17:50
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	17:50
Ethylbenzene	< 2.00	ug/L	6/14/2018	17:50
Freon 113	< 2.00	ug/L	6/14/2018	17:50
Isopropylbenzene	< 2.00	ug/L	6/14/2018	17:50
m,p-Xylene	< 2.00	ug/L	6/14/2018	17:50
Methyl acetate	< 2.00	ug/L	6/14/2018	17:50
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	17:50
Methylcyclohexane	< 2.00	ug/L	6/14/2018	17:50
Methylene chloride	< 5.00	ug/L	6/14/2018	17:50
Naphthalene	< 5.00	ug/L	6/14/2018	17:50
n-Butylbenzene	< 2.00	ug/L	6/14/2018	17:50
n-Propylbenzene	< 2.00	ug/L	6/14/2018	17:50
o-Xylene	< 2.00	ug/L	6/14/2018	17:50
p-Isopropyltoluene	**4.52**	ug/L	6/14/2018	17:50
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	17:50
Styrene	< 5.00	ug/L	6/14/2018	17:50
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	17:50
Tetrachloroethene	< 2.00	ug/L	6/14/2018	17:50
Toluene	< 2.00	ug/L	6/14/2018	17:50
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:50
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:50

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118
Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 17:50
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 17:50
Vinyl chloride	< 2.00	ug/L			6/14/2018 17:50

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**104**	77.2 - 121		6/14/2018 17:50
4-Bromofluorobenzene	**88.1**	70 - 123		6/14/2018 17:50
Pentafluorobenzene	**96.5**	85.4 - 110		6/14/2018 17:50
Toluene-D8	**95.1**	83.8 - 112		6/14/2018 17:50

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51640.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000280**	mg/L		6/18/2018 11:36

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**62.3**	mg/L		6/15/2018 16:46
Antimony	**0.0334**	mg/L	J	6/15/2018 16:46
Arsenic	**0.0921**	mg/L		6/15/2018 16:46
Barium	**0.902**	mg/L		6/15/2018 16:46
Beryllium	**0.00363**	mg/L	J	6/15/2018 16:46
Cadmium	**0.00548**	mg/L		6/15/2018 16:46
Calcium	**326**	mg/L		6/15/2018 16:46
Chromium	**0.106**	mg/L		6/15/2018 16:46
Cobalt	**0.0578**	mg/L		6/15/2018 16:46
Copper	**0.162**	mg/L		6/15/2018 16:46
Iron	**150**	mg/L		6/15/2018 16:46
Lead	**0.0789**	mg/L		6/15/2018 16:46
Magnesium	**98.2**	mg/L		6/15/2018 16:46
Manganese	**6.62**	mg/L		6/15/2018 16:46
Nickel	**0.131**	mg/L		6/15/2018 16:46
Potassium	**15.0**	mg/L		6/15/2018 16:46
Selenium	< 0.0200	mg/L		6/15/2018 16:46
Silver	**0.0133**	mg/L		6/15/2018 16:46
Sodium	**689**	mg/L		6/18/2018 14:06
Thallium	< 0.0250	mg/L		6/15/2018 16:46
Vanadium	**0.104**	mg/L		6/15/2018 16:46
Zinc	**1.13**	mg/L		6/15/2018 16:46

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 01:36
PCB-1221	< 1.00	ug/L		6/14/2018 01:36
PCB-1232	< 1.00	ug/L		6/14/2018 01:36
PCB-1242	< 1.00	ug/L		6/14/2018 01:36
PCB-1248	< 1.00	ug/L		6/14/2018 01:36
PCB-1254	< 1.00	ug/L		6/14/2018 01:36
PCB-1260	< 1.00	ug/L		6/14/2018 01:36
PCB-1262	< 1.00	ug/L		6/14/2018 01:36
PCB-1268	< 1.00	ug/L		6/14/2018 01:36

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**131**	10 - 104	*	6/14/2018 01:36
Tetrachloro-m-xylene	**96.5**	10 - 87.9	*	6/14/2018 01:36

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016772.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/18/2018 16:56
4,4-DDE	< 0.100	ug/L		6/18/2018 16:56
4,4-DDT	< 0.100	ug/L		6/18/2018 16:56
Aldrin	< 0.100	ug/L		6/18/2018 16:56
alpha-BHC	< 0.100	ug/L		6/18/2018 16:56
beta-BHC	< 0.100	ug/L		6/18/2018 16:56
cis-Chlordane	< 0.100	ug/L		6/18/2018 16:56
delta-BHC	< 0.100	ug/L		6/18/2018 16:56
Dieldrin	< 0.100	ug/L		6/18/2018 16:56
Endosulfan I	< 0.100	ug/L		6/18/2018 16:56
Endosulfan II	< 0.100	ug/L		6/18/2018 16:56
Endosulfan Sulfate	< 0.100	ug/L		6/18/2018 16:56
Endrin	< 0.100	ug/L		6/18/2018 16:56
Endrin Aldehyde	< 0.100	ug/L		6/18/2018 16:56
Endrin Ketone	< 0.100	ug/L		6/18/2018 16:56
gamma-BHC (Lindane)	< 0.100	ug/L		6/18/2018 16:56
Heptachlor	< 0.100	ug/L		6/18/2018 16:56
Heptachlor Epoxide	**0.134**	ug/L		6/18/2018 16:56
Methoxychlor	< 0.100	ug/L		6/18/2018 16:56
Toxaphene	< 1.00	ug/L		6/18/2018 16:56
trans-Chlordane	< 0.100	ug/L		6/18/2018 16:56

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**123**	15.9 - 138		6/18/2018 16:56
Tetrachloro-m-xylene (1)	**75.4**	20 - 112		6/18/2018 16:56

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030754.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 03:38
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 03:38
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:38
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:38
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 03:38
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 03:38
2-Nitroaniline	< 20.0	ug/L		6/16/2018 03:38
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 03:38
3-Nitroaniline	< 20.0	ug/L		6/16/2018 03:38
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:38
4-Chloroaniline	< 10.0	ug/L		6/16/2018 03:38
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:38
4-Nitroaniline	< 20.0	ug/L		6/16/2018 03:38
Acenaphthene	< 10.0	ug/L		6/16/2018 03:38
Acenaphthylene	< 10.0	ug/L		6/16/2018 03:38
Acetophenone	< 10.0	ug/L		6/16/2018 03:38
Anthracene	< 10.0	ug/L		6/16/2018 03:38
Atrazine	< 10.0	ug/L		6/16/2018 03:38
Benzaldehyde	< 10.0	ug/L		6/16/2018 03:38
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 03:38
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 03:38
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 03:38

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218
Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	03:38
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	03:38
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	03:38
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	03:38
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	03:38
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	03:38
Caprolactam	< 10.0	ug/L	6/16/2018	03:38
Carbazole	< 10.0	ug/L	6/16/2018	03:38
Chrysene	< 10.0	ug/L	6/16/2018	03:38
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	03:38
Dibenzofuran	< 10.0	ug/L	6/16/2018	03:38
Diethyl phthalate	< 10.0	ug/L	6/16/2018	03:38
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	03:38
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	03:38
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	03:38
Fluoranthene	< 10.0	ug/L	6/16/2018	03:38
Fluorene	< 10.0	ug/L	6/16/2018	03:38
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	03:38
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	03:38
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	03:38
Hexachloroethane	< 10.0	ug/L	6/16/2018	03:38
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	03:38
Isophorone	< 10.0	ug/L	6/16/2018	03:38
Naphthalene	< 10.0	ug/L	6/16/2018	03:38
Nitrobenzene	< 10.0	ug/L	6/16/2018	03:38
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	03:38
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	03:38
Phenanthrene	< 10.0	ug/L	6/16/2018	03:38
Pyrene	< 10.0	ug/L	6/16/2018	03:38

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218

Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**48.1**	31.2 - 108		6/16/2018	03:38
Nitrobenzene-d5	**61.7**	48.3 - 106		6/16/2018	03:38
Terphenyl-d14	**81.2**	52.2 - 117		6/16/2018	03:38

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 18:13
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:13
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:13
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:13
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 18:13
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 18:13
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:13
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 18:13
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:13
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:13
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:13
1,4-dioxane	< 20.0	ug/L		6/14/2018 18:13
2-Butanone	< 10.0	ug/L		6/14/2018 18:13
2-Hexanone	< 5.00	ug/L		6/14/2018 18:13
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 18:13
Acetone	< 10.0	ug/L		6/14/2018 18:13
Benzene	< 1.00	ug/L		6/14/2018 18:13
Bromochloromethane	< 5.00	ug/L		6/14/2018 18:13
Bromodichloromethane	< 2.00	ug/L		6/14/2018 18:13
Bromoform	< 5.00	ug/L		6/14/2018 18:13
Bromomethane	< 2.00	ug/L		6/14/2018 18:13
Carbon disulfide	< 2.00	ug/L		6/14/2018 18:13

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218
Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	18:13
Chlorobenzene	< 2.00	ug/L	6/14/2018	18:13
Chloroethane	< 2.00	ug/L	6/14/2018	18:13
Chloroform	< 2.00	ug/L	6/14/2018	18:13
Chloromethane	< 2.00	ug/L	6/14/2018	18:13
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:13
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:13
Cyclohexane	< 10.0	ug/L	6/14/2018	18:13
Dibromochloromethane	< 2.00	ug/L	6/14/2018	18:13
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	18:13
Ethylbenzene	< 2.00	ug/L	6/14/2018	18:13
Freon 113	< 2.00	ug/L	6/14/2018	18:13
Isopropylbenzene	< 2.00	ug/L	6/14/2018	18:13
m,p-Xylene	< 2.00	ug/L	6/14/2018	18:13
Methyl acetate	< 2.00	ug/L	6/14/2018	18:13
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	18:13
Methylcyclohexane	< 2.00	ug/L	6/14/2018	18:13
Methylene chloride	< 5.00	ug/L	6/14/2018	18:13
Naphthalene	< 5.00	ug/L	6/14/2018	18:13
n-Butylbenzene	< 2.00	ug/L	6/14/2018	18:13
n-Propylbenzene	< 2.00	ug/L	6/14/2018	18:13
o-Xylene	< 2.00	ug/L	6/14/2018	18:13
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	18:13
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	18:13
Styrene	< 5.00	ug/L	6/14/2018	18:13
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	18:13
Tetrachloroethene	< 2.00	ug/L	6/14/2018	18:13
Toluene	< 2.00	ug/L	6/14/2018	18:13
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:13
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:13

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218
Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 18:13
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 18:13
Vinyl chloride	< 2.00	ug/L			6/14/2018 18:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.2 - 121		6/14/2018 18:13
4-Bromofluorobenzene	**93.2**	70 - 123		6/14/2018 18:13
Pentafluorobenzene	**96.2**	85.4 - 110		6/14/2018 18:13
Toluene-D8	**100**	83.8 - 112		6/14/2018 18:13

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51641.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.00101**	mg/L		6/18/2018 11:39

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**145**	mg/L		6/15/2018 16:51
Antimony	**0.0400**	mg/L	J	6/15/2018 16:51
Arsenic	**0.208**	mg/L		6/15/2018 16:51
Barium	**1.39**	mg/L		6/15/2018 16:51
Beryllium	**0.00769**	mg/L		6/15/2018 16:51
Cadmium	**0.00670**	mg/L		6/15/2018 16:51
Calcium	**353**	mg/L		6/15/2018 16:51
Chromium	**0.206**	mg/L		6/15/2018 16:51
Cobalt	**0.133**	mg/L		6/15/2018 16:51
Copper	**0.363**	mg/L		6/15/2018 16:51
Iron	**321**	mg/L		6/15/2018 16:51
Lead	**0.321**	mg/L		6/15/2018 16:51
Magnesium	**172**	mg/L		6/15/2018 16:51
Manganese	**10.0**	mg/L		6/15/2018 16:51
Nickel	**0.288**	mg/L		6/15/2018 16:51
Potassium	**22.7**	mg/L		6/15/2018 16:51
Selenium	< 0.0200	mg/L		6/15/2018 16:51
Silver	**0.0305**	mg/L		6/15/2018 16:51
Sodium	**724**	mg/L		6/18/2018 14:11
Thallium	< 0.0250	mg/L		6/15/2018 16:51
Vanadium	**0.223**	mg/L		6/15/2018 16:51
Zinc	**1.05**	mg/L		6/15/2018 16:51

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/15/2018 13:39
PCB-1221	< 1.00	ug/L		6/15/2018 13:39
PCB-1232	< 1.00	ug/L		6/15/2018 13:39
PCB-1242	< 1.00	ug/L		6/15/2018 13:39
PCB-1248	< 1.00	ug/L		6/15/2018 13:39
PCB-1254	< 1.00	ug/L		6/15/2018 13:39
PCB-1260	< 1.00	ug/L		6/15/2018 13:39
PCB-1262	< 1.00	ug/L		6/15/2018 13:39
PCB-1268	< 1.00	ug/L		6/15/2018 13:39

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**84.1**	10 - 104		6/15/2018 13:39
Tetrachloro-m-xylene	**41.7**	10 - 87.9		6/15/2018 13:39

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016847.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 19:30
4,4-DDE	< 0.100	ug/L		6/15/2018 19:30
4,4-DDT	< 0.100	ug/L		6/15/2018 19:30
Aldrin	< 0.100	ug/L		6/15/2018 19:30
alpha-BHC	< 0.100	ug/L		6/15/2018 19:30
beta-BHC	< 0.100	ug/L		6/15/2018 19:30
cis-Chlordane	< 0.100	ug/L		6/15/2018 19:30
delta-BHC	< 0.100	ug/L		6/15/2018 19:30
Dieldrin	< 0.100	ug/L		6/15/2018 19:30
Endosulfan I	< 0.100	ug/L		6/15/2018 19:30
Endosulfan II	< 0.100	ug/L		6/15/2018 19:30
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 19:30
Endrin	< 0.100	ug/L		6/15/2018 19:30
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 19:30
Endrin Ketone	< 0.100	ug/L		6/15/2018 19:30
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 19:30
Heptachlor	< 0.100	ug/L		6/15/2018 19:30
Heptachlor Epoxide	**0.0788**	ug/L	JP	6/15/2018 19:30
Methoxychlor	< 0.100	ug/L		6/15/2018 19:30
Toxaphene	< 1.00	ug/L		6/15/2018 19:30
trans-Chlordane	< 0.100	ug/L		6/15/2018 19:30

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**124**	15.9 - 138		6/15/2018 19:30
Tetrachloro-m-xylene (1)	**62.5**	20 - 112		6/15/2018 19:30

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030729.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 04:07
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 04:07
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:07
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:07
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 04:07
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 04:07
2-Nitroaniline	< 20.0	ug/L		6/16/2018 04:07
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 04:07
3-Nitroaniline	< 20.0	ug/L		6/16/2018 04:07
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:07
4-Chloroaniline	< 10.0	ug/L		6/16/2018 04:07
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:07
4-Nitroaniline	< 20.0	ug/L		6/16/2018 04:07
Acenaphthene	< 10.0	ug/L		6/16/2018 04:07
Acenaphthylene	< 10.0	ug/L		6/16/2018 04:07
Acetophenone	< 10.0	ug/L		6/16/2018 04:07
Anthracene	< 10.0	ug/L		6/16/2018 04:07
Atrazine	< 10.0	ug/L		6/16/2018 04:07
Benzaldehyde	< 10.0	ug/L		6/16/2018 04:07
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 04:07
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 04:07
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 04:07

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218
Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	04:07
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	04:07
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	04:07
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	04:07
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	04:07
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	04:07
Caprolactam	< 10.0	ug/L	6/16/2018	04:07
Carbazole	< 10.0	ug/L	6/16/2018	04:07
Chrysene	< 10.0	ug/L	6/16/2018	04:07
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	04:07
Dibenzofuran	< 10.0	ug/L	6/16/2018	04:07
Diethyl phthalate	< 10.0	ug/L	6/16/2018	04:07
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	04:07
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	04:07
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	04:07
Fluoranthene	< 10.0	ug/L	6/16/2018	04:07
Fluorene	< 10.0	ug/L	6/16/2018	04:07
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	04:07
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	04:07
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	04:07
Hexachloroethane	< 10.0	ug/L	6/16/2018	04:07
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	04:07
Isophorone	< 10.0	ug/L	6/16/2018	04:07
Naphthalene	< 10.0	ug/L	6/16/2018	04:07
Nitrobenzene	< 10.0	ug/L	6/16/2018	04:07
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	04:07
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	04:07
Phenanthrene	< 10.0	ug/L	6/16/2018	04:07
Pyrene	< 10.0	ug/L	6/16/2018	04:07

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218

Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.0**	31.2 - 108		6/16/2018	04:07
Nitrobenzene-d5	**59.7**	48.3 - 106		6/16/2018	04:07
Terphenyl-d14	**75.6**	52.2 - 117		6/16/2018	04:07

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 18:37
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:37
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:37
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:37
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 18:37
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 18:37
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:37
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 18:37
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:37
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:37
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:37
1,4-dioxane	< 20.0	ug/L		6/14/2018 18:37
2-Butanone	< 10.0	ug/L		6/14/2018 18:37
2-Hexanone	< 5.00	ug/L		6/14/2018 18:37
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 18:37
Acetone	**9.84**	ug/L	J	6/14/2018 18:37
Benzene	< 1.00	ug/L		6/14/2018 18:37
Bromochloromethane	< 5.00	ug/L		6/14/2018 18:37
Bromodichloromethane	< 2.00	ug/L		6/14/2018 18:37
Bromoform	< 5.00	ug/L		6/14/2018 18:37
Bromomethane	< 2.00	ug/L		6/14/2018 18:37
Carbon disulfide	< 2.00	ug/L		6/14/2018 18:37

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218
Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	18:37
Chlorobenzene	< 2.00	ug/L	6/14/2018	18:37
Chloroethane	< 2.00	ug/L	6/14/2018	18:37
Chloroform	< 2.00	ug/L	6/14/2018	18:37
Chloromethane	< 2.00	ug/L	6/14/2018	18:37
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:37
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:37
Cyclohexane	< 10.0	ug/L	6/14/2018	18:37
Dibromochloromethane	< 2.00	ug/L	6/14/2018	18:37
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	18:37
Ethylbenzene	< 2.00	ug/L	6/14/2018	18:37
Freon 113	< 2.00	ug/L	6/14/2018	18:37
Isopropylbenzene	< 2.00	ug/L	6/14/2018	18:37
m,p-Xylene	< 2.00	ug/L	6/14/2018	18:37
Methyl acetate	< 2.00	ug/L	6/14/2018	18:37
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	18:37
Methylcyclohexane	< 2.00	ug/L	6/14/2018	18:37
Methylene chloride	< 5.00	ug/L	6/14/2018	18:37
Naphthalene	< 5.00	ug/L	6/14/2018	18:37
n-Butylbenzene	< 2.00	ug/L	6/14/2018	18:37
n-Propylbenzene	< 2.00	ug/L	6/14/2018	18:37
o-Xylene	< 2.00	ug/L	6/14/2018	18:37
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	18:37
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	18:37
Styrene	< 5.00	ug/L	6/14/2018	18:37
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	18:37
Tetrachloroethene	< 2.00	ug/L	6/14/2018	18:37
Toluene	< 2.00	ug/L	6/14/2018	18:37
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:37
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:37

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218
Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 18:37
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 18:37
Vinyl chloride	< 2.00	ug/L			6/14/2018 18:37

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.2 - 121		6/14/2018 18:37
4-Bromofluorobenzene	**93.9**	70 - 123		6/14/2018 18:37
Pentafluorobenzene	**92.9**	85.4 - 110		6/14/2018 18:37
Toluene-D8	**98.5**	83.8 - 112		6/14/2018 18:37

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51642.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000195**	mg/L	J	6/18/2018 11:42

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**54.4**	mg/L		6/15/2018 16:55
Antimony	< 0.0600	mg/L		6/15/2018 16:55
Arsenic	**0.0779**	mg/L		6/15/2018 16:55
Barium	**0.864**	mg/L		6/15/2018 16:55
Beryllium	**0.00311**	mg/L	J	6/15/2018 16:55
Cadmium	**0.00450**	mg/L	J	6/15/2018 16:55
Calcium	**323**	mg/L		6/15/2018 16:55
Chromium	**0.0920**	mg/L		6/15/2018 16:55
Cobalt	**0.0499**	mg/L	J	6/15/2018 16:55
Copper	**0.142**	mg/L		6/15/2018 16:55
Iron	**128**	mg/L		6/15/2018 16:55
Lead	**0.0674**	mg/L		6/15/2018 16:55
Magnesium	**94.1**	mg/L		6/15/2018 16:55
Manganese	**6.11**	mg/L		6/15/2018 16:55
Nickel	**0.114**	mg/L		6/15/2018 16:55
Potassium	**16.0**	mg/L		6/15/2018 16:55
Selenium	< 0.0200	mg/L		6/15/2018 16:55
Silver	**0.00910**	mg/L	J	6/15/2018 16:55
Sodium	**759**	mg/L		6/18/2018 14:15
Thallium	< 0.0250	mg/L		6/15/2018 16:55
Vanadium	**0.0909**	mg/L		6/15/2018 16:55
Zinc	**0.909**	mg/L		6/15/2018 16:55

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/15/2018 14:03
PCB-1221	< 1.00	ug/L		6/15/2018 14:03
PCB-1232	< 1.00	ug/L		6/15/2018 14:03
PCB-1242	< 1.00	ug/L		6/15/2018 14:03
PCB-1248	< 1.00	ug/L		6/15/2018 14:03
PCB-1254	< 1.00	ug/L		6/15/2018 14:03
PCB-1260	< 1.00	ug/L		6/15/2018 14:03
PCB-1262	< 1.00	ug/L		6/15/2018 14:03
PCB-1268	< 1.00	ug/L		6/15/2018 14:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**28.1**	10 - 104		6/15/2018 14:03
Tetrachloro-m-xylene	**47.2**	10 - 87.9		6/15/2018 14:03

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016848.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/18/2018 18:13
4,4-DDE	< 0.100	ug/L		6/18/2018 18:13
4,4-DDT	< 0.100	ug/L		6/18/2018 18:13
Aldrin	< 0.100	ug/L		6/18/2018 18:13
alpha-BHC	< 0.100	ug/L		6/18/2018 18:13
beta-BHC	**0.0631**	ug/L	JP	6/18/2018 18:13
cis-Chlordane	< 0.100	ug/L		6/18/2018 18:13
delta-BHC	< 0.100	ug/L		6/18/2018 18:13
Dieldrin	< 0.100	ug/L		6/18/2018 18:13
Endosulfan I	< 0.100	ug/L		6/18/2018 18:13
Endosulfan II	< 0.100	ug/L		6/18/2018 18:13
Endosulfan Sulfate	< 0.100	ug/L		6/18/2018 18:13
Endrin	< 0.100	ug/L		6/18/2018 18:13
Endrin Aldehyde	< 0.100	ug/L		6/18/2018 18:13
Endrin Ketone	< 0.100	ug/L		6/18/2018 18:13
gamma-BHC (Lindane)	< 0.100	ug/L		6/18/2018 18:13
Heptachlor	< 0.100	ug/L		6/18/2018 18:13
Heptachlor Epoxide	< 0.100	ug/L		6/18/2018 18:13
Methoxychlor	< 0.100	ug/L		6/18/2018 18:13
Toxaphene	< 1.00	ug/L		6/18/2018 18:13
trans-Chlordane	< 0.100	ug/L		6/18/2018 18:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**60.6**	15.9 - 138		6/18/2018 18:13
Tetrachloro-m-xylene (1)	**80.8**	20 - 112		6/18/2018 18:13

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030759.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 04:35
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 04:35
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:35
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:35
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 04:35
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 04:35
2-Nitroaniline	< 20.0	ug/L		6/16/2018 04:35
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 04:35
3-Nitroaniline	< 20.0	ug/L		6/16/2018 04:35
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:35
4-Chloroaniline	< 10.0	ug/L		6/16/2018 04:35
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:35
4-Nitroaniline	< 20.0	ug/L		6/16/2018 04:35
Acenaphthene	< 10.0	ug/L		6/16/2018 04:35
Acenaphthylene	< 10.0	ug/L		6/16/2018 04:35
Acetophenone	< 10.0	ug/L		6/16/2018 04:35
Anthracene	< 10.0	ug/L		6/16/2018 04:35
Atrazine	< 10.0	ug/L		6/16/2018 04:35
Benzaldehyde	< 10.0	ug/L		6/16/2018 04:35
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 04:35
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 04:35
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 04:35

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	04:35
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	04:35
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	04:35
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	04:35
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	04:35
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	04:35
Caprolactam	< 10.0	ug/L	6/16/2018	04:35
Carbazole	< 10.0	ug/L	6/16/2018	04:35
Chrysene	< 10.0	ug/L	6/16/2018	04:35
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	04:35
Dibenzofuran	< 10.0	ug/L	6/16/2018	04:35
Diethyl phthalate	< 10.0	ug/L	6/16/2018	04:35
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	04:35
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	04:35
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	04:35
Fluoranthene	< 10.0	ug/L	6/16/2018	04:35
Fluorene	< 10.0	ug/L	6/16/2018	04:35
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	04:35
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	04:35
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	04:35
Hexachloroethane	< 10.0	ug/L	6/16/2018	04:35
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	04:35
Isophorone	< 10.0	ug/L	6/16/2018	04:35
Naphthalene	< 10.0	ug/L	6/16/2018	04:35
Nitrobenzene	< 10.0	ug/L	6/16/2018	04:35
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	04:35
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	04:35
Phenanthrene	< 10.0	ug/L	6/16/2018	04:35
Pyrene	< 10.0	ug/L	6/16/2018	04:35

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**53.5**	31.2 - 108		6/16/2018 04:35
Nitrobenzene-d5	**65.4**	48.3 - 106		6/16/2018 04:35
Terphenyl-d14	**80.7**	52.2 - 117		6/16/2018 04:35

Method Reference(s): EPA 8270D
EPA 3510C
Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 19:00
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 19:00
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 19:00
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 19:00
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 19:00
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 19:00
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 19:00
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 19:00
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 19:00
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 19:00
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 19:00
1,4-dioxane	< 20.0	ug/L		6/14/2018 19:00
2-Butanone	< 10.0	ug/L		6/14/2018 19:00
2-Hexanone	< 5.00	ug/L		6/14/2018 19:00
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 19:00
Acetone	< 10.0	ug/L		6/14/2018 19:00
Benzene	< 1.00	ug/L		6/14/2018 19:00
Bromochloromethane	< 5.00	ug/L		6/14/2018 19:00
Bromodichloromethane	< 2.00	ug/L		6/14/2018 19:00
Bromoform	< 5.00	ug/L		6/14/2018 19:00
Bromomethane	< 2.00	ug/L		6/14/2018 19:00
Carbon disulfide	< 2.00	ug/L		6/14/2018 19:00

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	19:00
Chlorobenzene	< 2.00	ug/L	6/14/2018	19:00
Chloroethane	< 2.00	ug/L	6/14/2018	19:00
Chloroform	< 2.00	ug/L	6/14/2018	19:00
Chloromethane	< 2.00	ug/L	6/14/2018	19:00
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	19:00
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	19:00
Cyclohexane	< 10.0	ug/L	6/14/2018	19:00
Dibromochloromethane	< 2.00	ug/L	6/14/2018	19:00
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	19:00
Ethylbenzene	< 2.00	ug/L	6/14/2018	19:00
Freon 113	< 2.00	ug/L	6/14/2018	19:00
Isopropylbenzene	< 2.00	ug/L	6/14/2018	19:00
m,p-Xylene	< 2.00	ug/L	6/14/2018	19:00
Methyl acetate	< 2.00	ug/L	6/14/2018	19:00
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	19:00
Methylcyclohexane	< 2.00	ug/L	6/14/2018	19:00
Methylene chloride	< 5.00	ug/L	6/14/2018	19:00
Naphthalene	< 5.00	ug/L	6/14/2018	19:00
n-Butylbenzene	< 2.00	ug/L	6/14/2018	19:00
n-Propylbenzene	< 2.00	ug/L	6/14/2018	19:00
o-Xylene	< 2.00	ug/L	6/14/2018	19:00
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	19:00
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	19:00
Styrene	< 5.00	ug/L	6/14/2018	19:00
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	19:00
Tetrachloroethene	< 2.00	ug/L	6/14/2018	19:00
Toluene	< 2.00	ug/L	6/14/2018	19:00
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	19:00
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	19:00

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 19:00
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 19:00
Vinyl chloride	< 2.00	ug/L			6/14/2018 19:00

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**102**	77.2 - 121		6/14/2018 19:00
4-Bromofluorobenzene	**94.3**	70 - 123		6/14/2018 19:00
Pentafluorobenzene	**92.3**	85.4 - 110		6/14/2018 19:00
Toluene-D8	**96.5**	83.8 - 112		6/14/2018 19:00

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51643.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	Trip Blank-061218		
Lab Sample ID:	182626-08	**Date Sampled:**	6/11/2018
Matrix:	Water	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 16:17
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:17
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:17
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:17
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 16:17
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 16:17
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:17
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 16:17
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:17
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:17
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:17
1,4-dioxane	< 20.0	ug/L		6/14/2018 16:17
2-Butanone	< 10.0	ug/L		6/14/2018 16:17
2-Hexanone	< 5.00	ug/L		6/14/2018 16:17
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 16:17
Acetone	< 10.0	ug/L		6/14/2018 16:17
Benzene	< 1.00	ug/L		6/14/2018 16:17
Bromochloromethane	< 5.00	ug/L		6/14/2018 16:17
Bromodichloromethane	< 2.00	ug/L		6/14/2018 16:17
Bromoform	< 5.00	ug/L		6/14/2018 16:17
Bromomethane	< 2.00	ug/L		6/14/2018 16:17
Carbon disulfide	< 2.00	ug/L		6/14/2018 16:17

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: Trip Blank-061218
Lab Sample ID: 182626-08 **Date Sampled:** 6/11/2018
Matrix: Water **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	16:17
Chlorobenzene	< 2.00	ug/L	6/14/2018	16:17
Chloroethane	< 2.00	ug/L	6/14/2018	16:17
Chloroform	< 2.00	ug/L	6/14/2018	16:17
Chloromethane	< 2.00	ug/L	6/14/2018	16:17
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:17
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:17
Cyclohexane	< 10.0	ug/L	6/14/2018	16:17
Dibromochloromethane	< 2.00	ug/L	6/14/2018	16:17
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	16:17
Ethylbenzene	< 2.00	ug/L	6/14/2018	16:17
Freon 113	< 2.00	ug/L	6/14/2018	16:17
Isopropylbenzene	< 2.00	ug/L	6/14/2018	16:17
m,p-Xylene	< 2.00	ug/L	6/14/2018	16:17
Methyl acetate	< 2.00	ug/L	6/14/2018	16:17
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	16:17
Methylcyclohexane	< 2.00	ug/L	6/14/2018	16:17
Methylene chloride	< 5.00	ug/L	6/14/2018	16:17
Naphthalene	< 5.00	ug/L	6/14/2018	16:17
n-Butylbenzene	< 2.00	ug/L	6/14/2018	16:17
n-Propylbenzene	< 2.00	ug/L	6/14/2018	16:17
o-Xylene	< 2.00	ug/L	6/14/2018	16:17
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	16:17
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	16:17
Styrene	< 5.00	ug/L	6/14/2018	16:17
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	16:17
Tetrachloroethene	< 2.00	ug/L	6/14/2018	16:17
Toluene	< 2.00	ug/L	6/14/2018	16:17
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:17
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:17

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: Trip Blank-061218
Lab Sample ID: 182626-08 **Date Sampled:** 6/11/2018
Matrix: Water **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 16:17
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 16:17
Vinyl chloride	< 2.00	ug/L			6/14/2018 16:17

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**115**	77.2 - 121		6/14/2018 16:17
4-Bromofluorobenzene	**84.7**	70 - 123		6/14/2018 16:17
Pentafluorobenzene	**86.9**	85.4 - 110		6/14/2018 16:17
Toluene-D8	**95.5**	83.8 - 112		6/14/2018 16:17

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51636.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, June 19, 2018

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term, or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB will use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, LLC

REPORT TO:	INVOICE TO:	
CLIENT: Bergmann Associates	CLIENT:	LAB PROJECT ID: 182626
ADDRESS: 280 East Broad Street Suite 200	ADDRESS:	
CITY: Rochester STATE: NY ZIP 14604	CITY: Same STATE: ZIP:	Quotation #:
PHONE: 585-232-5135	PHONE:	Email:
ATTN: Stephen DeMeo	ATTN:	

PROJECT REFERENCE: West River Wall

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	EPA 8270 (BN)	EPA 8082 (PCB)	EPA 6081 (Pest.)	EPA 8260+CP-51(VOC)	EPA 6010/7471 TAL per sample labels 6/12/18					REMARKS	PARADIGM LAB SAMPLE NUMBER
06/11/18	10:00			RRW-CH-MW-01-061118	WG	6	X	X	X	X	X						01
06/11/18	10:30			RRW-CH-MW-02-061118	WG	6	X	X	X	X	X						02
06/11/18	11:00			RRW-CH-MW-08-061118	WG	6	X	X	X	X	X						03
06/11/18	15:00			RRW-CH-MW-08-061118	WG	6	X	X	X	X	X						04
06/12/18	09:00			RRW-CH-MW-09-061218	WG	6	X	X	X	X	X						05
06/12/18	09:45			RRW-CH-MW-10-061218	WG	6	X	X	X	X	X						06
06/12/18	09:50			RRW-CH-MW-06XX18 (Blind Duplicate)	WG	6	X	X	X	X	X						07
06/12/18				Trip Blank - 061218		1										T-841 per sample label	08
per TB method	GP 6/12/18															GP 6/12/18	

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	X	None Required		None Required
10 day		Batch QC		Basic EDD
Rush 3 day		Category A		NYSDEC EDD
Rush 2 day		Category B	X	
Rush 1 day				
Other please indicate date needed:		Other please indicate package needed:		Other EDD please indicate EDD needed:

Sampled By: [signature] Date/Time: 06/12/18 11:30

Relinquished By: [signature] Date/Time: 06/12/18 12:35

Received By: [signature] Date/Time: 6/12/18 1240

Received @ Lab By: [signature] Date/Time: 6/12/18 13:30

Total Cost:

P.I.F.

5 °C iced 6/12/18 13:10. Custody Seal n/a, Samples delivered by client. GP 6/12/18

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Bergmann Associates **Completed by:** Glenn Pezzulo

Lab Project ID: 182626 **Date:** 6/12/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	*NELAC compliance with the sample condition requirements upon receipt* Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X VOA		X
Comments			
Preservation	X VOA Metals		X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X Metals
Comments	5°C iced 6/12/18 13:10		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For

Bergmann Associates

For Lab Project ID

183791

Referencing

Rochester River Wall Spill Area at A6

Prepared

Monday, August 27, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183791

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-101 (19-20 ft.)		
Lab Sample ID:	183791-01	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/20/2018

Petroleum Hydrocarbons by GC

Analyte	Result	Units	Qualifier	Date Analyzed
Medium weight PHC as Diesel	**1470**	mg/Kg		8/22/2018 17:30

Sample chromatogram not an exact match to reference chromatogram. Closest match made.

