2017

PERIODIC REVIEW REPORT

FOR
FORMER DOWCRAFT FACILITY
NYSDEC SITE #907020
FALCONER, CHAUTAUQUA COUNTY, NEW YORK

Prepared by:

C&S ENGINEERS, INC.
141 ELM STREET
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Prepared on Behalf of:

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14 DEMING DRIVE
FALCONER, NEW YORK 14733

NOVEMBER 2017

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TABLES

APPENDICES

ACRONYM LIST

C&S	C&S ENGINEERS, INC.
JCC	JAMESTOWN CONTAINER COMPANIES
SITE	FORMER DOWCRAFT FACILITY
TCE	TRICHLOROETHYLENE
IRM	INTERIM REMEDIAL MEASURES
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ROD	RECORD OF DECISION
CRA	CONESTOGA-ROVERS & ASSOCIATES
RI	REMEDIAL INVESTIGATION
SCO	SOIL CLEANUP OBJECTIVES
SVOC	SEMI-VOLATILE ORGANIC COMPOUNDS
VOC	VOLATILE ORGANIC COMPOUNDS
SVI	SOIL VAPOR INTRUSION

EXECUTIVE SUMMARY

C&S Engineers, Inc. (C&S) has prepared the 2017 Periodic Review Report for the former Dowcraft Site (NYSDEC Site No. 907020) located at 65 South Dow Street in Falconer, New York. From 1939 to 1999, the Site manufactured steel partitions. As part of this manufacturing process, a vapor degreaser was used which included the use of chemicals such as trichloroethylene (TCE).

Previous environmental investigations have detected a TCE plume in the area of the former Dowcraft Site. TCE contamination is located within two sand/gravel layers separated by a silt/clay lens. According to previous environmental reports, the area of former degreaser pit (area of groundwater monitoring wells PW-3 and PW-3R) is a likely source area for the TCE plume. The plume originates from the degreaser area and has affected groundwater in the upper and lower sand/gravel layers. The plume extends from the degreaser area to the north, under the JCC building and up to the area of the Chadakoin River. This is an area of approximately one acre. The rate of movement is approximately 2 to 3 feet per year to the north. Sampling in the River has not shown any impact to date.

The 2003 Record of Decision of the Site selected in-situ chemical dechlorination using potassium permanganate as the approved remedy. Nine in-situ treatment events occurred between May 2000 and July 2006. In 2014, C&S completed another treatment on the Site. Ten injection borings were advanced throughout the TCE plume and a potassium permanganate treatment fence was installed adjacent to the source area by PW-3R.

Post-treatment groundwater monitoring indicates that the latest treatment was successful in the dechlorination of TCE. Out of eleven monitoring wells, seven wells show a decrease in TCE and other chlorinated compounds, and five of these monitoring wells show a decrease of 80% or greater. Some wells show an increase of daughter compounds, this suggests that the dechlorination process is breaking TCE into its daughter compounds.

The Site is compliant with all institutional and engineering controls. The Institutional and Engineering Controls Certification form is provided in Appendix D.

1 SITE OVERVIEW

1.1 Site Description

The Dowcraft Site is located at 65 South Dow Street in Falconer, New York and occupies approximately 2.2 acres of land situated immediately east of South Dow Street and approximately 100 feet south of the Chadakoin River (Site). The Jamestown Container manufacturing building is situated between the Site and the Chadakoin River.

1.2 Geology and Hydrogeology

Site geology consists of fill material overlying two sand/gravel layers separated by a silt/clay lens. Fill material consists of a mixed matrix of sand, cinders, silt, gavel, brick, concrete, coal, slag and metal. The fill unit ranges in thickness from 2 to over 14 feet, with an average thickness of 8 feet.

Under the fill, the upper sand/gravel layer ranges from 10 to 20 feet in thickness. Underlying the upper sand/gravel layer is a silt/clay lens that ranges from 4 to 8 feet in thickness. The lower sand/gravel layer is 10 to 18 feet thick. Underlying the lower sand layer is a second silt/clay layer that starts approximately 43 feet below ground surface (BGS). This unit is estimated to be 60 feet in thickness according to regional geology.

The average depth to groundwater is 10 feet BGS within the upper sand/gravel layer. Groundwater flow within the upper sand/gravel layer is to the north-northeast at approximately 2.7 feet per year.

1.3 Nature and Extent of Contamination

The chemicals of concern (COC) of the Site are trichloroethylene and its daughter compounds (cis-1,2-dichloroethene and vinyl chloride). According to previous environmental reports, the area of former degreaser pit (area of groundwater monitoring wells PW-3 and PW-3R) is a likely source area for the COC plume. The plume originates from the degreaser area and has affected groundwater in the upper and lower sand/gravel layers. The plume extends from the degreaser area to the north, under the JCC building and up to the area of the Chadakoin River. This is an area of approximately one acre. Sampling in the River has not shown any impact to date.

Total volatile organic compound (VOC) concentrations range between 500 to 2,600 ug/L. The volume of the COC plume extends from the degreaser pits to the southern façade of the JCC building (approximate area of 5,000 square feet), then vertically down to the base of the second sand/gravel layer (43 feet BGS); a total volume of approximately 8,333 cubic yards of groundwater and subsurface soil.

Table 1 presents the 2013 baseline groundwater monitoring data. Table 2 presents data for the pre-treatment and post-treatment groundwater monitoring events. Another groundwater monitoring event was conducted on November 2015. Sampling data will be submitted as a separate report to the NYSDEC.

1.4 Site History

The property was first developed in 1890 as a woolen mill until 1939 when it was converted into a factory which manufactured steel partitions used for offices. In 1986 the deed was transferred to the Dowcraft Corporation. Manufacturing activities continued until the facility closed in 1999. As part of this manufacturing process, a vapor degreaser was used which included the use of chemicals such as trichloroethylene (TCE). This work continued until 1999 when the facility was closed, a portion of the Site was demolished, and the property was sold to JCC.

Figure 1 presents present and historic site features.

The Dowcraft Site was the subject of environmental investigations in the early 1990s, at which time contaminated groundwater was discovered on site. An interim remedial measure (IRM) was subsequently put in place in 1994 which consisted of groundwater extraction and treatment. In 2000, the use of additional groundwater remediation technologies was approved by the NYSDEC which involved in-situ chemical oxidation of TCE through the injection of potassium permanganate into the overburden groundwater. In 2003, a Record of Decision (ROD) was approved that selected the following remedy:

- In-situ groundwater treatment through chemical oxidation, by injection of potassium permanganate dissolved in water through existing well points into the shallow overburden groundwater table;
- Overburden groundwater monitoring to verify the effectiveness of the treatment;
- Institutional controls to prevent the use of groundwater as a source of potable water; and
- Annual certification to NYSDEC to certify that institutional controls remain in place.

Conestoga-Rovers & Associates (CRA) conducted nine injection treatments between May 2000 and July 2006, totaling 21,500 pounds of potassium permanganate. These injection treatments were successful in oxidizing TCE in outer plume area; however, the concentrations of TCE in the source area remain high.

2014 and 2015 In-situ Remedial Activities

In May 2013, C&S was asked to re-evaluate the environmental conditions of the Site. On July 2013, baseline groundwater monitoring was conducted to determine the changes, if any, in TCE concentrations since 2006. Based on the findings of this work, a Corrective Measures Work Plan was submitted to the NYSDEC on May 2, 2014. C&S proposed additional in-situ chemical oxidation (ISCO) injections and the installation of a potassium permanganate treatment fence. This work was conducted on December 1 through 9, 2014.

Ten borings were each injected with approximately 33 gallons ISCO solution containing approximately 400 pounds of ISCO material. As the solution was pumped into the

subsurface, the drill rods were lifted at a rate designed to inject a consistent amount of materials between 5 and 30 feet below grade. A total of 4,024.12 pounds of potassium permanganate was injected into the TCE plume.

Within the lower sand/gravel layer, the area adjacent to PW-3R contains the highest concentrations of TCE. To address these concentrations, a treatment fence was installed to reduce source loading into downgradient groundwater zones. The treatment fence consisted of 1.5 foot long tubes of paraffin wax mixed with potassium permanganate installed in selected monitoring wells and in the subsurface. A 36-foot treatment fence was installed next to the northwest corner of the building. A total of ten borings to 40 feet below grade were drilled to facilitate the installation of the treatment fence. A potassium permanganate cylinder was dropped down the drill casing. Four feet of casing was removed allowing the bore hole to collapse and another cylinder was placed in series until a total of 5 cylinders were installed (a vertical treatment thickness of approximately 7.5 feet in each boring).