Method Reference(s): NYSDOH 310.13

Preparation Date: 8/20/2018

ELAP does not offer this test for approval as part of their laboratory certification program.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183791

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-103 (17-18 ft.)		
Lab Sample ID:	183791-02	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/20/2018

Petroleum Hydrocarbons by GC

Analyte	Result	Units	Qualifier	Date Analyzed
Medium weight PHC as Diesel	**911**	mg/Kg		8/22/2018 18:08

Sample chromatogram not an exact match to reference chromatogram. Closest match made.

Method Reference(s): NYSDOH 310.13

Preparation Date: 8/20/2018

ELAP does not offer this test for approval as part of their laboratory certification program.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183791

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-104 (17-18 ft.)		
Lab Sample ID:	183791-03	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/20/2018

Petroleum Hydrocarbons by GC

Analyte	Result	Units	Qualifier	Date Analyzed
Medium weight PHC as Diesel	**1820**	mg/Kg		8/22/2018 18:47

Sample chromatogram not an exact match to reference chromatogram. Closest match made.

Method Reference(s): NYSDOH 310.13

Preparation Date: 8/20/2018

ELAP does not offer this test for approval as part of their laboratory certification program.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183791

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-109 (17-18 ft.)		
Lab Sample ID:	183791-04	**Date Sampled:**	8/9/2018
Matrix:	Soil	**Date Received:**	8/20/2018

Petroleum Hydrocarbons by GC

Analyte	Result	Units	Qualifier	Date Analyzed
Medium weight PHC as Diesel	**348**	mg/Kg		8/22/2018 19:26

Sample chromatogram not an exact match to reference chromatogram. Closest match made.

Method Reference(s): NYSDOH 310.13

Preparation Date: 8/20/2018

ELAP does not offer this test for approval as part of their laboratory certification program.

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

Relog: 183791

PARADIGM

REPORT TO:		INVOICE TO:		
CLIENT:	Bergmann	CLIENT:	Same	LAB PROJECT ID: 183651
ADDRESS:	280 East Broad Street	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14604	CITY: STATE: ZIP:		Quotation #:
PHONE:	(585) 232-5135	PHONE:		Email:
ATTN:	Steve DeMeo	ATTN:		

PROJECT REFERENCE: Rochester River Wall Spill Arrest at A6

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260 Plus CP51	8270 CP51	REMARKS	PARADIGM LAB SAMPLE NUMBER
8/8/18	10:00		X	GB-101 (19-20 ft.)	SO	2	X	X	Relog Samples 101, 104, 103, 109 for PitC 310.13 per SDeMeo phonecall 8/20/18 SS	01 -01
8/8/18	1:30		X	GB-102 (17-18 ft.)	SO	2	X	X		02
8/8/18	2:20PM		X	GB-103 (17-18 ft.)	SO	2	X	X		03 -02
8/8/18	3:10PM		X	GB-104 (17-18 ft.)	SO	2	X	X		04 -03
8/9/18	3:20PM		X	GB-109 (17-18 ft.)	SO	2	X	X		05 -04
8/9/18	4:15PM		X	GB-110 (13-14 ft.)	SO	2	X	X		06
									10°C iwl 8/10/18 0926	

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required	☐	None Required	☐
10 day	☐	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

Sampled By: Stephen J. DeMeo	Date/Time: 8/8/18 to 8/10/18	Total Cost:
Relinquished By:	Date/Time: 8/10/18 9:10AM	
Received By: Jane Jaeger	Date/Time: 8/10/18 0910	P.I.F.
Received @ Lab By: Molly Vail	Date/Time: 8/10/18 0941	

Relog: 2Pz 8/20/18 11:32

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Relog: 183791

Chain of Custody Supplement

Client: Bergmann **Completed by:** MollyVail

Lab Project ID: 183651 **Date:** 8/10/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	*NELAC compliance with the sample condition requirements upon receipt* Yes	No	N/A
Container Type	X	5035	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature		X	
Comments	10°C iwd 8/10/18 0926		
Sufficient Sample Quantity	X		
Comments			

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report For

Bergmann Associates

For Lab Project ID

183651

Referencing

Rochester River Wall Spill Area at A6

Prepared

Friday, August 17, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

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PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-101 (19-20 ft.)		
Lab Sample ID:	183651-01	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 327	ug/Kg		8/13/2018 16:23
Acenaphthylene	< 327	ug/Kg		8/13/2018 16:23
Anthracene	< 327	ug/Kg		8/13/2018 16:23
Benzo (a) anthracene	< 327	ug/Kg		8/13/2018 16:23
Benzo (a) pyrene	< 327	ug/Kg		8/13/2018 16:23
Benzo (b) fluoranthene	< 327	ug/Kg		8/13/2018 16:23
Benzo (g,h,i) perylene	< 327	ug/Kg		8/13/2018 16:23
Benzo (k) fluoranthene	< 327	ug/Kg		8/13/2018 16:23
Chrysene	< 327	ug/Kg		8/13/2018 16:23
Dibenz (a,h) anthracene	< 327	ug/Kg		8/13/2018 16:23
Fluoranthene	< 327	ug/Kg		8/13/2018 16:23
Fluorene	< 327	ug/Kg		8/13/2018 16:23
Indeno (1,2,3-cd) pyrene	< 327	ug/Kg		8/13/2018 16:23
Naphthalene	< 327	ug/Kg		8/13/2018 16:23
Phenanthrene	< 327	ug/Kg		8/13/2018 16:23
Pyrene	< 327	ug/Kg	M	8/13/2018 16:23

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**48.5**	35.7 - 85.7		8/13/2018 16:23
Nitrobenzene-d5	**43.2**	36.1 - 74.4		8/13/2018 16:23
Terphenyl-d14	**56.6**	46.6 - 99.9		8/13/2018 16:23

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 8/13/2018
Data File: B30353.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 10.8	ug/Kg		8/15/2018 17:27
1,1,2,2-Tetrachloroethane	< 10.8	ug/Kg		8/15/2018 17:27
1,1,2-Trichloroethane	< 10.8	ug/Kg		8/15/2018 17:27

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PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-101 (19-20 ft.)		
Lab Sample ID:	183651-01	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

1,1-Dichloroethane	< 10.8	ug/Kg	8/15/2018	17:27
1,1-Dichloroethene	< 10.8	ug/Kg	8/15/2018	17:27
1,2,3-Trichlorobenzene	< 27.1	ug/Kg	8/15/2018	17:27
1,2,4-Trichlorobenzene	< 27.1	ug/Kg	8/15/2018	17:27
1,2,4-Trimethylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
1,2-Dibromo-3-Chloropropane	< 54.2	ug/Kg	8/15/2018	17:27
1,2-Dichlorobenzene	< 10.8	ug/Kg	8/15/2018	17:27
1,2-Dichloroethane	< 10.8	ug/Kg	8/15/2018	17:27
1,2-Dichloropropane	< 10.8	ug/Kg	8/15/2018	17:27
1,3,5-Trimethylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
1,3-Dichlorobenzene	< 10.8	ug/Kg	8/15/2018	17:27
1,4-Dichlorobenzene	< 10.8	ug/Kg	8/15/2018	17:27
1,4-Dioxane	< 108	ug/Kg	8/15/2018	17:27
2-Butanone	< 54.2	ug/Kg	8/15/2018	17:27
2-Hexanone	< 27.1	ug/Kg	8/15/2018	17:27
4-Methyl-2-pentanone	< 27.1	ug/Kg	8/15/2018	17:27
Acetone	< 54.2	ug/Kg	8/15/2018	17:27
Benzene	< 10.8	ug/Kg	8/15/2018	17:27
Bromochloromethane	< 27.1	ug/Kg	8/15/2018	17:27
Bromodichloromethane	< 10.8	ug/Kg	8/15/2018	17:27
Bromoform	< 27.1	ug/Kg	8/15/2018	17:27
Bromomethane	< 10.8	ug/Kg	8/15/2018	17:27
Carbon disulfide	< 10.8	ug/Kg	8/15/2018	17:27
Carbon Tetrachloride	< 10.8	ug/Kg	8/15/2018	17:27
Chlorobenzene	< 10.8	ug/Kg	8/15/2018	17:27
Chloroethane	< 10.8	ug/Kg	8/15/2018	17:27
Chloroform	< 10.8	ug/Kg	8/15/2018	17:27
Chloromethane	< 10.8	ug/Kg	8/15/2018	17:27
cis-1,2-Dichloroethene	< 10.8	ug/Kg	8/15/2018	17:27
cis-1,3-Dichloropropene	< 10.8	ug/Kg	8/15/2018	17:27
Cyclohexane	< 54.2	ug/Kg	8/15/2018	17:27
Dibromochloromethane	< 10.8	ug/Kg	8/15/2018	17:27

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-101 (19-20 ft.)
Lab Sample ID: 183651-01 **Date Sampled:** 8/8/2018
Matrix: Soil **Date Received:** 8/10/2018

Dibromomethane	< 10.8	ug/Kg	8/15/2018	17:27
Dichlorodifluoromethane	< 10.8	ug/Kg	8/15/2018	17:27
Ethylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
Freon 113	< 10.8	ug/Kg	8/15/2018	17:27
Isopropylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
m,p-Xylene	< 10.8	ug/Kg	8/15/2018	17:27
Methyl acetate	< 10.8	ug/Kg	8/15/2018	17:27
Methyl tert-butyl Ether	< 10.8	ug/Kg	8/15/2018	17:27
Methylcyclohexane	< 10.8	ug/Kg	8/15/2018	17:27
Methylene chloride	< 27.1	ug/Kg	8/15/2018	17:27
Naphthalene	< 27.1	ug/Kg	8/15/2018	17:27
n-Butylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
n-Propylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
o-Xylene	< 10.8	ug/Kg	8/15/2018	17:27
p-Isopropyltoluene	< 10.8	ug/Kg	8/15/2018	17:27
sec-Butylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
Styrene	< 27.1	ug/Kg	8/15/2018	17:27
tert-Butylbenzene	< 10.8	ug/Kg	8/15/2018	17:27
Tetrachloroethene	< 10.8	ug/Kg	8/15/2018	17:27
Toluene	< 10.8	ug/Kg	8/15/2018	17:27
trans-1,2-Dichloroethene	< 10.8	ug/Kg	8/15/2018	17:27
trans-1,3-Dichloropropene	< 10.8	ug/Kg	8/15/2018	17:27
Trichloroethene	< 10.8	ug/Kg	8/15/2018	17:27
Trichlorofluoromethane	< 10.8	ug/Kg	8/15/2018	17:27
Vinyl chloride	< 10.8	ug/Kg	8/15/2018	17:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-101 (19-20 ft.)
Lab Sample ID: 183651-01 **Date Sampled:** 8/8/2018
Matrix: Soil **Date Received:** 8/10/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**104**	80.4 - 128		8/15/2018	17:27
4-Bromofluorobenzene	**131**	75.7 - 120	*	8/15/2018	17:27
Pentafluorobenzene	**95.9**	85.3 - 111		8/15/2018	17:27
Toluene-D8	**103**	85 - 112		8/15/2018	17:27

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x53230.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-102 (17-18 ft.)
Lab Sample ID: 183651-02 **Date Sampled:** 8/8/2018
Matrix: Soil **Date Received:** 8/10/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 321	ug/Kg		8/13/2018 17:52
Acenaphthylene	< 321	ug/Kg		8/13/2018 17:52
Anthracene	< 321	ug/Kg		8/13/2018 17:52
Benzo (a) anthracene	< 321	ug/Kg		8/13/2018 17:52
Benzo (a) pyrene	< 321	ug/Kg		8/13/2018 17:52
Benzo (b) fluoranthene	< 321	ug/Kg		8/13/2018 17:52
Benzo (g,h,i) perylene	< 321	ug/Kg		8/13/2018 17:52
Benzo (k) fluoranthene	< 321	ug/Kg		8/13/2018 17:52
Chrysene	< 321	ug/Kg		8/13/2018 17:52
Dibenz (a,h) anthracene	< 321	ug/Kg		8/13/2018 17:52
Fluoranthene	< 321	ug/Kg		8/13/2018 17:52
Fluorene	< 321	ug/Kg		8/13/2018 17:52
Indeno (1,2,3-cd) pyrene	< 321	ug/Kg		8/13/2018 17:52
Naphthalene	< 321	ug/Kg		8/13/2018 17:52
Phenanthrene	< 321	ug/Kg		8/13/2018 17:52
Pyrene	< 321	ug/Kg		8/13/2018 17:52

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**33.4**	35.7 - 85.7	*	8/13/2018 17:52
Nitrobenzene-d5	**23.4**	36.1 - 74.4	*	8/13/2018 17:52
Terphenyl-d14	**45.9**	46.6 - 99.9	*	8/13/2018 17:52

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 8/13/2018
Data File: B30356.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 7.41	ug/Kg		8/14/2018 19:57
1,1,2,2-Tetrachloroethane	< 7.41	ug/Kg		8/14/2018 19:57
1,1,2-Trichloroethane	< 7.41	ug/Kg		8/14/2018 19:57

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PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-102 (17-18 ft.)		
Lab Sample ID:	183651-02	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

1,1-Dichloroethane	< 7.41	ug/Kg	8/14/2018	19:57
1,1-Dichloroethene	< 7.41	ug/Kg	8/14/2018	19:57
1,2,3-Trichlorobenzene	< 18.5	ug/Kg	8/14/2018	19:57
1,2,4-Trichlorobenzene	< 18.5	ug/Kg	8/14/2018	19:57
1,2,4-Trimethylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
1,2-Dibromo-3-Chloropropane	< 37.0	ug/Kg	8/14/2018	19:57
1,2-Dichlorobenzene	< 7.41	ug/Kg	8/14/2018	19:57
1,2-Dichloroethane	< 7.41	ug/Kg	8/14/2018	19:57
1,2-Dichloropropane	< 7.41	ug/Kg	8/14/2018	19:57
1,3,5-Trimethylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
1,3-Dichlorobenzene	< 7.41	ug/Kg	8/14/2018	19:57
1,4-Dichlorobenzene	< 7.41	ug/Kg	8/14/2018	19:57
1,4-Dioxane	< 74.1	ug/Kg	8/14/2018	19:57
2-Butanone	< 37.0	ug/Kg	8/14/2018	19:57
2-Hexanone	< 18.5	ug/Kg	8/14/2018	19:57
4-Methyl-2-pentanone	< 18.5	ug/Kg	8/14/2018	19:57
Acetone	< 37.0	ug/Kg	8/14/2018	19:57
Benzene	< 7.41	ug/Kg	8/14/2018	19:57
Bromochloromethane	< 18.5	ug/Kg	8/14/2018	19:57
Bromodichloromethane	< 7.41	ug/Kg	8/14/2018	19:57
Bromoform	< 18.5	ug/Kg	8/14/2018	19:57
Bromomethane	< 7.41	ug/Kg	8/14/2018	19:57
Carbon disulfide	< 7.41	ug/Kg	8/14/2018	19:57
Carbon Tetrachloride	< 7.41	ug/Kg	8/14/2018	19:57
Chlorobenzene	< 7.41	ug/Kg	8/14/2018	19:57
Chloroethane	< 7.41	ug/Kg	8/14/2018	19:57
Chloroform	< 7.41	ug/Kg	8/14/2018	19:57
Chloromethane	< 7.41	ug/Kg	8/14/2018	19:57
cis-1,2-Dichloroethene	< 7.41	ug/Kg	8/14/2018	19:57
cis-1,3-Dichloropropene	< 7.41	ug/Kg	8/14/2018	19:57
Cyclohexane	< 37.0	ug/Kg	8/14/2018	19:57
Dibromochloromethane	< 7.41	ug/Kg	8/14/2018	19:57

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-102 (17-18 ft.)		
Lab Sample ID:	183651-02	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Dibromomethane	< 18.5	ug/Kg	8/14/2018	19:57
Dichlorodifluoromethane	< 7.41	ug/Kg	8/14/2018	19:57
Ethylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
Freon 113	< 7.41	ug/Kg	8/14/2018	19:57
Isopropylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
m,p-Xylene	< 7.41	ug/Kg	8/14/2018	19:57
Methyl acetate	< 7.41	ug/Kg	8/14/2018	19:57
Methyl tert-butyl Ether	< 7.41	ug/Kg	8/14/2018	19:57
Methylcyclohexane	< 7.41	ug/Kg	8/14/2018	19:57
Methylene chloride	< 18.5	ug/Kg	8/14/2018	19:57
Naphthalene	< 18.5	ug/Kg	8/14/2018	19:57
n-Butylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
n-Propylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
o-Xylene	< 7.41	ug/Kg	8/14/2018	19:57
p-Isopropyltoluene	< 7.41	ug/Kg	8/14/2018	19:57
sec-Butylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
Styrene	< 18.5	ug/Kg	8/14/2018	19:57
tert-Butylbenzene	< 7.41	ug/Kg	8/14/2018	19:57
Tetrachloroethene	< 7.41	ug/Kg	8/14/2018	19:57
Toluene	< 7.41	ug/Kg	8/14/2018	19:57
trans-1,2-Dichloroethene	< 7.41	ug/Kg	8/14/2018	19:57
trans-1,3-Dichloropropene	< 7.41	ug/Kg	8/14/2018	19:57
Trichloroethene	< 7.41	ug/Kg	8/14/2018	19:57
Trichlorofluoromethane	< 7.41	ug/Kg	8/14/2018	19:57
Vinyl chloride	< 7.41	ug/Kg	8/14/2018	19:57

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-102 (17-18 ft.)
Lab Sample ID: 183651-02 **Date Sampled:** 8/8/2018
Matrix: Soil **Date Received:** 8/10/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**108**	80.4 - 128		8/14/2018	19:57
4-Bromofluorobenzene	**97.3**	75.7 - 120		8/14/2018	19:57
Pentafluorobenzene	**96.6**	85.3 - 111		8/14/2018	19:57
Toluene-D8	**99.3**	85 - 112		8/14/2018	19:57

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x53205.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-103 (17-18 ft.)		
Lab Sample ID:	183651-03	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 372	ug/Kg		8/13/2018 18:21
Acenaphthylene	< 372	ug/Kg		8/13/2018 18:21
Anthracene	< 372	ug/Kg		8/13/2018 18:21
Benzo (a) anthracene	< 372	ug/Kg		8/13/2018 18:21
Benzo (a) pyrene	< 372	ug/Kg		8/13/2018 18:21
Benzo (b) fluoranthene	< 372	ug/Kg		8/13/2018 18:21
Benzo (g,h,i) perylene	< 372	ug/Kg		8/13/2018 18:21
Benzo (k) fluoranthene	< 372	ug/Kg		8/13/2018 18:21
Chrysene	< 372	ug/Kg		8/13/2018 18:21
Dibenz (a,h) anthracene	< 372	ug/Kg		8/13/2018 18:21
Fluoranthene	< 372	ug/Kg		8/13/2018 18:21
Fluorene	< 372	ug/Kg		8/13/2018 18:21
Indeno (1,2,3-cd) pyrene	< 372	ug/Kg		8/13/2018 18:21
Naphthalene	< 372	ug/Kg		8/13/2018 18:21
Phenanthrene	< 372	ug/Kg		8/13/2018 18:21
Pyrene	< 372	ug/Kg		8/13/2018 18:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**51.8**	35.7 - 85.7		8/13/2018 18:21
Nitrobenzene-d5	**46.5**	36.1 - 74.4		8/13/2018 18:21
Terphenyl-d14	**56.4**	46.6 - 99.9		8/13/2018 18:21

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 8/13/2018
Data File: B30357.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 12.2	ug/Kg		8/15/2018 17:51
1,1,2,2-Tetrachloroethane	< 12.2	ug/Kg		8/15/2018 17:51
1,1,2-Trichloroethane	< 12.2	ug/Kg		8/15/2018 17:51

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-103 (17-18 ft.)		
Lab Sample ID:	183651-03	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

1,1-Dichloroethane	< 12.2	ug/Kg	8/15/2018	17:51
1,1-Dichloroethene	< 12.2	ug/Kg	8/15/2018	17:51
1,2,3-Trichlorobenzene	< 30.4	ug/Kg	8/15/2018	17:51
1,2,4-Trichlorobenzene	< 30.4	ug/Kg	8/15/2018	17:51
1,2,4-Trimethylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
1,2-Dibromo-3-Chloropropane	< 60.8	ug/Kg	8/15/2018	17:51
1,2-Dichlorobenzene	< 12.2	ug/Kg	8/15/2018	17:51
1,2-Dichloroethane	< 12.2	ug/Kg	8/15/2018	17:51
1,2-Dichloropropane	< 12.2	ug/Kg	8/15/2018	17:51
1,3,5-Trimethylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
1,3-Dichlorobenzene	< 12.2	ug/Kg	8/15/2018	17:51
1,4-Dichlorobenzene	< 12.2	ug/Kg	8/15/2018	17:51
1,4-Dioxane	< 122	ug/Kg	8/15/2018	17:51
2-Butanone	< 60.8	ug/Kg	8/15/2018	17:51
2-Hexanone	< 30.4	ug/Kg	8/15/2018	17:51
4-Methyl-2-pentanone	< 30.4	ug/Kg	8/15/2018	17:51
Acetone	< 60.8	ug/Kg	8/15/2018	17:51
Benzene	< 12.2	ug/Kg	8/15/2018	17:51
Bromochloromethane	< 30.4	ug/Kg	8/15/2018	17:51
Bromodichloromethane	< 12.2	ug/Kg	8/15/2018	17:51
Bromoform	< 30.4	ug/Kg	8/15/2018	17:51
Bromomethane	< 12.2	ug/Kg	8/15/2018	17:51
Carbon disulfide	< 12.2	ug/Kg	8/15/2018	17:51
Carbon Tetrachloride	< 12.2	ug/Kg	8/15/2018	17:51
Chlorobenzene	< 12.2	ug/Kg	8/15/2018	17:51
Chloroethane	< 12.2	ug/Kg	8/15/2018	17:51
Chloroform	< 12.2	ug/Kg	8/15/2018	17:51
Chloromethane	< 12.2	ug/Kg	8/15/2018	17:51
cis-1,2-Dichloroethene	< 12.2	ug/Kg	8/15/2018	17:51
cis-1,3-Dichloropropene	< 12.2	ug/Kg	8/15/2018	17:51
Cyclohexane	< 60.8	ug/Kg	8/15/2018	17:51
Dibromochloromethane	< 12.2	ug/Kg	8/15/2018	17:51

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-103 (17-18 ft.)		
Lab Sample ID:	183651-03	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Dibromomethane	< 12.2	ug/Kg	8/15/2018	17:51
Dichlorodifluoromethane	< 12.2	ug/Kg	8/15/2018	17:51
Ethylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
Freon 113	< 12.2	ug/Kg	8/15/2018	17:51
Isopropylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
m,p-Xylene	< 12.2	ug/Kg	8/15/2018	17:51
Methyl acetate	< 12.2	ug/Kg	8/15/2018	17:51
Methyl tert-butyl Ether	< 12.2	ug/Kg	8/15/2018	17:51
Methylcyclohexane	< 12.2	ug/Kg	8/15/2018	17:51
Methylene chloride	< 30.4	ug/Kg	8/15/2018	17:51
Naphthalene	< 30.4	ug/Kg	8/15/2018	17:51
n-Butylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
n-Propylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
o-Xylene	< 12.2	ug/Kg	8/15/2018	17:51
p-Isopropyltoluene	< 12.2	ug/Kg	8/15/2018	17:51
sec-Butylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
Styrene	< 30.4	ug/Kg	8/15/2018	17:51
tert-Butylbenzene	< 12.2	ug/Kg	8/15/2018	17:51
Tetrachloroethene	< 12.2	ug/Kg	8/15/2018	17:51
Toluene	< 12.2	ug/Kg	8/15/2018	17:51
trans-1,2-Dichloroethene	< 12.2	ug/Kg	8/15/2018	17:51
trans-1,3-Dichloropropene	< 12.2	ug/Kg	8/15/2018	17:51
Trichloroethene	< 12.2	ug/Kg	8/15/2018	17:51
Trichlorofluoromethane	< 12.2	ug/Kg	8/15/2018	17:51
Vinyl chloride	< 12.2	ug/Kg	8/15/2018	17:51

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-103 (17-18 ft.)
Lab Sample ID: 183651-03 **Date Sampled:** 8/8/2018
Matrix: Soil **Date Received:** 8/10/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**105**	80.4 - 128		8/15/2018	17:51
4-Bromofluorobenzene	**115**	75.7 - 120		8/15/2018	17:51
Pentafluorobenzene	**99.4**	85.3 - 111		8/15/2018	17:51
Toluene-D8	**104**	85 - 112		8/15/2018	17:51

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x53231.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-104 (17-18 ft.)		
Lab Sample ID:	183651-04	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 329	ug/Kg		8/13/2018 18:51
Acenaphthylene	< 329	ug/Kg		8/13/2018 18:51
Anthracene	< 329	ug/Kg		8/13/2018 18:51
Benzo (a) anthracene	< 329	ug/Kg		8/13/2018 18:51
Benzo (a) pyrene	< 329	ug/Kg		8/13/2018 18:51
Benzo (b) fluoranthene	< 329	ug/Kg		8/13/2018 18:51
Benzo (g,h,i) perylene	< 329	ug/Kg		8/13/2018 18:51
Benzo (k) fluoranthene	< 329	ug/Kg		8/13/2018 18:51
Chrysene	< 329	ug/Kg		8/13/2018 18:51
Dibenz (a,h) anthracene	< 329	ug/Kg		8/13/2018 18:51
Fluoranthene	< 329	ug/Kg		8/13/2018 18:51
Fluorene	< 329	ug/Kg		8/13/2018 18:51
Indeno (1,2,3-cd) pyrene	< 329	ug/Kg		8/13/2018 18:51
Naphthalene	< 329	ug/Kg		8/13/2018 18:51
Phenanthrene	< 329	ug/Kg		8/13/2018 18:51
Pyrene	< 329	ug/Kg		8/13/2018 18:51

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**49.6**	35.7 - 85.7		8/13/2018 18:51
Nitrobenzene-d5	**42.0**	36.1 - 74.4		8/13/2018 18:51
Terphenyl-d14	**52.7**	46.6 - 99.9		8/13/2018 18:51

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 8/13/2018
Data File: B30358.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 8.66	ug/Kg		8/15/2018 18:15
1,1,2,2-Tetrachloroethane	< 8.66	ug/Kg		8/15/2018 18:15
1,1,2-Trichloroethane	< 8.66	ug/Kg		8/15/2018 18:15

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-104 (17-18 ft.)		
Lab Sample ID:	183651-04	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

1,1-Dichloroethane	< 8.66	ug/Kg	8/15/2018	18:15
1,1-Dichloroethene	< 8.66	ug/Kg	8/15/2018	18:15
1,2,3-Trichlorobenzene	< 21.7	ug/Kg	8/15/2018	18:15
1,2,4-Trichlorobenzene	< 21.7	ug/Kg	8/15/2018	18:15
1,2,4-Trimethylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
1,2-Dibromo-3-Chloropropane	< 43.3	ug/Kg	8/15/2018	18:15
1,2-Dichlorobenzene	< 8.66	ug/Kg	8/15/2018	18:15
1,2-Dichloroethane	< 8.66	ug/Kg	8/15/2018	18:15
1,2-Dichloropropane	< 8.66	ug/Kg	8/15/2018	18:15
1,3,5-Trimethylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
1,3-Dichlorobenzene	< 8.66	ug/Kg	8/15/2018	18:15
1,4-Dichlorobenzene	< 8.66	ug/Kg	8/15/2018	18:15
1,4-Dioxane	< 86.6	ug/Kg	8/15/2018	18:15
2-Butanone	< 43.3	ug/Kg	8/15/2018	18:15
2-Hexanone	< 21.7	ug/Kg	8/15/2018	18:15
4-Methyl-2-pentanone	< 21.7	ug/Kg	8/15/2018	18:15
Acetone	< 43.3	ug/Kg	8/15/2018	18:15
Benzene	< 8.66	ug/Kg	8/15/2018	18:15
Bromochloromethane	< 21.7	ug/Kg	8/15/2018	18:15
Bromodichloromethane	< 8.66	ug/Kg	8/15/2018	18:15
Bromoform	< 21.7	ug/Kg	8/15/2018	18:15
Bromomethane	< 8.66	ug/Kg	8/15/2018	18:15
Carbon disulfide	< 8.66	ug/Kg	8/15/2018	18:15
Carbon Tetrachloride	< 8.66	ug/Kg	8/15/2018	18:15
Chlorobenzene	< 8.66	ug/Kg	8/15/2018	18:15
Chloroethane	< 8.66	ug/Kg	8/15/2018	18:15
Chloroform	< 8.66	ug/Kg	8/15/2018	18:15
Chloromethane	< 8.66	ug/Kg	8/15/2018	18:15
cis-1,2-Dichloroethene	< 8.66	ug/Kg	8/15/2018	18:15
cis-1,3-Dichloropropene	< 8.66	ug/Kg	8/15/2018	18:15
Cyclohexane	< 43.3	ug/Kg	8/15/2018	18:15
Dibromochloromethane	< 8.66	ug/Kg	8/15/2018	18:15

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-104 (17-18 ft.)		
Lab Sample ID:	183651-04	**Date Sampled:**	8/8/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Dibromomethane	< 8.66	ug/Kg	8/15/2018	18:15
Dichlorodifluoromethane	< 8.66	ug/Kg	8/15/2018	18:15
Ethylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
Freon 113	< 8.66	ug/Kg	8/15/2018	18:15
Isopropylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
m,p-Xylene	< 8.66	ug/Kg	8/15/2018	18:15
Methyl acetate	< 8.66	ug/Kg	8/15/2018	18:15
Methyl tert-butyl Ether	< 8.66	ug/Kg	8/15/2018	18:15
Methylcyclohexane	< 8.66	ug/Kg	8/15/2018	18:15
Methylene chloride	< 21.7	ug/Kg	8/15/2018	18:15
Naphthalene	< 21.7	ug/Kg	8/15/2018	18:15
n-Butylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
n-Propylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
o-Xylene	< 8.66	ug/Kg	8/15/2018	18:15
p-Isopropyltoluene	< 8.66	ug/Kg	8/15/2018	18:15
sec-Butylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
Styrene	< 21.7	ug/Kg	8/15/2018	18:15
tert-Butylbenzene	< 8.66	ug/Kg	8/15/2018	18:15
Tetrachloroethene	< 8.66	ug/Kg	8/15/2018	18:15
Toluene	< 8.66	ug/Kg	8/15/2018	18:15
trans-1,2-Dichloroethene	< 8.66	ug/Kg	8/15/2018	18:15
trans-1,3-Dichloropropene	< 8.66	ug/Kg	8/15/2018	18:15
Trichloroethene	< 8.66	ug/Kg	8/15/2018	18:15
Trichlorofluoromethane	< 8.66	ug/Kg	8/15/2018	18:15
Vinyl chloride	< 8.66	ug/Kg	8/15/2018	18:15

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-104 (17-18 ft.)
Lab Sample ID: 183651-04 **Date Sampled:** 8/8/2018
Matrix: Soil **Date Received:** 8/10/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**97.0**	80.4 - 128		8/15/2018	18:15
4-Bromofluorobenzene	**1110**	75.7 - 120	*	8/15/2018	18:15
Pentafluorobenzene	**102**	85.3 - 111		8/15/2018	18:15
Toluene-D8	**112**	85 - 112		8/15/2018	18:15

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x53232.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-109 (17-18 ft.)
Lab Sample ID: 183651-05 **Date Sampled:** 8/9/2018
Matrix: Soil **Date Received:** 8/10/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 308	ug/Kg		8/13/2018 19:20
Acenaphthylene	< 308	ug/Kg		8/13/2018 19:20
Anthracene	< 308	ug/Kg		8/13/2018 19:20
Benzo (a) anthracene	< 308	ug/Kg		8/13/2018 19:20
Benzo (a) pyrene	< 308	ug/Kg		8/13/2018 19:20
Benzo (b) fluoranthene	< 308	ug/Kg		8/13/2018 19:20
Benzo (g,h,i) perylene	< 308	ug/Kg		8/13/2018 19:20
Benzo (k) fluoranthene	< 308	ug/Kg		8/13/2018 19:20
Chrysene	< 308	ug/Kg		8/13/2018 19:20
Dibenz (a,h) anthracene	< 308	ug/Kg		8/13/2018 19:20
Fluoranthene	< 308	ug/Kg		8/13/2018 19:20
Fluorene	< 308	ug/Kg		8/13/2018 19:20
Indeno (1,2,3-cd) pyrene	< 308	ug/Kg		8/13/2018 19:20
Naphthalene	< 308	ug/Kg		8/13/2018 19:20
Phenanthrene	< 308	ug/Kg		8/13/2018 19:20
Pyrene	< 308	ug/Kg		8/13/2018 19:20

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**50.6**	35.7 - 85.7		8/13/2018 19:20
Nitrobenzene-d5	**36.5**	36.1 - 74.4		8/13/2018 19:20
Terphenyl-d14	**59.9**	46.6 - 99.9		8/13/2018 19:20

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 8/13/2018
Data File: B30359.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 10.1	ug/Kg		8/15/2018 18:39
1,1,2,2-Tetrachloroethane	< 10.1	ug/Kg		8/15/2018 18:39
1,1,2-Trichloroethane	< 10.1	ug/Kg		8/15/2018 18:39

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-109 (17-18 ft.)		
Lab Sample ID:	183651-05	**Date Sampled:**	8/9/2018
Matrix:	Soil	**Date Received:**	8/10/2018

1,1-Dichloroethane	< 10.1	ug/Kg	8/15/2018	18:39
1,1-Dichloroethene	< 10.1	ug/Kg	8/15/2018	18:39
1,2,3-Trichlorobenzene	< 25.3	ug/Kg	8/15/2018	18:39
1,2,4-Trichlorobenzene	< 25.3	ug/Kg	8/15/2018	18:39
1,2,4-Trimethylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
1,2-Dibromo-3-Chloropropane	< 50.6	ug/Kg	8/15/2018	18:39
1,2-Dichlorobenzene	< 10.1	ug/Kg	8/15/2018	18:39
1,2-Dichloroethane	< 10.1	ug/Kg	8/15/2018	18:39
1,2-Dichloropropane	< 10.1	ug/Kg	8/15/2018	18:39
1,3,5-Trimethylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
1,3-Dichlorobenzene	< 10.1	ug/Kg	8/15/2018	18:39
1,4-Dichlorobenzene	< 10.1	ug/Kg	8/15/2018	18:39
1,4-Dioxane	< 101	ug/Kg	8/15/2018	18:39
2-Butanone	< 50.6	ug/Kg	8/15/2018	18:39
2-Hexanone	< 25.3	ug/Kg	8/15/2018	18:39
4-Methyl-2-pentanone	< 25.3	ug/Kg	8/15/2018	18:39
Acetone	< 50.6	ug/Kg	8/15/2018	18:39
Benzene	< 10.1	ug/Kg	8/15/2018	18:39
Bromochloromethane	< 25.3	ug/Kg	8/15/2018	18:39
Bromodichloromethane	< 10.1	ug/Kg	8/15/2018	18:39
Bromoform	< 25.3	ug/Kg	8/15/2018	18:39
Bromomethane	< 10.1	ug/Kg	8/15/2018	18:39
Carbon disulfide	< 10.1	ug/Kg	8/15/2018	18:39
Carbon Tetrachloride	< 10.1	ug/Kg	8/15/2018	18:39
Chlorobenzene	< 10.1	ug/Kg	8/15/2018	18:39
Chloroethane	< 10.1	ug/Kg	8/15/2018	18:39
Chloroform	< 10.1	ug/Kg	8/15/2018	18:39
Chloromethane	< 10.1	ug/Kg	8/15/2018	18:39
cis-1,2-Dichloroethene	< 10.1	ug/Kg	8/15/2018	18:39
cis-1,3-Dichloropropene	< 10.1	ug/Kg	8/15/2018	18:39
Cyclohexane	< 50.6	ug/Kg	8/15/2018	18:39
Dibromochloromethane	< 10.1	ug/Kg	8/15/2018	18:39