2 MONITORING PLAN COMPLIANCE REPORT

The monitoring plan developed by C&S for the Site includes both chemical and hydraulic monitoring of groundwater before and after treatment semi-annually for two years. Baseline groundwater monitoring was performed on July 2, 2013 and the chemical data is provided in Table 1. The following monitoring wells are included in the groundwater monitoring plan:

ESI - 1	ESI - 11
ESI - 2	ESI - 12
ESI - 3	ESI -13R
ESI - 6	PW - 1
ESI - 7	PW - 3R
ESI - 10	

The groundwater monitoring activities included the collection of depth-to-water measurements at each monitoring well and the collection of groundwater samples for laboratory analysis. Pre-treatment sampling was conducted on October 21, 22 and 29, 2014 and post-treatment sampling was conducted on:

April 21 and 22, 2015	1st Post-treatment
November 2 and 3, 2015	2nd Post-treatment
April 25 and 26, 2016	3rd Post-treatment

October 20 and 21, 2016 — 4th Post-treatment

June 7 and 8, 2017 — 5th Post-treatment

Groundwater sampling was conducted in accordance with the U.S. Environmental Protection Agency Low flow sample procedure.

3 REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

Contaminant concentrations appeared to have deceased, although some increases were also observed. The table below presents a comparison of total VOC concentrations from each monitoring well and the percent change from pre-treatment and post-treatment groundwater monitoring.

CHANGE IN VOC CONCENTRATION 2014-2017

Monitoring Well	*Total VOC Concentration (ug/L)*		*Percent Change*
	Pre-Treatment October 2014	*Post-Treatment June 2017*	
PW-1	16.9	20.36	+20.47%
PW-3R	2,609.3	3090.2	+18.43%
ESI-1	8.9	3.68	-58.65%
ESI-2	816.08	--	--
ESI-3	4.8	0	-100%
ESI-6	575.22	612	+6.39%
ESI-7	208.39	36.35	-82.56%
ESI-10	352.11	3.01	-99.15%
ESI-11	157	5.87	-96.26%
ESI-12	221.48	14.2	-93.95%
ESI-13R	40	7.37	-99.98%

Out of ten monitoring wells, seven wells show a decrease in TCE and other chlorinated compounds. Continued decreases of TCE and other chlorinated compounds were observed in wells on the outside of the contaminant plume (ESI-1, ESI-7 and ESI-13R) and inside the JCC building (ESI-10, ESI-11 and ESI-12). No TCE or other chlorinated compounds were detected in samples from within the JCC building.

Two wells show a rebound of chlorinated compounds from the December 2014 treatment event. Monitoring wells within the area treated with injection borings still contain elevated levels of TCE and daughter compounds (ESI-2 and ESI-6). Elevated concentrations were observed in sampling events conducted from April 2015 through October 2016. The reason for this observation is not clear, although a possible explanation is the injections caused the migration of groundwater with higher concentrations towards

certain monitoring wells, or the ISCO materials may have increased the mobilization of contaminants that may have adhered to soil particles. However, these monitoring wells have increased levels of daughter compounds of TCE, indicating that reductive de-chlorination of TCE is taking place as a result of the potassium permanganate treatment.

Both wells show a trend in chlorinated contaminants back to pre-treatment levels, indicating that this area is still in the process of reductive de-chlorination.

Chloride concentrations are unchanged with previous sampling events. Future monitoring rounds will include chloride in all sampled wells, so trends of chloride concentrations will be available during future monitoring events.

Additional parameters were monitored, including specific conductance, pH, chloride and dissolved oxygen. Overall, specific conductance and pH levels remained consistent within all the monitoring wells before and after treatment. In ten of the eleven monitoring wells, dissolved oxygen increased as potassium permanganate oxidized TCE and the other chlorinated compounds.

Historic concentrations of TCE and its daughter compounds from October 2005 to October 2016 are presented on Figures 2, 3, and 4. Laboratory analytical results are provided in Appendix A.

4 IC/EC PLAN COMPLIANCE REPORT

4.1 IC/EC Requirements and Compliance

As stated in the 2003 ROD, the remedial goals selected for this Site are:

- Treat the source area of groundwater contamination by oxidation dechlorination of the contaminants in place;
- Prevent exposure of human receptors to contaminated groundwater in the sand and gravel unit under Site;
- Prevent or mitigate, to the maximum extent practicable, COC migration via groundwater so that releases from the underlying sand and gravel unit to the Chadakoin River do not exceed applicable standards, criteria and guidance.

4.1.1 Institutional Controls

The institutional controls for this Site are:

- Groundwater Use Restriction
- Land Use Restriction
- Monitoring Plan
- Operation and Monitoring Plan

The Site has not changed owners and the land use of the Site has not change. A signed certification that groundwater is not utilized is provided by the property owner in Appendix B.

4.1.2 Engineering Controls

As specified under the Engineering Control Provision, any future development on the Site will include provisions for soil gas controls, or an assessment demonstrating that such controls are not needed.

The soil vapor intrusion (SVI) work plan, submitted on February 20, 2015, targeted areas in the main JCC building and one smaller out building to determine if TCE and other chlorinated compounds in the groundwater have impacted the soil vapor and indoor air quality.

The main JCC building is a linear building that begins at South Dow Street and extends approximately 1,060 feet to the northeast. The main building consists of multiple interconnected buildings that have been added throughout its history. The main building consists of the following portions, starting from South Dow Street:

- Four-story brick building, 55 feet long by 100 feet wide;
- Two-story brick building 300, feet long by 50 feet wide;
- One-story brick building 380, feet long by 80 feet wide; and
- One-story steel building 325, feet long by 100 feet wide.

A second, one-story concrete block building (220 feet long by 50 feet wide), referred by JCC as Building #9, is south of the main building. Building #9 is used for manufacturing.

On November 2, 2015, Centek Laboratories performed the SVI sampling with the assistance of JCC maintenance staff. A total of nine sub-slab samples (SS-1 to SS-9) and nine indoor air samples (IA-1 to IA-9) were installed within the main building and Building A. Figure 5 shows the locations of the SVI samples and the three building use areas. Indoor air samples were co-located with each sub-slab sample.

Based on the sample results and a review by the New York State Department of Health (NYSDOH), it was determined that a soil vapor depressurization system would be warranted to mitigate impacts from contaminated soil vapors. A sub-slab depressurization system work plan was submitted on January 12, 2017 and accepted by the NYSDEC and NYSDOH on February 8, 2017.

4.1.2.1 Construction Completion Reports

The following section summarizes the construction completion reports, provided in Appendix C, for the Sub-Slab Depressurization systems. The primary objective of implementing the preventive measures was to mitigate potential intrusion of soil vapor into the site buildings.

April 2017, Jamestown Container Companies – 65 South DOW St., Falconer, NY 14733 Construction Completion Report for SSD System – Building 9, prepared by Mitigation Tech Vapor Intrusion Specialists.

This document presented a construction report, performance evaluation, O&M recommendations, and certification of effectiveness for the Sub-Slab Depressurization (SSD) system installed by Mitigation Tech. Two multi-suction point SSD systems were installed using principles and equipment typically used for soil vapor intrusion mitigation in buildings in compliance with the NYSDOH document, "Guidance for Evaluation Soil Vapor Intrusion in the State of New York, October 2006."

The building was assessed by confirmatory sub-slab air communication testing at the job start to refine data obtained from the preliminary building assessment. The system, comprised of two fans, suction cavities, and other SSD system components, was constructed on March 21 through 27, 2017. Vacuum and air flow measurements were performed continuously during construction to ensure design integrity.

As-built sketches of the system are provided in Appendix C.

October 2017, Jamestown Container Companies – 65 South DOW St., Falconer, NY 14733 Construction Completion Report for SSD System – Building 5 & 6, prepared by Mitigation Tech Vapor Intrusion Specialists.

This document presented a construction report, performance evaluation, O&M recommendations, and certification of effectiveness for the Sub-Slab Depressurization System and Crawlspace Ventilation System (CVS) installed by Mitigation Tech. Following a Design/Build SSD construction plan that was modified based on continuing assessment performed during construction, five single suction point SSD systems were installed using principles and equipment typically used for soil vapor intrusion mitigation in buildings in compliance with the NYSDOH document, "Guidance for Evaluation Soil Vapor Intrusion in the State of New York, October 2006."