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-109 (17-18 ft.)		
Lab Sample ID:	183651-05	**Date Sampled:**	8/9/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Dibromomethane	< 10.1	ug/Kg	8/15/2018	18:39
Dichlorodifluoromethane	< 10.1	ug/Kg	8/15/2018	18:39
Ethylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
Freon 113	< 10.1	ug/Kg	8/15/2018	18:39
Isopropylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
m,p-Xylene	< 10.1	ug/Kg	8/15/2018	18:39
Methyl acetate	< 10.1	ug/Kg	8/15/2018	18:39
Methyl tert-butyl Ether	< 10.1	ug/Kg	8/15/2018	18:39
Methylcyclohexane	< 10.1	ug/Kg	8/15/2018	18:39
Methylene chloride	< 25.3	ug/Kg	8/15/2018	18:39
Naphthalene	< 25.3	ug/Kg	8/15/2018	18:39
n-Butylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
n-Propylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
o-Xylene	< 10.1	ug/Kg	8/15/2018	18:39
p-Isopropyltoluene	< 10.1	ug/Kg	8/15/2018	18:39
sec-Butylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
Styrene	< 25.3	ug/Kg	8/15/2018	18:39
tert-Butylbenzene	< 10.1	ug/Kg	8/15/2018	18:39
Tetrachloroethene	< 10.1	ug/Kg	8/15/2018	18:39
Toluene	< 10.1	ug/Kg	8/15/2018	18:39
trans-1,2-Dichloroethene	< 10.1	ug/Kg	8/15/2018	18:39
trans-1,3-Dichloropropene	< 10.1	ug/Kg	8/15/2018	18:39
Trichloroethene	< 10.1	ug/Kg	8/15/2018	18:39
Trichlorofluoromethane	< 10.1	ug/Kg	8/15/2018	18:39
Vinyl chloride	< 10.1	ug/Kg	8/15/2018	18:39

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-109 (17-18 ft.)
Lab Sample ID: 183651-05 **Date Sampled:** 8/9/2018
Matrix: Soil **Date Received:** 8/10/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**111**	80.4 - 128		8/15/2018	18:39
4-Bromofluorobenzene	**95.1**	75.7 - 120		8/15/2018	18:39
Pentafluorobenzene	**107**	85.3 - 111		8/15/2018	18:39
Toluene-D8	**108**	85 - 112		8/15/2018	18:39

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x53233.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-110 (13-14 ft.)		
Lab Sample ID:	183651-06	**Date Sampled:**	8/9/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 381	ug/Kg		8/13/2018 19:50
Acenaphthylene	< 381	ug/Kg		8/13/2018 19:50
Anthracene	< 381	ug/Kg		8/13/2018 19:50
Benzo (a) anthracene	< 381	ug/Kg		8/13/2018 19:50
Benzo (a) pyrene	< 381	ug/Kg		8/13/2018 19:50
Benzo (b) fluoranthene	< 381	ug/Kg		8/13/2018 19:50
Benzo (g,h,i) perylene	< 381	ug/Kg		8/13/2018 19:50
Benzo (k) fluoranthene	< 381	ug/Kg		8/13/2018 19:50
Chrysene	< 381	ug/Kg		8/13/2018 19:50
Dibenz (a,h) anthracene	< 381	ug/Kg		8/13/2018 19:50
Fluoranthene	< 381	ug/Kg		8/13/2018 19:50
Fluorene	< 381	ug/Kg		8/13/2018 19:50
Indeno (1,2,3-cd) pyrene	< 381	ug/Kg		8/13/2018 19:50
Naphthalene	< 381	ug/Kg		8/13/2018 19:50
Phenanthrene	< 381	ug/Kg		8/13/2018 19:50
Pyrene	< 381	ug/Kg		8/13/2018 19:50

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**56.2**	35.7 - 85.7		8/13/2018 19:50
Nitrobenzene-d5	**37.0**	36.1 - 74.4		8/13/2018 19:50
Terphenyl-d14	**63.8**	46.6 - 99.9		8/13/2018 19:50

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 8/13/2018
Data File: B30360.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 10.4	ug/Kg		8/14/2018 20:21
1,1,2,2-Tetrachloroethane	< 10.4	ug/Kg		8/14/2018 20:21
1,1,2-Trichloroethane	< 10.4	ug/Kg		8/14/2018 20:21

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-110 (13-14 ft.)		
Lab Sample ID:	183651-06	**Date Sampled:**	8/9/2018
Matrix:	Soil	**Date Received:**	8/10/2018

1,1-Dichloroethane	< 10.4	ug/Kg	8/14/2018	20:21
1,1-Dichloroethene	< 10.4	ug/Kg	8/14/2018	20:21
1,2,3-Trichlorobenzene	< 25.9	ug/Kg	8/14/2018	20:21
1,2,4-Trichlorobenzene	< 25.9	ug/Kg	8/14/2018	20:21
1,2,4-Trimethylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
1,2-Dibromo-3-Chloropropane	< 51.8	ug/Kg	8/14/2018	20:21
1,2-Dichlorobenzene	< 10.4	ug/Kg	8/14/2018	20:21
1,2-Dichloroethane	< 10.4	ug/Kg	8/14/2018	20:21
1,2-Dichloropropane	< 10.4	ug/Kg	8/14/2018	20:21
1,3,5-Trimethylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
1,3-Dichlorobenzene	< 10.4	ug/Kg	8/14/2018	20:21
1,4-Dichlorobenzene	< 10.4	ug/Kg	8/14/2018	20:21
1,4-Dioxane	< 104	ug/Kg	8/14/2018	20:21
2-Butanone	< 51.8	ug/Kg	8/14/2018	20:21
2-Hexanone	< 25.9	ug/Kg	8/14/2018	20:21
4-Methyl-2-pentanone	< 25.9	ug/Kg	8/14/2018	20:21
Acetone	**81.7**	ug/Kg	8/14/2018	20:21
Benzene	< 10.4	ug/Kg	8/14/2018	20:21
Bromochloromethane	< 25.9	ug/Kg	8/14/2018	20:21
Bromodichloromethane	< 10.4	ug/Kg	8/14/2018	20:21
Bromoform	< 25.9	ug/Kg	8/14/2018	20:21
Bromomethane	< 10.4	ug/Kg	8/14/2018	20:21
Carbon disulfide	< 10.4	ug/Kg	8/14/2018	20:21
Carbon Tetrachloride	< 10.4	ug/Kg	8/14/2018	20:21
Chlorobenzene	< 10.4	ug/Kg	8/14/2018	20:21
Chloroethane	< 10.4	ug/Kg	8/14/2018	20:21
Chloroform	< 10.4	ug/Kg	8/14/2018	20:21
Chloromethane	< 10.4	ug/Kg	8/14/2018	20:21
cis-1,2-Dichloroethene	< 10.4	ug/Kg	8/14/2018	20:21
cis-1,3-Dichloropropene	< 10.4	ug/Kg	8/14/2018	20:21
Cyclohexane	< 51.8	ug/Kg	8/14/2018	20:21
Dibromochloromethane	< 10.4	ug/Kg	8/14/2018	20:21

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier:	GB-110 (13-14 ft.)		
Lab Sample ID:	183651-06	**Date Sampled:**	8/9/2018
Matrix:	Soil	**Date Received:**	8/10/2018

Dibromomethane	< 25.9	ug/Kg	8/14/2018	20:21
Dichlorodifluoromethane	< 10.4	ug/Kg	8/14/2018	20:21
Ethylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
Freon 113	< 10.4	ug/Kg	8/14/2018	20:21
Isopropylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
m,p-Xylene	< 10.4	ug/Kg	8/14/2018	20:21
Methyl acetate	< 10.4	ug/Kg	8/14/2018	20:21
Methyl tert-butyl Ether	< 10.4	ug/Kg	8/14/2018	20:21
Methylcyclohexane	< 10.4	ug/Kg	8/14/2018	20:21
Methylene chloride	< 25.9	ug/Kg	8/14/2018	20:21
Naphthalene	< 25.9	ug/Kg	8/14/2018	20:21
n-Butylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
n-Propylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
o-Xylene	< 10.4	ug/Kg	8/14/2018	20:21
p-Isopropyltoluene	< 10.4	ug/Kg	8/14/2018	20:21
sec-Butylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
Styrene	< 25.9	ug/Kg	8/14/2018	20:21
tert-Butylbenzene	< 10.4	ug/Kg	8/14/2018	20:21
Tetrachloroethene	< 10.4	ug/Kg	8/14/2018	20:21
Toluene	< 10.4	ug/Kg	8/14/2018	20:21
trans-1,2-Dichloroethene	< 10.4	ug/Kg	8/14/2018	20:21
trans-1,3-Dichloropropene	< 10.4	ug/Kg	8/14/2018	20:21
Trichloroethene	< 10.4	ug/Kg	8/14/2018	20:21
Trichlorofluoromethane	< 10.4	ug/Kg	8/14/2018	20:21
Vinyl chloride	< 10.4	ug/Kg	8/14/2018	20:21

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 183651

Client: **Bergmann Associates**

Project Reference: Rochester River Wall Spill Area at A6

Sample Identifier: GB-110 (13-14 ft.)
Lab Sample ID: 183651-06 **Date Sampled:** 8/9/2018
Matrix: Soil **Date Received:** 8/10/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**101**	80.4 - 128		8/14/2018	20:21
4-Bromofluorobenzene	**94.1**	75.7 - 120		8/14/2018	20:21
Pentafluorobenzene	**95.9**	85.3 - 111		8/14/2018	20:21
Toluene-D8	**96.4**	85 - 112		8/14/2018	20:21

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x53206.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		LAB PROJECT ID
CLIENT:	Bergmann	CLIENT:	Same	183651
ADDRESS:	280 East Broad Street	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14604	CITY: STATE: ZIP:		Quotation #:
PHONE:	(585) 232-5135	PHONE:		Email:
ATTN:	Steve DeMeo	ATTN:		

PROJECT REFERENCE
Rochester River Wall Spill Arent at A6

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260 Plus CP51	8270 CP51	REMARKS	PARADIGM LAB SAMPLE NUMBER
8/8/18	10:00		X	GB-101 (19-20 ft.)	SO	2	X	X		01
8/8/18	11:30		X	GB-102 (17-18 ft.)	SO	2	X	X		02
8/8/18	2:20PM		X	GB-103 (17-18 ft.)	SO	2	X	X		03
8/8/18	3:10 PM		X	GB-104 (17-18 ft.)	SO	2	X	X		04
8/9/18	3:20PM		X	GB-109 (17-18 ft.)	SO	2	X	X		05
8/9/18	4:15PM		X	GB-110 (13-14 ft.)	SO	2	X	X		06
									10°C iwl 8/10/18 0926	

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	☒	None Required	☐	None Required ☐
10 day	☐	Batch QC	☐	Basic EDD ☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD ☐
Rush 2 day	☐	Category B	☐	
Rush 1 day	☐			
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed: ☐

Stephen J. DeMeo	8/8/18 to ~~8/10/18~~ 8/9/18	Total Cost:
Sampled By	Date/Time	
Relinquished By	8/10/18 9:10AM Date/Time	
Received By	8/10/18 0910 Date/Time	P.I.F.
Received @ Lab By	8/10/18 0941 Date/Time	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Bergmann **Completed by:** Molly Vail

Lab Project ID: 183651 **Date:** 8/10/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt Yes	No	N/A
Container Type	X	5035	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature		X	
Comments	10°C iwd 8/10/18 0926		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000313**	mg/L		6/18/2018 11:25

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**53.7**	mg/L		6/15/2018 16:05
Antimony	**0.0310**	mg/L	J	6/15/2018 16:05
Arsenic	**0.0290**	mg/L		6/18/2018 13:28
Barium	**0.458**	mg/L		6/15/2018 16:05
Beryllium	**0.00303**	mg/L	J	6/15/2018 16:05
Cadmium	< 0.00500	mg/L		6/15/2018 16:05
Calcium	**284**	mg/L		6/15/2018 16:05
Chromium	**0.0762**	mg/L		6/15/2018 16:05
Cobalt	**0.0389**	mg/L	J	6/15/2018 16:05
Copper	**0.164**	mg/L		6/15/2018 16:05
Iron	**84.0**	mg/L		6/15/2018 16:05
Lead	**0.214**	mg/L		6/15/2018 16:05
Magnesium	**76.6**	mg/L		6/15/2018 16:05
Manganese	**2.06**	mg/L		6/15/2018 16:05
Nickel	**0.0784**	mg/L		6/15/2018 16:05
Potassium	**14.9**	mg/L		6/15/2018 16:05
Selenium	< 0.0200	mg/L		6/15/2018 16:05
Silver	**0.00671**	mg/L	J	6/15/2018 16:05
Sodium	**127**	mg/L		6/15/2018 16:05
Thallium	< 0.0250	mg/L		6/15/2018 16:05
Vanadium	**0.0951**	mg/L		6/15/2018 16:05
Zinc	**0.357**	mg/L		6/15/2018 16:05

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 00:03
PCB-1221	< 1.00	ug/L		6/14/2018 00:03
PCB-1232	< 1.00	ug/L		6/14/2018 00:03
PCB-1242	< 1.00	ug/L		6/14/2018 00:03
PCB-1248	< 1.00	ug/L		6/14/2018 00:03
PCB-1254	< 1.00	ug/L		6/14/2018 00:03
PCB-1260	< 1.00	ug/L		6/14/2018 00:03
PCB-1262	< 1.00	ug/L		6/14/2018 00:03
PCB-1268	< 1.00	ug/L		6/14/2018 00:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**28.6**	10 - 104		6/14/2018 00:03
Tetrachloro-m-xylene	**43.7**	10 - 87.9		6/14/2018 00:03

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016768.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 18:13
4,4-DDE	< 0.100	ug/L		6/15/2018 18:13
4,4-DDT	< 0.100	ug/L		6/15/2018 18:13
Aldrin	< 0.100	ug/L		6/15/2018 18:13
alpha-BHC	< 0.100	ug/L		6/15/2018 18:13
beta-BHC	< 0.100	ug/L		6/15/2018 18:13
cis-Chlordane	< 0.100	ug/L		6/15/2018 18:13
delta-BHC	< 0.100	ug/L		6/15/2018 18:13
Dieldrin	< 0.100	ug/L		6/15/2018 18:13
Endosulfan I	< 0.100	ug/L		6/15/2018 18:13
Endosulfan II	< 0.100	ug/L		6/15/2018 18:13
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 18:13
Endrin	< 0.100	ug/L		6/15/2018 18:13
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 18:13
Endrin Ketone	< 0.100	ug/L		6/15/2018 18:13
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 18:13
Heptachlor	< 0.100	ug/L		6/15/2018 18:13
Heptachlor Epoxide	< 0.100	ug/L		6/15/2018 18:13
Methoxychlor	< 0.100	ug/L		6/15/2018 18:13
Toxaphene	< 1.00	ug/L		6/15/2018 18:13
trans-Chlordane	< 0.100	ug/L		6/15/2018 18:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**69.3**	15.9 - 138		6/15/2018 18:13
Tetrachloro-m-xylene (1)	**73.1**	20 - 112		6/15/2018 18:13

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030724.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 01:43
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 01:43
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 01:43
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 01:43
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 01:43
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 01:43
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 01:43
2-Nitroaniline	< 20.0	ug/L		6/16/2018 01:43
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 01:43
3-Nitroaniline	< 20.0	ug/L		6/16/2018 01:43
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 01:43
4-Chloroaniline	< 10.0	ug/L		6/16/2018 01:43
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 01:43
4-Nitroaniline	< 20.0	ug/L		6/16/2018 01:43
Acenaphthene	< 10.0	ug/L		6/16/2018 01:43
Acenaphthylene	< 10.0	ug/L		6/16/2018 01:43
Acetophenone	< 10.0	ug/L		6/16/2018 01:43
Anthracene	< 10.0	ug/L		6/16/2018 01:43
Atrazine	< 10.0	ug/L		6/16/2018 01:43
Benzaldehyde	< 10.0	ug/L		6/16/2018 01:43
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 01:43
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 01:43
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 01:43

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118
Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	01:43
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	01:43
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	01:43
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	01:43
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	01:43
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	01:43
Caprolactam	< 10.0	ug/L	6/16/2018	01:43
Carbazole	< 10.0	ug/L	6/16/2018	01:43
Chrysene	< 10.0	ug/L	6/16/2018	01:43
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	01:43
Dibenzofuran	< 10.0	ug/L	6/16/2018	01:43
Diethyl phthalate	< 10.0	ug/L	6/16/2018	01:43
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	01:43
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	01:43
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	01:43
Fluoranthene	< 10.0	ug/L	6/16/2018	01:43
Fluorene	< 10.0	ug/L	6/16/2018	01:43
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	01:43
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	01:43
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	01:43
Hexachloroethane	< 10.0	ug/L	6/16/2018	01:43
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	01:43
Isophorone	< 10.0	ug/L	6/16/2018	01:43
Naphthalene	< 10.0	ug/L	6/16/2018	01:43
Nitrobenzene	< 10.0	ug/L	6/16/2018	01:43
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	01:43
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	01:43
Phenanthrene	< 10.0	ug/L	6/16/2018	01:43
Pyrene	< 10.0	ug/L	6/16/2018	01:43

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118

Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.1**	31.2 - 108		6/16/2018	01:43
Nitrobenzene-d5	**60.8**	48.3 - 106		6/16/2018	01:43
Terphenyl-d14	**79.1**	52.2 - 117		6/16/2018	01:43

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-061118		
Lab Sample ID:	182626-01	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 16:40
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:40
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:40
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:40
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 16:40
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 16:40
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:40
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 16:40
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 16:40
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:40
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:40
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:40
1,4-dioxane	< 20.0	ug/L		6/14/2018 16:40
2-Butanone	< 10.0	ug/L		6/14/2018 16:40
2-Hexanone	< 5.00	ug/L		6/14/2018 16:40
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 16:40
Acetone	< 10.0	ug/L		6/14/2018 16:40
Benzene	< 1.00	ug/L		6/14/2018 16:40
Bromochloromethane	< 5.00	ug/L		6/14/2018 16:40
Bromodichloromethane	< 2.00	ug/L		6/14/2018 16:40
Bromoform	< 5.00	ug/L		6/14/2018 16:40
Bromomethane	< 2.00	ug/L		6/14/2018 16:40
Carbon disulfide	< 2.00	ug/L		6/14/2018 16:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118
Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	16:40
Chlorobenzene	< 2.00	ug/L	6/14/2018	16:40
Chloroethane	< 2.00	ug/L	6/14/2018	16:40
Chloroform	< 2.00	ug/L	6/14/2018	16:40
Chloromethane	< 2.00	ug/L	6/14/2018	16:40
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:40
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:40
Cyclohexane	< 10.0	ug/L	6/14/2018	16:40
Dibromochloromethane	< 2.00	ug/L	6/14/2018	16:40
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	16:40
Ethylbenzene	< 2.00	ug/L	6/14/2018	16:40
Freon 113	< 2.00	ug/L	6/14/2018	16:40
Isopropylbenzene	< 2.00	ug/L	6/14/2018	16:40
m,p-Xylene	< 2.00	ug/L	6/14/2018	16:40
Methyl acetate	< 2.00	ug/L	6/14/2018	16:40
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	16:40
Methylcyclohexane	< 2.00	ug/L	6/14/2018	16:40
Methylene chloride	< 5.00	ug/L	6/14/2018	16:40
Naphthalene	< 5.00	ug/L	6/14/2018	16:40
n-Butylbenzene	< 2.00	ug/L	6/14/2018	16:40
n-Propylbenzene	< 2.00	ug/L	6/14/2018	16:40
o-Xylene	< 2.00	ug/L	6/14/2018	16:40
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	16:40
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	16:40
Styrene	< 5.00	ug/L	6/14/2018	16:40
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	16:40
Tetrachloroethene	< 2.00	ug/L	6/14/2018	16:40
Toluene	< 2.00	ug/L	6/14/2018	16:40
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:40
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-01-061118
Lab Sample ID: 182626-01 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 16:40
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 16:40
Vinyl chloride	< 2.00	ug/L			6/14/2018 16:40

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**118**	77.2 - 121		6/14/2018 16:40
4-Bromofluorobenzene	**93.0**	70 - 123		6/14/2018 16:40
Pentafluorobenzene	**87.2**	85.4 - 110		6/14/2018 16:40
Toluene-D8	**93.4**	83.8 - 112		6/14/2018 16:40

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51637.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		6/18/2018 11:28

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**8.90**	mg/L	M	6/15/2018 16:10
Antimony	< 0.0600	mg/L		6/15/2018 16:10
Arsenic	**0.0313**	mg/L		6/18/2018 13:33
Barium	**0.456**	mg/L		6/15/2018 16:10
Beryllium	< 0.00500	mg/L		6/15/2018 16:10
Cadmium	< 0.00500	mg/L		6/15/2018 16:10
Calcium	**173**	mg/L		6/15/2018 16:10
Chromium	**0.0207**	mg/L	D	6/15/2018 16:10
Cobalt	< 0.0500	mg/L		6/15/2018 16:10
Copper	**0.0278**	mg/L		6/15/2018 16:10
Iron	**33.0**	mg/L		6/15/2018 16:10
Lead	**0.0146**	mg/L		6/15/2018 16:10
Magnesium	**43.3**	mg/L		6/15/2018 16:10
Manganese	**2.12**	mg/L		6/15/2018 16:10
Nickel	**0.0206**	mg/L	J	6/15/2018 16:10
Potassium	**9.95**	mg/L		6/15/2018 16:10
Selenium	< 0.0200	mg/L		6/15/2018 16:10
Silver	< 0.0100	mg/L		6/15/2018 16:10
Sodium	**26.9**	mg/L		6/15/2018 16:10
Thallium	< 0.0250	mg/L		6/15/2018 16:10
Vanadium	**0.0176**	mg/L	J	6/15/2018 16:10
Zinc	**0.132**	mg/L		6/15/2018 16:10

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 00:26
PCB-1221	< 1.00	ug/L		6/14/2018 00:26
PCB-1232	< 1.00	ug/L		6/14/2018 00:26
PCB-1242	< 1.00	ug/L		6/14/2018 00:26
PCB-1248	< 1.00	ug/L		6/14/2018 00:26
PCB-1254	< 1.00	ug/L		6/14/2018 00:26
PCB-1260	< 1.00	ug/L		6/14/2018 00:26
PCB-1262	< 1.00	ug/L		6/14/2018 00:26
PCB-1268	< 1.00	ug/L		6/14/2018 00:26

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**23.8**	10 - 104		6/14/2018 00:26
Tetrachloro-m-xylene	**46.5**	10 - 87.9		6/14/2018 00:26

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016769.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 18:29
4,4-DDE	< 0.100	ug/L		6/15/2018 18:29
4,4-DDT	< 0.100	ug/L		6/15/2018 18:29
Aldrin	< 0.100	ug/L		6/15/2018 18:29
alpha-BHC	< 0.100	ug/L		6/15/2018 18:29
beta-BHC	< 0.100	ug/L		6/15/2018 18:29
cis-Chlordane	< 0.100	ug/L		6/15/2018 18:29
delta-BHC	< 0.100	ug/L		6/15/2018 18:29
Dieldrin	< 0.100	ug/L		6/15/2018 18:29
Endosulfan I	< 0.100	ug/L		6/15/2018 18:29
Endosulfan II	< 0.100	ug/L		6/15/2018 18:29
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 18:29
Endrin	< 0.100	ug/L		6/15/2018 18:29
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 18:29
Endrin Ketone	< 0.100	ug/L		6/15/2018 18:29
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 18:29
Heptachlor	< 0.100	ug/L		6/15/2018 18:29
Heptachlor Epoxide	< 0.100	ug/L		6/15/2018 18:29
Methoxychlor	< 0.100	ug/L		6/15/2018 18:29
Toxaphene	< 1.00	ug/L		6/15/2018 18:29
trans-Chlordane	< 0.100	ug/L		6/15/2018 18:29

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**48.2**	15.9 - 138		6/15/2018 18:29
Tetrachloro-m-xylene (1)	**75.6**	20 - 112		6/15/2018 18:29

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030725.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118
Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 02:11
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:11
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 02:11
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:11
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:11
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 02:11
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 02:11
2-Nitroaniline	< 20.0	ug/L		6/16/2018 02:11
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 02:11
3-Nitroaniline	< 20.0	ug/L		6/16/2018 02:11
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:11
4-Chloroaniline	< 10.0	ug/L		6/16/2018 02:11
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:11
4-Nitroaniline	< 20.0	ug/L		6/16/2018 02:11
Acenaphthene	< 10.0	ug/L		6/16/2018 02:11
Acenaphthylene	< 10.0	ug/L		6/16/2018 02:11
Acetophenone	< 10.0	ug/L		6/16/2018 02:11
Anthracene	< 10.0	ug/L		6/16/2018 02:11
Atrazine	< 10.0	ug/L		6/16/2018 02:11
Benzaldehyde	< 10.0	ug/L		6/16/2018 02:11
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 02:11
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 02:11
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 02:11

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118
Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	02:11
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	02:11
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	02:11
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	02:11
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	02:11
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	02:11
Caprolactam	< 10.0	ug/L	6/16/2018	02:11
Carbazole	< 10.0	ug/L	6/16/2018	02:11
Chrysene	< 10.0	ug/L	6/16/2018	02:11
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	02:11
Dibenzofuran	< 10.0	ug/L	6/16/2018	02:11
Diethyl phthalate	< 10.0	ug/L	6/16/2018	02:11
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	02:11
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	02:11
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	02:11
Fluoranthene	< 10.0	ug/L	6/16/2018	02:11
Fluorene	< 10.0	ug/L	6/16/2018	02:11
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	02:11
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	02:11
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	02:11
Hexachloroethane	< 10.0	ug/L	6/16/2018	02:11
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	02:11
Isophorone	< 10.0	ug/L	6/16/2018	02:11
Naphthalene	< 10.0	ug/L	6/16/2018	02:11
Nitrobenzene	< 10.0	ug/L	6/16/2018	02:11
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	02:11
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	02:11
Phenanthrene	< 10.0	ug/L	6/16/2018	02:11
Pyrene	< 10.0	ug/L	6/16/2018	02:11

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118

Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.2**	31.2 - 108		6/16/2018	02:11
Nitrobenzene-d5	**61.6**	48.3 - 106		6/16/2018	02:11
Terphenyl-d14	**80.0**	52.2 - 117		6/16/2018	02:11

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-061118		
Lab Sample ID:	182626-02	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 17:03
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:03
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:03
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:03
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 17:03
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 17:03
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:03
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 17:03
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 17:03
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:03
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:03
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:03
1,4-dioxane	< 20.0	ug/L		6/14/2018 17:03
2-Butanone	< 10.0	ug/L		6/14/2018 17:03
2-Hexanone	< 5.00	ug/L		6/14/2018 17:03
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 17:03
Acetone	< 10.0	ug/L		6/14/2018 17:03
Benzene	< 1.00	ug/L		6/14/2018 17:03
Bromochloromethane	< 5.00	ug/L		6/14/2018 17:03
Bromodichloromethane	< 2.00	ug/L		6/14/2018 17:03
Bromoform	< 5.00	ug/L		6/14/2018 17:03
Bromomethane	< 2.00	ug/L		6/14/2018 17:03
Carbon disulfide	< 2.00	ug/L		6/14/2018 17:03

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118
Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	17:03
Chlorobenzene	< 2.00	ug/L	6/14/2018	17:03
Chloroethane	< 2.00	ug/L	6/14/2018	17:03
Chloroform	< 2.00	ug/L	6/14/2018	17:03
Chloromethane	< 2.00	ug/L	6/14/2018	17:03
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:03
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:03
Cyclohexane	< 10.0	ug/L	6/14/2018	17:03
Dibromochloromethane	< 2.00	ug/L	6/14/2018	17:03
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	17:03
Ethylbenzene	< 2.00	ug/L	6/14/2018	17:03
Freon 113	< 2.00	ug/L	6/14/2018	17:03
Isopropylbenzene	< 2.00	ug/L	6/14/2018	17:03
m,p-Xylene	< 2.00	ug/L	6/14/2018	17:03
Methyl acetate	< 2.00	ug/L	6/14/2018	17:03
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	17:03
Methylcyclohexane	< 2.00	ug/L	6/14/2018	17:03
Methylene chloride	< 5.00	ug/L	6/14/2018	17:03
Naphthalene	< 5.00	ug/L	6/14/2018	17:03
n-Butylbenzene	< 2.00	ug/L	6/14/2018	17:03
n-Propylbenzene	< 2.00	ug/L	6/14/2018	17:03
o-Xylene	< 2.00	ug/L	6/14/2018	17:03
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	17:03
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	17:03
Styrene	< 5.00	ug/L	6/14/2018	17:03
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	17:03
Tetrachloroethene	< 2.00	ug/L	6/14/2018	17:03
Toluene	< 2.00	ug/L	6/14/2018	17:03
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:03
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:03

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-02-061118

Lab Sample ID: 182626-02 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 17:03
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 17:03
Vinyl chloride	< 2.00	ug/L			6/14/2018 17:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**107**	77.2 - 121		6/14/2018 17:03
4-Bromofluorobenzene	**102**	70 - 123		6/14/2018 17:03
Pentafluorobenzene	**93.7**	85.4 - 110		6/14/2018 17:03
Toluene-D8	**104**	83.8 - 112		6/14/2018 17:03

Method Reference(s): EPA 8260C
EPA 5030C

Data File: x51638.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0151**	mg/L		6/18/2018 12:38

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**109**	mg/L		6/15/2018 16:29
Antimony	**0.0346**	mg/L	J	6/15/2018 16:29
Arsenic	**0.136**	mg/L		6/15/2018 16:29
Barium	**1.50**	mg/L		6/15/2018 16:29
Beryllium	**0.00652**	mg/L		6/15/2018 16:29
Cadmium	**0.00405**	mg/L	J	6/15/2018 16:29
Calcium	**243**	mg/L		6/15/2018 16:29
Chromium	**0.306**	mg/L		6/15/2018 16:29
Cobalt	**0.109**	mg/L		6/15/2018 16:29
Copper	**0.687**	mg/L		6/15/2018 16:29
Iron	**236**	mg/L		6/15/2018 16:29
Lead	**0.963**	mg/L		6/15/2018 16:29
Magnesium	**103**	mg/L		6/15/2018 16:29
Manganese	**4.98**	mg/L		6/15/2018 16:29
Nickel	**0.241**	mg/L		6/15/2018 16:29
Potassium	**19.8**	mg/L		6/15/2018 16:29
Selenium	< 0.0200	mg/L		6/15/2018 16:29
Silver	**0.0168**	mg/L		6/15/2018 16:29
Sodium	**164**	mg/L		6/15/2018 16:29
Thallium	< 0.0250	mg/L		6/15/2018 16:29
Vanadium	**0.186**	mg/L		6/15/2018 16:29
Zinc	**0.761**	mg/L		6/15/2018 16:29

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/15/2018 13:16
PCB-1221	< 1.00	ug/L		6/15/2018 13:16
PCB-1232	< 1.00	ug/L		6/15/2018 13:16
PCB-1242	< 1.00	ug/L		6/15/2018 13:16
PCB-1248	< 1.00	ug/L		6/15/2018 13:16
PCB-1254	< 1.00	ug/L		6/15/2018 13:16
PCB-1260	< 1.00	ug/L		6/15/2018 13:16
PCB-1262	< 1.00	ug/L		6/15/2018 13:16
PCB-1268	< 1.00	ug/L		6/15/2018 13:16

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**21.6**	10 - 104		6/15/2018 13:16
Tetrachloro-m-xylene	**37.2**	10 - 87.9		6/15/2018 13:16

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016846.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/18/2018 17:58
4,4-DDE	< 0.100	ug/L		6/18/2018 17:58
4,4-DDT	< 0.100	ug/L		6/18/2018 17:58
Aldrin	< 0.100	ug/L		6/18/2018 17:58
alpha-BHC	< 0.100	ug/L		6/18/2018 17:58
beta-BHC	**0.0962**	ug/L	JP	6/18/2018 17:58
cis-Chlordane	< 0.100	ug/L		6/18/2018 17:58
delta-BHC	< 0.100	ug/L		6/18/2018 17:58
Dieldrin	< 0.100	ug/L		6/18/2018 17:58
Endosulfan I	< 0.100	ug/L		6/18/2018 17:58
Endosulfan II	< 0.100	ug/L		6/18/2018 17:58
Endosulfan Sulfate	**0.0516**	ug/L	J	6/18/2018 17:58
Endrin	< 0.100	ug/L		6/18/2018 17:58
Endrin Aldehyde	< 0.100	ug/L		6/18/2018 17:58
Endrin Ketone	< 0.100	ug/L		6/18/2018 17:58
gamma-BHC (Lindane)	< 0.100	ug/L		6/18/2018 17:58
Heptachlor	< 0.100	ug/L		6/18/2018 17:58
Heptachlor Epoxide	< 0.100	ug/L		6/18/2018 17:58
Methoxychlor	< 0.100	ug/L		6/18/2018 17:58
Toxaphene	< 1.00	ug/L		6/18/2018 17:58
trans-Chlordane	< 0.100	ug/L		6/18/2018 17:58

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**41.9**	15.9 - 138		6/18/2018 17:58
Tetrachloro-m-xylene (1)	**70.4**	20 - 112		6/18/2018 17:58