The building was assessed by extensive sub-slab air communication testing at job start to refine data obtained from the preliminary building assessment. Due to a system of sub-slab structural arches and crisscrossing grade beams, sub-slab spaces were either inaccessible or difficult to access. In the case of Building 5, extensive backfilling has occurred such that the soil is present immediately below the floor in the central and northernmost portions of the foundation. The southernmost portion is an open crawlspace with a dirt floor. Mitigation Tech determined that active ventilation of the southernmost sub-slab compartment bounded by buildings 4 and 6A would constitute a zone of defense to intercept soil vapor migrating from the south which would also create some limited depressurization north of the first grade beam. In the case of Building 6, the sub-space is in essence a crawlspace so ventilation was determined the most appropriate strategy to divert vapors from the building interior.

The system, comprised of five independent fan systems, suction cavities, and other SSD system components, was constructed on August 4 through 7, 2017. Vacuum and air flow

measurements were performed continuously during construction to ensure design integrity.

As-built sketches of the system are provided in Appendix C.

After the soil collect mitigation systems were operational, NYSDOH requested indoor air samples to evaluate the effectiveness of the systems. Nine indoor air samples and one outdoor air sample (located in the same areas as the SVI investigation) were collected on November 20 through 21, 2017. At this time, the lab is processing the samples. C&S will provide the results to the NYSDEC and NYSDOH once the results are received.

4.2 IC/EC Certification

As required, the Site Management Periodic Review Report Notice – Institutional and Engineering Controls Certificate Form has been completed and a copy is provided in Appendix D.

5 OPERATION AND MAINTENANCE PLAN COMPLIANCE

5.1 Groundwater Monitoring Wells

Maintenance items included are those associated with the monitoring wells. Minor maintenance to the well caps, PVC risers and road boxes is recommended for some of the monitoring wells. Section 6 provides maintenance recommendations when appropriate.

5.2 Soil Vapor Mitigation Systems

5.2.1 Monthly Monitoring

Monthly monitoring will be conducted as follows:

- Inspect fan vacuum indicator to verify that the value indicated by a mark on the gauge has not changed significantly from the position of the mark. The gauge is inspected by observing the level of colored fluid.
- Record the observed measurement for each fan vacuum indicator on form labeled "SSD System Vacuum Gauge Record". Store all forms in the facility maintenance office.
- Inspect visible components of SSD system for degraded condition.

5.2.2 Annual Inspection

Annual inspection will be conducted as follows:

- Conduct a visual inspection of the complete system (e.g., vent fans, piping, warning devices, labeling).

- Inspect all components for condition and proper operation.
- Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the NYS DOH VI Guidance (i.e., with the systems running, use smoke sticks to check for leaks through concrete cracks, floor joints and at the suction points; any leaks will be resealed until smoke is no longer observed flowing through the opening).
- Inspect the exhaust or discharge point of each exhaust fan to verify that no air intakes have been located within 10 feet.
- Conduct pressure field extension testing to ensure that the system is maintaining a vacuum beneath the entire slab. Perform a differential pressure reading at least one vacuum test point.
- Interview appropriate building occupants seeking comments and observations regarding the operation of the system.
- Confirm that the circuit breakers controlling the circuits on which the soil vapor vent fans operate are labeled "Soil Vapor System."

6 CONCLUSIONS AND RECOMMENDATIONS

Based upon the remedial activates performed, the following conclusions have been formulated:

- All of the required work was completed and is reported herein.
- The remedial activities performed at the Site have prevented any adverse risk to human health and the environment.
- The groundwater flow configuration beneath the Site is stable and remains consistent with the historically identified trends. The groundwater flow is to the north and discharges into the Chadakoin River.
- The 2014 post-treatment sampling suggests that the potassium permanganate injections and cylinders appear to be effective in treating the groundwater contaminants in many wells and less effective in others.
- The SVI systems comprised of a SSD system for Building 9 and a SSD system and CVS for Buildings 5 and 6 were properly installed and verified for effectiveness. The primary objective of implementing these systems was to mitigate potential intrusion of soil vapors.

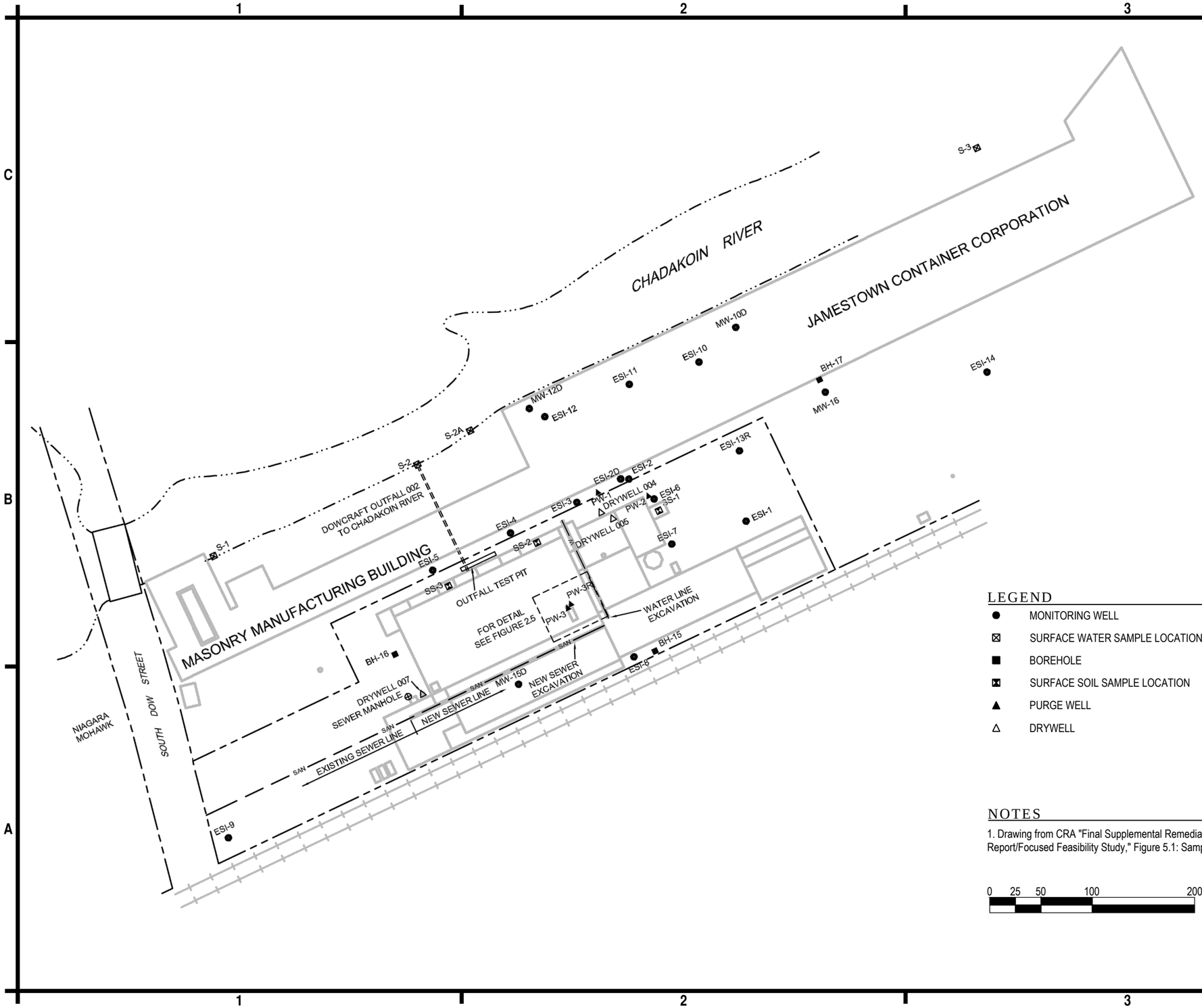
C&S recommends the following:

- NYSDEC approval of the September 2017 Operation, Maintenance, and Monitoring Work Plan for the Former Dowcraft Site included monitoring the natural attenuation of the groundwater contamination and periodically inspecting the operation of two soil vapor mitigation systems over five years. The Remedial

Action Monitoring Program will consist of monitoring Site groundwater on an annual basis and the performance of the SSDS on a monthly and annual basis.

- Two groundwater monitoring wells need to be repaired or replaced. When sampling at ESI-1, C&S observed that the well cap was missing from this well. The well cap was likely dislodged by the loading and off-loading of a dumpster located next to the well. The well plug was not damaged, but the road box was filled with sediment. The road box was cleaned out and the well was purged and sampled. The well cap for ESI-2 was also damaged. Heavy equipment traffic in this area forced the well cap into the road box in a way that the well cap could not be removed. This well could not be sampled.