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030758.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 02:40
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 02:40
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 02:40
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:40
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 02:40
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 02:40
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 02:40
2-Nitroaniline	< 20.0	ug/L		6/16/2018 02:40
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 02:40
3-Nitroaniline	< 20.0	ug/L		6/16/2018 02:40
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:40
4-Chloroaniline	< 10.0	ug/L		6/16/2018 02:40
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 02:40
4-Nitroaniline	< 20.0	ug/L		6/16/2018 02:40
Acenaphthene	< 10.0	ug/L		6/16/2018 02:40
Acenaphthylene	< 10.0	ug/L		6/16/2018 02:40
Acetophenone	< 10.0	ug/L		6/16/2018 02:40
Anthracene	< 10.0	ug/L		6/16/2018 02:40
Atrazine	< 10.0	ug/L		6/16/2018 02:40
Benzaldehyde	< 10.0	ug/L		6/16/2018 02:40
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 02:40
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 02:40
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 02:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118
Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	02:40
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	02:40
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	02:40
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	02:40
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	02:40
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	02:40
Caprolactam	< 10.0	ug/L	6/16/2018	02:40
Carbazole	< 10.0	ug/L	6/16/2018	02:40
Chrysene	< 10.0	ug/L	6/16/2018	02:40
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	02:40
Dibenzofuran	< 10.0	ug/L	6/16/2018	02:40
Diethyl phthalate	< 10.0	ug/L	6/16/2018	02:40
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	02:40
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	02:40
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	02:40
Fluoranthene	< 10.0	ug/L	6/16/2018	02:40
Fluorene	< 10.0	ug/L	6/16/2018	02:40
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	02:40
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	02:40
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	02:40
Hexachloroethane	< 10.0	ug/L	6/16/2018	02:40
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	02:40
Isophorone	< 10.0	ug/L	6/16/2018	02:40
Naphthalene	< 10.0	ug/L	6/16/2018	02:40
Nitrobenzene	< 10.0	ug/L	6/16/2018	02:40
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	02:40
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	02:40
Phenanthrene	< 10.0	ug/L	6/16/2018	02:40
Pyrene	< 10.0	ug/L	6/16/2018	02:40

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118

Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**45.5**	31.2 - 108		6/16/2018	02:40
Nitrobenzene-d5	**56.8**	48.3 - 106		6/16/2018	02:40
Terphenyl-d14	**76.5**	52.2 - 117		6/16/2018	02:40

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-08-061118		
Lab Sample ID:	182626-03	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 17:27
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:27
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:27
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:27
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 17:27
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 17:27
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:27
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 17:27
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 17:27
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:27
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:27
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:27
1,4-dioxane	< 20.0	ug/L		6/14/2018 17:27
2-Butanone	< 10.0	ug/L		6/14/2018 17:27
2-Hexanone	< 5.00	ug/L		6/14/2018 17:27
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 17:27
Acetone	< 10.0	ug/L		6/14/2018 17:27
Benzene	< 1.00	ug/L		6/14/2018 17:27
Bromochloromethane	< 5.00	ug/L		6/14/2018 17:27
Bromodichloromethane	< 2.00	ug/L		6/14/2018 17:27
Bromoform	< 5.00	ug/L		6/14/2018 17:27
Bromomethane	< 2.00	ug/L		6/14/2018 17:27
Carbon disulfide	< 2.00	ug/L		6/14/2018 17:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118
Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	17:27
Chlorobenzene	< 2.00	ug/L	6/14/2018	17:27
Chloroethane	< 2.00	ug/L	6/14/2018	17:27
Chloroform	< 2.00	ug/L	6/14/2018	17:27
Chloromethane	< 2.00	ug/L	6/14/2018	17:27
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:27
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:27
Cyclohexane	< 10.0	ug/L	6/14/2018	17:27
Dibromochloromethane	< 2.00	ug/L	6/14/2018	17:27
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	17:27
Ethylbenzene	< 2.00	ug/L	6/14/2018	17:27
Freon 113	< 2.00	ug/L	6/14/2018	17:27
Isopropylbenzene	< 2.00	ug/L	6/14/2018	17:27
m,p-Xylene	< 2.00	ug/L	6/14/2018	17:27
Methyl acetate	< 2.00	ug/L	6/14/2018	17:27
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	17:27
Methylcyclohexane	< 2.00	ug/L	6/14/2018	17:27
Methylene chloride	< 5.00	ug/L	6/14/2018	17:27
Naphthalene	< 5.00	ug/L	6/14/2018	17:27
n-Butylbenzene	< 2.00	ug/L	6/14/2018	17:27
n-Propylbenzene	< 2.00	ug/L	6/14/2018	17:27
o-Xylene	< 2.00	ug/L	6/14/2018	17:27
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	17:27
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	17:27
Styrene	< 5.00	ug/L	6/14/2018	17:27
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	17:27
Tetrachloroethene	< 2.00	ug/L	6/14/2018	17:27
Toluene	< 2.00	ug/L	6/14/2018	17:27
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:27
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-08-061118
Lab Sample ID: 182626-03 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 17:27
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 17:27
Vinyl chloride	< 2.00	ug/L			6/14/2018 17:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**104**	77.2 - 121		6/14/2018 17:27
4-Bromofluorobenzene	**96.2**	70 - 123		6/14/2018 17:27
Pentafluorobenzene	**92.2**	85.4 - 110		6/14/2018 17:27
Toluene-D8	**98.3**	83.8 - 112		6/14/2018 17:27

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51639.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000362**	mg/L		6/18/2018 11:33

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**51.5**	mg/L		6/15/2018 16:42
Antimony	< 0.0600	mg/L		6/15/2018 16:42
Arsenic	**0.0485**	mg/L		6/18/2018 13:53
Barium	**0.822**	mg/L		6/15/2018 16:42
Beryllium	**0.00527**	mg/L		6/15/2018 16:42
Cadmium	< 0.00500	mg/L		6/15/2018 16:42
Calcium	**415**	mg/L		6/15/2018 16:42
Chromium	**0.0714**	mg/L		6/15/2018 16:42
Cobalt	**0.0509**	mg/L		6/15/2018 16:42
Copper	**0.137**	mg/L		6/15/2018 16:42
Iron	**93.5**	mg/L		6/15/2018 16:42
Lead	**0.138**	mg/L		6/15/2018 16:42
Magnesium	**124**	mg/L		6/15/2018 16:42
Manganese	**6.58**	mg/L		6/15/2018 16:42
Nickel	**0.0868**	mg/L		6/15/2018 16:42
Potassium	**12.2**	mg/L		6/15/2018 16:42
Selenium	< 0.0200	mg/L		6/15/2018 16:42
Silver	**0.00720**	mg/L	J	6/15/2018 16:42
Sodium	**129**	mg/L		6/15/2018 16:42
Thallium	< 0.0250	mg/L		6/15/2018 16:42
Vanadium	**0.125**	mg/L		6/15/2018 16:42
Zinc	**0.317**	mg/L		6/15/2018 16:42

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 01:13
PCB-1221	< 1.00	ug/L		6/14/2018 01:13
PCB-1232	< 1.00	ug/L		6/14/2018 01:13
PCB-1242	< 1.00	ug/L		6/14/2018 01:13
PCB-1248	< 1.00	ug/L		6/14/2018 01:13
PCB-1254	< 1.00	ug/L		6/14/2018 01:13
PCB-1260	< 1.00	ug/L		6/14/2018 01:13
PCB-1262	< 1.00	ug/L		6/14/2018 01:13
PCB-1268	< 1.00	ug/L		6/14/2018 01:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**22.5**	10 - 104		6/14/2018 01:13
Tetrachloro-m-xylene	**51.9**	10 - 87.9		6/14/2018 01:13

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016771.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 19:00
4,4-DDE	< 0.100	ug/L		6/15/2018 19:00
4,4-DDT	< 0.100	ug/L		6/15/2018 19:00
Aldrin	< 0.100	ug/L		6/15/2018 19:00
alpha-BHC	< 0.100	ug/L		6/15/2018 19:00
beta-BHC	< 0.100	ug/L		6/15/2018 19:00
cis-Chlordane	< 0.100	ug/L		6/15/2018 19:00
delta-BHC	< 0.100	ug/L		6/15/2018 19:00
Dieldrin	< 0.100	ug/L		6/15/2018 19:00
Endosulfan I	< 0.100	ug/L		6/15/2018 19:00
Endosulfan II	< 0.100	ug/L		6/15/2018 19:00
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 19:00
Endrin	< 0.100	ug/L		6/15/2018 19:00
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 19:00
Endrin Ketone	< 0.100	ug/L		6/15/2018 19:00
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 19:00
Heptachlor	< 0.100	ug/L		6/15/2018 19:00
Heptachlor Epoxide	< 0.100	ug/L		6/15/2018 19:00
Methoxychlor	< 0.100	ug/L		6/15/2018 19:00
Toxaphene	< 1.00	ug/L		6/15/2018 19:00
trans-Chlordane	< 0.100	ug/L		6/15/2018 19:00

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**42.3**	15.9 - 138		6/15/2018 19:00
Tetrachloro-m-xylene (1)	**75.3**	20 - 112		6/15/2018 19:00

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030727.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 03:09
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:09
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 03:09
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:09
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:09
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 03:09
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 03:09
2-Nitroaniline	< 20.0	ug/L		6/16/2018 03:09
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 03:09
3-Nitroaniline	< 20.0	ug/L		6/16/2018 03:09
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:09
4-Chloroaniline	< 10.0	ug/L		6/16/2018 03:09
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:09
4-Nitroaniline	< 20.0	ug/L		6/16/2018 03:09
Acenaphthene	< 10.0	ug/L		6/16/2018 03:09
Acenaphthylene	< 10.0	ug/L		6/16/2018 03:09
Acetophenone	< 10.0	ug/L		6/16/2018 03:09
Anthracene	< 10.0	ug/L		6/16/2018 03:09
Atrazine	< 10.0	ug/L		6/16/2018 03:09
Benzaldehyde	< 10.0	ug/L		6/16/2018 03:09
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 03:09
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 03:09
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 03:09

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118
Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	03:09
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	03:09
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	03:09
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	03:09
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	03:09
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	03:09
Caprolactam	< 10.0	ug/L	6/16/2018	03:09
Carbazole	< 10.0	ug/L	6/16/2018	03:09
Chrysene	< 10.0	ug/L	6/16/2018	03:09
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	03:09
Dibenzofuran	< 10.0	ug/L	6/16/2018	03:09
Diethyl phthalate	< 10.0	ug/L	6/16/2018	03:09
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	03:09
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	03:09
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	03:09
Fluoranthene	< 10.0	ug/L	6/16/2018	03:09
Fluorene	< 10.0	ug/L	6/16/2018	03:09
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	03:09
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	03:09
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	03:09
Hexachloroethane	< 10.0	ug/L	6/16/2018	03:09
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	03:09
Isophorone	< 10.0	ug/L	6/16/2018	03:09
Naphthalene	< 10.0	ug/L	6/16/2018	03:09
Nitrobenzene	< 10.0	ug/L	6/16/2018	03:09
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	03:09
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	03:09
Phenanthrene	< 10.0	ug/L	6/16/2018	03:09
Pyrene	< 10.0	ug/L	6/16/2018	03:09

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118

Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.9**	31.2 - 108		6/16/2018	03:09
Nitrobenzene-d5	**59.1**	48.3 - 106		6/16/2018	03:09
Terphenyl-d14	**78.0**	52.2 - 117		6/16/2018	03:09

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-061118		
Lab Sample ID:	182626-04	**Date Sampled:**	6/11/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 17:50
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:50
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 17:50
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:50
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 17:50
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 17:50
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:50
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 17:50
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 17:50
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 17:50
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:50
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 17:50
1,4-dioxane	< 20.0	ug/L		6/14/2018 17:50
2-Butanone	< 10.0	ug/L		6/14/2018 17:50
2-Hexanone	< 5.00	ug/L		6/14/2018 17:50
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 17:50
Acetone	< 10.0	ug/L		6/14/2018 17:50
Benzene	< 1.00	ug/L		6/14/2018 17:50
Bromochloromethane	< 5.00	ug/L		6/14/2018 17:50
Bromodichloromethane	< 2.00	ug/L		6/14/2018 17:50
Bromoform	< 5.00	ug/L		6/14/2018 17:50
Bromomethane	< 2.00	ug/L		6/14/2018 17:50
Carbon disulfide	< 2.00	ug/L		6/14/2018 17:50

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118
Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	17:50
Chlorobenzene	< 2.00	ug/L	6/14/2018	17:50
Chloroethane	< 2.00	ug/L	6/14/2018	17:50
Chloroform	< 2.00	ug/L	6/14/2018	17:50
Chloromethane	< 2.00	ug/L	6/14/2018	17:50
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:50
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:50
Cyclohexane	< 10.0	ug/L	6/14/2018	17:50
Dibromochloromethane	< 2.00	ug/L	6/14/2018	17:50
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	17:50
Ethylbenzene	< 2.00	ug/L	6/14/2018	17:50
Freon 113	< 2.00	ug/L	6/14/2018	17:50
Isopropylbenzene	< 2.00	ug/L	6/14/2018	17:50
m,p-Xylene	< 2.00	ug/L	6/14/2018	17:50
Methyl acetate	< 2.00	ug/L	6/14/2018	17:50
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	17:50
Methylcyclohexane	< 2.00	ug/L	6/14/2018	17:50
Methylene chloride	< 5.00	ug/L	6/14/2018	17:50
Naphthalene	< 5.00	ug/L	6/14/2018	17:50
n-Butylbenzene	< 2.00	ug/L	6/14/2018	17:50
n-Propylbenzene	< 2.00	ug/L	6/14/2018	17:50
o-Xylene	< 2.00	ug/L	6/14/2018	17:50
p-Isopropyltoluene	**4.52**	ug/L	6/14/2018	17:50
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	17:50
Styrene	< 5.00	ug/L	6/14/2018	17:50
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	17:50
Tetrachloroethene	< 2.00	ug/L	6/14/2018	17:50
Toluene	< 2.00	ug/L	6/14/2018	17:50
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	17:50
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	17:50

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-03-061118
Lab Sample ID: 182626-04 **Date Sampled:** 6/11/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 17:50
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 17:50
Vinyl chloride	< 2.00	ug/L			6/14/2018 17:50

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**104**	77.2 - 121		6/14/2018 17:50
4-Bromofluorobenzene	**88.1**	70 - 123		6/14/2018 17:50
Pentafluorobenzene	**96.5**	85.4 - 110		6/14/2018 17:50
Toluene-D8	**95.1**	83.8 - 112		6/14/2018 17:50

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51640.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000280**	mg/L		6/18/2018 11:36

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**62.3**	mg/L		6/15/2018 16:46
Antimony	**0.0334**	mg/L	J	6/15/2018 16:46
Arsenic	**0.0921**	mg/L		6/15/2018 16:46
Barium	**0.902**	mg/L		6/15/2018 16:46
Beryllium	**0.00363**	mg/L	J	6/15/2018 16:46
Cadmium	**0.00548**	mg/L		6/15/2018 16:46
Calcium	**326**	mg/L		6/15/2018 16:46
Chromium	**0.106**	mg/L		6/15/2018 16:46
Cobalt	**0.0578**	mg/L		6/15/2018 16:46
Copper	**0.162**	mg/L		6/15/2018 16:46
Iron	**150**	mg/L		6/15/2018 16:46
Lead	**0.0789**	mg/L		6/15/2018 16:46
Magnesium	**98.2**	mg/L		6/15/2018 16:46
Manganese	**6.62**	mg/L		6/15/2018 16:46
Nickel	**0.131**	mg/L		6/15/2018 16:46
Potassium	**15.0**	mg/L		6/15/2018 16:46
Selenium	< 0.0200	mg/L		6/15/2018 16:46
Silver	**0.0133**	mg/L		6/15/2018 16:46
Sodium	**689**	mg/L		6/18/2018 14:06
Thallium	< 0.0250	mg/L		6/15/2018 16:46
Vanadium	**0.104**	mg/L		6/15/2018 16:46
Zinc	**1.13**	mg/L		6/15/2018 16:46

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/14/2018 01:36
PCB-1221	< 1.00	ug/L		6/14/2018 01:36
PCB-1232	< 1.00	ug/L		6/14/2018 01:36
PCB-1242	< 1.00	ug/L		6/14/2018 01:36
PCB-1248	< 1.00	ug/L		6/14/2018 01:36
PCB-1254	< 1.00	ug/L		6/14/2018 01:36
PCB-1260	< 1.00	ug/L		6/14/2018 01:36
PCB-1262	< 1.00	ug/L		6/14/2018 01:36
PCB-1268	< 1.00	ug/L		6/14/2018 01:36

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**131**	10 - 104	*	6/14/2018 01:36
Tetrachloro-m-xylene	**96.5**	10 - 87.9	*	6/14/2018 01:36

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016772.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/18/2018 16:56
4,4-DDE	< 0.100	ug/L		6/18/2018 16:56
4,4-DDT	< 0.100	ug/L		6/18/2018 16:56
Aldrin	< 0.100	ug/L		6/18/2018 16:56
alpha-BHC	< 0.100	ug/L		6/18/2018 16:56
beta-BHC	< 0.100	ug/L		6/18/2018 16:56
cis-Chlordane	< 0.100	ug/L		6/18/2018 16:56
delta-BHC	< 0.100	ug/L		6/18/2018 16:56
Dieldrin	< 0.100	ug/L		6/18/2018 16:56
Endosulfan I	< 0.100	ug/L		6/18/2018 16:56
Endosulfan II	< 0.100	ug/L		6/18/2018 16:56
Endosulfan Sulfate	< 0.100	ug/L		6/18/2018 16:56
Endrin	< 0.100	ug/L		6/18/2018 16:56
Endrin Aldehyde	< 0.100	ug/L		6/18/2018 16:56
Endrin Ketone	< 0.100	ug/L		6/18/2018 16:56
gamma-BHC (Lindane)	< 0.100	ug/L		6/18/2018 16:56
Heptachlor	< 0.100	ug/L		6/18/2018 16:56
Heptachlor Epoxide	**0.134**	ug/L		6/18/2018 16:56
Methoxychlor	< 0.100	ug/L		6/18/2018 16:56
Toxaphene	< 1.00	ug/L		6/18/2018 16:56
trans-Chlordane	< 0.100	ug/L		6/18/2018 16:56

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**123**	15.9 - 138		6/18/2018 16:56
Tetrachloro-m-xylene (1)	**75.4**	20 - 112		6/18/2018 16:56

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030754.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 03:38
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 03:38
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 03:38
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:38
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 03:38
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 03:38
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 03:38
2-Nitroaniline	< 20.0	ug/L		6/16/2018 03:38
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 03:38
3-Nitroaniline	< 20.0	ug/L		6/16/2018 03:38
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:38
4-Chloroaniline	< 10.0	ug/L		6/16/2018 03:38
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 03:38
4-Nitroaniline	< 20.0	ug/L		6/16/2018 03:38
Acenaphthene	< 10.0	ug/L		6/16/2018 03:38
Acenaphthylene	< 10.0	ug/L		6/16/2018 03:38
Acetophenone	< 10.0	ug/L		6/16/2018 03:38
Anthracene	< 10.0	ug/L		6/16/2018 03:38
Atrazine	< 10.0	ug/L		6/16/2018 03:38
Benzaldehyde	< 10.0	ug/L		6/16/2018 03:38
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 03:38
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 03:38
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 03:38

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218
Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	03:38
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	03:38
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	03:38
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	03:38
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	03:38
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	03:38
Caprolactam	< 10.0	ug/L	6/16/2018	03:38
Carbazole	< 10.0	ug/L	6/16/2018	03:38
Chrysene	< 10.0	ug/L	6/16/2018	03:38
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	03:38
Dibenzofuran	< 10.0	ug/L	6/16/2018	03:38
Diethyl phthalate	< 10.0	ug/L	6/16/2018	03:38
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	03:38
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	03:38
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	03:38
Fluoranthene	< 10.0	ug/L	6/16/2018	03:38
Fluorene	< 10.0	ug/L	6/16/2018	03:38
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	03:38
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	03:38
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	03:38
Hexachloroethane	< 10.0	ug/L	6/16/2018	03:38
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	03:38
Isophorone	< 10.0	ug/L	6/16/2018	03:38
Naphthalene	< 10.0	ug/L	6/16/2018	03:38
Nitrobenzene	< 10.0	ug/L	6/16/2018	03:38
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	03:38
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	03:38
Phenanthrene	< 10.0	ug/L	6/16/2018	03:38
Pyrene	< 10.0	ug/L	6/16/2018	03:38

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218

Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**48.1**	31.2 - 108		6/16/2018	03:38
Nitrobenzene-d5	**61.7**	48.3 - 106		6/16/2018	03:38
Terphenyl-d14	**81.2**	52.2 - 117		6/16/2018	03:38

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-061218		
Lab Sample ID:	182626-05	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 18:13
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:13
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:13
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:13
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 18:13
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 18:13
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:13
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 18:13
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 18:13
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:13
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:13
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:13
1,4-dioxane	< 20.0	ug/L		6/14/2018 18:13
2-Butanone	< 10.0	ug/L		6/14/2018 18:13
2-Hexanone	< 5.00	ug/L		6/14/2018 18:13
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 18:13
Acetone	< 10.0	ug/L		6/14/2018 18:13
Benzene	< 1.00	ug/L		6/14/2018 18:13
Bromochloromethane	< 5.00	ug/L		6/14/2018 18:13
Bromodichloromethane	< 2.00	ug/L		6/14/2018 18:13
Bromoform	< 5.00	ug/L		6/14/2018 18:13
Bromomethane	< 2.00	ug/L		6/14/2018 18:13
Carbon disulfide	< 2.00	ug/L		6/14/2018 18:13

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218
Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	18:13
Chlorobenzene	< 2.00	ug/L	6/14/2018	18:13
Chloroethane	< 2.00	ug/L	6/14/2018	18:13
Chloroform	< 2.00	ug/L	6/14/2018	18:13
Chloromethane	< 2.00	ug/L	6/14/2018	18:13
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:13
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:13
Cyclohexane	< 10.0	ug/L	6/14/2018	18:13
Dibromochloromethane	< 2.00	ug/L	6/14/2018	18:13
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	18:13
Ethylbenzene	< 2.00	ug/L	6/14/2018	18:13
Freon 113	< 2.00	ug/L	6/14/2018	18:13
Isopropylbenzene	< 2.00	ug/L	6/14/2018	18:13
m,p-Xylene	< 2.00	ug/L	6/14/2018	18:13
Methyl acetate	< 2.00	ug/L	6/14/2018	18:13
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	18:13
Methylcyclohexane	< 2.00	ug/L	6/14/2018	18:13
Methylene chloride	< 5.00	ug/L	6/14/2018	18:13
Naphthalene	< 5.00	ug/L	6/14/2018	18:13
n-Butylbenzene	< 2.00	ug/L	6/14/2018	18:13
n-Propylbenzene	< 2.00	ug/L	6/14/2018	18:13
o-Xylene	< 2.00	ug/L	6/14/2018	18:13
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	18:13
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	18:13
Styrene	< 5.00	ug/L	6/14/2018	18:13
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	18:13
Tetrachloroethene	< 2.00	ug/L	6/14/2018	18:13
Toluene	< 2.00	ug/L	6/14/2018	18:13
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:13
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:13

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-09-061218
Lab Sample ID: 182626-05 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 18:13
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 18:13
Vinyl chloride	< 2.00	ug/L			6/14/2018 18:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.2 - 121		6/14/2018 18:13
4-Bromofluorobenzene	**93.2**	70 - 123		6/14/2018 18:13
Pentafluorobenzene	**96.2**	85.4 - 110		6/14/2018 18:13
Toluene-D8	**100**	83.8 - 112		6/14/2018 18:13

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51641.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.00101**	mg/L		6/18/2018 11:39

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**145**	mg/L		6/15/2018 16:51
Antimony	**0.0400**	mg/L	J	6/15/2018 16:51
Arsenic	**0.208**	mg/L		6/15/2018 16:51
Barium	**1.39**	mg/L		6/15/2018 16:51
Beryllium	**0.00769**	mg/L		6/15/2018 16:51
Cadmium	**0.00670**	mg/L		6/15/2018 16:51
Calcium	**353**	mg/L		6/15/2018 16:51
Chromium	**0.206**	mg/L		6/15/2018 16:51
Cobalt	**0.133**	mg/L		6/15/2018 16:51
Copper	**0.363**	mg/L		6/15/2018 16:51
Iron	**321**	mg/L		6/15/2018 16:51
Lead	**0.321**	mg/L		6/15/2018 16:51
Magnesium	**172**	mg/L		6/15/2018 16:51
Manganese	**10.0**	mg/L		6/15/2018 16:51
Nickel	**0.288**	mg/L		6/15/2018 16:51
Potassium	**22.7**	mg/L		6/15/2018 16:51
Selenium	< 0.0200	mg/L		6/15/2018 16:51
Silver	**0.0305**	mg/L		6/15/2018 16:51
Sodium	**724**	mg/L		6/18/2018 14:11
Thallium	< 0.0250	mg/L		6/15/2018 16:51
Vanadium	**0.223**	mg/L		6/15/2018 16:51
Zinc	**1.05**	mg/L		6/15/2018 16:51

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/15/2018 13:39
PCB-1221	< 1.00	ug/L		6/15/2018 13:39
PCB-1232	< 1.00	ug/L		6/15/2018 13:39
PCB-1242	< 1.00	ug/L		6/15/2018 13:39
PCB-1248	< 1.00	ug/L		6/15/2018 13:39
PCB-1254	< 1.00	ug/L		6/15/2018 13:39
PCB-1260	< 1.00	ug/L		6/15/2018 13:39
PCB-1262	< 1.00	ug/L		6/15/2018 13:39
PCB-1268	< 1.00	ug/L		6/15/2018 13:39

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**84.1**	10 - 104		6/15/2018 13:39
Tetrachloro-m-xylene	**41.7**	10 - 87.9		6/15/2018 13:39

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016847.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/15/2018 19:30
4,4-DDE	< 0.100	ug/L		6/15/2018 19:30
4,4-DDT	< 0.100	ug/L		6/15/2018 19:30
Aldrin	< 0.100	ug/L		6/15/2018 19:30
alpha-BHC	< 0.100	ug/L		6/15/2018 19:30
beta-BHC	< 0.100	ug/L		6/15/2018 19:30
cis-Chlordane	< 0.100	ug/L		6/15/2018 19:30
delta-BHC	< 0.100	ug/L		6/15/2018 19:30
Dieldrin	< 0.100	ug/L		6/15/2018 19:30
Endosulfan I	< 0.100	ug/L		6/15/2018 19:30
Endosulfan II	< 0.100	ug/L		6/15/2018 19:30
Endosulfan Sulfate	< 0.100	ug/L		6/15/2018 19:30
Endrin	< 0.100	ug/L		6/15/2018 19:30
Endrin Aldehyde	< 0.100	ug/L		6/15/2018 19:30
Endrin Ketone	< 0.100	ug/L		6/15/2018 19:30
gamma-BHC (Lindane)	< 0.100	ug/L		6/15/2018 19:30
Heptachlor	< 0.100	ug/L		6/15/2018 19:30
Heptachlor Epoxide	**0.0788**	ug/L	JP	6/15/2018 19:30
Methoxychlor	< 0.100	ug/L		6/15/2018 19:30
Toxaphene	< 1.00	ug/L		6/15/2018 19:30
trans-Chlordane	< 0.100	ug/L		6/15/2018 19:30

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**124**	15.9 - 138		6/15/2018 19:30
Tetrachloro-m-xylene (1)	**62.5**	20 - 112		6/15/2018 19:30

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030729.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 04:07
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:07
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 04:07
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:07
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:07
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 04:07
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 04:07
2-Nitroaniline	< 20.0	ug/L		6/16/2018 04:07
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 04:07
3-Nitroaniline	< 20.0	ug/L		6/16/2018 04:07
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:07
4-Chloroaniline	< 10.0	ug/L		6/16/2018 04:07
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:07
4-Nitroaniline	< 20.0	ug/L		6/16/2018 04:07
Acenaphthene	< 10.0	ug/L		6/16/2018 04:07
Acenaphthylene	< 10.0	ug/L		6/16/2018 04:07
Acetophenone	< 10.0	ug/L		6/16/2018 04:07
Anthracene	< 10.0	ug/L		6/16/2018 04:07
Atrazine	< 10.0	ug/L		6/16/2018 04:07
Benzaldehyde	< 10.0	ug/L		6/16/2018 04:07
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 04:07
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 04:07
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 04:07

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218
Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	04:07
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	04:07
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	04:07
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	04:07
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	04:07
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	04:07
Caprolactam	< 10.0	ug/L	6/16/2018	04:07
Carbazole	< 10.0	ug/L	6/16/2018	04:07
Chrysene	< 10.0	ug/L	6/16/2018	04:07
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	04:07
Dibenzofuran	< 10.0	ug/L	6/16/2018	04:07
Diethyl phthalate	< 10.0	ug/L	6/16/2018	04:07
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	04:07
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	04:07
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	04:07
Fluoranthene	< 10.0	ug/L	6/16/2018	04:07
Fluorene	< 10.0	ug/L	6/16/2018	04:07
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	04:07
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	04:07
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	04:07
Hexachloroethane	< 10.0	ug/L	6/16/2018	04:07
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	04:07
Isophorone	< 10.0	ug/L	6/16/2018	04:07
Naphthalene	< 10.0	ug/L	6/16/2018	04:07
Nitrobenzene	< 10.0	ug/L	6/16/2018	04:07
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	04:07
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	04:07
Phenanthrene	< 10.0	ug/L	6/16/2018	04:07
Pyrene	< 10.0	ug/L	6/16/2018	04:07

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218

Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018

Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**44.0**	31.2 - 108		6/16/2018	04:07
Nitrobenzene-d5	**59.7**	48.3 - 106		6/16/2018	04:07
Terphenyl-d14	**75.6**	52.2 - 117		6/16/2018	04:07

Method Reference(s): EPA 8270D
EPA 3510C

Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-061218		
Lab Sample ID:	182626-06	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 18:37
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:37
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 18:37
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:37
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 18:37
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 18:37
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:37
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 18:37
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 18:37
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 18:37
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:37
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 18:37
1,4-dioxane	< 20.0	ug/L		6/14/2018 18:37
2-Butanone	< 10.0	ug/L		6/14/2018 18:37
2-Hexanone	< 5.00	ug/L		6/14/2018 18:37
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 18:37
Acetone	**9.84**	ug/L	J	6/14/2018 18:37
Benzene	< 1.00	ug/L		6/14/2018 18:37
Bromochloromethane	< 5.00	ug/L		6/14/2018 18:37
Bromodichloromethane	< 2.00	ug/L		6/14/2018 18:37
Bromoform	< 5.00	ug/L		6/14/2018 18:37
Bromomethane	< 2.00	ug/L		6/14/2018 18:37
Carbon disulfide	< 2.00	ug/L		6/14/2018 18:37

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218
Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	18:37
Chlorobenzene	< 2.00	ug/L	6/14/2018	18:37
Chloroethane	< 2.00	ug/L	6/14/2018	18:37
Chloroform	< 2.00	ug/L	6/14/2018	18:37
Chloromethane	< 2.00	ug/L	6/14/2018	18:37
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:37
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:37
Cyclohexane	< 10.0	ug/L	6/14/2018	18:37
Dibromochloromethane	< 2.00	ug/L	6/14/2018	18:37
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	18:37
Ethylbenzene	< 2.00	ug/L	6/14/2018	18:37
Freon 113	< 2.00	ug/L	6/14/2018	18:37
Isopropylbenzene	< 2.00	ug/L	6/14/2018	18:37
m,p-Xylene	< 2.00	ug/L	6/14/2018	18:37
Methyl acetate	< 2.00	ug/L	6/14/2018	18:37
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	18:37
Methylcyclohexane	< 2.00	ug/L	6/14/2018	18:37
Methylene chloride	< 5.00	ug/L	6/14/2018	18:37
Naphthalene	< 5.00	ug/L	6/14/2018	18:37
n-Butylbenzene	< 2.00	ug/L	6/14/2018	18:37
n-Propylbenzene	< 2.00	ug/L	6/14/2018	18:37
o-Xylene	< 2.00	ug/L	6/14/2018	18:37
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	18:37
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	18:37
Styrene	< 5.00	ug/L	6/14/2018	18:37
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	18:37
Tetrachloroethene	< 2.00	ug/L	6/14/2018	18:37
Toluene	< 2.00	ug/L	6/14/2018	18:37
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	18:37
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	18:37

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-10-061218
Lab Sample ID: 182626-06 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 18:37
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 18:37
Vinyl chloride	< 2.00	ug/L			6/14/2018 18:37

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.2 - 121		6/14/2018 18:37
4-Bromofluorobenzene	**93.9**	70 - 123		6/14/2018 18:37
Pentafluorobenzene	**92.9**	85.4 - 110		6/14/2018 18:37
Toluene-D8	**98.5**	83.8 - 112		6/14/2018 18:37

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51642.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.000195**	mg/L	J	6/18/2018 11:42

Method Reference(s): EPA 7470A
Preparation Date: 6/15/2018
Data File: Hg180618A

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**54.4**	mg/L		6/15/2018 16:55
Antimony	< 0.0600	mg/L		6/15/2018 16:55
Arsenic	**0.0779**	mg/L		6/15/2018 16:55
Barium	**0.864**	mg/L		6/15/2018 16:55
Beryllium	**0.00311**	mg/L	J	6/15/2018 16:55
Cadmium	**0.00450**	mg/L	J	6/15/2018 16:55
Calcium	**323**	mg/L		6/15/2018 16:55
Chromium	**0.0920**	mg/L		6/15/2018 16:55
Cobalt	**0.0499**	mg/L	J	6/15/2018 16:55
Copper	**0.142**	mg/L		6/15/2018 16:55
Iron	**128**	mg/L		6/15/2018 16:55
Lead	**0.0674**	mg/L		6/15/2018 16:55
Magnesium	**94.1**	mg/L		6/15/2018 16:55
Manganese	**6.11**	mg/L		6/15/2018 16:55
Nickel	**0.114**	mg/L		6/15/2018 16:55
Potassium	**16.0**	mg/L		6/15/2018 16:55
Selenium	< 0.0200	mg/L		6/15/2018 16:55
Silver	**0.00910**	mg/L	J	6/15/2018 16:55
Sodium	**759**	mg/L		6/18/2018 14:15
Thallium	< 0.0250	mg/L		6/15/2018 16:55
Vanadium	**0.0909**	mg/L		6/15/2018 16:55
Zinc	**0.909**	mg/L		6/15/2018 16:55

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 6/14/2018
Data File: 180615B

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 1.00	ug/L		6/15/2018 14:03
PCB-1221	< 1.00	ug/L		6/15/2018 14:03
PCB-1232	< 1.00	ug/L		6/15/2018 14:03
PCB-1242	< 1.00	ug/L		6/15/2018 14:03
PCB-1248	< 1.00	ug/L		6/15/2018 14:03
PCB-1254	< 1.00	ug/L		6/15/2018 14:03
PCB-1260	< 1.00	ug/L		6/15/2018 14:03
PCB-1262	< 1.00	ug/L		6/15/2018 14:03
PCB-1268	< 1.00	ug/L		6/15/2018 14:03

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	**28.1**	10 - 104		6/15/2018 14:03
Tetrachloro-m-xylene	**47.2**	10 - 87.9		6/15/2018 14:03

Method Reference(s): EPA 8082A
EPA 3510C
Preparation Date: 6/13/2018
Data File: EC016848.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 0.100	ug/L		6/18/2018 18:13
4,4-DDE	< 0.100	ug/L		6/18/2018 18:13
4,4-DDT	< 0.100	ug/L		6/18/2018 18:13
Aldrin	< 0.100	ug/L		6/18/2018 18:13
alpha-BHC	< 0.100	ug/L		6/18/2018 18:13
beta-BHC	**0.0631**	ug/L	JP	6/18/2018 18:13
cis-Chlordane	< 0.100	ug/L		6/18/2018 18:13
delta-BHC	< 0.100	ug/L		6/18/2018 18:13
Dieldrin	< 0.100	ug/L		6/18/2018 18:13
Endosulfan I	< 0.100	ug/L		6/18/2018 18:13
Endosulfan II	< 0.100	ug/L		6/18/2018 18:13
Endosulfan Sulfate	< 0.100	ug/L		6/18/2018 18:13
Endrin	< 0.100	ug/L		6/18/2018 18:13
Endrin Aldehyde	< 0.100	ug/L		6/18/2018 18:13
Endrin Ketone	< 0.100	ug/L		6/18/2018 18:13
gamma-BHC (Lindane)	< 0.100	ug/L		6/18/2018 18:13
Heptachlor	< 0.100	ug/L		6/18/2018 18:13
Heptachlor Epoxide	< 0.100	ug/L		6/18/2018 18:13
Methoxychlor	< 0.100	ug/L		6/18/2018 18:13
Toxaphene	< 1.00	ug/L		6/18/2018 18:13
trans-Chlordane	< 0.100	ug/L		6/18/2018 18:13

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**60.6**	15.9 - 138		6/18/2018 18:13
Tetrachloro-m-xylene (1)	**80.8**	20 - 112		6/18/2018 18:13

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 6/13/2018
Data File: ST030759.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 10.0	ug/L		6/16/2018 04:35
1,2,4,5-Tetrachlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,2,4-Trichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,2-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,3-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
1,4-Dichlorobenzene	< 10.0	ug/L		6/16/2018 04:35
2,2-Oxybis (1-chloropropane)	< 10.0	ug/L		6/16/2018 04:35
2,4-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:35
2,6-Dinitrotoluene	< 10.0	ug/L		6/16/2018 04:35
2-Chloronaphthalene	< 10.0	ug/L		6/16/2018 04:35
2-Methylnapthalene	< 10.0	ug/L		6/16/2018 04:35
2-Nitroaniline	< 20.0	ug/L		6/16/2018 04:35
3,3'-Dichlorobenzidine	< 10.0	ug/L		6/16/2018 04:35
3-Nitroaniline	< 20.0	ug/L		6/16/2018 04:35
4-Bromophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:35
4-Chloroaniline	< 10.0	ug/L		6/16/2018 04:35
4-Chlorophenyl phenyl ether	< 10.0	ug/L		6/16/2018 04:35
4-Nitroaniline	< 20.0	ug/L		6/16/2018 04:35
Acenaphthene	< 10.0	ug/L		6/16/2018 04:35
Acenaphthylene	< 10.0	ug/L		6/16/2018 04:35
Acetophenone	< 10.0	ug/L		6/16/2018 04:35
Anthracene	< 10.0	ug/L		6/16/2018 04:35
Atrazine	< 10.0	ug/L		6/16/2018 04:35
Benzaldehyde	< 10.0	ug/L		6/16/2018 04:35
Benzo (a) anthracene	< 10.0	ug/L		6/16/2018 04:35
Benzo (a) pyrene	< 10.0	ug/L		6/16/2018 04:35
Benzo (b) fluoranthene	< 10.0	ug/L		6/16/2018 04:35

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Benzo (g,h,i) perylene	< 10.0	ug/L	6/16/2018	04:35
Benzo (k) fluoranthene	< 10.0	ug/L	6/16/2018	04:35
Bis (2-chloroethoxy) methane	< 10.0	ug/L	6/16/2018	04:35
Bis (2-chloroethyl) ether	< 10.0	ug/L	6/16/2018	04:35
Bis (2-ethylhexyl) phthalate	< 10.0	ug/L	6/16/2018	04:35
Butylbenzylphthalate	< 10.0	ug/L	6/16/2018	04:35
Caprolactam	< 10.0	ug/L	6/16/2018	04:35
Carbazole	< 10.0	ug/L	6/16/2018	04:35
Chrysene	< 10.0	ug/L	6/16/2018	04:35
Dibenz (a,h) anthracene	< 10.0	ug/L	6/16/2018	04:35
Dibenzofuran	< 10.0	ug/L	6/16/2018	04:35
Diethyl phthalate	< 10.0	ug/L	6/16/2018	04:35
Dimethyl phthalate	< 20.0	ug/L	6/16/2018	04:35
Di-n-butyl phthalate	< 10.0	ug/L	6/16/2018	04:35
Di-n-octylphthalate	< 10.0	ug/L	6/16/2018	04:35
Fluoranthene	< 10.0	ug/L	6/16/2018	04:35
Fluorene	< 10.0	ug/L	6/16/2018	04:35
Hexachlorobenzene	< 10.0	ug/L	6/16/2018	04:35
Hexachlorobutadiene	< 10.0	ug/L	6/16/2018	04:35
Hexachlorocyclopentadiene	< 10.0	ug/L	6/16/2018	04:35
Hexachloroethane	< 10.0	ug/L	6/16/2018	04:35
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L	6/16/2018	04:35
Isophorone	< 10.0	ug/L	6/16/2018	04:35
Naphthalene	< 10.0	ug/L	6/16/2018	04:35
Nitrobenzene	< 10.0	ug/L	6/16/2018	04:35
N-Nitroso-di-n-propylamine	< 10.0	ug/L	6/16/2018	04:35
N-Nitrosodiphenylamine	< 10.0	ug/L	6/16/2018	04:35
Phenanthrene	< 10.0	ug/L	6/16/2018	04:35
Pyrene	< 10.0	ug/L	6/16/2018	04:35

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**53.5**	31.2 - 108		6/16/2018 04:35
Nitrobenzene-d5	**65.4**	48.3 - 106		6/16/2018 04:35
Terphenyl-d14	**80.7**	52.2 - 117		6/16/2018 04:35

Method Reference(s): EPA 8270D
EPA 3510C
Preparation Date: 6/13/2018

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-06XX18 (Blind Duplicate)		
Lab Sample ID:	182626-07	**Date Sampled:**	6/12/2018
Matrix:	Groundwater	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 19:00
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 19:00
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 19:00
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 19:00
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 19:00
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 19:00
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 19:00
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 19:00
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 19:00
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 19:00
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 19:00
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 19:00
1,4-dioxane	< 20.0	ug/L		6/14/2018 19:00
2-Butanone	< 10.0	ug/L		6/14/2018 19:00
2-Hexanone	< 5.00	ug/L		6/14/2018 19:00
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 19:00
Acetone	< 10.0	ug/L		6/14/2018 19:00
Benzene	< 1.00	ug/L		6/14/2018 19:00
Bromochloromethane	< 5.00	ug/L		6/14/2018 19:00
Bromodichloromethane	< 2.00	ug/L		6/14/2018 19:00
Bromoform	< 5.00	ug/L		6/14/2018 19:00
Bromomethane	< 2.00	ug/L		6/14/2018 19:00
Carbon disulfide	< 2.00	ug/L		6/14/2018 19:00

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	19:00
Chlorobenzene	< 2.00	ug/L	6/14/2018	19:00
Chloroethane	< 2.00	ug/L	6/14/2018	19:00
Chloroform	< 2.00	ug/L	6/14/2018	19:00
Chloromethane	< 2.00	ug/L	6/14/2018	19:00
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	19:00
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	19:00
Cyclohexane	< 10.0	ug/L	6/14/2018	19:00
Dibromochloromethane	< 2.00	ug/L	6/14/2018	19:00
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	19:00
Ethylbenzene	< 2.00	ug/L	6/14/2018	19:00
Freon 113	< 2.00	ug/L	6/14/2018	19:00
Isopropylbenzene	< 2.00	ug/L	6/14/2018	19:00
m,p-Xylene	< 2.00	ug/L	6/14/2018	19:00
Methyl acetate	< 2.00	ug/L	6/14/2018	19:00
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	19:00
Methylcyclohexane	< 2.00	ug/L	6/14/2018	19:00
Methylene chloride	< 5.00	ug/L	6/14/2018	19:00
Naphthalene	< 5.00	ug/L	6/14/2018	19:00
n-Butylbenzene	< 2.00	ug/L	6/14/2018	19:00
n-Propylbenzene	< 2.00	ug/L	6/14/2018	19:00
o-Xylene	< 2.00	ug/L	6/14/2018	19:00
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	19:00
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	19:00
Styrene	< 5.00	ug/L	6/14/2018	19:00
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	19:00
Tetrachloroethene	< 2.00	ug/L	6/14/2018	19:00
Toluene	< 2.00	ug/L	6/14/2018	19:00
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	19:00
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	19:00

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: RRW-CH-MW-06XX18 (Blind Duplicate)
Lab Sample ID: 182626-07 **Date Sampled:** 6/12/2018
Matrix: Groundwater **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 19:00
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 19:00
Vinyl chloride	< 2.00	ug/L			6/14/2018 19:00

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**102**	77.2 - 121		6/14/2018 19:00
4-Bromofluorobenzene	**94.3**	70 - 123		6/14/2018 19:00
Pentafluorobenzene	**92.3**	85.4 - 110		6/14/2018 19:00
Toluene-D8	**96.5**	83.8 - 112		6/14/2018 19:00

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51643.D

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Report Prepared Tuesday, June 19, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	Trip Blank-061218		
Lab Sample ID:	182626-08	**Date Sampled:**	6/11/2018
Matrix:	Water	**Date Received:**	6/12/2018

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1,2-Trichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1-Dichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,1-Dichloroethene	< 2.00	ug/L		6/14/2018 16:17
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:17
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/14/2018 16:17
1,2,4-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:17
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/14/2018 16:17
1,2-Dibromoethane	< 2.00	ug/L		6/14/2018 16:17
1,2-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:17
1,2-Dichloroethane	< 2.00	ug/L		6/14/2018 16:17
1,2-Dichloropropane	< 2.00	ug/L		6/14/2018 16:17
1,3,5-Trimethylbenzene	< 2.00	ug/L		6/14/2018 16:17
1,3-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:17
1,4-Dichlorobenzene	< 2.00	ug/L		6/14/2018 16:17
1,4-dioxane	< 20.0	ug/L		6/14/2018 16:17
2-Butanone	< 10.0	ug/L		6/14/2018 16:17
2-Hexanone	< 5.00	ug/L		6/14/2018 16:17
4-Methyl-2-pentanone	< 5.00	ug/L		6/14/2018 16:17
Acetone	< 10.0	ug/L		6/14/2018 16:17
Benzene	< 1.00	ug/L		6/14/2018 16:17
Bromochloromethane	< 5.00	ug/L		6/14/2018 16:17
Bromodichloromethane	< 2.00	ug/L		6/14/2018 16:17
Bromoform	< 5.00	ug/L		6/14/2018 16:17
Bromomethane	< 2.00	ug/L		6/14/2018 16:17
Carbon disulfide	< 2.00	ug/L		6/14/2018 16:17

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: Trip Blank-061218
Lab Sample ID: 182626-08 **Date Sampled:** 6/11/2018
Matrix: Water **Date Received:** 6/12/2018

Carbon Tetrachloride	< 2.00	ug/L	6/14/2018	16:17
Chlorobenzene	< 2.00	ug/L	6/14/2018	16:17
Chloroethane	< 2.00	ug/L	6/14/2018	16:17
Chloroform	< 2.00	ug/L	6/14/2018	16:17
Chloromethane	< 2.00	ug/L	6/14/2018	16:17
cis-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:17
cis-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:17
Cyclohexane	< 10.0	ug/L	6/14/2018	16:17
Dibromochloromethane	< 2.00	ug/L	6/14/2018	16:17
Dichlorodifluoromethane	< 2.00	ug/L	6/14/2018	16:17
Ethylbenzene	< 2.00	ug/L	6/14/2018	16:17
Freon 113	< 2.00	ug/L	6/14/2018	16:17
Isopropylbenzene	< 2.00	ug/L	6/14/2018	16:17
m,p-Xylene	< 2.00	ug/L	6/14/2018	16:17
Methyl acetate	< 2.00	ug/L	6/14/2018	16:17
Methyl tert-butyl Ether	< 2.00	ug/L	6/14/2018	16:17
Methylcyclohexane	< 2.00	ug/L	6/14/2018	16:17
Methylene chloride	< 5.00	ug/L	6/14/2018	16:17
Naphthalene	< 5.00	ug/L	6/14/2018	16:17
n-Butylbenzene	< 2.00	ug/L	6/14/2018	16:17
n-Propylbenzene	< 2.00	ug/L	6/14/2018	16:17
o-Xylene	< 2.00	ug/L	6/14/2018	16:17
p-Isopropyltoluene	< 2.00	ug/L	6/14/2018	16:17
sec-Butylbenzene	< 2.00	ug/L	6/14/2018	16:17
Styrene	< 5.00	ug/L	6/14/2018	16:17
tert-Butylbenzene	< 2.00	ug/L	6/14/2018	16:17
Tetrachloroethene	< 2.00	ug/L	6/14/2018	16:17
Toluene	< 2.00	ug/L	6/14/2018	16:17
trans-1,2-Dichloroethene	< 2.00	ug/L	6/14/2018	16:17
trans-1,3-Dichloropropene	< 2.00	ug/L	6/14/2018	16:17

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 182626

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier: Trip Blank-061218
Lab Sample ID: 182626-08 **Date Sampled:** 6/11/2018
Matrix: Water **Date Received:** 6/12/2018

Trichloroethene	< 2.00	ug/L			6/14/2018 16:17
Trichlorofluoromethane	< 2.00	ug/L			6/14/2018 16:17
Vinyl chloride	< 2.00	ug/L			6/14/2018 16:17

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**115**	77.2 - 121		6/14/2018 16:17
4-Bromofluorobenzene	**84.7**	70 - 123		6/14/2018 16:17
Pentafluorobenzene	**86.9**	85.4 - 110		6/14/2018 16:17
Toluene-D8	**95.5**	83.8 - 112		6/14/2018 16:17

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51636.D

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Report Prepared Tuesday, June 19, 2018

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term, or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB will use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, LLC

REPORT TO:	INVOICE TO:	
CLIENT: Bergmann Associates	CLIENT:	LAB PROJECT ID: 182626
ADDRESS: 280 East Broad Street Suite 200	ADDRESS:	
CITY: Rochester STATE: NY ZIP 14604	CITY: Same STATE: ZIP:	Quotation #:
PHONE: 585-232-5135	PHONE:	Email:
ATTN: Stephen DeMeo	ATTN:	

PROJECT REFERENCE: West River Wall

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	EPA 8270 (BN)	EPA 8082 (PCB)	EPA 6081 (Pest.)	EPA 8260+CP-51(VOC)	EPA 6010/7471 TAL per sample labels 6/12/18					REMARKS	PARADIGM LAB SAMPLE NUMBER
06/11/18	10:00			RRW-CH-MW-01-061118	WG	6	X	X	X	X	X						01
06/11/18	10:30			RRW-CH-MW-02-061118	WG	6	X	X	X	X	X						02
06/11/18	11:00			RRW-CH-MW-08-061118	WG	6	X	X	X	X	X						03
06/11/18	15:00			RRW-CH-MW-08-061118	WG	6	X	X	X	X	X						04
06/12/18	09:00			RRW-CH-MW-09-061218	WG	6	X	X	X	X	X						05
06/12/18	09:45			RRW-CH-MW-10-061218	WG	6	X	X	X	X	X						06
06/12/18	09:50			RRW-CH-MW-06XX18 (Blind Duplicate)	WG	6	X	X	X	X	X						07
06/12/18				Trip Blank - 061218		1										T-841 per sample label	08
per TB method	GP 6/12/18															GP 6/12/18	

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	X	None Required		None Required
10 day		Batch QC		Basic EDD
Rush 3 day		Category A		NYSDEC EDD
Rush 2 day		Category B	X	
Rush 1 day				
Other please indicate date needed:		Other please indicate package needed:		Other EDD please indicate EDD needed:

Sampled By: [signature] Date/Time: 06/12/18 11:30

Relinquished By: [signature] Date/Time: 06/12/18 12:35

Received By: [signature] Date/Time: 6/12/18 1240

Received @ Lab By: [signature] Date/Time: 6/12/18 13:30

Total Cost:

P.I.F.

5 °C iced 6/12/18 13:10. Custody Seal n/a, Samples delivered by client. GP 6/12/18

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Bergmann Associates **Completed by:** Glenn Pezzulo

Lab Project ID: 182626 **Date:** 6/12/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	*NELAC compliance with the sample condition requirements upon receipt* Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X VOA		X
Comments			
Preservation	X VOA Metals		X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X Metals
Comments	5°C iced 6/12/18 13:10		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-122018		
Lab Sample ID:	185881-01	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 09:55

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-01-122018		
Lab Sample ID:	185881-01	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**8.15**	mg/L		12/21/2018 15:24
Antimony	< 0.0600	mg/L		12/21/2018 15:24
Arsenic	**0.00980**	mg/L	J	12/26/2018 10:09
Barium	**0.163**	mg/L		12/21/2018 15:24
Beryllium	< 0.00500	mg/L		12/21/2018 15:24
Cadmium	< 0.00500	mg/L		12/21/2018 15:24
Calcium	**139**	mg/L		12/21/2018 15:24
Chromium	**0.0143**	mg/L		12/21/2018 15:24
Cobalt	< 0.0500	mg/L		12/21/2018 15:24
Copper	**0.0389**	mg/L		12/26/2018 10:09
Iron	**12.4**	mg/L		12/26/2018 10:09
Lead	**0.0479**	mg/L		12/21/2018 15:24
Magnesium	**39.6**	mg/L		12/21/2018 15:24
Manganese	**3.57**	mg/L		12/21/2018 15:24
Nickel	**0.0218**	mg/L	J	12/21/2018 15:24
Potassium	**7.46**	mg/L		12/21/2018 15:24
Selenium	**0.0333**	mg/L		12/21/2018 15:24
Silver	< 0.0100	mg/L		12/21/2018 15:24
Sodium	**65.8**	mg/L		12/21/2018 15:24
Thallium	< 0.0250	mg/L		12/21/2018 15:24
Vanadium	**0.0178**	mg/L	J	12/21/2018 15:24
Zinc	**0.0938**	mg/L		12/21/2018 15:24

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-122018		
Lab Sample ID:	185881-02	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 09:58

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-02-122018		
Lab Sample ID:	185881-02	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**12.6**	mg/L		12/21/2018 15:28
Antimony	< 0.0600	mg/L		12/21/2018 15:28
Arsenic	**0.0491**	mg/L		12/26/2018 10:13
Barium	**0.702**	mg/L		12/21/2018 15:28
Beryllium	< 0.00500	mg/L		12/21/2018 15:28
Cadmium	< 0.00500	mg/L		12/21/2018 15:28
Calcium	**171**	mg/L		12/21/2018 15:28
Chromium	**0.0187**	mg/L		12/21/2018 15:28
Cobalt	< 0.0500	mg/L		12/21/2018 15:28
Copper	**0.0351**	mg/L		12/26/2018 10:13
Iron	**46.7**	mg/L		12/26/2018 10:13
Lead	**0.0593**	mg/L		12/21/2018 15:28
Magnesium	**43.7**	mg/L		12/21/2018 15:28
Manganese	**2.25**	mg/L		12/21/2018 15:28
Nickel	**0.0212**	mg/L	J	12/21/2018 15:28
Potassium	**10.8**	mg/L		12/21/2018 15:28
Selenium	**0.0122**	mg/L	J	12/21/2018 15:28
Silver	< 0.0100	mg/L		12/21/2018 15:28
Sodium	**27.2**	mg/L		12/21/2018 15:28
Thallium	< 0.0250	mg/L		12/21/2018 15:28
Vanadium	**0.0280**	mg/L		12/21/2018 15:28
Zinc	**0.443**	mg/L		12/21/2018 15:28

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-122018		
Lab Sample ID:	185881-03	**Date Sampled:**	12/20/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.00332**	mg/L		12/31/2018 10:01

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-03-122018		
Lab Sample ID:	185881-03	**Date Sampled:**	12/20/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**16.7**	mg/L		12/21/2018 15:32
Antimony	< 0.0600	mg/L		12/21/2018 15:32
Arsenic	**0.0618**	mg/L		12/26/2018 10:18
Barium	**0.541**	mg/L		12/21/2018 15:32
Beryllium	< 0.00500	mg/L		12/21/2018 15:32
Cadmium	< 0.00500	mg/L		12/21/2018 15:32
Calcium	**194**	mg/L		12/21/2018 15:32
Chromium	**0.0531**	mg/L		12/21/2018 15:32
Cobalt	< 0.0500	mg/L		12/21/2018 15:32
Copper	**0.0967**	mg/L		12/26/2018 10:18
Iron	**61.1**	mg/L		12/26/2018 10:18
Lead	**0.147**	mg/L		12/21/2018 15:32
Magnesium	**50.1**	mg/L		12/21/2018 15:32
Manganese	**3.40**	mg/L		12/21/2018 15:32
Nickel	**0.0352**	mg/L	J	12/21/2018 15:32
Potassium	**12.7**	mg/L		12/21/2018 15:32
Selenium	**0.0157**	mg/L	J	12/21/2018 15:32
Silver	< 0.0100	mg/L		12/21/2018 15:32
Sodium	**192**	mg/L		12/21/2018 15:32
Thallium	< 0.0250	mg/L		12/21/2018 15:32
Vanadium	**0.0342**	mg/L		12/21/2018 15:32
Zinc	**0.107**	mg/L		12/21/2018 15:32

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-04-122018		
Lab Sample ID:	185881-04	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 10:04

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-04-122018		
Lab Sample ID:	185881-04	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**0.964**	mg/L		12/21/2018 15:45
Antimony	< 0.0600	mg/L		12/21/2018 15:45
Arsenic	**0.00880**	mg/L	J	12/26/2018 10:22
Barium	**0.146**	mg/L		12/21/2018 15:45
Beryllium	< 0.00500	mg/L		12/21/2018 15:45
Cadmium	< 0.00500	mg/L		12/21/2018 15:45
Calcium	**151**	mg/L		12/21/2018 15:45
Chromium	< 0.0100	mg/L		12/21/2018 15:45
Cobalt	< 0.0500	mg/L		12/21/2018 15:45
Copper	< 0.0200	mg/L		12/26/2018 10:22
Iron	**10.3**	mg/L		12/26/2018 10:22
Lead	< 0.0100	mg/L		12/21/2018 15:45
Magnesium	**31.9**	mg/L		12/21/2018 15:45
Manganese	**3.46**	mg/L		12/21/2018 15:45
Nickel	< 0.0400	mg/L		12/21/2018 15:45
Potassium	**5.69**	mg/L		12/21/2018 15:45
Selenium	< 0.0200	mg/L		12/21/2018 15:45
Silver	< 0.0100	mg/L		12/21/2018 15:45
Sodium	**120**	mg/L		12/21/2018 15:45
Thallium	< 0.0250	mg/L		12/21/2018 15:45
Vanadium	< 0.0250	mg/L		12/21/2018 15:45
Zinc	< 0.0600	mg/L		12/21/2018 15:45

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-05-122018		
Lab Sample ID:	185881-05	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 10:07

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-05-122018		
Lab Sample ID:	185881-05	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**11.5**	mg/L		12/21/2018 15:50
Antimony	< 0.0600	mg/L		12/21/2018 15:50
Arsenic	**0.0212**	mg/L		12/26/2018 10:27
Barium	**0.237**	mg/L		12/21/2018 15:50
Beryllium	< 0.00500	mg/L		12/21/2018 15:50
Cadmium	< 0.00500	mg/L		12/21/2018 15:50
Calcium	**208**	mg/L		12/21/2018 15:50
Chromium	**0.0163**	mg/L		12/21/2018 15:50
Cobalt	< 0.0500	mg/L		12/21/2018 15:50
Copper	**0.0271**	mg/L		12/26/2018 10:27
Iron	**32.3**	mg/L		12/26/2018 10:27
Lead	**0.0232**	mg/L		12/21/2018 15:50
Magnesium	**30.2**	mg/L		12/21/2018 15:50
Manganese	**2.90**	mg/L		12/21/2018 15:50
Nickel	**0.0221**	mg/L	J	12/21/2018 15:50
Potassium	**5.04**	mg/L		12/21/2018 15:50
Selenium	< 0.0200	mg/L		12/21/2018 15:50
Silver	< 0.0100	mg/L		12/21/2018 15:50
Sodium	**43.3**	mg/L		12/21/2018 15:50
Thallium	< 0.0250	mg/L		12/21/2018 15:50
Vanadium	**0.0220**	mg/L	J	12/21/2018 15:50
Zinc	**0.0720**	mg/L		12/21/2018 15:50

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-122018		
Lab Sample ID:	185881-06	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 10:09

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-09-122018		
Lab Sample ID:	185881-06	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**3.68**	mg/L		12/21/2018 15:54
Antimony	< 0.0600	mg/L		12/21/2018 15:54
Arsenic	**0.0247**	mg/L		12/26/2018 10:39
Barium	**0.220**	mg/L		12/21/2018 15:54
Beryllium	< 0.00500	mg/L		12/21/2018 15:54
Cadmium	< 0.00500	mg/L		12/21/2018 15:54
Calcium	**249**	mg/L		12/21/2018 15:54
Chromium	< 0.0100	mg/L		12/21/2018 15:54
Cobalt	< 0.0500	mg/L		12/21/2018 15:54
Copper	**0.0121**	mg/L	J	12/26/2018 10:39
Iron	**14.3**	mg/L		12/26/2018 10:39
Lead	< 0.0100	mg/L		12/21/2018 15:54
Magnesium	**35.4**	mg/L		12/21/2018 15:54
Manganese	**3.00**	mg/L		12/21/2018 15:54
Nickel	< 0.0400	mg/L		12/21/2018 15:54
Potassium	**8.89**	mg/L		12/21/2018 15:54
Selenium	**0.0118**	mg/L	J	12/21/2018 15:54
Silver	< 0.0100	mg/L		12/21/2018 15:54
Sodium	**237**	mg/L		12/21/2018 15:54
Thallium	< 0.0250	mg/L		12/21/2018 15:54
Vanadium	< 0.0250	mg/L		12/21/2018 15:54
Zinc	**0.0391**	mg/L	J	12/21/2018 15:54

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-122018		
Lab Sample ID:	185881-07	**Date Sampled:**	12/20/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 10:12

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-10-122018		
Lab Sample ID:	185881-07	**Date Sampled:**	12/20/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**0.822**	mg/L		12/21/2018 15:58
Antimony	< 0.0600	mg/L		12/21/2018 15:58
Arsenic	**0.0120**	mg/L		12/26/2018 10:44
Barium	**0.462**	mg/L		12/21/2018 15:58
Beryllium	< 0.00500	mg/L		12/21/2018 15:58
Cadmium	< 0.00500	mg/L		12/21/2018 15:58
Calcium	**208**	mg/L		12/21/2018 15:58
Chromium	**0.0160**	mg/L		12/21/2018 15:58
Cobalt	< 0.0500	mg/L		12/21/2018 15:58
Copper	< 0.0200	mg/L		12/26/2018 10:44
Iron	**6.93**	mg/L		12/26/2018 10:44
Lead	< 0.0100	mg/L		12/21/2018 15:58
Magnesium	**59.3**	mg/L		12/21/2018 15:58
Manganese	**7.21**	mg/L		12/21/2018 15:58
Nickel	< 0.0400	mg/L		12/21/2018 15:58
Potassium	**10.2**	mg/L		12/21/2018 15:58
Selenium	**0.0113**	mg/L	J	12/21/2018 15:58
Silver	< 0.0100	mg/L		12/21/2018 15:58
Sodium	**572**	mg/L		12/26/2018 11:05
Thallium	< 0.0250	mg/L		12/21/2018 15:58
Vanadium	< 0.0250	mg/L		12/21/2018 15:58
Zinc	< 0.0600	mg/L		12/21/2018 15:58

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-12XX18 (Blind Duplicate)		
Lab Sample ID:	185881-08	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.000200	mg/L		12/31/2018 10:26

Method Reference(s): EPA 7470A
Preparation Date: 12/28/2018
Data File: Hg181231A

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Report Prepared Wednesday, January 2, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 185881

Client: **Bergmann Associates**

Project Reference: West River Wall

Sample Identifier:	RRW-CH-MW-12XX18 (Blind Duplicate)		
Lab Sample ID:	185881-08	**Date Sampled:**	12/19/2018
Matrix:	Groundwater	**Date Received:**	12/20/2018

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**1.04**	mg/L		12/21/2018 16:19
Antimony	< 0.0600	mg/L		12/21/2018 16:19
Arsenic	**0.0150**	mg/L		12/26/2018 11:34
Barium	**0.477**	mg/L		12/21/2018 16:19
Beryllium	< 0.00500	mg/L		12/21/2018 16:19
Cadmium	< 0.00500	mg/L		12/21/2018 16:19
Calcium	**213**	mg/L		12/21/2018 16:19
Chromium	< 0.0100	mg/L		12/21/2018 16:19
Cobalt	< 0.0500	mg/L		12/21/2018 16:19
Copper	< 0.0200	mg/L	J	12/26/2018 11:34
Iron	**8.26**	mg/L		12/26/2018 11:34
Lead	< 0.0100	mg/L		12/21/2018 16:19
Magnesium	**61.0**	mg/L		12/21/2018 16:19
Manganese	**7.46**	mg/L		12/21/2018 16:19
Nickel	< 0.0400	mg/L		12/21/2018 16:19
Potassium	**10.3**	mg/L		12/21/2018 16:19
Selenium	**0.0140**	mg/L	J	12/21/2018 16:19
Silver	< 0.0100	mg/L		12/21/2018 16:19
Sodium	**578**	mg/L		12/26/2018 12:07
Thallium	< 0.0250	mg/L		12/21/2018 16:19
Vanadium	< 0.0250	mg/L		12/21/2018 16:19
Zinc	< 0.0600	mg/L		12/21/2018 16:19

Method Reference(s): EPA 6010C
EPA 3005A
Preparation Date: 12/20/2018
Data File: 181221B

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Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		
CLIENT:	Bergmann Associates	CLIENT:		LAB PROJECT ID: 185881
ADDRESS:	280 East Broad Street Suite 200	ADDRESS:		
CITY:	Rochester	STATE: NY	ZIP: 14604	CITY: SAME STATE: ZIP:	Quotation #:
PHONE:	585-232-5135	PHONE:		Email: sdemeo@BERGMANNPC.com bseifert@lvengineers.com
ATTN:	Stephen DeMeo	ATTN:		

PROJECT REFERENCE

West River Wall

Matrix Codes:

AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	TAL Metals 6010/7471									REMARKS	PARADIGM LAB SAMPLE NUMBER
12/19/18	15:00		✓	RRW-CH-MW-01-122018	WG	1	✓										01
12/19/18	14:30		✓	RRW-CH-MW-02-122018	WG	1	✓										02
12/20/18	11:30		✓	RRW-CH-MW-03-122018	WG	1	✓										03
12/19/18	13:30		✓	RRW-CH-MW-04-122018	WG	1	✓										04
12/19/18	13:00		✓	RRW-CH-MW-05-122018	WG	1	✓										05
12/19/18	10:30		✓	RRW-CH-MW-09-122018	WG	1	✓										06
12/20/18	10:00		✓	RRW-CH-MW-10-122018	WG	1	✓										07
12/19/18	13:15		✓	RRW-CH-MW-12XX18 (Blind Duplicate)	WG	1	✓										08
12/20/18	10:05		✓	RRW-CH-MW-10MS-122018	WG	1	✓										~~09~~
12/20/18	10:10		✓	RRW-CH-MW-10MSD-122018	WG	1	✓										~~10~~ 07

4°C iced 12/20/18 1329 custody seals NA client shipped Mail/Fed Ex

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	✓	None Required	☐	None Required	☐
10 day	☐	Batch QC	☐	Basic EDD	✓
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	✓		
Rush 1 day	☐				
Date Needed _____ please indicate date needed:		Other ☐ please indicate package needed:		Other EDD ☐ please indicate EDD needed :	

Sampled By	12/20/18 12:00 Date/Time	Total Cost:
Relinquished By	12/20/18 13:10 Date/Time	
Received By	12/20/18 13:10 Date/Time	P.I.F.
Received @ Lab By	12/20/18 1340 Date/Time	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

2 of 2

Chain of Custody Supplement

Client: Bergmann **Completed by:** Molly Reid

Lab Project ID: 155681 **Date:** 12/20/11

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation	X		
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature			X
Comments	4°C iced		
Sufficient Sample Quantity	X		
Comments			

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-01-032019		
Lab Sample ID:	191155-01	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.13	ug/Kg		3/26/2019 15:04
1,1,2,2-Tetrachloroethane	< 4.13	ug/Kg		3/26/2019 15:04
1,1,2-Trichloroethane	< 4.13	ug/Kg		3/26/2019 15:04
1,1-Dichloroethane	< 4.13	ug/Kg		3/26/2019 15:04
1,1-Dichloroethene	< 4.13	ug/Kg		3/26/2019 15:04
1,2,3-Trichlorobenzene	< 10.3	ug/Kg		3/26/2019 15:04
1,2,4-Trichlorobenzene	< 10.3	ug/Kg		3/26/2019 15:04
1,2,4-Trimethylbenzene	< 4.13	ug/Kg		3/26/2019 15:04
1,2-Dibromo-3-Chloropropane	< 20.7	ug/Kg		3/26/2019 15:04
1,2-Dibromoethane	< 4.13	ug/Kg		3/26/2019 15:04
1,2-Dichlorobenzene	< 4.13	ug/Kg		3/26/2019 15:04
1,2-Dichloroethane	< 4.13	ug/Kg		3/26/2019 15:04
1,2-Dichloropropane	< 4.13	ug/Kg		3/26/2019 15:04
1,3,5-Trimethylbenzene	< 4.13	ug/Kg		3/26/2019 15:04
1,3-Dichlorobenzene	< 4.13	ug/Kg		3/26/2019 15:04
1,4-Dichlorobenzene	< 4.13	ug/Kg		3/26/2019 15:04
1,4-Dioxane	< 41.3	ug/Kg		3/26/2019 15:04
2-Butanone	< 20.7	ug/Kg		3/26/2019 15:04
2-Hexanone	< 10.3	ug/Kg		3/26/2019 15:04
4-Methyl-2-pentanone	< 10.3	ug/Kg		3/26/2019 15:04
Acetone	< 20.7	ug/Kg		3/26/2019 15:04
Benzene	< 4.13	ug/Kg		3/26/2019 15:04
Bromochloromethane	< 10.3	ug/Kg		3/26/2019 15:04
Bromodichloromethane	< 4.13	ug/Kg		3/26/2019 15:04
Bromoform	< 10.3	ug/Kg		3/26/2019 15:04
Bromomethane	< 4.13	ug/Kg		3/26/2019 15:04
Carbon disulfide	< 4.13	ug/Kg		3/26/2019 15:04