FIGURES



LEGEND

- MONITORING WELL
- SURFACE WATER SAMPLE LOCATION
- BOREHOLE
- SURFACE SOIL SAMPLE LOCATION
- PURGE WELL
- DRYWELL

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 25 50 100 200 FEET

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FORMER DOWCRAFT FACILITY
GROUNDWATER REMEDIATION
FALCONER, NEW YORK

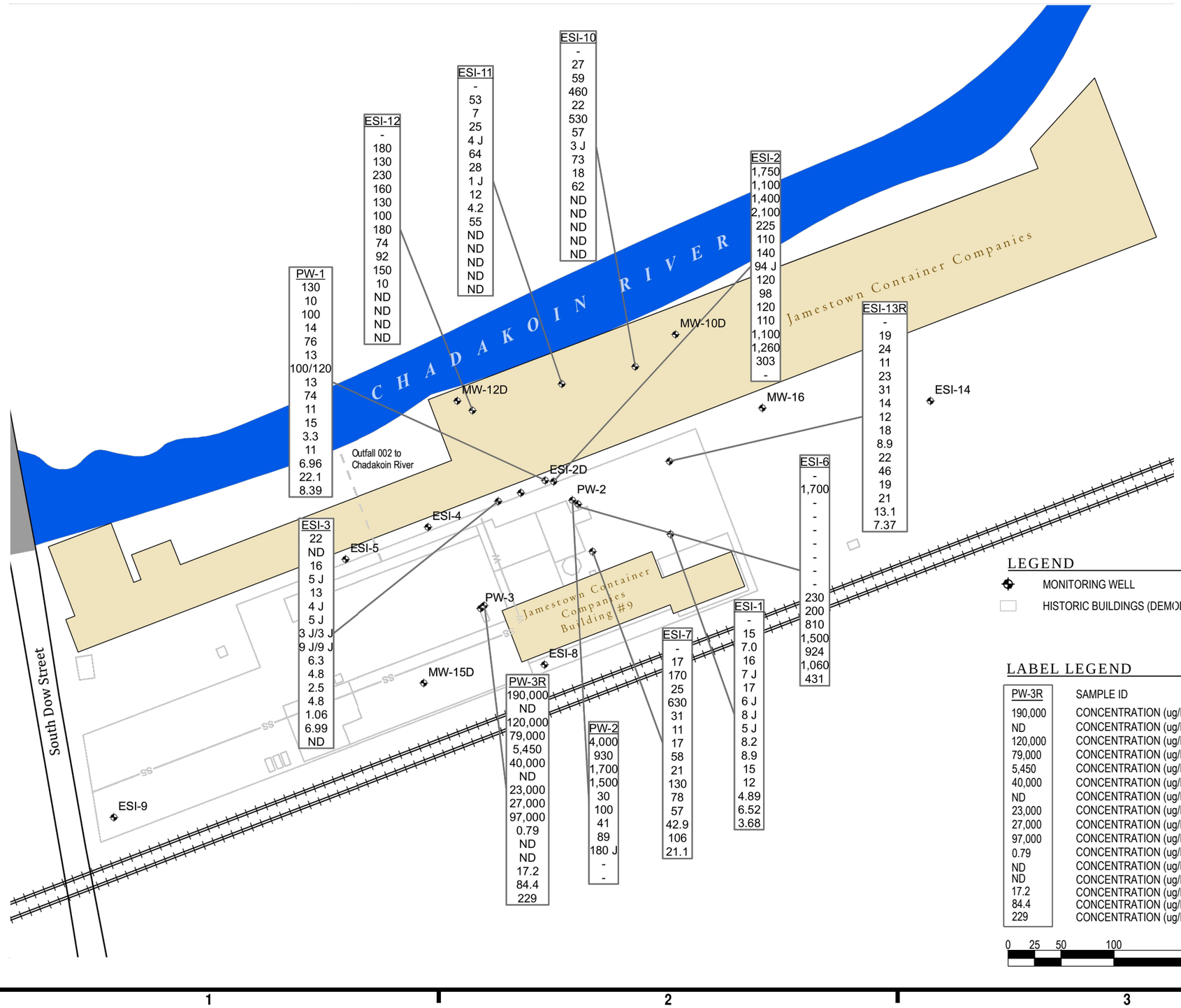
MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	N30.001.001
DATE:	JUNE 6, 2016
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

HISTORIC AND EXISTING SITE FEATURES

FIGURE 1

f:\Project\n30 - jamestown container\n30001001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 1 HISTORIC AND EXISTING SITE FEATURES.dwg



F:\Project\N30 - Jamestown Container\N30001001 - Jamestown Container\Environmental\CADD-GIS\Sheet Files\FIGURE 2 TRICLOROETHYLENE CONCENTRATIONS.dwg

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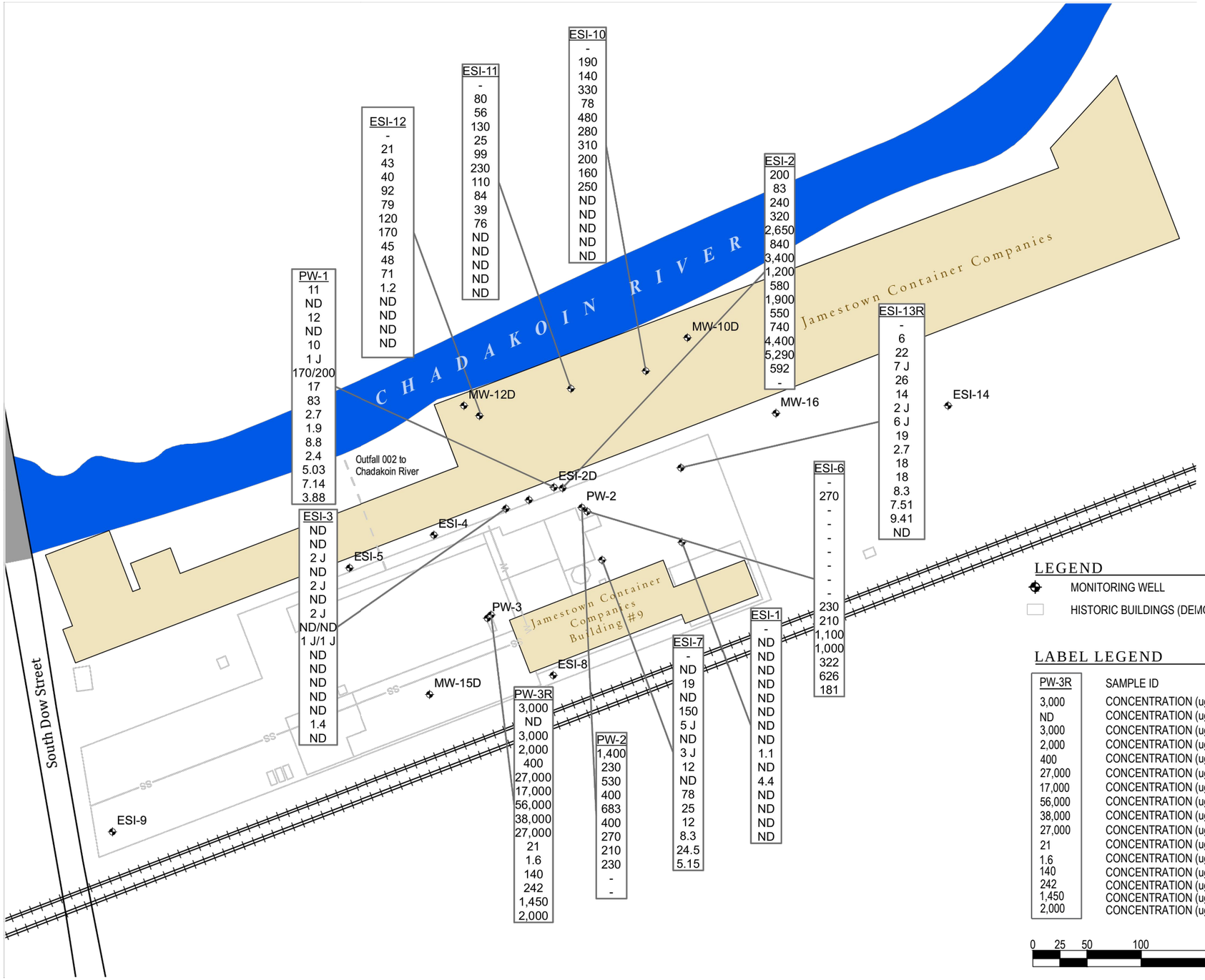
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

TRICHLOROETHYLENE CONCENTRATIONS

FIGURE 2



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FALCONER, NEW YORK

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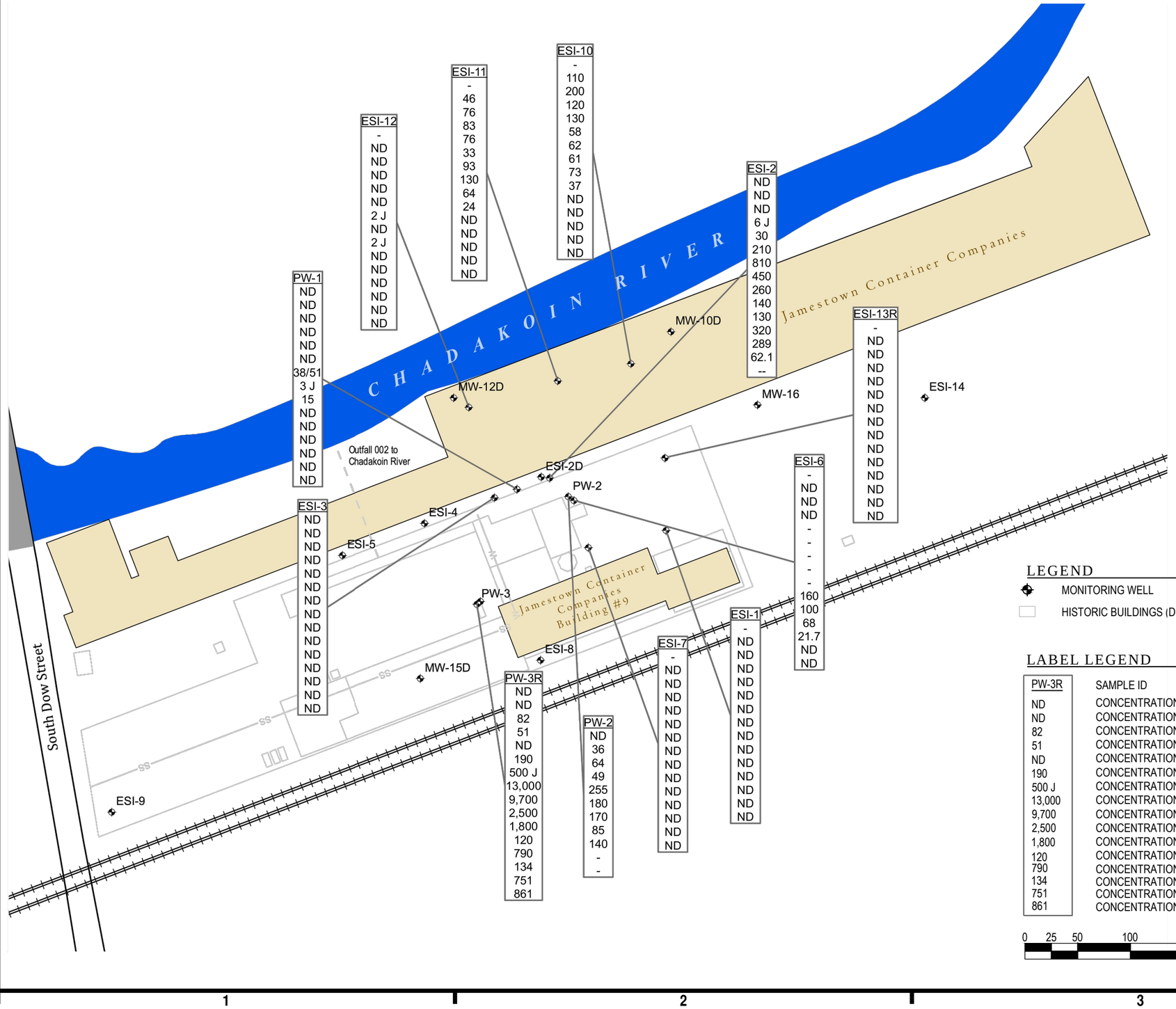
PROJECT NO:	N30.001.001
DATE:	NOVEMBER 13, 2017
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

cis-1,2-DICHLOROETHENE CONCENTRATIONS

FIGURE 3

F:\Project\N30 - Jamestown Container\N30001001 - Jamestown Container\Environmental\CADD-GIS\Sheet Files\FIGURE 3 cis-1,2-DICHLOROETHENE CONCENTRATIONS.dwg



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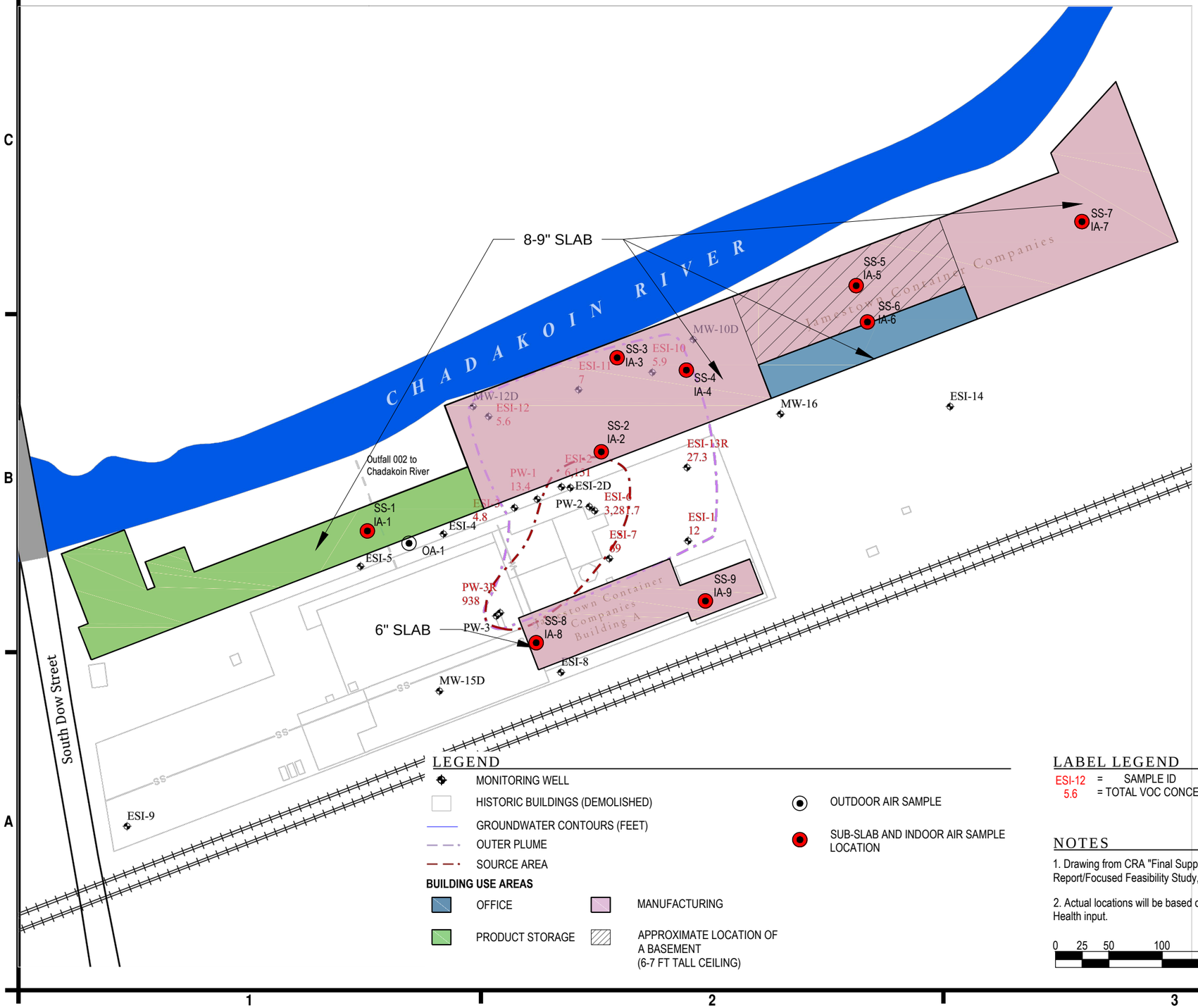
PROJECT NO:	N30.001.001
DATE:	NOVEMBER 13, 2017
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

VINYL CHLORIDE CONCENTRATIONS

FIGURE 4

F:\Project\N30 - Jamestown Container\N30001001 - Jamestown Container\Environmental\CADD-GIS\Sheet Files\FIGURE 4 VINYL CHLORIDE CONCENTRATIONS.dwg



LEGEND

- MONITORING WELL
- HISTORIC BUILDINGS (DEMOLISHED)
- GROUNDWATER CONTOURS (FEET)
- OUTER PLUME
- SOURCE AREA

BUILDING USE AREAS

- OFFICE
- PRODUCT STORAGE
- MANUFACTURING
- APPROXIMATE LOCATION OF A BASEMENT (6-7 FT TALL CEILING)