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-01-032019
Lab Sample ID: 191155-01 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 4.13	ug/Kg		3/26/2019	15:04
Chlorobenzene	< 4.13	ug/Kg		3/26/2019	15:04
Chloroethane	< 4.13	ug/Kg		3/26/2019	15:04
Chloroform	< 4.13	ug/Kg		3/26/2019	15:04
Chloromethane	< 4.13	ug/Kg		3/26/2019	15:04
cis-1,2-Dichloroethene	< 4.13	ug/Kg		3/26/2019	15:04
cis-1,3-Dichloropropene	< 4.13	ug/Kg		3/26/2019	15:04
Cyclohexane	< 20.7	ug/Kg		3/26/2019	15:04
Dibromochloromethane	< 4.13	ug/Kg		3/26/2019	15:04
Dichlorodifluoromethane	< 4.13	ug/Kg		3/26/2019	15:04
Ethylbenzene	< 4.13	ug/Kg		3/26/2019	15:04
Freon 113	< 4.13	ug/Kg		3/26/2019	15:04
Isopropylbenzene	< 4.13	ug/Kg		3/26/2019	15:04
m,p-Xylene	**6.20**	ug/Kg		3/26/2019	15:04
Methyl acetate	< 4.13	ug/Kg		3/26/2019	15:04
Methyl tert-butyl Ether	< 4.13	ug/Kg		3/26/2019	15:04
Methylcyclohexane	< 4.13	ug/Kg		3/26/2019	15:04
Methylene chloride	< 10.3	ug/Kg		3/26/2019	15:04
Naphthalene	< 10.3	ug/Kg		3/26/2019	15:04
n-Butylbenzene	< 4.13	ug/Kg		3/26/2019	15:04
n-Propylbenzene	< 4.13	ug/Kg		3/26/2019	15:04
o-Xylene	**2.43**	ug/Kg	J	3/26/2019	15:04
p-Isopropyltoluene	< 4.13	ug/Kg		3/26/2019	15:04
sec-Butylbenzene	< 4.13	ug/Kg		3/26/2019	15:04
Styrene	< 10.3	ug/Kg		3/26/2019	15:04
tert-Butylbenzene	< 4.13	ug/Kg		3/26/2019	15:04
Tetrachloroethene	< 4.13	ug/Kg		3/26/2019	15:04
Toluene	< 4.13	ug/Kg		3/26/2019	15:04
trans-1,2-Dichloroethene	< 4.13	ug/Kg		3/26/2019	15:04
trans-1,3-Dichloropropene	< 4.13	ug/Kg		3/26/2019	15:04

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-01-032019
Lab Sample ID: 191155-01 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 4.13	ug/Kg		3/26/2019	15:04
Trichlorofluoromethane	< 4.13	ug/Kg		3/26/2019	15:04
Vinyl chloride	< 4.13	ug/Kg		3/26/2019	15:04

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**86.7**	75 - 132		3/26/2019	15:04
4-Bromofluorobenzene	**82.8**	70.2 - 120		3/26/2019	15:04
Pentafluorobenzene	**97.5**	86.1 - 109		3/26/2019	15:04
Toluene-D8	**95.5**	83.2 - 113		3/26/2019	15:04

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x59491.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-02-032019		
Lab Sample ID:	191155-02	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 5.31	ug/Kg		3/21/2019 13:07
1,1,2,2-Tetrachloroethane	< 5.31	ug/Kg		3/21/2019 13:07
1,1,2-Trichloroethane	< 5.31	ug/Kg		3/21/2019 13:07
1,1-Dichloroethane	< 5.31	ug/Kg		3/21/2019 13:07
1,1-Dichloroethene	< 5.31	ug/Kg		3/21/2019 13:07
1,2,3-Trichlorobenzene	< 13.3	ug/Kg		3/21/2019 13:07
1,2,4-Trichlorobenzene	< 13.3	ug/Kg		3/21/2019 13:07
1,2,4-Trimethylbenzene	< 5.31	ug/Kg		3/21/2019 13:07
1,2-Dibromo-3-Chloropropane	< 26.6	ug/Kg		3/21/2019 13:07
1,2-Dibromoethane	< 5.31	ug/Kg		3/21/2019 13:07
1,2-Dichlorobenzene	< 5.31	ug/Kg		3/21/2019 13:07
1,2-Dichloroethane	< 5.31	ug/Kg		3/21/2019 13:07
1,2-Dichloropropane	< 5.31	ug/Kg		3/21/2019 13:07
1,3,5-Trimethylbenzene	< 5.31	ug/Kg		3/21/2019 13:07
1,3-Dichlorobenzene	< 5.31	ug/Kg		3/21/2019 13:07
1,4-Dichlorobenzene	< 5.31	ug/Kg		3/21/2019 13:07
1,4-Dioxane	< 53.1	ug/Kg		3/21/2019 13:07
2-Butanone	< 26.6	ug/Kg		3/21/2019 13:07
2-Hexanone	< 13.3	ug/Kg		3/21/2019 13:07
4-Methyl-2-pentanone	< 13.3	ug/Kg		3/21/2019 13:07
Acetone	< 26.6	ug/Kg		3/21/2019 13:07
Benzene	< 5.31	ug/Kg		3/21/2019 13:07
Bromochloromethane	< 13.3	ug/Kg		3/21/2019 13:07
Bromodichloromethane	< 5.31	ug/Kg		3/21/2019 13:07
Bromoform	< 13.3	ug/Kg		3/21/2019 13:07
Bromomethane	< 5.31	ug/Kg		3/21/2019 13:07
Carbon disulfide	< 5.31	ug/Kg		3/21/2019 13:07

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PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: Lu Engineers, Inc.

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-02-032019
Lab Sample ID: 191155-02 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 5.31	ug/Kg		3/21/2019	13:07
Chlorobenzene	< 5.31	ug/Kg		3/21/2019	13:07
Chloroethane	< 5.31	ug/Kg		3/21/2019	13:07
Chloroform	< 5.31	ug/Kg		3/21/2019	13:07
Chloromethane	< 5.31	ug/Kg		3/21/2019	13:07
cis-1,2-Dichloroethene	< 5.31	ug/Kg		3/21/2019	13:07
cis-1,3-Dichloropropene	< 5.31	ug/Kg		3/21/2019	13:07
Cyclohexane	< 26.6	ug/Kg		3/21/2019	13:07
Dibromochloromethane	< 5.31	ug/Kg		3/21/2019	13:07
Dichlorodifluoromethane	< 5.31	ug/Kg		3/21/2019	13:07
Ethylbenzene	< 5.31	ug/Kg		3/21/2019	13:07
Freon 113	< 5.31	ug/Kg		3/21/2019	13:07
Isopropylbenzene	< 5.31	ug/Kg		3/21/2019	13:07
m,p-Xylene	< 5.31	ug/Kg		3/21/2019	13:07
Methyl acetate	< 5.31	ug/Kg		3/21/2019	13:07
Methyl tert-butyl Ether	< 5.31	ug/Kg		3/21/2019	13:07
Methylcyclohexane	< 5.31	ug/Kg		3/21/2019	13:07
Methylene chloride	< 13.3	ug/Kg		3/21/2019	13:07
Naphthalene	< 13.3	ug/Kg		3/21/2019	13:07
n-Butylbenzene	< 5.31	ug/Kg		3/21/2019	13:07
n-Propylbenzene	< 5.31	ug/Kg		3/21/2019	13:07
o-Xylene	< 5.31	ug/Kg		3/21/2019	13:07
p-Isopropyltoluene	**2.69**	ug/Kg	J	3/21/2019	13:07
sec-Butylbenzene	< 5.31	ug/Kg		3/21/2019	13:07
Styrene	< 13.3	ug/Kg		3/21/2019	13:07
tert-Butylbenzene	< 5.31	ug/Kg		3/21/2019	13:07
Tetrachloroethene	< 5.31	ug/Kg		3/21/2019	13:07
Toluene	< 5.31	ug/Kg		3/21/2019	13:07
trans-1,2-Dichloroethene	< 5.31	ug/Kg		3/21/2019	13:07
trans-1,3-Dichloropropene	< 5.31	ug/Kg		3/21/2019	13:07

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-02-032019
Lab Sample ID: 191155-02 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 5.31	ug/Kg		3/21/2019	13:07
Trichlorofluoromethane	< 5.31	ug/Kg		3/21/2019	13:07
Vinyl chloride	< 5.31	ug/Kg		3/21/2019	13:07

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**114**	75 - 132		3/21/2019	13:07
4-Bromofluorobenzene	**90.0**	70.2 - 120		3/21/2019	13:07
Pentafluorobenzene	**96.2**	86.1 - 109		3/21/2019	13:07
Toluene-D8	**82.4**	83.2 - 113	*	3/21/2019	13:07

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x59383.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: Lu Engineers, Inc.

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-03-032019		
Lab Sample ID:	191155-03	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 5.00	ug/Kg		3/21/2019 13:30
1,1,2,2-Tetrachloroethane	< 5.00	ug/Kg		3/21/2019 13:30
1,1,2-Trichloroethane	< 5.00	ug/Kg		3/21/2019 13:30
1,1-Dichloroethane	< 5.00	ug/Kg		3/21/2019 13:30
1,1-Dichloroethene	< 5.00	ug/Kg		3/21/2019 13:30
1,2,3-Trichlorobenzene	< 12.5	ug/Kg		3/21/2019 13:30
1,2,4-Trichlorobenzene	< 12.5	ug/Kg		3/21/2019 13:30
1,2,4-Trimethylbenzene	< 5.00	ug/Kg		3/21/2019 13:30
1,2-Dibromo-3-Chloropropane	< 25.0	ug/Kg		3/21/2019 13:30
1,2-Dibromoethane	< 5.00	ug/Kg		3/21/2019 13:30
1,2-Dichlorobenzene	< 5.00	ug/Kg		3/21/2019 13:30
1,2-Dichloroethane	< 5.00	ug/Kg		3/21/2019 13:30
1,2-Dichloropropane	< 5.00	ug/Kg		3/21/2019 13:30
1,3,5-Trimethylbenzene	< 5.00	ug/Kg		3/21/2019 13:30
1,3-Dichlorobenzene	< 5.00	ug/Kg		3/21/2019 13:30
1,4-Dichlorobenzene	< 5.00	ug/Kg		3/21/2019 13:30
1,4-Dioxane	< 50.0	ug/Kg		3/21/2019 13:30
2-Butanone	< 25.0	ug/Kg		3/21/2019 13:30
2-Hexanone	< 12.5	ug/Kg		3/21/2019 13:30
4-Methyl-2-pentanone	< 12.5	ug/Kg		3/21/2019 13:30
Acetone	< 25.0	ug/Kg		3/21/2019 13:30
Benzene	< 5.00	ug/Kg		3/21/2019 13:30
Bromochloromethane	< 12.5	ug/Kg		3/21/2019 13:30
Bromodichloromethane	< 5.00	ug/Kg		3/21/2019 13:30
Bromoform	< 12.5	ug/Kg		3/21/2019 13:30
Bromomethane	< 5.00	ug/Kg		3/21/2019 13:30
Carbon disulfide	< 5.00	ug/Kg		3/21/2019 13:30

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-03-032019
Lab Sample ID: 191155-03 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 5.00	ug/Kg	3/21/2019	13:30
Chlorobenzene	< 5.00	ug/Kg	3/21/2019	13:30
Chloroethane	< 5.00	ug/Kg	3/21/2019	13:30
Chloroform	< 5.00	ug/Kg	3/21/2019	13:30
Chloromethane	< 5.00	ug/Kg	3/21/2019	13:30
cis-1,2-Dichloroethene	< 5.00	ug/Kg	3/21/2019	13:30
cis-1,3-Dichloropropene	< 5.00	ug/Kg	3/21/2019	13:30
Cyclohexane	< 25.0	ug/Kg	3/21/2019	13:30
Dibromochloromethane	< 5.00	ug/Kg	3/21/2019	13:30
Dichlorodifluoromethane	< 5.00	ug/Kg	3/21/2019	13:30
Ethylbenzene	< 5.00	ug/Kg	3/21/2019	13:30
Freon 113	< 5.00	ug/Kg	3/21/2019	13:30
Isopropylbenzene	< 5.00	ug/Kg	3/21/2019	13:30
m,p-Xylene	< 5.00	ug/Kg	3/21/2019	13:30
Methyl acetate	< 5.00	ug/Kg	3/21/2019	13:30
Methyl tert-butyl Ether	< 5.00	ug/Kg	3/21/2019	13:30
Methylcyclohexane	< 5.00	ug/Kg	3/21/2019	13:30
Methylene chloride	< 12.5	ug/Kg	3/21/2019	13:30
Naphthalene	< 12.5	ug/Kg	3/21/2019	13:30
n-Butylbenzene	< 5.00	ug/Kg	3/21/2019	13:30
n-Propylbenzene	< 5.00	ug/Kg	3/21/2019	13:30
o-Xylene	< 5.00	ug/Kg	3/21/2019	13:30
p-Isopropyltoluene	< 5.00	ug/Kg	3/21/2019	13:30
sec-Butylbenzene	< 5.00	ug/Kg	3/21/2019	13:30
Styrene	< 12.5	ug/Kg	3/21/2019	13:30
tert-Butylbenzene	< 5.00	ug/Kg	3/21/2019	13:30
Tetrachloroethene	< 5.00	ug/Kg	3/21/2019	13:30
Toluene	< 5.00	ug/Kg	3/21/2019	13:30
trans-1,2-Dichloroethene	< 5.00	ug/Kg	3/21/2019	13:30
trans-1,3-Dichloropropene	< 5.00	ug/Kg	3/21/2019	13:30

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-03-032019
Lab Sample ID: 191155-03 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 5.00	ug/Kg			3/21/2019	13:30
Trichlorofluoromethane	< 5.00	ug/Kg			3/21/2019	13:30
Vinyl chloride	< 5.00	ug/Kg			3/21/2019	13:30

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**117**	75 - 132		3/21/2019	13:30
4-Bromofluorobenzene	**63.0**	70.2 - 120	*	3/21/2019	13:30
Pentafluorobenzene	**95.1**	86.1 - 109		3/21/2019	13:30
Toluene-D8	**82.8**	83.2 - 113	*	3/21/2019	13:30

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x59384.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-04-032019		
Lab Sample ID:	191155-04	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 5.40	ug/Kg		3/21/2019 13:54
1,1,2,2-Tetrachloroethane	< 5.40	ug/Kg		3/21/2019 13:54
1,1,2-Trichloroethane	< 5.40	ug/Kg		3/21/2019 13:54
1,1-Dichloroethane	< 5.40	ug/Kg		3/21/2019 13:54
1,1-Dichloroethene	< 5.40	ug/Kg		3/21/2019 13:54
1,2,3-Trichlorobenzene	< 13.5	ug/Kg		3/21/2019 13:54
1,2,4-Trichlorobenzene	< 13.5	ug/Kg		3/21/2019 13:54
1,2,4-Trimethylbenzene	< 5.40	ug/Kg		3/21/2019 13:54
1,2-Dibromo-3-Chloropropane	< 27.0	ug/Kg		3/21/2019 13:54
1,2-Dibromoethane	< 5.40	ug/Kg		3/21/2019 13:54
1,2-Dichlorobenzene	< 5.40	ug/Kg		3/21/2019 13:54
1,2-Dichloroethane	< 5.40	ug/Kg		3/21/2019 13:54
1,2-Dichloropropane	< 5.40	ug/Kg		3/21/2019 13:54
1,3,5-Trimethylbenzene	< 5.40	ug/Kg		3/21/2019 13:54
1,3-Dichlorobenzene	< 5.40	ug/Kg		3/21/2019 13:54
1,4-Dichlorobenzene	< 5.40	ug/Kg		3/21/2019 13:54
1,4-Dioxane	< 54.0	ug/Kg		3/21/2019 13:54
2-Butanone	< 27.0	ug/Kg		3/21/2019 13:54
2-Hexanone	< 13.5	ug/Kg		3/21/2019 13:54
4-Methyl-2-pentanone	< 13.5	ug/Kg		3/21/2019 13:54
Acetone	< 27.0	ug/Kg		3/21/2019 13:54
Benzene	< 5.40	ug/Kg		3/21/2019 13:54
Bromochloromethane	< 13.5	ug/Kg		3/21/2019 13:54
Bromodichloromethane	< 5.40	ug/Kg		3/21/2019 13:54
Bromoform	< 13.5	ug/Kg		3/21/2019 13:54
Bromomethane	< 5.40	ug/Kg		3/21/2019 13:54
Carbon disulfide	< 5.40	ug/Kg		3/21/2019 13:54

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-04-032019
Lab Sample ID: 191155-04 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 5.40	ug/Kg	3/21/2019	13:54
Chlorobenzene	< 5.40	ug/Kg	3/21/2019	13:54
Chloroethane	< 5.40	ug/Kg	3/21/2019	13:54
Chloroform	< 5.40	ug/Kg	3/21/2019	13:54
Chloromethane	< 5.40	ug/Kg	3/21/2019	13:54
cis-1,2-Dichloroethene	< 5.40	ug/Kg	3/21/2019	13:54
cis-1,3-Dichloropropene	< 5.40	ug/Kg	3/21/2019	13:54
Cyclohexane	< 27.0	ug/Kg	3/21/2019	13:54
Dibromochloromethane	< 5.40	ug/Kg	3/21/2019	13:54
Dichlorodifluoromethane	< 5.40	ug/Kg	3/21/2019	13:54
Ethylbenzene	< 5.40	ug/Kg	3/21/2019	13:54
Freon 113	< 5.40	ug/Kg	3/21/2019	13:54
Isopropylbenzene	< 5.40	ug/Kg	3/21/2019	13:54
m,p-Xylene	< 5.40	ug/Kg	3/21/2019	13:54
Methyl acetate	< 5.40	ug/Kg	3/21/2019	13:54
Methyl tert-butyl Ether	< 5.40	ug/Kg	3/21/2019	13:54
Methylcyclohexane	< 5.40	ug/Kg	3/21/2019	13:54
Methylene chloride	< 13.5	ug/Kg	3/21/2019	13:54
Naphthalene	< 13.5	ug/Kg	3/21/2019	13:54
n-Butylbenzene	< 5.40	ug/Kg	3/21/2019	13:54
n-Propylbenzene	< 5.40	ug/Kg	3/21/2019	13:54
o-Xylene	< 5.40	ug/Kg	3/21/2019	13:54
p-Isopropyltoluene	< 5.40	ug/Kg	3/21/2019	13:54
sec-Butylbenzene	< 5.40	ug/Kg	3/21/2019	13:54
Styrene	< 13.5	ug/Kg	3/21/2019	13:54
tert-Butylbenzene	< 5.40	ug/Kg	3/21/2019	13:54
Tetrachloroethene	< 5.40	ug/Kg	3/21/2019	13:54
Toluene	< 5.40	ug/Kg	3/21/2019	13:54
trans-1,2-Dichloroethene	< 5.40	ug/Kg	3/21/2019	13:54
trans-1,3-Dichloropropene	< 5.40	ug/Kg	3/21/2019	13:54

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-04-032019		
Lab Sample ID:	191155-04	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Trichloroethene	< 5.40	ug/Kg	3/21/2019	13:54
Trichlorofluoromethane	< 5.40	ug/Kg	3/21/2019	13:54
Vinyl chloride	< 5.40	ug/Kg	3/21/2019	13:54

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**123**	75 - 132		3/21/2019	13:54
4-Bromofluorobenzene	**53.2**	70.2 - 120	*	3/21/2019	13:54
Pentafluorobenzene	**95.2**	86.1 - 109		3/21/2019	13:54
Toluene-D8	**80.2**	83.2 - 113	*	3/21/2019	13:54

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x59385.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-05-032019		
Lab Sample ID:	191155-05	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.51	ug/Kg		3/21/2019 14:17
1,1,2,2-Tetrachloroethane	< 4.51	ug/Kg		3/21/2019 14:17
1,1,2-Trichloroethane	< 4.51	ug/Kg		3/21/2019 14:17
1,1-Dichloroethane	< 4.51	ug/Kg		3/21/2019 14:17
1,1-Dichloroethene	< 4.51	ug/Kg		3/21/2019 14:17
1,2,3-Trichlorobenzene	< 11.3	ug/Kg		3/21/2019 14:17
1,2,4-Trichlorobenzene	< 11.3	ug/Kg		3/21/2019 14:17
1,2,4-Trimethylbenzene	< 4.51	ug/Kg		3/21/2019 14:17
1,2-Dibromo-3-Chloropropane	< 22.6	ug/Kg		3/21/2019 14:17
1,2-Dibromoethane	< 4.51	ug/Kg		3/21/2019 14:17
1,2-Dichlorobenzene	< 4.51	ug/Kg		3/21/2019 14:17
1,2-Dichloroethane	< 4.51	ug/Kg		3/21/2019 14:17
1,2-Dichloropropane	< 4.51	ug/Kg		3/21/2019 14:17
1,3,5-Trimethylbenzene	< 4.51	ug/Kg		3/21/2019 14:17
1,3-Dichlorobenzene	< 4.51	ug/Kg		3/21/2019 14:17
1,4-Dichlorobenzene	< 4.51	ug/Kg		3/21/2019 14:17
1,4-Dioxane	< 45.1	ug/Kg		3/21/2019 14:17
2-Butanone	< 22.6	ug/Kg		3/21/2019 14:17
2-Hexanone	< 11.3	ug/Kg		3/21/2019 14:17
4-Methyl-2-pentanone	< 11.3	ug/Kg		3/21/2019 14:17
Acetone	< 22.6	ug/Kg		3/21/2019 14:17
Benzene	< 4.51	ug/Kg		3/21/2019 14:17
Bromochloromethane	< 11.3	ug/Kg		3/21/2019 14:17
Bromodichloromethane	< 4.51	ug/Kg		3/21/2019 14:17
Bromoform	< 11.3	ug/Kg		3/21/2019 14:17
Bromomethane	< 4.51	ug/Kg		3/21/2019 14:17
Carbon disulfide	< 4.51	ug/Kg		3/21/2019 14:17

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-05-032019
Lab Sample ID: 191155-05 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 4.51	ug/Kg	3/21/2019	14:17
Chlorobenzene	< 4.51	ug/Kg	3/21/2019	14:17
Chloroethane	< 4.51	ug/Kg	3/21/2019	14:17
Chloroform	< 4.51	ug/Kg	3/21/2019	14:17
Chloromethane	< 4.51	ug/Kg	3/21/2019	14:17
cis-1,2-Dichloroethene	< 4.51	ug/Kg	3/21/2019	14:17
cis-1,3-Dichloropropene	< 4.51	ug/Kg	3/21/2019	14:17
Cyclohexane	< 22.6	ug/Kg	3/21/2019	14:17
Dibromochloromethane	< 4.51	ug/Kg	3/21/2019	14:17
Dichlorodifluoromethane	< 4.51	ug/Kg	3/21/2019	14:17
Ethylbenzene	< 4.51	ug/Kg	3/21/2019	14:17
Freon 113	< 4.51	ug/Kg	3/21/2019	14:17
Isopropylbenzene	< 4.51	ug/Kg	3/21/2019	14:17
m,p-Xylene	< 4.51	ug/Kg	3/21/2019	14:17
Methyl acetate	< 4.51	ug/Kg	3/21/2019	14:17
Methyl tert-butyl Ether	< 4.51	ug/Kg	3/21/2019	14:17
Methylcyclohexane	< 4.51	ug/Kg	3/21/2019	14:17
Methylene chloride	< 11.3	ug/Kg	3/21/2019	14:17
Naphthalene	< 11.3	ug/Kg	3/21/2019	14:17
n-Butylbenzene	< 4.51	ug/Kg	3/21/2019	14:17
n-Propylbenzene	< 4.51	ug/Kg	3/21/2019	14:17
o-Xylene	< 4.51	ug/Kg	3/21/2019	14:17
p-Isopropyltoluene	< 4.51	ug/Kg	3/21/2019	14:17
sec-Butylbenzene	< 4.51	ug/Kg	3/21/2019	14:17
Styrene	< 11.3	ug/Kg	3/21/2019	14:17
tert-Butylbenzene	< 4.51	ug/Kg	3/21/2019	14:17
Tetrachloroethene	< 4.51	ug/Kg	3/21/2019	14:17
Toluene	< 4.51	ug/Kg	3/21/2019	14:17
trans-1,2-Dichloroethene	< 4.51	ug/Kg	3/21/2019	14:17
trans-1,3-Dichloropropene	< 4.51	ug/Kg	3/21/2019	14:17

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-05-032019
Lab Sample ID: 191155-05 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 4.51	ug/Kg		3/21/2019	14:17
Trichlorofluoromethane	< 4.51	ug/Kg		3/21/2019	14:17
Vinyl chloride	< 4.51	ug/Kg		3/21/2019	14:17

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**120**	75 - 132		3/21/2019	14:17
4-Bromofluorobenzene	**61.0**	70.2 - 120	*	3/21/2019	14:17
Pentafluorobenzene	**94.1**	86.1 - 109		3/21/2019	14:17
Toluene-D8	**82.8**	83.2 - 113	*	3/21/2019	14:17

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x59386.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-06-032019		
Lab Sample ID:	191155-06	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.77	ug/Kg		3/26/2019 15:27
1,1,2,2-Tetrachloroethane	< 4.77	ug/Kg		3/26/2019 15:27
1,1,2-Trichloroethane	< 4.77	ug/Kg		3/26/2019 15:27
1,1-Dichloroethane	< 4.77	ug/Kg		3/26/2019 15:27
1,1-Dichloroethene	< 4.77	ug/Kg		3/26/2019 15:27
1,2,3-Trichlorobenzene	< 11.9	ug/Kg		3/26/2019 15:27
1,2,4-Trichlorobenzene	< 11.9	ug/Kg		3/26/2019 15:27
1,2,4-Trimethylbenzene	< 4.77	ug/Kg		3/26/2019 15:27
1,2-Dibromo-3-Chloropropane	< 23.9	ug/Kg		3/26/2019 15:27
1,2-Dibromoethane	< 4.77	ug/Kg		3/26/2019 15:27
1,2-Dichlorobenzene	< 4.77	ug/Kg		3/26/2019 15:27
1,2-Dichloroethane	< 4.77	ug/Kg		3/26/2019 15:27
1,2-Dichloropropane	< 4.77	ug/Kg		3/26/2019 15:27
1,3,5-Trimethylbenzene	< 4.77	ug/Kg		3/26/2019 15:27
1,3-Dichlorobenzene	< 4.77	ug/Kg		3/26/2019 15:27
1,4-Dichlorobenzene	< 4.77	ug/Kg		3/26/2019 15:27
1,4-Dioxane	< 47.7	ug/Kg		3/26/2019 15:27
2-Butanone	< 23.9	ug/Kg		3/26/2019 15:27
2-Hexanone	< 11.9	ug/Kg		3/26/2019 15:27
4-Methyl-2-pentanone	< 11.9	ug/Kg		3/26/2019 15:27
Acetone	< 23.9	ug/Kg		3/26/2019 15:27
Benzene	< 4.77	ug/Kg		3/26/2019 15:27
Bromochloromethane	< 11.9	ug/Kg		3/26/2019 15:27
Bromodichloromethane	< 4.77	ug/Kg		3/26/2019 15:27
Bromoform	< 11.9	ug/Kg		3/26/2019 15:27
Bromomethane	< 4.77	ug/Kg		3/26/2019 15:27
Carbon disulfide	< 4.77	ug/Kg		3/26/2019 15:27

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-06-032019		
Lab Sample ID:	191155-06	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Carbon Tetrachloride	< 4.77	ug/Kg		3/26/2019	15:27
Chlorobenzene	< 4.77	ug/Kg		3/26/2019	15:27
Chloroethane	< 4.77	ug/Kg		3/26/2019	15:27
Chloroform	< 4.77	ug/Kg		3/26/2019	15:27
Chloromethane	< 4.77	ug/Kg		3/26/2019	15:27
cis-1,2-Dichloroethene	< 4.77	ug/Kg		3/26/2019	15:27
cis-1,3-Dichloropropene	< 4.77	ug/Kg		3/26/2019	15:27
Cyclohexane	< 23.9	ug/Kg		3/26/2019	15:27
Dibromochloromethane	< 4.77	ug/Kg		3/26/2019	15:27
Dichlorodifluoromethane	< 4.77	ug/Kg		3/26/2019	15:27
Ethylbenzene	< 4.77	ug/Kg		3/26/2019	15:27
Freon 113	< 4.77	ug/Kg		3/26/2019	15:27
Isopropylbenzene	< 4.77	ug/Kg		3/26/2019	15:27
m,p-Xylene	**4.43**	ug/Kg	J	3/26/2019	15:27
Methyl acetate	< 4.77	ug/Kg		3/26/2019	15:27
Methyl tert-butyl Ether	< 4.77	ug/Kg		3/26/2019	15:27
Methylcyclohexane	< 4.77	ug/Kg		3/26/2019	15:27
Methylene chloride	< 11.9	ug/Kg		3/26/2019	15:27
Naphthalene	< 11.9	ug/Kg		3/26/2019	15:27
n-Butylbenzene	< 4.77	ug/Kg		3/26/2019	15:27
n-Propylbenzene	< 4.77	ug/Kg		3/26/2019	15:27
o-Xylene	< 4.77	ug/Kg		3/26/2019	15:27
p-Isopropyltoluene	< 4.77	ug/Kg		3/26/2019	15:27
sec-Butylbenzene	< 4.77	ug/Kg		3/26/2019	15:27
Styrene	< 11.9	ug/Kg		3/26/2019	15:27
tert-Butylbenzene	< 4.77	ug/Kg		3/26/2019	15:27
Tetrachloroethene	< 4.77	ug/Kg		3/26/2019	15:27
Toluene	< 4.77	ug/Kg		3/26/2019	15:27
trans-1,2-Dichloroethene	< 4.77	ug/Kg		3/26/2019	15:27
trans-1,3-Dichloropropene	< 4.77	ug/Kg		3/26/2019	15:27

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-06-032019
Lab Sample ID: 191155-06 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 4.77	ug/Kg		3/26/2019	15:27
Trichlorofluoromethane	< 4.77	ug/Kg		3/26/2019	15:27
Vinyl chloride	< 4.77	ug/Kg		3/26/2019	15:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**90.2**	75 - 132		3/26/2019	15:27
4-Bromofluorobenzene	**96.9**	70.2 - 120		3/26/2019	15:27
Pentafluorobenzene	**98.0**	86.1 - 109		3/26/2019	15:27
Toluene-D8	**93.4**	83.2 - 113		3/26/2019	15:27

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x59492.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: Lu Engineers, Inc.