- OUTDOOR AIR SAMPLE
- SUB-SLAB AND INDOOR AIR SAMPLE LOCATION

LABEL LEGEND

ESI-12 = SAMPLE ID
5.6 = TOTAL VOC CONCENTRATION (UG/L)

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

2. Actual locations will be based on field conditions and Department of Health input.

0 25 50 100 200 FEET

F:\Project\N30 - Jamestown Container\N30001001 - Jamestown Container\Environmental\CADD-GIS\Sheet Files\FIGURE 2 SOIL VAPOR INVESTIGATION SAMPLE LOCATIONS.dwg

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FORMER DOWCRAFT FACILITY
GROUNDWATER REMEDIATION
FALCONER, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	N30.001.001
DATE:	DECEMBER 4, 2015
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	M. COLMERAUER

SOIL VAPOR SAMPLING LOCATIONS

FIGURE 5

TABLES

TABLE 1: JULY 2013 GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC CONMPOUNDS
FORMER DOWCRAFT FACILITY

Sample Location	NYSDEC Standards & Guidance Values	ESI - 1	ESI - 2	ESI - 3	ESI - 6	ESI - 7	ESI - 10	ESI - 11	ESI - 12	ESI - 13R	PW - 1	PW - 3R
Sample Date		2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13	2-Jul-13
Matrix		Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/l	ug/l	ug/l	ug/l
Contaminant												
Volatile Organic Compounds												
Acetone	50	<10.0	<10.0	<10.0		<10.0	<10.0	<10.0				13
Benzene	1	<0.70	<0.70	<0.70		<0.70	<0.70	<0.70				0.88 J
Carbon disulfide	N/S	<2.0	1.3	<2.0		<2.0	<2.0	<2.0				5.0
1,1-Dichloroethane	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				5.5
1,2-Dichloroethane	0.6	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				1.2
1,1-Dichloroethene	5	<2.0	2.8	<2.0	1.6	<2.0	0.34 J	<2.0				48
cis-1,2-Dichloroethene	5	1.1	1,900	<2.0	230	1.9	160	39	48	2.7	2.7	27,000 DL
trans-1,2-Dichloroethene	5	<2.0	13	<2.0	1.2	<2.0	1.6	<2.0				500 E
1,2-Dichloropropane	1	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				2.2
Ethylbenzene	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				0.77 J
Methylene Chloride	5	<5.0	<5.0	<5.0		<5.0	<5.0	<5.0				1.3
4-Methyl-2-pentanone	N/S	<5.0	<5.0	<5.0		<5.0	<5.0	<5.0				2.6 J
Tetrachloroethene	5	<2.0	0.55 J	<2.0	0.88 J	<2.0	<2.0	<2.0				18
1,1,2-Trichloroethane	1	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				2.8
Trichloroethene	5	8.2	98	6.3	230	21	18	4.2	92	8.9	11	97000 DL
Toluene	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				18
Vinyl chloride	2	<2.0	800	<2.0	73	<2.0	11	75				6300 DL
Xylene (total)	5	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0				4.8
Total VOCs		**9.3**	**2815.65**	**6.3**	**536.68**	**22.9**	**190.94**	**118.2**	**140**	**11.6**	**13.7**	**130924**

Notes

1) Shaded areas indicate concentration exceeds NYSDEC T.O.G.S 1.1.1 Ambient Water Quality Standards

2) < = not detected - below Method Detection Limit.

3) J = The analyte was positively identified but, the number indicates an estimated value. Detected concentration is less than the contract required quanititation limit but is greater than zero.

4) N/S = No Standard

TABLE 2: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK

Location ID		ESI-1		ESI-1		ESI-1		ESI-1		ESI-1		ESI-1		ESI-10		ESI-10		ESI-10		ESI-10		ESI-10		ESI-10		ESI-11		ESI-11		ESI-11		ESI-11		ESI-11		ESI-11	
Sample Matrix		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG	
Date Sampled		12/02/2014		04/21/2015		11/03/2015		04/25/2016		10/20/2016		06/07/2017		10/29/2014		04/21/2015		11/03/2015		04/26/2016		10/20/2016		06/07/2017		10/29/2014		04/21/2015		11/03/2015		04/26/2016		10/20/2016		06/07/2017	
Units		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
NYSDEC Groundwater Standards & Guidance Values																																					
1,1,1-Trichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,1-Dichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,1-Dichloroethene	5.0 ug/l	--	U	--	U,*	--	U	--	U	--	U	--	U	**0.61**	**J**	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U
1,2-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,2-Dichloroethane	0.6 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,3-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,4-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Bromoform	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**3.01**		--	U	--	U	--	U	--	U	**4.78**	
Dibromochloromethane	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**1.09**	
Acetone	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**8.5**	**J**	**5.9**	**J**	**7.16**	**J**	**7.11**	**J**	--	U	--	U	**3.9**	**J**	**7.0**	**J**	**32.4**		--	U	--	U
Benzene	1.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Carbon Tetrachloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U	--	U
Chlorobenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Chloroform	7.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Cis-1,2-Dichloroethylene	5.0 ug/l	--	U	**4.4**		--	U	--	U	--	U	--	U	**240**	**E**	--	U	--	U	--	U	--	U	--	U	--	U	**76**		--	U	--	U	--	U	--	U
Ethylbenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Methylene Chloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Tetrachloroethylene (PCE)	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Toluene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Trans-1,2-Dichloroethene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**2.5**		--	U	--	U	--	U	--	U	--	U	--	U	**2.0**		--	U	--	U	--	U	--	U
Trichloroethylene (TCE)	5.0 ug/l	**8.9**		**15**		**12**		**4.89**		**6.52**		**3.68**		**62**		--	U	--	U	--	U	--	U	--	U	--	U	**55**		--	U	--	U	--	U	--	U
Vinyl Chloride	2.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**37**		--	U,*	--	U	--	U	--	U	--	U	--	U	**24**		--	U	--	U	--	U	--	U
Xylenes	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Tert-Butyl Methyl Ether		--	U	--	U	--	U	--	U					--	U	--	U	--	U	--	U					--	U	--	U	--	U	--	U	--	U	--	U
Dissolved Oxygen		6100.00	HF	7900.00	HF	4800.00	HF	--	U	4300.0		6400.0		1800.00	HF	2900.00	HF	2800.00	HF	--	U	4700.0		6400.0		1800.00	HF	3100.00	HF	2400.00	HF	--	U	1500.0		10000.0	
Chloride		**249000.0**	**B**	**337000.0**	**B**	**309000.0**	**B**			**263000**		**170000.0**		**164000.0**	**B**			**79700.00**	**B**			**132000**		**190000.0**				**165000.0**	**B**	**174000.0**	**B**			**138000**		**150000.0**	
pH (S.U.)		6.58	HF	6.92	HF	7.07	HF	6.66						6.58	HF	6.69	HF	6.77	HF	6.37						6.93	HF	6.76	HF	7.02	HF	6.86					

TABLE 2: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK

Location ID		ESI-12		ESI-12		ESI-12		ESI-12		ESI-12		ESI-12		ESI-13R		ESI-13R		ESI-13R		ESI-13R		ESI-13R		ESI-13R		ESI-2		ESI-2		ESI-2		ESI-2		ESI-2		ESI-2
Sample Matrix		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG
Date Sampled		10/22/2014		04/21/2015		11/03/2015		04/26/2016		10/21/2016		06/07/2017		10/21/2014		04/21/2015		11/02/2015		04/25/2016		10/20/2016		06/07/2017		12/02/2014		04/22/2015		11/03/2015		04/25/2016		10/21/2016		06/08/2017
Units		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l
NYSDEC Groundwater Standards & Guidance Values																																				
1,1,1-Trichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
1,1-Dichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
1,1-Dichloroethene	5.0 ug/l	--	U	--	U	--	U	--	UM	--	UM	--	U	--	U	--	U,*	--	U	--	U	--	U	--	U	**1.1**		--	U,*	**12**		--	U	--	U		
1,2-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
1,2-Dichloroethane	0.6 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
1,3-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
1,4-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Bromoform	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	**14.5**																								
Dibromochloromethane	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U																							
Acetone	50.0 ug/l	--	U	--	U	**5.6**	**J**	**5.85**	**J**	**6.19**	**J**	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Benzene	1.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Carbon Tetrachloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U	--	U		
Chlorobenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Chloroform	7.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Cis-1,2-Dichloroethylene	5.0 ug/l	**71**		**1.2**		--	U	--	U	--	U	--	U	**18**		**18**		**8.3**		**7.51**		**9.41**		--	U	**540**	**E**	**740**		**4400**	**E**	**5290**		**592**			
Ethylbenzene	5.0 ug/l	--	U	--	U	--	U	--	UM	--	UM	--	UM	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Methylene Chloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**7.9**	**J**	--	U	--	U	--	U		
Tetrachloroethylene (PCE)	5.0 ug/l	**0.48**	**J**	**0.54**	**J**	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**0.48**	**J**	--	U	--	U	--	U	--	U		
Toluene	5.0 ug/l	--	U	--	U	--	U	--	UM	--	UM	--	UM	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Trans-1,2-Dichloroethene	5.0 ug/l	--	U	--	U	--	U	--	UM	--	UM	--	UM	--	U	--	U	--	U	--	U	--	U	--	U	**4.5**		--	U	**19**		--	U	--	U		
Trichloroethylene (TCE)	5.0 ug/l	**140**	**E**	**10**		--	U	--	UM	--	UM	--	UM	**22**		**46**		**19**		**21.0**		**13.1**		**7.37**		**130**	**E**	**110**		**1100**	**E**	**1260**		**303**			
Vinyl Chloride	2.0 ug/l	--	U	--	U,*	--	U	--	UM	--	UM	--	UM	--	U	--	U	--	U	--	U	--	U	--	U	**130**	**E**	**130**		**320**		**289**		--	U		
Xylenes	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U		
Tert-Butyl Methyl Ether		--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U					--	U	--	U	--	U	--	U				
Dissolved Oxygen		5400.00	HF	7600.00	HF	4500.00	HF	--	U	6500.0		3200.0		3700.00	HF	6700.00	HF	3800.00	HF	--	U	1000.0		6000.0		2100.00	HF	4900.00	HF	2200.00	HF	--	U	3700.0			
Chloride				**176000.0**	**B**	**167000.0**	**B**			**185000**		**200000.0**				**357000.0**	**B**	**322000.0**	**B**			**233000**		**160000**		**215000.0**	**B**	**219000.0**	**B**	**212000.0**	**B**			**141000**			
pH (S.U.)		6.91	HF	7.04	HF	7.23	HF	7.05						6.54	HF	6.66	HF	7.05	HF	6.64						7.06	HF	7.09	HF	7.15	HF	7.03					

WELL CAP DAMAGED. SAMPLE NOT COLLCETED.

TABLE 2: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK

Location ID		ESI-3		ESI-3		ESI-3		ESI-3		ESI-3		ESI-3		ESI-6		ESI-6		ESI-6		ESI-6		ESI-6		ESI-6		ESI-7		ESI-7		ESI-7		ESI-7		ESI-7		ESI-7	
Sample Matrix		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG	
Date Sampled		10/21/2014		04/22/2015		11/02/2015		04/25/2016		10/20/2016		06/07/2017		10/29/2014		04/22/2015		11/02/2015		04/25/2016		10/21/2016		06/08/2017		10/21/2014		04/21/2015		11/02/2015		04/25/2016		10/20/2016		06/08/2017	
Units		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
NYSDEC Groundwater Standards & Guidance Values																																					
1,1,1-Trichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,1-Dichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,1-Dichloroethene	5.0 ug/l	--	U	--	U,*	--	U	--	U	--	U	--	U	**1.6**		--	U	**3.9**		--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U
1,2-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,2-Dichloroethane	0.6 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,3-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,4-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Bromoform	50.0 ug/l																																				
Dibromochloromethane	50.0 ug/l																																				
Acetone	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**6.89**	**J**	**10.10**			
Benzene	1.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Carbon Tetrachloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Chlorobenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Chloroform	7.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Cis-1,2-Dichloroethylene	5.0 ug/l	--	U	--	U	--	U	--	U	**1.40**	**J**	--	U	**210**	**E**	**1100**		**1000**	**E**	**322**		**626**		**181**		**78**		**25**		**12**		**8.30**		**24.5**		**5.15**	
Ethylbenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Methylene Chloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	**10**	**J**	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Tetrachloroethylene (PCE)	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**1.1**		--	U	**5.8**		--	U	--	U	--	U	**0.39**	**J**	--	U	--	U	--	U	--	U	--	U
Toluene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Trans-1,2-Dichloroethene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**2.2**		--	U	**4.0**		--	U	**11.1**	**J**	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Trichloroethylene (TCE)	5.0 ug/l	**4.8**		**2.5**		**4.8**		**1.06**	**J**	**6.99**		--	U	**200**	**E**	**810**		**1500**	**E**	**924**		**1060**		**431**		**150**	**E**	**78**		**57**		**42.9**		**106**		**21.1**	
Vinyl Chloride	2.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**160**	**E**	**100**	***,^**	**68**		**21.7**		--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Xylenes	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Tert-Butyl Methyl Ether		--	U	--	U	--	U	--	U					--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Dissolved Oxygen		7400.00	HF	10000.00	HF	6000.00	HF	--	U	4800.0		5900.0		2700.00	HF	2700.00	HF	2000.00	HF	--	U	2500.0		2400.0		7300.00	HF	8500.00	HF	6700.00	HF	--	U	5100.0		9000.0	
Chloride				**218000.0**	**B**	**234000.0**	**B**			**288000**		**270000**				**242000.0**	**B**	**240000.0**	**B**			**241000**		**241000**				**331000.0**	**B**	**203000.0**	**B**			**70900**		**220000**	
pH (S.U.)		6.90	HF	7.12	HF	7.11	HF	--	U					7.05	HF	7.05	HF	7.23	HF	6.99		7.99		7.99		6.87	HF	6.88	HF	7.03	HF	6.89					

TABLE 2: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK

Location ID		PW-1		PW-1		PW-1		PW-1		PW-1		PW-1		PW-3R		PW-3R		PW-3R		PW-3R		PW-3R	
Sample Matrix		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG		WG	
Date Sampled		10/21/2014		04/21/2015		11/02/2015		04/25/2016		10/20/2016		06/08/2017		10/29/2014		04/22/2015		11/03/2015		04/26/2016		10/21/2016	
Units	NYSDEC Groundwater Standards & Guidance Values	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
1,1,1-Trichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,1-Dichloroethane	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**5.1**		**4.0**		--	U	--	U	--	U
1,1-Dichloroethene	5.0 ug/l	--	U	--	U,*	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U
1,2-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,2-Dichloroethane	0.6 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,3-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
1,4-Dichlorobenzene	3.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Bromoform	50.0 ug/l																						
Dibromochloromethane	50.0 ug/l																						
Acetone	50.0 ug/l	--	U	--	U	--	U	--	U	--	U	**8.09**	J	**12**		**16**		--	U	**11.3**	**J**	**12.3**	**J**
Benzene	1.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**0.61**	**J**	**0.53**	**J**	--	U	--	U	--	U
Carbon Tetrachloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U,*	--	U	--	U	--	U	--	U
Chlorobenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Chloroform	7.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Cis-1,2-Dichloroethylene	5.0 ug/l	**1.9**		**8.8**		**2.4**		**5.03**		**7.14**		**3.88**		**21**		**1.6**		**140**		**242**		**1450**	
Ethylbenzene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Methylene Chloride	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Tetrachloroethylene (PCE)	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Toluene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**8.1**		**6.9**		**8.0**	**J**	**4.90**		--	U
Trans-1,2-Dichloroethene	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**39**		--	U	--	U	--	U	--	U
Trichloroethylene (TCE)	5.0 ug/l	**15**		**3.3**		**11**		**6.96**		**22.1**		**8.39**		**0.79**	**J**	--	U	--	U	**17.2**		**84.4**	
Vinyl Chloride	2.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**1800**	**E**	**120**	**E**	**790**	**^,F1**	**134**		**751**	
Xylenes	5.0 ug/l	--	U	--	U	--	U	--	U	--	U	--	U	**2.3**		**1.1**	**J**	--	U				
Tert-Butyl Methyl Ether		--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U	--	U
Dissolved Oxygen		6900.00	HF	9500.00	HF	5700.00	HF	--	U	4400.0		4400.0		3300.00	HF	960.000	HF	760.000	HF	--	U	ND	
Chloride				**222000.0**	**B**	**243000.0**	**B**			**228000**		**290000**				**281000.0**	**B**	**265000.0**	**B**			**317000**	
pH (S.U.)		6.86	HF	6.92	HF	7.13	HF	6.99						6.40	HF	6.40	HF	6.41	HF	6.74		7.74	

TABLE NOTES

WG - Groundwater
ug/l - micrograms per liter
S.U. - Standard Unit

Qualifier Key
J - Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

I - The lower value for the two columns has been reported due to obvious interference.
G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
A - Spectra identified as "Aldol Condensation Product".
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
F - Denotes a parameter for which Paradigm does not carry cerification, the results for which should therefore only be used where ELAP certification is required, such as personal exposure assessment.
RE - Analytical results are from sample re-extraction.
R - Analytical results are from sample re-analysis.
D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
P - The RPD between the results for the two columns exceeds the method-specified criteria.
U - Not detected at the reported detection limit for the sample.
M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
S - Analytical results are from modified screening analysis.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
* - Indicates any recoveries outside associated acceptance windows. Surrogate ouliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.
< - Analyzed for but not detected at or above the quantitation limit
1 - Indicates data from primary column used for QC calculation.