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-07-032019		
Lab Sample ID:	191155-07	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.75	ug/Kg		3/21/2019 15:04
1,1,2,2-Tetrachloroethane	< 4.75	ug/Kg		3/21/2019 15:04
1,1,2-Trichloroethane	< 4.75	ug/Kg		3/21/2019 15:04
1,1-Dichloroethane	< 4.75	ug/Kg		3/21/2019 15:04
1,1-Dichloroethene	< 4.75	ug/Kg		3/21/2019 15:04
1,2,3-Trichlorobenzene	< 11.9	ug/Kg		3/21/2019 15:04
1,2,4-Trichlorobenzene	< 11.9	ug/Kg		3/21/2019 15:04
1,2,4-Trimethylbenzene	< 4.75	ug/Kg		3/21/2019 15:04
1,2-Dibromo-3-Chloropropane	< 23.8	ug/Kg		3/21/2019 15:04
1,2-Dibromoethane	< 4.75	ug/Kg		3/21/2019 15:04
1,2-Dichlorobenzene	< 4.75	ug/Kg		3/21/2019 15:04
1,2-Dichloroethane	< 4.75	ug/Kg		3/21/2019 15:04
1,2-Dichloropropane	< 4.75	ug/Kg		3/21/2019 15:04
1,3,5-Trimethylbenzene	< 4.75	ug/Kg		3/21/2019 15:04
1,3-Dichlorobenzene	< 4.75	ug/Kg		3/21/2019 15:04
1,4-Dichlorobenzene	< 4.75	ug/Kg		3/21/2019 15:04
1,4-Dioxane	< 47.5	ug/Kg		3/21/2019 15:04
2-Butanone	< 23.8	ug/Kg		3/21/2019 15:04
2-Hexanone	< 11.9	ug/Kg		3/21/2019 15:04
4-Methyl-2-pentanone	< 11.9	ug/Kg		3/21/2019 15:04
Acetone	< 23.8	ug/Kg		3/21/2019 15:04
Benzene	< 4.75	ug/Kg		3/21/2019 15:04
Bromochloromethane	< 11.9	ug/Kg		3/21/2019 15:04
Bromodichloromethane	< 4.75	ug/Kg		3/21/2019 15:04
Bromoform	< 11.9	ug/Kg		3/21/2019 15:04
Bromomethane	< 4.75	ug/Kg		3/21/2019 15:04
Carbon disulfide	< 4.75	ug/Kg		3/21/2019 15:04

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-07-032019
Lab Sample ID: 191155-07 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 4.75	ug/Kg	3/21/2019	15:04
Chlorobenzene	< 4.75	ug/Kg	3/21/2019	15:04
Chloroethane	< 4.75	ug/Kg	3/21/2019	15:04
Chloroform	< 4.75	ug/Kg	3/21/2019	15:04
Chloromethane	< 4.75	ug/Kg	3/21/2019	15:04
cis-1,2-Dichloroethene	< 4.75	ug/Kg	3/21/2019	15:04
cis-1,3-Dichloropropene	< 4.75	ug/Kg	3/21/2019	15:04
Cyclohexane	< 23.8	ug/Kg	3/21/2019	15:04
Dibromochloromethane	< 4.75	ug/Kg	3/21/2019	15:04
Dichlorodifluoromethane	< 4.75	ug/Kg	3/21/2019	15:04
Ethylbenzene	< 4.75	ug/Kg	3/21/2019	15:04
Freon 113	< 4.75	ug/Kg	3/21/2019	15:04
Isopropylbenzene	< 4.75	ug/Kg	3/21/2019	15:04
m,p-Xylene	< 4.75	ug/Kg	3/21/2019	15:04
Methyl acetate	< 4.75	ug/Kg	3/21/2019	15:04
Methyl tert-butyl Ether	< 4.75	ug/Kg	3/21/2019	15:04
Methylcyclohexane	< 4.75	ug/Kg	3/21/2019	15:04
Methylene chloride	< 11.9	ug/Kg	3/21/2019	15:04
Naphthalene	< 11.9	ug/Kg	3/21/2019	15:04
n-Butylbenzene	< 4.75	ug/Kg	3/21/2019	15:04
n-Propylbenzene	< 4.75	ug/Kg	3/21/2019	15:04
o-Xylene	< 4.75	ug/Kg	3/21/2019	15:04
p-Isopropyltoluene	< 4.75	ug/Kg	3/21/2019	15:04
sec-Butylbenzene	< 4.75	ug/Kg	3/21/2019	15:04
Styrene	< 11.9	ug/Kg	3/21/2019	15:04
tert-Butylbenzene	< 4.75	ug/Kg	3/21/2019	15:04
Tetrachloroethene	< 4.75	ug/Kg	3/21/2019	15:04
Toluene	< 4.75	ug/Kg	3/21/2019	15:04
trans-1,2-Dichloroethene	< 4.75	ug/Kg	3/21/2019	15:04
trans-1,3-Dichloropropene	< 4.75	ug/Kg	3/21/2019	15:04

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-07-032019
Lab Sample ID: 191155-07 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 4.75	ug/Kg		3/21/2019	15:04
Trichlorofluoromethane	< 4.75	ug/Kg		3/21/2019	15:04
Vinyl chloride	< 4.75	ug/Kg		3/21/2019	15:04

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**125**	75 - 132		3/21/2019	15:04
4-Bromofluorobenzene	**59.4**	70.2 - 120	*	3/21/2019	15:04
Pentafluorobenzene	**88.5**	86.1 - 109		3/21/2019	15:04
Toluene-D8	**80.1**	83.2 - 113	*	3/21/2019	15:04

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x59388.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-08-032019		
Lab Sample ID:	191155-08	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 5.21	ug/Kg		3/21/2019 15:27
1,1,2,2-Tetrachloroethane	< 5.21	ug/Kg		3/21/2019 15:27
1,1,2-Trichloroethane	< 5.21	ug/Kg		3/21/2019 15:27
1,1-Dichloroethane	< 5.21	ug/Kg		3/21/2019 15:27
1,1-Dichloroethene	< 5.21	ug/Kg		3/21/2019 15:27
1,2,3-Trichlorobenzene	< 13.0	ug/Kg		3/21/2019 15:27
1,2,4-Trichlorobenzene	< 13.0	ug/Kg		3/21/2019 15:27
1,2,4-Trimethylbenzene	< 5.21	ug/Kg		3/21/2019 15:27
1,2-Dibromo-3-Chloropropane	< 26.0	ug/Kg		3/21/2019 15:27
1,2-Dibromoethane	< 5.21	ug/Kg		3/21/2019 15:27
1,2-Dichlorobenzene	< 5.21	ug/Kg		3/21/2019 15:27
1,2-Dichloroethane	< 5.21	ug/Kg		3/21/2019 15:27
1,2-Dichloropropane	< 5.21	ug/Kg		3/21/2019 15:27
1,3,5-Trimethylbenzene	< 5.21	ug/Kg		3/21/2019 15:27
1,3-Dichlorobenzene	< 5.21	ug/Kg		3/21/2019 15:27
1,4-Dichlorobenzene	< 5.21	ug/Kg		3/21/2019 15:27
1,4-Dioxane	< 52.1	ug/Kg		3/21/2019 15:27
2-Butanone	< 26.0	ug/Kg		3/21/2019 15:27
2-Hexanone	< 13.0	ug/Kg		3/21/2019 15:27
4-Methyl-2-pentanone	< 13.0	ug/Kg		3/21/2019 15:27
Acetone	< 26.0	ug/Kg		3/21/2019 15:27
Benzene	< 5.21	ug/Kg		3/21/2019 15:27
Bromochloromethane	< 13.0	ug/Kg		3/21/2019 15:27
Bromodichloromethane	< 5.21	ug/Kg		3/21/2019 15:27
Bromoform	< 13.0	ug/Kg		3/21/2019 15:27
Bromomethane	< 5.21	ug/Kg		3/21/2019 15:27
Carbon disulfide	< 5.21	ug/Kg		3/21/2019 15:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-08-032019
Lab Sample ID: 191155-08 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Carbon Tetrachloride	< 5.21	ug/Kg	3/21/2019	15:27
Chlorobenzene	< 5.21	ug/Kg	3/21/2019	15:27
Chloroethane	< 5.21	ug/Kg	3/21/2019	15:27
Chloroform	< 5.21	ug/Kg	3/21/2019	15:27
Chloromethane	< 5.21	ug/Kg	3/21/2019	15:27
cis-1,2-Dichloroethene	< 5.21	ug/Kg	3/21/2019	15:27
cis-1,3-Dichloropropene	< 5.21	ug/Kg	3/21/2019	15:27
Cyclohexane	< 26.0	ug/Kg	3/21/2019	15:27
Dibromochloromethane	< 5.21	ug/Kg	3/21/2019	15:27
Dichlorodifluoromethane	< 5.21	ug/Kg	3/21/2019	15:27
Ethylbenzene	< 5.21	ug/Kg	3/21/2019	15:27
Freon 113	< 5.21	ug/Kg	3/21/2019	15:27
Isopropylbenzene	< 5.21	ug/Kg	3/21/2019	15:27
m,p-Xylene	< 5.21	ug/Kg	3/21/2019	15:27
Methyl acetate	< 5.21	ug/Kg	3/21/2019	15:27
Methyl tert-butyl Ether	< 5.21	ug/Kg	3/21/2019	15:27
Methylcyclohexane	< 5.21	ug/Kg	3/21/2019	15:27
Methylene chloride	< 13.0	ug/Kg	3/21/2019	15:27
Naphthalene	< 13.0	ug/Kg	3/21/2019	15:27
n-Butylbenzene	< 5.21	ug/Kg	3/21/2019	15:27
n-Propylbenzene	< 5.21	ug/Kg	3/21/2019	15:27
o-Xylene	< 5.21	ug/Kg	3/21/2019	15:27
p-Isopropyltoluene	< 5.21	ug/Kg	3/21/2019	15:27
sec-Butylbenzene	< 5.21	ug/Kg	3/21/2019	15:27
Styrene	< 13.0	ug/Kg	3/21/2019	15:27
tert-Butylbenzene	< 5.21	ug/Kg	3/21/2019	15:27
Tetrachloroethene	< 5.21	ug/Kg	3/21/2019	15:27
Toluene	< 5.21	ug/Kg	3/21/2019	15:27
trans-1,2-Dichloroethene	< 5.21	ug/Kg	3/21/2019	15:27
trans-1,3-Dichloropropene	< 5.21	ug/Kg	3/21/2019	15:27

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-08-032019
Lab Sample ID: 191155-08 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Trichloroethene	< 5.21	ug/Kg			3/21/2019	15:27
Trichlorofluoromethane	< 5.21	ug/Kg			3/21/2019	15:27
Vinyl chloride	< 5.21	ug/Kg			3/21/2019	15:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**130**	75 - 132		3/21/2019	15:27
4-Bromofluorobenzene	**58.3**	70.2 - 120	*	3/21/2019	15:27
Pentafluorobenzene	**90.7**	86.1 - 109		3/21/2019	15:27
Toluene-D8	**80.4**	83.2 - 113	*	3/21/2019	15:27

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: x59389.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-01-032019		
Lab Sample ID:	191155-09	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.132**	mg/Kg		3/29/2019 10:20

Method Reference(s): EPA 7471B
Preparation Date: 3/28/2019
Data File: Hg190329A

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-01-032019		
Lab Sample ID:	191155-09	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**6140**	mg/Kg		3/26/2019 13:14
Antimony	**3.69**	mg/Kg		3/26/2019 13:14
Arsenic	**11.6**	mg/Kg		3/26/2019 13:14
Barium	**68.5**	mg/Kg		3/26/2019 13:14
Beryllium	**0.640**	mg/Kg		3/26/2019 13:14
Cadmium	**0.451**	mg/Kg		3/26/2019 18:45
Calcium	**12300**	mg/Kg		3/26/2019 13:14
Chromium	**12.4**	mg/Kg		3/26/2019 13:14
Cobalt	**7.14**	mg/Kg		3/26/2019 13:14
Copper	**65.0**	mg/Kg		3/26/2019 13:14
Iron	**22100**	mg/Kg		3/26/2019 13:14
Lead	**140**	mg/Kg		3/26/2019 18:45
Magnesium	**6230**	mg/Kg		3/26/2019 18:45
Manganese	**389**	mg/Kg		3/26/2019 13:14
Nickel	**14.1**	mg/Kg		3/26/2019 13:14
Potassium	**753**	mg/Kg		3/26/2019 13:14
Selenium	**1.14**	mg/Kg	J	3/26/2019 13:14
Silver	< 0.594	mg/Kg		3/26/2019 13:14
Sodium	**114**	mg/Kg	J	3/26/2019 13:14
Thallium	**1.31**	mg/Kg	J	3/26/2019 13:14
Vanadium	**20.0**	mg/Kg		3/26/2019 13:14
Zinc	**66.2**	mg/Kg		3/26/2019 13:14

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 3/25/2019
Data File: 190326A

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-01-032019		
Lab Sample ID:	191155-09	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1221	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1232	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1242	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1248	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1254	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1260	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1262	< 0.0359	mg/Kg		3/25/2019 18:55
PCB-1268	< 0.0359	mg/Kg		3/25/2019 18:55

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Tetrachloro-m-xylene	**25.6**	18 - 103		3/25/2019 18:55

Method Reference(s): EPA 8082A
EPA 3546

Preparation Date: 3/25/2019

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PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-01-032019		
Lab Sample ID:	191155-09	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.59	ug/Kg		3/25/2019 18:20
4,4-DDE	< 3.59	ug/Kg		3/25/2019 18:20
4,4-DDT	**3.62**	ug/Kg		3/25/2019 18:20
Aldrin	**3.39**	ug/Kg	JP	3/25/2019 18:20
alpha-BHC	< 3.59	ug/Kg		3/25/2019 18:20
beta-BHC	**18.0**	ug/Kg		3/25/2019 18:20
cis-Chlordane	**7.21**	ug/Kg	P	3/25/2019 18:20
delta-BHC	**14.8**	ug/Kg	P	3/25/2019 18:20
Dieldrin	**4.34**	ug/Kg	P	3/25/2019 18:20
Endosulfan I	< 3.59	ug/Kg		3/25/2019 18:20
Endosulfan II	< 3.59	ug/Kg		3/25/2019 18:20
Endosulfan Sulfate	**7.07**	ug/Kg	P	3/25/2019 18:20
Endrin	< 3.59	ug/Kg		3/25/2019 18:20
Endrin Aldehyde	**5.41**	ug/Kg		3/25/2019 18:20
Endrin Ketone	< 3.59	ug/Kg		3/25/2019 18:20
gamma-BHC (Lindane)	**3.86**	ug/Kg	P	3/25/2019 18:20
Heptachlor	**7.09**	ug/Kg		3/25/2019 18:20
Heptachlor Epoxide	< 3.59	ug/Kg		3/25/2019 18:20
Methoxychlor	< 3.59	ug/Kg		3/25/2019 18:20
Toxaphene	< 35.9	ug/Kg		3/25/2019 18:20
trans-Chlordane	< 3.59	ug/Kg		3/25/2019 18:20

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**93.0**	27.5 - 136		3/25/2019 18:20
Tetrachloro-m-xylene (1)	**55.4**	29.3 - 107		3/25/2019 18:20

Method Reference(s): EPA 8081B
EPA 3546

Preparation Date: 3/25/2019

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-01-032019
Lab Sample ID: 191155-09 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 347	ug/Kg		3/25/2019 21:25
1,2,4,5-Tetrachlorobenzene	< 347	ug/Kg		3/25/2019 21:25
1,2,4-Trichlorobenzene	< 347	ug/Kg		3/25/2019 21:25
1,2-Dichlorobenzene	< 347	ug/Kg		3/25/2019 21:25
1,3-Dichlorobenzene	< 347	ug/Kg		3/25/2019 21:25
1,4-Dichlorobenzene	< 347	ug/Kg		3/25/2019 21:25
2,2-Oxybis (1-chloropropane)	< 347	ug/Kg		3/25/2019 21:25
2,4-Dinitrotoluene	< 347	ug/Kg		3/25/2019 21:25
2,6-Dinitrotoluene	< 347	ug/Kg		3/25/2019 21:25
2-Chloronaphthalene	< 347	ug/Kg		3/25/2019 21:25
2-Methylnapthalene	**469**	ug/Kg		3/25/2019 21:25
2-Nitroaniline	< 347	ug/Kg		3/25/2019 21:25
3,3'-Dichlorobenzidine	< 347	ug/Kg		3/25/2019 21:25
3-Nitroaniline	< 347	ug/Kg		3/25/2019 21:25
4-Bromophenyl phenyl ether	< 347	ug/Kg		3/25/2019 21:25
4-Chloroaniline	< 347	ug/Kg		3/25/2019 21:25
4-Chlorophenyl phenyl ether	< 347	ug/Kg		3/25/2019 21:25
4-Nitroaniline	< 347	ug/Kg		3/25/2019 21:25
Acenaphthene	< 347	ug/Kg		3/25/2019 21:25
Acenaphthylene	**216**	ug/Kg	J	3/25/2019 21:25
Acetophenone	< 347	ug/Kg		3/25/2019 21:25
Anthracene	< 347	ug/Kg		3/25/2019 21:25
Atrazine	< 347	ug/Kg		3/25/2019 21:25
Benzaldehyde	< 347	ug/Kg		3/25/2019 21:25
Benzo (a) anthracene	**468**	ug/Kg		3/25/2019 21:25
Benzo (a) pyrene	**397**	ug/Kg		3/25/2019 21:25
Benzo (b) fluoranthene	**662**	ug/Kg		3/25/2019 21:25

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-01-032019
Lab Sample ID: 191155-09 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Benzo (g,h,i) perylene	**287**	ug/Kg	J	3/25/2019	21:25
Benzo (k) fluoranthene	**344**	ug/Kg	J	3/25/2019	21:25
Bis (2-chloroethoxy) methane	< 347	ug/Kg		3/25/2019	21:25
Bis (2-chloroethyl) ether	< 347	ug/Kg		3/25/2019	21:25
Bis (2-ethylhexyl) phthalate	< 347	ug/Kg		3/25/2019	21:25
Butylbenzylphthalate	< 347	ug/Kg		3/25/2019	21:25
Caprolactam	< 347	ug/Kg		3/25/2019	21:25
Carbazole	< 347	ug/Kg		3/25/2019	21:25
Chrysene	**708**	ug/Kg		3/25/2019	21:25
Dibenz (a,h) anthracene	< 347	ug/Kg		3/25/2019	21:25
Dibenzofuran	< 347	ug/Kg		3/25/2019	21:25
Diethyl phthalate	< 347	ug/Kg		3/25/2019	21:25
Dimethyl phthalate	< 347	ug/Kg		3/25/2019	21:25
Di-n-butyl phthalate	< 347	ug/Kg		3/25/2019	21:25
Di-n-octylphthalate	< 347	ug/Kg		3/25/2019	21:25
Fluoranthene	**721**	ug/Kg		3/25/2019	21:25
Fluorene	< 347	ug/Kg		3/25/2019	21:25
Hexachlorobenzene	< 347	ug/Kg		3/25/2019	21:25
Hexachlorobutadiene	< 347	ug/Kg		3/25/2019	21:25
Hexachlorocyclopentadiene	< 1390	ug/Kg		3/25/2019	21:25
Hexachloroethane	< 347	ug/Kg		3/25/2019	21:25
Indeno (1,2,3-cd) pyrene	**360**	ug/Kg		3/25/2019	21:25
Isophorone	< 347	ug/Kg		3/25/2019	21:25
Naphthalene	**401**	ug/Kg		3/25/2019	21:25
Nitrobenzene	< 347	ug/Kg		3/25/2019	21:25
N-Nitroso-di-n-propylamine	< 347	ug/Kg		3/25/2019	21:25
N-Nitrosodiphenylamine	< 347	ug/Kg		3/25/2019	21:25
Phenanthrene	**864**	ug/Kg		3/25/2019	21:25
Pyrene	**647**	ug/Kg		3/25/2019	21:25

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-01-032019

Lab Sample ID: 191155-09 **Date Sampled:** 3/20/2019

Matrix: Soil **Date Received:** 3/22/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**52.2**	32.3 - 86.7		3/25/2019	21:25
Nitrobenzene-d5	**44.7**	28.6 - 81.3		3/25/2019	21:25
Terphenyl-d14	**55.3**	37.3 - 102		3/25/2019	21:25

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 3/25/2019
Data File: B36487.D

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-01-032019		
Lab Sample ID:	191155-09	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.557	mg/Kg		3/27/2019

Method Reference(s): EPA 9014
Preparation Date: 3/26/2019

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-02-032019		
Lab Sample ID:	191155-10	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.168**	mg/Kg		3/29/2019 10:23

Method Reference(s): EPA 7471B
Preparation Date: 3/28/2019
Data File: Hg190329A

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-02-032019		
Lab Sample ID:	191155-10	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**3910**	mg/Kg		3/26/2019 13:19
Antimony	**2.85**	mg/Kg	J	3/26/2019 13:19
Arsenic	**4.72**	mg/Kg		3/26/2019 13:19
Barium	**105**	mg/Kg		3/26/2019 13:19
Beryllium	**0.274**	mg/Kg		3/26/2019 13:19
Cadmium	**0.732**	mg/Kg		3/26/2019 18:58
Calcium	**78600**	mg/Kg		3/29/2019 12:46
Chromium	**10.7**	mg/Kg		3/26/2019 13:19
Cobalt	**3.67**	mg/Kg		3/26/2019 13:19
Copper	**60.7**	mg/Kg		3/26/2019 13:19
Iron	**13800**	mg/Kg		3/26/2019 13:19
Lead	**132**	mg/Kg		3/26/2019 18:58
Magnesium	**30100**	mg/Kg		3/26/2019 19:02
Manganese	**299**	mg/Kg		3/26/2019 13:19
Nickel	**15.1**	mg/Kg		3/26/2019 13:19
Potassium	**824**	mg/Kg		3/26/2019 13:19
Selenium	< 1.04	mg/Kg		3/26/2019 13:19
Silver	**0.437**	mg/Kg	J	3/26/2019 13:19
Sodium	**193**	mg/Kg		3/26/2019 13:19
Thallium	**5.16**	mg/Kg		3/26/2019 13:19
Vanadium	**14.4**	mg/Kg		3/26/2019 13:19
Zinc	**200**	mg/Kg		3/26/2019 13:19

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 3/25/2019
Data File: 190326A

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-02-032019		
Lab Sample ID:	191155-10	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1221	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1232	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1242	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1248	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1254	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1260	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1262	< 0.0309	mg/Kg		3/25/2019 19:18
PCB-1268	< 0.0309	mg/Kg		3/25/2019 19:18

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Tetrachloro-m-xylene	**28.0**	18 - 103		3/25/2019 19:18

Method Reference(s): EPA 8082A
EPA 3546

Preparation Date: 3/25/2019

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-02-032019		
Lab Sample ID:	191155-10	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	**1.73**	ug/Kg	JP	3/25/2019 18:35
4,4-DDE	< 3.09	ug/Kg		3/25/2019 18:35
4,4-DDT	**7.07**	ug/Kg		3/25/2019 18:35
Aldrin	< 3.09	ug/Kg		3/25/2019 18:35
alpha-BHC	< 3.09	ug/Kg		3/25/2019 18:35
beta-BHC	< 3.09	ug/Kg		3/25/2019 18:35
cis-Chlordane	**7.67**	ug/Kg		3/25/2019 18:35
delta-BHC	< 3.09	ug/Kg		3/25/2019 18:35
Dieldrin	**2.94**	ug/Kg	JP	3/25/2019 18:35
Endosulfan I	< 3.09	ug/Kg		3/25/2019 18:35
Endosulfan II	< 3.09	ug/Kg		3/25/2019 18:35
Endosulfan Sulfate	**4.61**	ug/Kg	P	3/25/2019 18:35
Endrin	< 3.09	ug/Kg		3/25/2019 18:35
Endrin Aldehyde	< 3.09	ug/Kg		3/25/2019 18:35
Endrin Ketone	**2.92**	ug/Kg	J	3/25/2019 18:35
gamma-BHC (Lindane)	< 3.09	ug/Kg		3/25/2019 18:35
Heptachlor	< 3.09	ug/Kg		3/25/2019 18:35
Heptachlor Epoxide	**1.74**	ug/Kg	JP	3/25/2019 18:35
Methoxychlor	< 3.09	ug/Kg		3/25/2019 18:35
Toxaphene	< 30.9	ug/Kg		3/25/2019 18:35
trans-Chlordane	< 3.09	ug/Kg		3/25/2019 18:35

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**24.7**	27.5 - 136	*	3/25/2019 18:35
Tetrachloro-m-xylene (1)	**35.6**	29.3 - 107		3/25/2019 18:35

Method Reference(s): EPA 8081B
EPA 3546

Preparation Date: 3/25/2019

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-02-032019
Lab Sample ID: 191155-10 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 307	ug/Kg		3/26/2019 20:15
1,2,4,5-Tetrachlorobenzene	< 307	ug/Kg		3/26/2019 20:15
1,2,4-Trichlorobenzene	< 307	ug/Kg		3/26/2019 20:15
1,2-Dichlorobenzene	< 307	ug/Kg		3/26/2019 20:15
1,3-Dichlorobenzene	< 307	ug/Kg		3/26/2019 20:15
1,4-Dichlorobenzene	< 307	ug/Kg		3/26/2019 20:15
2,2-Oxybis (1-chloropropane)	< 307	ug/Kg		3/26/2019 20:15
2,4-Dinitrotoluene	< 307	ug/Kg		3/26/2019 20:15
2,6-Dinitrotoluene	< 307	ug/Kg		3/26/2019 20:15
2-Chloronaphthalene	< 307	ug/Kg		3/26/2019 20:15
2-Methylnapthalene	< 307	ug/Kg		3/26/2019 20:15
2-Nitroaniline	< 307	ug/Kg		3/26/2019 20:15
3,3'-Dichlorobenzidine	< 307	ug/Kg		3/26/2019 20:15
3-Nitroaniline	< 307	ug/Kg		3/26/2019 20:15
4-Bromophenyl phenyl ether	< 307	ug/Kg		3/26/2019 20:15
4-Chloroaniline	< 307	ug/Kg		3/26/2019 20:15
4-Chlorophenyl phenyl ether	< 307	ug/Kg		3/26/2019 20:15
4-Nitroaniline	< 307	ug/Kg		3/26/2019 20:15
Acenaphthene	< 307	ug/Kg		3/26/2019 20:15
Acenaphthylene	**435**	ug/Kg		3/26/2019 20:15
Acetophenone	< 307	ug/Kg		3/26/2019 20:15
Anthracene	**426**	ug/Kg		3/26/2019 20:15
Atrazine	< 307	ug/Kg		3/26/2019 20:15
Benzaldehyde	< 307	ug/Kg		3/26/2019 20:15
Benzo (a) anthracene	**1040**	ug/Kg		3/26/2019 20:15
Benzo (a) pyrene	**1160**	ug/Kg		3/26/2019 20:15
Benzo (b) fluoranthene	**1300**	ug/Kg		3/26/2019 20:15

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-02-032019
Lab Sample ID: 191155-10 **Date Sampled:** 3/20/2019
Matrix: Soil **Date Received:** 3/22/2019

Benzo (g,h,i) perylene	**968**	ug/Kg	3/26/2019	20:15
Benzo (k) fluoranthene	**820**	ug/Kg	3/26/2019	20:15
Bis (2-chloroethoxy) methane	< 307	ug/Kg	3/26/2019	20:15
Bis (2-chloroethyl) ether	< 307	ug/Kg	3/26/2019	20:15
Bis (2-ethylhexyl) phthalate	< 307	ug/Kg	3/26/2019	20:15
Butylbenzylphthalate	< 307	ug/Kg	3/26/2019	20:15
Caprolactam	< 307	ug/Kg	3/26/2019	20:15
Carbazole	< 307	ug/Kg	3/26/2019	20:15
Chrysene	**1020**	ug/Kg	3/26/2019	20:15
Dibenz (a,h) anthracene	**339**	ug/Kg	3/26/2019	20:15
Dibenzofuran	< 307	ug/Kg	3/26/2019	20:15
Diethyl phthalate	< 307	ug/Kg	3/26/2019	20:15
Dimethyl phthalate	< 307	ug/Kg	3/26/2019	20:15
Di-n-butyl phthalate	< 307	ug/Kg	3/26/2019	20:15
Di-n-octylphthalate	< 307	ug/Kg	3/26/2019	20:15
Fluoranthene	**1720**	ug/Kg	3/26/2019	20:15
Fluorene	< 307	ug/Kg	3/26/2019	20:15
Hexachlorobenzene	< 307	ug/Kg	3/26/2019	20:15
Hexachlorobutadiene	< 307	ug/Kg	3/26/2019	20:15
Hexachlorocyclopentadiene	< 1230	ug/Kg	3/26/2019	20:15
Hexachloroethane	< 307	ug/Kg	3/26/2019	20:15
Indeno (1,2,3-cd) pyrene	**965**	ug/Kg	3/26/2019	20:15
Isophorone	< 307	ug/Kg	3/26/2019	20:15
Naphthalene	< 307	ug/Kg	3/26/2019	20:15
Nitrobenzene	< 307	ug/Kg	3/26/2019	20:15
N-Nitroso-di-n-propylamine	< 307	ug/Kg	3/26/2019	20:15
N-Nitrosodiphenylamine	< 307	ug/Kg	3/26/2019	20:15
Phenanthrene	**814**	ug/Kg	3/26/2019	20:15
Pyrene	**1500**	ug/Kg	3/26/2019	20:15

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-02-032019

Lab Sample ID: 191155-10 **Date Sampled:** 3/20/2019

Matrix: Soil **Date Received:** 3/22/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**53.7**	32.3 - 86.7		3/26/2019	20:15
Nitrobenzene-d5	**49.0**	28.6 - 81.3		3/26/2019	20:15
Terphenyl-d14	**55.1**	37.3 - 102		3/26/2019	20:15

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 3/25/2019
Data File: B36518.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-02-032019		
Lab Sample ID:	191155-10	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.560	mg/Kg		3/27/2019

Method Reference(s): EPA 9014
Preparation Date: 3/26/2019

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.213**	mg/Kg		3/29/2019 10:26

Method Reference(s): EPA 7471B
Preparation Date: 3/28/2019
Data File: Hg190329A

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**6940**	mg/Kg		3/26/2019 13:23
Antimony	**2.43**	mg/Kg	JM	3/26/2019 13:23
Arsenic	**4.17**	mg/Kg		3/26/2019 13:23
Barium	**70.7**	mg/Kg	M	3/26/2019 13:23
Beryllium	**0.435**	mg/Kg	D	3/26/2019 13:23
Cadmium	**0.578**	mg/Kg	D	3/26/2019 19:07
Calcium	**31800**	mg/Kg	D	3/29/2019 12:50
Chromium	**11.9**	mg/Kg		3/26/2019 13:23
Cobalt	**4.96**	mg/Kg		3/26/2019 13:23
Copper	**39.1**	mg/Kg	D	3/26/2019 13:23
Iron	**13600**	mg/Kg		3/26/2019 13:23
Lead	**112**	mg/Kg	D,M	3/26/2019 19:07
Magnesium	**12100**	mg/Kg	D	3/26/2019 19:07
Manganese	**339**	mg/Kg	M	3/26/2019 13:23
Nickel	**12.0**	mg/Kg		3/26/2019 13:23
Potassium	**1110**	mg/Kg		3/26/2019 13:23
Selenium	< 1.20	mg/Kg		3/26/2019 19:07
Silver	**0.527**	mg/Kg	J	3/26/2019 13:23
Sodium	**107**	mg/Kg	J	3/26/2019 13:23
Thallium	**1.91**	mg/Kg	D	3/26/2019 13:23
Vanadium	**15.4**	mg/Kg		3/26/2019 13:23
Zinc	**243**	mg/Kg	D,M	3/26/2019 13:23

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 3/25/2019
Data File: 190326A

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1221	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1232	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1242	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1248	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1254	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1260	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1262	< 0.0338	mg/Kg		3/25/2019 19:41
PCB-1268	< 0.0338	mg/Kg		3/25/2019 19:41

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Tetrachloro-m-xylene	**37.9**	18 - 103		3/25/2019 19:41

Method Reference(s): EPA 8082A
EPA 3546

Preparation Date: 3/25/2019

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PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Chlorinated Pesticides

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.38	ug/Kg		3/25/2019 18:50
4,4-DDE	< 3.38	ug/Kg		3/25/2019 18:50
4,4-DDT	**3.16**	ug/Kg	J	3/25/2019 18:50
Aldrin	< 3.38	ug/Kg		3/25/2019 18:50
alpha-BHC	< 3.38	ug/Kg		3/25/2019 18:50
beta-BHC	< 3.38	ug/Kg		3/25/2019 18:50
cis-Chlordane	**15.5**	ug/Kg		3/25/2019 18:50
delta-BHC	< 3.38	ug/Kg		3/25/2019 18:50
Dieldrin	**2.43**	ug/Kg	JP	3/25/2019 18:50
Endosulfan I	< 3.38	ug/Kg		3/25/2019 18:50
Endosulfan II	< 3.38	ug/Kg		3/25/2019 18:50
Endosulfan Sulfate	**13.4**	ug/Kg	P	3/25/2019 18:50
Endrin	< 3.38	ug/Kg		3/25/2019 18:50
Endrin Aldehyde	**2.54**	ug/Kg	JP	3/25/2019 18:50
Endrin Ketone	**4.68**	ug/Kg		3/25/2019 18:50
gamma-BHC (Lindane)	< 3.38	ug/Kg		3/25/2019 18:50
Heptachlor	< 3.38	ug/Kg		3/25/2019 18:50
Heptachlor Epoxide	**2.39**	ug/Kg	JP	3/25/2019 18:50
Methoxychlor	**8.31**	ug/Kg	P	3/25/2019 18:50
Toxaphene	< 33.8	ug/Kg		3/25/2019 18:50
trans-Chlordane	**2.02**	ug/Kg	JP	3/25/2019 18:50

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	**94.4**	27.5 - 136		3/25/2019 18:50
Tetrachloro-m-xylene (1)	**54.9**	29.3 - 107		3/25/2019 18:50

Method Reference(s): EPA 8081B
EPA 3546

Preparation Date: 3/25/2019

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 333	ug/Kg		3/25/2019 22:25
1,2,4,5-Tetrachlorobenzene	< 333	ug/Kg		3/25/2019 22:25
1,2,4-Trichlorobenzene	< 333	ug/Kg		3/25/2019 22:25
1,2-Dichlorobenzene	< 333	ug/Kg		3/25/2019 22:25
1,3-Dichlorobenzene	< 333	ug/Kg		3/25/2019 22:25
1,4-Dichlorobenzene	< 333	ug/Kg		3/25/2019 22:25
2,2-Oxybis (1-chloropropane)	< 333	ug/Kg		3/25/2019 22:25
2,4-Dinitrotoluene	< 333	ug/Kg		3/25/2019 22:25
2,6-Dinitrotoluene	< 333	ug/Kg		3/25/2019 22:25
2-Chloronaphthalene	< 333	ug/Kg		3/25/2019 22:25
2-Methylnapthalene	< 333	ug/Kg		3/25/2019 22:25
2-Nitroaniline	< 333	ug/Kg		3/25/2019 22:25
3,3'-Dichlorobenzidine	< 333	ug/Kg		3/25/2019 22:25
3-Nitroaniline	< 333	ug/Kg		3/25/2019 22:25
4-Bromophenyl phenyl ether	< 333	ug/Kg		3/25/2019 22:25
4-Chloroaniline	< 333	ug/Kg		3/25/2019 22:25
4-Chlorophenyl phenyl ether	< 333	ug/Kg		3/25/2019 22:25
4-Nitroaniline	< 333	ug/Kg		3/25/2019 22:25
Acenaphthene	< 333	ug/Kg		3/25/2019 22:25
Acenaphthylene	< 333	ug/Kg		3/25/2019 22:25
Acetophenone	< 333	ug/Kg		3/25/2019 22:25
Anthracene	**434**	ug/Kg		3/25/2019 22:25
Atrazine	< 333	ug/Kg		3/25/2019 22:25
Benzaldehyde	< 333	ug/Kg		3/25/2019 22:25
Benzo (a) anthracene	**1850**	ug/Kg		3/25/2019 22:25
Benzo (a) pyrene	**1670**	ug/Kg		3/25/2019 22:25
Benzo (b) fluoranthene	**1730**	ug/Kg		3/25/2019 22:25

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Benzo (g,h,i) perylene	**1210**	ug/Kg		3/25/2019	22:25
Benzo (k) fluoranthene	**1350**	ug/Kg		3/25/2019	22:25
Bis (2-chloroethoxy) methane	< 333	ug/Kg		3/25/2019	22:25
Bis (2-chloroethyl) ether	< 333	ug/Kg		3/25/2019	22:25
Bis (2-ethylhexyl) phthalate	< 333	ug/Kg		3/25/2019	22:25
Butylbenzylphthalate	< 333	ug/Kg		3/25/2019	22:25
Caprolactam	< 333	ug/Kg		3/25/2019	22:25
Carbazole	**235**	ug/Kg	J	3/25/2019	22:25
Chrysene	**1730**	ug/Kg		3/25/2019	22:25
Dibenz (a,h) anthracene	**419**	ug/Kg		3/25/2019	22:25
Dibenzofuran	< 333	ug/Kg		3/25/2019	22:25
Diethyl phthalate	< 333	ug/Kg		3/25/2019	22:25
Dimethyl phthalate	< 333	ug/Kg		3/25/2019	22:25
Di-n-butyl phthalate	< 333	ug/Kg		3/25/2019	22:25
Di-n-octylphthalate	< 333	ug/Kg		3/25/2019	22:25
Fluoranthene	**3400**	ug/Kg		3/25/2019	22:25
Fluorene	< 333	ug/Kg		3/25/2019	22:25
Hexachlorobenzene	< 333	ug/Kg		3/25/2019	22:25
Hexachlorobutadiene	< 333	ug/Kg		3/25/2019	22:25
Hexachlorocyclopentadiene	< 1330	ug/Kg		3/25/2019	22:25
Hexachloroethane	< 333	ug/Kg		3/25/2019	22:25
Indeno (1,2,3-cd) pyrene	**1180**	ug/Kg		3/25/2019	22:25
Isophorone	< 333	ug/Kg		3/25/2019	22:25
Naphthalene	< 333	ug/Kg		3/25/2019	22:25
Nitrobenzene	< 333	ug/Kg		3/25/2019	22:25
N-Nitroso-di-n-propylamine	< 333	ug/Kg		3/25/2019	22:25
N-Nitrosodiphenylamine	< 333	ug/Kg		3/25/2019	22:25
Phenanthrene	**1830**	ug/Kg		3/25/2019	22:25
Pyrene	**2680**	ug/Kg		3/25/2019	22:25

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: Lu Engineers, Inc.

Project Reference: 50378-02

Sample Identifier: RRW-CH-CS-03-032019

Lab Sample ID: 191155-11 **Date Sampled:** 3/20/2019

Matrix: Soil **Date Received:** 3/22/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**57.0**	32.3 - 86.7		3/25/2019	22:25
Nitrobenzene-d5	**52.2**	28.6 - 81.3		3/25/2019	22:25
Terphenyl-d14	**61.4**	37.3 - 102		3/25/2019	22:25

Method Reference(s): EPA 8270D
EPA 3546

Preparation Date: 3/25/2019

Data File: B36489.D

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Report Prepared Friday, March 29, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 191155

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-CS-03-032019		
Lab Sample ID:	191155-11	**Date Sampled:**	3/20/2019
Matrix:	Soil	**Date Received:**	3/22/2019

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.591	mg/Kg		3/27/2019

Method Reference(s): EPA 9014
Preparation Date: 3/26/2019

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Friday, March 29, 2019

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

PARADIGM
179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

1 of 3

REPORT TO:			INVOICE TO:		
CLIENT: LW Engineers			CLIENT:		LAB PROJECT ID: 191155
ADDRESS: 339 East Ave Suite 200			ADDRESS:		
CITY: Rochester	STATE: NY	ZIP: 14604	CITY: SAME	STATE: ZIP:	Quotation #: MS 031319A
PHONE: 585-385-7417			PHONE:		Email: bseifert@lwengineers.com
ATTN: Ben Seifert			ATTN: Greg Andrus		

PROJECT REFERENCE: 50378-02

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	TCL VOC + CP-51	SVOC (B/N's)	TAL Metals	PCB	Pesticides	Cyanide	REMARKS	PARADIGM LAB SAMPLE NUMBER
03/20/19	See labels	11:55	✓	RRW-CH-SS-01-032019	SO	01	✓							01
03/20/19		12:45	✓	RRW-CH-SS-02-032019			✓							02
03/20/19		13:00	✓	RRW-CH-SS-03-032019			✓							03
03/20/19		12:45	✓	RRW-CH-SS-04-032019			✓							04
03/20/19		13:55	✓	RRW-CH-SS-05-032019			✓							05
03/20/19		13:06	✓	RRW-CH-SS-06-032019			✓							06
03/20/19		13:16	✓	RRW-CH-SS-07-032019			✓							07
03/20/19		13:30	✓	RRW-CH-SS-08-032019			✓							08
03/20/19		12:38	✓	RRW-CH-CS-01-032019				✓	✓	✓	✓	✓	Please homogenize	09
03/20/19		13:00	✓	RRW-CH-CS-02-032019				✓	✓	✓	✓	✓	" "	10

per Sample labels GP 3/22/19

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☒	None Required	☐	None Required	☒
10 day	☐	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐				
Date Needed _____ please indicate date needed:		Other ☐ please indicate package needed:		Other EDD ☐ please indicate EDD needed :	

Sampled By: Ben Seifert — 03/20/2019 14:05 — Date/Time
Relinquished By: Ben Seifert — 03/21/2019 08:48 — Date/Time
Received By: [signature] — 3/21/19 848 — Date/Time
Received @ Lab By: [signature] — 3/22/19 13:53 — Date/Time

Total Cost:

P.I.F.

2°C Iced 3/21/19 09:00. No Custody Seal GP 3/21/19

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

PARADIGM
179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

2 of 3

REPORT TO:		INVOICE TO:		
CLIENT:	Lu Engineers	CLIENT:		LAB PROJECT ID: 191155
ADDRESS:	339 East Avenue Suite 200	ADDRESS:	SAME	
CITY:	Rochester STATE: NY ZIP 14604	CITY:	STATE: ZIP:	Quotation #: MS-031319A
PHONE:	585-385-7417	PHONE:		Email: bseifert@luengineers.com
ATTN:	Ben Seifert	ATTN:	Greg Andrus	

PROJECT REFERENCE: 50378-02

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	TCL VOC + CP-51	SVOC (B/N's)	TAL Metals	PCB	Pesticides	Cyanide	REMARKS	PARADIGM LAB SAMPLE NUMBER
03/20/19	13:35	✓		RRW-CH-CS-03-032019	SO	01		✓	✓	✓	✓	✓	" "	11
	per sample labels	GO 3/22/19												

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	☒	None Required	☐	None Required ☒
10 day	☐	Batch QC	☐	Basic EDD ☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD ☐
Rush 2 day	☐	Category B	☒	
Rush 1 day	☐			
Date Needed _____ please indicate date needed:		Other ☐ please indicate package needed:		Other EDD ☐ please indicate EDD needed :

Sampled By	03/20/19 Date/Time 1405	Total Cost:
Relinquished By	03/21/2019 Date/Time 08:48	
Received By	3/21/19 Date/Time 848	P.I.F.
Received @ Lab By	3/22/19 Date/Time 13:53	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Glenn Pezzulo

Lab Project ID: 191155 **Date:** 3/22/19

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt Yes	No	N/A
Container Type	X	X Soil	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		X metals
Comments	2°C iced 3/21/19 09:00		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-09-070219		
Lab Sample ID:	193062-01	**Date Sampled:**	7/2/2019
Matrix:	Soil	**Date Received:**	7/2/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.0790**	mg/Kg		7/10/2019 07:17

Method Reference(s): EPA 7471B
Preparation Date: 7/9/2019
Data File: Hg190710A

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-09-070219		
Lab Sample ID:	193062-01	**Date Sampled:**	7/2/2019
Matrix:	Soil	**Date Received:**	7/2/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**5980**	mg/Kg		7/9/2019 00:04
Antimony	< 3.13	mg/Kg		7/9/2019 00:04
Arsenic	**5.13**	mg/Kg		7/9/2019 00:04
Barium	**46.6**	mg/Kg		7/9/2019 00:04
Beryllium	**0.299**	mg/Kg		7/9/2019 00:04
Cadmium	**0.350**	mg/Kg		7/9/2019 00:04
Calcium	**7310**	mg/Kg		7/9/2019 00:04
Chromium	**10.7**	mg/Kg		7/9/2019 00:04
Cobalt	**5.10**	mg/Kg		7/9/2019 00:04
Copper	**48.9**	mg/Kg		7/9/2019 00:04
Iron	**12100**	mg/Kg		7/9/2019 00:04
Lead	**80.9**	mg/Kg		7/9/2019 00:04
Magnesium	**3970**	mg/Kg		7/9/2019 00:04
Manganese	**336**	mg/Kg		7/9/2019 00:04
Nickel	**11.9**	mg/Kg		7/9/2019 00:04
Potassium	**848**	mg/Kg		7/9/2019 00:04
Selenium	**0.746**	mg/Kg	J	7/10/2019 00:04
Silver	**1.07**	mg/Kg		7/9/2019 00:04
Sodium	**81.4**	mg/Kg	J	7/9/2019 00:04
Thallium	< 1.30	mg/Kg		7/9/2019 00:04
Vanadium	**12.4**	mg/Kg		7/9/2019 00:04
Zinc	**88.9**	mg/Kg		7/9/2019 00:04

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 7/3/2019
Data File: 190708C

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-09-070219
Lab Sample ID: 193062-01 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 294	ug/Kg		7/10/2019 15:51
1,2,4,5-Tetrachlorobenzene	< 294	ug/Kg		7/10/2019 15:51
1,2,4-Trichlorobenzene	< 294	ug/Kg		7/10/2019 15:51
1,2-Dichlorobenzene	< 294	ug/Kg		7/10/2019 15:51
1,3-Dichlorobenzene	< 294	ug/Kg		7/10/2019 15:51
1,4-Dichlorobenzene	< 294	ug/Kg		7/10/2019 15:51
2,2-Oxybis (1-chloropropane)	< 294	ug/Kg		7/10/2019 15:51
2,4-Dinitrotoluene	< 294	ug/Kg		7/10/2019 15:51
2,6-Dinitrotoluene	< 294	ug/Kg		7/10/2019 15:51
2-Chloronaphthalene	< 294	ug/Kg		7/10/2019 15:51
2-Methylnapthalene	< 294	ug/Kg		7/10/2019 15:51
2-Nitroaniline	< 294	ug/Kg		7/10/2019 15:51
3,3'-Dichlorobenzidine	< 294	ug/Kg		7/10/2019 15:51
3-Nitroaniline	< 294	ug/Kg		7/10/2019 15:51
4-Bromophenyl phenyl ether	< 294	ug/Kg		7/10/2019 15:51
4-Chloroaniline	< 294	ug/Kg		7/10/2019 15:51
4-Chlorophenyl phenyl ether	< 294	ug/Kg		7/10/2019 15:51
4-Nitroaniline	< 294	ug/Kg		7/10/2019 15:51
Acenaphthene	< 294	ug/Kg		7/10/2019 15:51
Acenaphthylene	**429**	ug/Kg		7/10/2019 15:51
Acetophenone	< 294	ug/Kg		7/10/2019 15:51
Anthracene	**550**	ug/Kg		7/10/2019 15:51
Atrazine	< 294	ug/Kg		7/10/2019 15:51
Benzaldehyde	< 294	ug/Kg		7/10/2019 15:51
Benzo (a) anthracene	**4200**	ug/Kg		7/10/2019 15:51
Benzo (a) pyrene	**3220**	ug/Kg		7/10/2019 15:51
Benzo (b) fluoranthene	**2850**	ug/Kg		7/10/2019 15:51

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-09-070219
Lab Sample ID: 193062-01 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Benzo (g,h,i) perylene	**1640**	ug/Kg	7/10/2019	15:51
Benzo (k) fluoranthene	**2760**	ug/Kg	7/10/2019	15:51
Bis (2-chloroethoxy) methane	< 294	ug/Kg	7/10/2019	15:51
Bis (2-chloroethyl) ether	< 294	ug/Kg	7/10/2019	15:51
Bis (2-ethylhexyl) phthalate	< 294	ug/Kg	7/10/2019	15:51
Butylbenzylphthalate	< 294	ug/Kg	7/10/2019	15:51
Caprolactam	< 294	ug/Kg	7/10/2019	15:51
Carbazole	< 294	ug/Kg	7/10/2019	15:51
Chrysene	**3360**	ug/Kg	7/10/2019	15:51
Dibenz (a,h) anthracene	**616**	ug/Kg	7/10/2019	15:51
Dibenzofuran	< 294	ug/Kg	7/10/2019	15:51
Diethyl phthalate	< 294	ug/Kg	7/10/2019	15:51
Dimethyl phthalate	< 294	ug/Kg	7/10/2019	15:51
Di-n-butyl phthalate	< 294	ug/Kg	7/10/2019	15:51
Di-n-octylphthalate	< 294	ug/Kg	7/10/2019	15:51
Fluoranthene	**5630**	ug/Kg	7/10/2019	15:51
Fluorene	< 294	ug/Kg	7/10/2019	15:51
Hexachlorobenzene	< 294	ug/Kg	7/10/2019	15:51
Hexachlorobutadiene	< 294	ug/Kg	7/10/2019	15:51
Hexachlorocyclopentadiene	< 1180	ug/Kg	7/10/2019	15:51
Hexachloroethane	< 294	ug/Kg	7/10/2019	15:51
Indeno (1,2,3-cd) pyrene	**1720**	ug/Kg	7/10/2019	15:51
Isophorone	< 294	ug/Kg	7/10/2019	15:51
Naphthalene	< 294	ug/Kg	7/10/2019	15:51
Nitrobenzene	< 294	ug/Kg	7/10/2019	15:51
N-Nitroso-di-n-propylamine	< 294	ug/Kg	7/10/2019	15:51
N-Nitrosodiphenylamine	< 294	ug/Kg	7/10/2019	15:51
Phenanthrene	**772**	ug/Kg	7/10/2019	15:51
Pyrene	**4770**	ug/Kg	7/10/2019	15:51

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-09-070219

Lab Sample ID: 193062-01 **Date Sampled:** 7/2/2019

Matrix: Soil **Date Received:** 7/2/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**56.8**	39 - 77.6		7/10/2019	15:51
Nitrobenzene-d5	**56.8**	35.4 - 75.3		7/10/2019	15:51
Terphenyl-d14	**60.3**	42 - 93.5		7/10/2019	15:51

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 7/5/2019
Data File: B38647.D

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-10-070219		
Lab Sample ID:	193062-02	**Date Sampled:**	7/2/2019
Matrix:	Soil	**Date Received:**	7/2/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.235**	mg/Kg		7/10/2019 07:19

Method Reference(s): EPA 7471B
Preparation Date: 7/9/2019
Data File: Hg190710A

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-10-070219
Lab Sample ID: 193062-02 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**5440**	mg/Kg		7/9/2019 00:08
Antimony	**1.99**	mg/Kg	J	7/9/2019 00:08
Arsenic	**4.05**	mg/Kg		7/9/2019 00:08
Barium	**73.3**	mg/Kg		7/9/2019 00:08
Beryllium	**0.255**	mg/Kg	J	7/9/2019 00:08
Cadmium	**0.783**	mg/Kg		7/9/2019 00:08
Calcium	**43300**	mg/Kg		7/10/2019 00:09
Chromium	**19.6**	mg/Kg		7/9/2019 00:08
Cobalt	**4.14**	mg/Kg		7/9/2019 00:08
Copper	**80.2**	mg/Kg		7/9/2019 00:08
Iron	**13800**	mg/Kg		7/9/2019 00:08
Lead	**135**	mg/Kg		7/9/2019 00:08
Magnesium	**14600**	mg/Kg		7/9/2019 00:08
Manganese	**323**	mg/Kg		7/9/2019 00:08
Nickel	**17.8**	mg/Kg		7/9/2019 00:08
Potassium	**1060**	mg/Kg		7/9/2019 00:08
Selenium	**1.58**	mg/Kg		7/9/2019 00:08
Silver	**1.32**	mg/Kg		7/9/2019 00:08
Sodium	**131**	mg/Kg		7/9/2019 00:08
Thallium	**2.22**	mg/Kg		7/9/2019 00:08
Vanadium	**12.8**	mg/Kg		7/9/2019 00:08
Zinc	**175**	mg/Kg		7/9/2019 00:08

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 7/3/2019
Data File: 190708C

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-10-070219
Lab Sample ID: 193062-02 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 290	ug/Kg		7/10/2019 16:20
1,2,4,5-Tetrachlorobenzene	< 290	ug/Kg		7/10/2019 16:20
1,2,4-Trichlorobenzene	< 290	ug/Kg		7/10/2019 16:20
1,2-Dichlorobenzene	< 290	ug/Kg		7/10/2019 16:20
1,3-Dichlorobenzene	< 290	ug/Kg		7/10/2019 16:20
1,4-Dichlorobenzene	< 290	ug/Kg		7/10/2019 16:20
2,2-Oxybis (1-chloropropane)	< 290	ug/Kg		7/10/2019 16:20
2,4-Dinitrotoluene	< 290	ug/Kg		7/10/2019 16:20
2,6-Dinitrotoluene	< 290	ug/Kg		7/10/2019 16:20
2-Chloronaphthalene	< 290	ug/Kg		7/10/2019 16:20
2-Methylnapthalene	< 290	ug/Kg		7/10/2019 16:20
2-Nitroaniline	< 290	ug/Kg		7/10/2019 16:20
3,3'-Dichlorobenzidine	< 290	ug/Kg		7/10/2019 16:20
3-Nitroaniline	< 290	ug/Kg		7/10/2019 16:20
4-Bromophenyl phenyl ether	< 290	ug/Kg		7/10/2019 16:20
4-Chloroaniline	< 290	ug/Kg		7/10/2019 16:20
4-Chlorophenyl phenyl ether	< 290	ug/Kg		7/10/2019 16:20
4-Nitroaniline	< 290	ug/Kg		7/10/2019 16:20
Acenaphthene	< 290	ug/Kg		7/10/2019 16:20
Acenaphthylene	< 290	ug/Kg		7/10/2019 16:20
Acetophenone	< 290	ug/Kg		7/10/2019 16:20
Anthracene	**228**	ug/Kg	J	7/10/2019 16:20
Atrazine	< 290	ug/Kg		7/10/2019 16:20
Benzaldehyde	< 290	ug/Kg		7/10/2019 16:20
Benzo (a) anthracene	**1050**	ug/Kg		7/10/2019 16:20
Benzo (a) pyrene	**1070**	ug/Kg		7/10/2019 16:20
Benzo (b) fluoranthene	**1210**	ug/Kg		7/10/2019 16:20

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-10-070219
Lab Sample ID: 193062-02 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Benzo (g,h,i) perylene	**857**	ug/Kg		7/10/2019	16:20
Benzo (k) fluoranthene	**739**	ug/Kg		7/10/2019	16:20
Bis (2-chloroethoxy) methane	< 290	ug/Kg		7/10/2019	16:20
Bis (2-chloroethyl) ether	< 290	ug/Kg		7/10/2019	16:20
Bis (2-ethylhexyl) phthalate	< 290	ug/Kg		7/10/2019	16:20
Butylbenzylphthalate	< 290	ug/Kg		7/10/2019	16:20
Caprolactam	< 290	ug/Kg		7/10/2019	16:20
Carbazole	< 290	ug/Kg		7/10/2019	16:20
Chrysene	**1100**	ug/Kg		7/10/2019	16:20
Dibenz (a,h) anthracene	**256**	ug/Kg	J	7/10/2019	16:20
Dibenzofuran	< 290	ug/Kg		7/10/2019	16:20
Diethyl phthalate	< 290	ug/Kg		7/10/2019	16:20
Dimethyl phthalate	< 290	ug/Kg		7/10/2019	16:20
Di-n-butyl phthalate	< 290	ug/Kg		7/10/2019	16:20
Di-n-octylphthalate	< 290	ug/Kg		7/10/2019	16:20
Fluoranthene	**1790**	ug/Kg		7/10/2019	16:20
Fluorene	< 290	ug/Kg		7/10/2019	16:20
Hexachlorobenzene	< 290	ug/Kg		7/10/2019	16:20
Hexachlorobutadiene	< 290	ug/Kg		7/10/2019	16:20
Hexachlorocyclopentadiene	< 1160	ug/Kg		7/10/2019	16:20
Hexachloroethane	< 290	ug/Kg		7/10/2019	16:20
Indeno (1,2,3-cd) pyrene	**894**	ug/Kg		7/10/2019	16:20
Isophorone	< 290	ug/Kg		7/10/2019	16:20
Naphthalene	< 290	ug/Kg		7/10/2019	16:20
Nitrobenzene	< 290	ug/Kg		7/10/2019	16:20
N-Nitroso-di-n-propylamine	< 290	ug/Kg		7/10/2019	16:20
N-Nitrosodiphenylamine	< 290	ug/Kg		7/10/2019	16:20
Phenanthrene	**882**	ug/Kg		7/10/2019	16:20
Pyrene	**1450**	ug/Kg		7/10/2019	16:20

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-10-070219

Lab Sample ID: 193062-02 **Date Sampled:** 7/2/2019

Matrix: Soil **Date Received:** 7/2/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**50.8**	39 - 77.6		7/10/2019	16:20
Nitrobenzene-d5	**52.2**	35.4 - 75.3		7/10/2019	16:20
Terphenyl-d14	**53.7**	42 - 93.5		7/10/2019	16:20

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 7/5/2019
Data File: B38648.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-11-070219		
Lab Sample ID:	193062-03	**Date Sampled:**	7/2/2019
Matrix:	Soil	**Date Received:**	7/2/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.311**	mg/Kg		7/10/2019 07:21

Method Reference(s): EPA 7471B
Preparation Date: 7/9/2019
Data File: Hg190710A

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-11-070219		
Lab Sample ID:	193062-03	**Date Sampled:**	7/2/2019
Matrix:	Soil	**Date Received:**	7/2/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**5540**	mg/Kg		7/9/2019 00:12
Antimony	**2.25**	mg/Kg	J	7/9/2019 00:12
Arsenic	**3.68**	mg/Kg		7/9/2019 00:12
Barium	**69.3**	mg/Kg		7/9/2019 00:12
Beryllium	**0.284**	mg/Kg		7/9/2019 00:12
Cadmium	**7.26**	mg/Kg		7/9/2019 00:12
Calcium	**32100**	mg/Kg		7/10/2019 00:13
Chromium	**11.0**	mg/Kg		7/9/2019 00:12
Cobalt	**4.28**	mg/Kg		7/9/2019 00:12
Copper	**53.6**	mg/Kg		7/9/2019 00:12
Iron	**14100**	mg/Kg		7/9/2019 00:12
Lead	**175**	mg/Kg		7/9/2019 00:12
Magnesium	**10200**	mg/Kg		7/9/2019 00:12
Manganese	**317**	mg/Kg		7/9/2019 00:12
Nickel	**11.1**	mg/Kg		7/9/2019 00:12
Potassium	**1020**	mg/Kg		7/9/2019 00:12
Selenium	**1.72**	mg/Kg		7/9/2019 00:12
Silver	**1.25**	mg/Kg		7/9/2019 00:12
Sodium	**93.1**	mg/Kg	J	7/9/2019 00:12
Thallium	**0.960**	mg/Kg	J	7/9/2019 00:12
Vanadium	**13.3**	mg/Kg		7/9/2019 00:12
Zinc	**2800**	mg/Kg		7/10/2019 00:13

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 7/3/2019
Data File: 190708C

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-11-070219
Lab Sample ID: 193062-03 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 311	ug/Kg		7/10/2019 16:51
1,2,4,5-Tetrachlorobenzene	< 311	ug/Kg		7/10/2019 16:51
1,2,4-Trichlorobenzene	< 311	ug/Kg		7/10/2019 16:51
1,2-Dichlorobenzene	< 311	ug/Kg		7/10/2019 16:51
1,3-Dichlorobenzene	< 311	ug/Kg		7/10/2019 16:51
1,4-Dichlorobenzene	< 311	ug/Kg		7/10/2019 16:51
2,2-Oxybis (1-chloropropane)	< 311	ug/Kg		7/10/2019 16:51
2,4-Dinitrotoluene	< 311	ug/Kg		7/10/2019 16:51
2,6-Dinitrotoluene	< 311	ug/Kg		7/10/2019 16:51
2-Chloronaphthalene	< 311	ug/Kg		7/10/2019 16:51
2-Methylnapthalene	< 311	ug/Kg		7/10/2019 16:51
2-Nitroaniline	< 311	ug/Kg		7/10/2019 16:51
3,3'-Dichlorobenzidine	< 311	ug/Kg		7/10/2019 16:51
3-Nitroaniline	< 311	ug/Kg		7/10/2019 16:51
4-Bromophenyl phenyl ether	< 311	ug/Kg		7/10/2019 16:51
4-Chloroaniline	< 311	ug/Kg		7/10/2019 16:51
4-Chlorophenyl phenyl ether	< 311	ug/Kg		7/10/2019 16:51
4-Nitroaniline	< 311	ug/Kg		7/10/2019 16:51
Acenaphthene	< 311	ug/Kg		7/10/2019 16:51
Acenaphthylene	< 311	ug/Kg		7/10/2019 16:51
Acetophenone	< 311	ug/Kg		7/10/2019 16:51
Anthracene	**334**	ug/Kg		7/10/2019 16:51
Atrazine	< 311	ug/Kg		7/10/2019 16:51
Benzaldehyde	< 311	ug/Kg		7/10/2019 16:51
Benzo (a) anthracene	**1470**	ug/Kg		7/10/2019 16:51
Benzo (a) pyrene	**1360**	ug/Kg		7/10/2019 16:51
Benzo (b) fluoranthene	**1300**	ug/Kg		7/10/2019 16:51

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-11-070219
Lab Sample ID: 193062-03 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Benzo (g,h,i) perylene	**948**	ug/Kg		7/10/2019	16:51
Benzo (k) fluoranthene	**1150**	ug/Kg		7/10/2019	16:51
Bis (2-chloroethoxy) methane	< 311	ug/Kg		7/10/2019	16:51
Bis (2-chloroethyl) ether	< 311	ug/Kg		7/10/2019	16:51
Bis (2-ethylhexyl) phthalate	< 311	ug/Kg		7/10/2019	16:51
Butylbenzylphthalate	< 311	ug/Kg		7/10/2019	16:51
Caprolactam	< 311	ug/Kg		7/10/2019	16:51
Carbazole	< 311	ug/Kg		7/10/2019	16:51
Chrysene	**1420**	ug/Kg		7/10/2019	16:51
Dibenz (a,h) anthracene	**302**	ug/Kg	J	7/10/2019	16:51
Dibenzofuran	< 311	ug/Kg		7/10/2019	16:51
Diethyl phthalate	< 311	ug/Kg		7/10/2019	16:51
Dimethyl phthalate	< 311	ug/Kg		7/10/2019	16:51
Di-n-butyl phthalate	< 311	ug/Kg		7/10/2019	16:51
Di-n-octylphthalate	< 311	ug/Kg		7/10/2019	16:51
Fluoranthene	**2250**	ug/Kg		7/10/2019	16:51
Fluorene	< 311	ug/Kg		7/10/2019	16:51
Hexachlorobenzene	< 311	ug/Kg		7/10/2019	16:51
Hexachlorobutadiene	< 311	ug/Kg		7/10/2019	16:51
Hexachlorocyclopentadiene	< 1250	ug/Kg		7/10/2019	16:51
Hexachloroethane	< 311	ug/Kg		7/10/2019	16:51
Indeno (1,2,3-cd) pyrene	**916**	ug/Kg		7/10/2019	16:51
Isophorone	< 311	ug/Kg		7/10/2019	16:51
Naphthalene	< 311	ug/Kg		7/10/2019	16:51
Nitrobenzene	< 311	ug/Kg		7/10/2019	16:51
N-Nitroso-di-n-propylamine	< 311	ug/Kg		7/10/2019	16:51
N-Nitrosodiphenylamine	< 311	ug/Kg		7/10/2019	16:51
Phenanthrene	**923**	ug/Kg		7/10/2019	16:51
Pyrene	**2070**	ug/Kg		7/10/2019	16:51

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-11-070219

Lab Sample ID: 193062-03 **Date Sampled:** 7/2/2019

Matrix: Soil **Date Received:** 7/2/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**59.9**	39 - 77.6		7/10/2019	16:51
Nitrobenzene-d5	**58.2**	35.4 - 75.3		7/10/2019	16:51
Terphenyl-d14	**64.4**	42 - 93.5		7/10/2019	16:51

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 7/5/2019
Data File: B38649.D

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier:	RRW-CH-SS-12-070219		
Lab Sample ID:	193062-04	**Date Sampled:**	7/2/2019
Matrix:	Soil	**Date Received:**	7/2/2019

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	**0.325**	mg/Kg		7/10/2019 07:23

Method Reference(s): EPA 7471B
Preparation Date: 7/9/2019
Data File: Hg190710A

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Report Prepared Thursday, July 11, 2019

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-12-070219
Lab Sample ID: 193062-04 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	**4450**	mg/Kg		7/9/2019 00:17
Antimony	**2.54**	mg/Kg	J	7/9/2019 00:17
Arsenic	**4.56**	mg/Kg		7/9/2019 00:17
Barium	**139**	mg/Kg		7/9/2019 00:17
Beryllium	**0.219**	mg/Kg	J	7/9/2019 00:17
Cadmium	**1.19**	mg/Kg		7/9/2019 00:17
Calcium	**49600**	mg/Kg		7/10/2019 00:17
Chromium	**14.7**	mg/Kg		7/9/2019 00:17
Cobalt	**3.76**	mg/Kg		7/9/2019 00:17
Copper	**137**	mg/Kg		7/9/2019 00:17
Iron	**15900**	mg/Kg		7/9/2019 00:17
Lead	**207**	mg/Kg		7/9/2019 00:17
Magnesium	**19600**	mg/Kg		7/9/2019 00:17
Manganese	**318**	mg/Kg		7/9/2019 00:17
Nickel	**15.2**	mg/Kg		7/9/2019 00:17
Potassium	**904**	mg/Kg		7/9/2019 00:17
Selenium	**2.20**	mg/Kg		7/9/2019 00:17
Silver	**2.70**	mg/Kg		7/9/2019 00:17
Sodium	**210**	mg/Kg		7/9/2019 00:17
Thallium	**2.48**	mg/Kg		7/9/2019 00:17
Vanadium	**10.8**	mg/Kg		7/9/2019 00:17
Zinc	**264**	mg/Kg		7/9/2019 00:17

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 7/3/2019
Data File: 190708C

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-12-070219
Lab Sample ID: 193062-04 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Semi-Volatile Organics (Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 331	ug/Kg		7/10/2019 17:20
1,2,4,5-Tetrachlorobenzene	< 331	ug/Kg		7/10/2019 17:20
1,2,4-Trichlorobenzene	< 331	ug/Kg		7/10/2019 17:20
1,2-Dichlorobenzene	< 331	ug/Kg		7/10/2019 17:20
1,3-Dichlorobenzene	< 331	ug/Kg		7/10/2019 17:20
1,4-Dichlorobenzene	< 331	ug/Kg		7/10/2019 17:20
2,2-Oxybis (1-chloropropane)	< 331	ug/Kg		7/10/2019 17:20
2,4-Dinitrotoluene	< 331	ug/Kg		7/10/2019 17:20
2,6-Dinitrotoluene	< 331	ug/Kg		7/10/2019 17:20
2-Chloronaphthalene	< 331	ug/Kg		7/10/2019 17:20
2-Methylnapthalene	< 331	ug/Kg		7/10/2019 17:20
2-Nitroaniline	< 331	ug/Kg		7/10/2019 17:20
3,3'-Dichlorobenzidine	< 331	ug/Kg		7/10/2019 17:20
3-Nitroaniline	< 331	ug/Kg		7/10/2019 17:20
4-Bromophenyl phenyl ether	< 331	ug/Kg		7/10/2019 17:20
4-Chloroaniline	< 331	ug/Kg		7/10/2019 17:20
4-Chlorophenyl phenyl ether	< 331	ug/Kg		7/10/2019 17:20
4-Nitroaniline	< 331	ug/Kg		7/10/2019 17:20
Acenaphthene	< 331	ug/Kg		7/10/2019 17:20
Acenaphthylene	< 331	ug/Kg		7/10/2019 17:20
Acetophenone	< 331	ug/Kg		7/10/2019 17:20
Anthracene	**175**	ug/Kg	J	7/10/2019 17:20
Atrazine	< 331	ug/Kg		7/10/2019 17:20
Benzaldehyde	< 331	ug/Kg		7/10/2019 17:20
Benzo (a) anthracene	**1380**	ug/Kg		7/10/2019 17:20
Benzo (a) pyrene	**1410**	ug/Kg		7/10/2019 17:20
Benzo (b) fluoranthene	**1520**	ug/Kg		7/10/2019 17:20

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-12-070219
Lab Sample ID: 193062-04 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Benzo (g,h,i) perylene	**1230**	ug/Kg	7/10/2019	17:20
Benzo (k) fluoranthene	**1190**	ug/Kg	7/10/2019	17:20
Bis (2-chloroethoxy) methane	< 331	ug/Kg	7/10/2019	17:20
Bis (2-chloroethyl) ether	< 331	ug/Kg	7/10/2019	17:20
Bis (2-ethylhexyl) phthalate	< 331	ug/Kg	7/10/2019	17:20
Butylbenzylphthalate	< 331	ug/Kg	7/10/2019	17:20
Caprolactam	< 331	ug/Kg	7/10/2019	17:20
Carbazole	< 331	ug/Kg	7/10/2019	17:20
Chrysene	**1400**	ug/Kg	7/10/2019	17:20
Dibenz (a,h) anthracene	**371**	ug/Kg	7/10/2019	17:20
Dibenzofuran	< 331	ug/Kg	7/10/2019	17:20
Diethyl phthalate	< 331	ug/Kg	7/10/2019	17:20
Dimethyl phthalate	< 331	ug/Kg	7/10/2019	17:20
Di-n-butyl phthalate	< 331	ug/Kg	7/10/2019	17:20
Di-n-octylphthalate	< 331	ug/Kg	7/10/2019	17:20
Fluoranthene	**1990**	ug/Kg	7/10/2019	17:20
Fluorene	< 331	ug/Kg	7/10/2019	17:20
Hexachlorobenzene	< 331	ug/Kg	7/10/2019	17:20
Hexachlorobutadiene	< 331	ug/Kg	7/10/2019	17:20
Hexachlorocyclopentadiene	< 1330	ug/Kg	7/10/2019	17:20
Hexachloroethane	< 331	ug/Kg	7/10/2019	17:20
Indeno (1,2,3-cd) pyrene	**1100**	ug/Kg	7/10/2019	17:20
Isophorone	< 331	ug/Kg	7/10/2019	17:20
Naphthalene	< 331	ug/Kg	7/10/2019	17:20
Nitrobenzene	< 331	ug/Kg	7/10/2019	17:20
N-Nitroso-di-n-propylamine	< 331	ug/Kg	7/10/2019	17:20
N-Nitrosodiphenylamine	< 331	ug/Kg	7/10/2019	17:20
Phenanthrene	**656**	ug/Kg	7/10/2019	17:20
Pyrene	**1710**	ug/Kg	7/10/2019	17:20

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PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 193062

Client: **Lu Engineers, Inc.**

Project Reference: 50378-02

Sample Identifier: RRW-CH-SS-12-070219
Lab Sample ID: 193062-04 **Date Sampled:** 7/2/2019
Matrix: Soil **Date Received:** 7/2/2019

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
2-Fluorobiphenyl	**48.3**	39 - 77.6		7/10/2019	17:20
Nitrobenzene-d5	**49.7**	35.4 - 75.3		7/10/2019	17:20
Terphenyl-d14	**53.1**	42 - 93.5		7/10/2019	17:20

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 7/5/2019
Data File: B38650.D

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Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM

REPORT TO:		INVOICE TO:		
CLIENT:	LU Engineers	CLIENT:		LAB PROJECT ID: 193062
ADDRESS:	339 East Avenue, Suite 200	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14604	CITY:	SAME STATE: ZIP:	Quotation #:
PHONE:	585-385-7417	PHONE:		Email: lgregor@luengineers.com; gregandrus@luengineers.com
ATTN:	LAURA GREGOR/GREG ANDRUS	ATTN:		

PROJECT REFERENCE: 50378-02

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	SVOC (8/NYS)	TAL Metals									REMARKS	PARADIGM LAB SAMPLE NUMBER
7/2/19	10:15		✓	RRW-CH-SS-09-070219	SO	1	✓	✓											01
7/2/19	10:20		✓	RRW-CH-SS-10-070219	SO	1	✓	✓											02
7/2/19	10:25		✓	RRW-CH-SS-11-070219	SO	1	✓	✓											03
7/2/19	10:30		✓	RRW-CH-SS-12-070219	SO	1	✓	✓											04

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☒	None Required	☐	None Required	☒
10 day	☐	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

Laura K Gregor 7/2/19 10:35
Sampled By — Date/Time

Laura K Gregor 7/2/19 10:42
Relinquished By — Date/Time

[signature] 7/2/19 1042
Received By — Date/Time

[signature] 7/2/19 11:02
Received @ Lab By — Date/Time

Total Cost:

P.I.F.

13°C iced started in field 7/2/19 10:50

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

Custody Seal N/A, samples delivered by client. CP 7/2/19

See additional page for sample conditions.

PARADIGM

Chain of Custody Supplement

Client: Lu Engineers **Completed by:** Glenn Pezzulo

Lab Project ID: 193062 **Date:** 7/3/19

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	*NELAC compliance with the sample condition requirements upon receipt* Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X 5VOA Hg		X
Comments	13°C iced started in field 7/2/19 10:50		
Compliant Sample Quantity/Type	X		
Comments			