APPENDICES

APPENDIX A
LABORATORY ANALYTICAL RESULTS

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-12-060717		
Lab Sample ID:	172549-01	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1160**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-12-060717		
Lab Sample ID:	172549-01	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 16:02
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 16:02
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 16:02
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 16:02
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 16:02
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 16:02
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 16:02
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 16:02
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 16:02
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:02
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 16:02
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 16:02
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:02
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:02
1,4-dioxane	< 20.0	ug/L		6/15/2017 16:02
2-Butanone	< 10.0	ug/L		6/15/2017 16:02
2-Hexanone	< 5.00	ug/L		6/15/2017 16:02
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 16:02
Acetone	< 10.0	ug/L		6/15/2017 16:02
Benzene	< 1.00	ug/L		6/15/2017 16:02
Bromochloromethane	< 5.00	ug/L		6/15/2017 16:02
Bromodichloromethane	< 2.00	ug/L		6/15/2017 16:02
Bromoform	**14.5**	ug/L		6/15/2017 16:02
Bromomethane	< 2.00	ug/L		6/15/2017 16:02
Carbon disulfide	< 2.00	ug/L		6/15/2017 16:02
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 16:02
Chlorobenzene	< 2.00	ug/L		6/15/2017 16:02

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-12-060717
Lab Sample ID: 172549-01 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	16:02
Chloroform	< 2.00	ug/L	6/15/2017	16:02
Chloromethane	< 2.00	ug/L	6/15/2017	16:02
cis-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	16:02
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	16:02
Cyclohexane	< 10.0	ug/L	6/15/2017	16:02
Dibromochloromethane	< 2.00	ug/L	6/15/2017	16:02
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	16:02
Ethylbenzene	< 2.00	ug/L	6/15/2017	16:02
Freon 113	< 2.00	ug/L	6/15/2017	16:02
Isopropylbenzene	< 2.00	ug/L	6/15/2017	16:02
m,p-Xylene	< 2.00	ug/L	6/15/2017	16:02
Methyl acetate	< 2.00	ug/L	6/15/2017	16:02
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	16:02
Methylcyclohexane	< 2.00	ug/L	6/15/2017	16:02
Methylene chloride	< 5.00	ug/L	6/15/2017	16:02
o-Xylene	< 2.00	ug/L	6/15/2017	16:02
Styrene	< 5.00	ug/L	6/15/2017	16:02
Tetrachloroethene	< 2.00	ug/L	6/15/2017	16:02
Toluene	< 2.00	ug/L	6/15/2017	16:02
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	16:02
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	16:02
Trichloroethene	< 2.00	ug/L	6/15/2017	16:02
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	16:02
Vinyl chloride	< 2.00	ug/L	6/15/2017	16:02

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-12-060717
Lab Sample ID: 172549-01 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**102**	77.8 - 124		6/15/2017 16:02
4-Bromofluorobenzene	**83.9**	78 - 117		6/15/2017 16:02
Pentafluorobenzene	**93.1**	83.2 - 118		6/15/2017 16:02
Toluene-D8	**69.4**	83.7 - 116	*	6/15/2017 16:02

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42472.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-11-060717		
Lab Sample ID:	172549-02	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**924**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-11-060717
Lab Sample ID: 172549-02 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 16:26
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 16:26
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 16:26
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 16:26
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 16:26
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 16:26
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 16:26
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 16:26
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 16:26
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:26
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 16:26
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 16:26
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:26
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:26
1,4-dioxane	< 20.0	ug/L		6/15/2017 16:26
2-Butanone	< 10.0	ug/L		6/15/2017 16:26
2-Hexanone	< 5.00	ug/L		6/15/2017 16:26
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 16:26
Acetone	< 10.0	ug/L		6/15/2017 16:26
Benzene	< 1.00	ug/L		6/15/2017 16:26
Bromochloromethane	< 5.00	ug/L		6/15/2017 16:26
Bromodichloromethane	< 2.00	ug/L		6/15/2017 16:26
Bromoform	**4.78**	ug/L	J	6/15/2017 16:26
Bromomethane	< 2.00	ug/L		6/15/2017 16:26
Carbon disulfide	< 2.00	ug/L		6/15/2017 16:26
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 16:26
Chlorobenzene	< 2.00	ug/L		6/15/2017 16:26

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-11-060717
Lab Sample ID: 172549-02 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L		6/15/2017	16:26
Chloroform	< 2.00	ug/L		6/15/2017	16:26
Chloromethane	< 2.00	ug/L		6/15/2017	16:26
cis-1,2-Dichloroethene	< 2.00	ug/L		6/15/2017	16:26
cis-1,3-Dichloropropene	< 2.00	ug/L		6/15/2017	16:26
Cyclohexane	< 10.0	ug/L		6/15/2017	16:26
Dibromochloromethane	**1.09**	ug/L	J	6/15/2017	16:26
Dichlorodifluoromethane	< 2.00	ug/L		6/15/2017	16:26
Ethylbenzene	< 2.00	ug/L		6/15/2017	16:26
Freon 113	< 2.00	ug/L		6/15/2017	16:26
Isopropylbenzene	< 2.00	ug/L		6/15/2017	16:26
m,p-Xylene	< 2.00	ug/L		6/15/2017	16:26
Methyl acetate	< 2.00	ug/L		6/15/2017	16:26
Methyl tert-butyl Ether	< 2.00	ug/L		6/15/2017	16:26
Methylcyclohexane	< 2.00	ug/L		6/15/2017	16:26
Methylene chloride	< 5.00	ug/L		6/15/2017	16:26
o-Xylene	< 2.00	ug/L		6/15/2017	16:26
Styrene	< 5.00	ug/L		6/15/2017	16:26
Tetrachloroethene	< 2.00	ug/L		6/15/2017	16:26
Toluene	< 2.00	ug/L		6/15/2017	16:26
trans-1,2-Dichloroethene	< 2.00	ug/L		6/15/2017	16:26
trans-1,3-Dichloropropene	< 2.00	ug/L		6/15/2017	16:26
Trichloroethene	< 2.00	ug/L		6/15/2017	16:26
Trichlorofluoromethane	< 2.00	ug/L		6/15/2017	16:26
Vinyl chloride	< 2.00	ug/L		6/15/2017	16:26

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-11-060717
Lab Sample ID: 172549-02 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.8 - 124		6/15/2017 16:26
4-Bromofluorobenzene	**83.7**	78 - 117		6/15/2017 16:26
Pentafluorobenzene	**91.9**	83.2 - 118		6/15/2017 16:26
Toluene-D8	**86.5**	83.7 - 116		6/15/2017 16:26

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42473.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-10-060717		
Lab Sample ID:	172549-03	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1080**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-10-060717
Lab Sample ID: 172549-03 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 16:50
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 16:50
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 16:50
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 16:50
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 16:50
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 16:50
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 16:50
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 16:50
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 16:50
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:50
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 16:50
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 16:50
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:50
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 16:50
1,4-dioxane	< 20.0	ug/L		6/15/2017 16:50
2-Butanone	< 10.0	ug/L		6/15/2017 16:50
2-Hexanone	< 5.00	ug/L		6/15/2017 16:50
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 16:50
Acetone	< 10.0	ug/L		6/15/2017 16:50
Benzene	< 1.00	ug/L		6/15/2017 16:50
Bromochloromethane	< 5.00	ug/L		6/15/2017 16:50
Bromodichloromethane	< 2.00	ug/L		6/15/2017 16:50
Bromoform	**3.01**	ug/L	J	6/15/2017 16:50
Bromomethane	< 2.00	ug/L		6/15/2017 16:50
Carbon disulfide	< 2.00	ug/L		6/15/2017 16:50
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 16:50
Chlorobenzene	< 2.00	ug/L		6/15/2017 16:50

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-10-060717
Lab Sample ID: 172549-03 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	16:50
Chloroform	< 2.00	ug/L	6/15/2017	16:50
Chloromethane	< 2.00	ug/L	6/15/2017	16:50
cis-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	16:50
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	16:50
Cyclohexane	< 10.0	ug/L	6/15/2017	16:50
Dibromochloromethane	< 2.00	ug/L	6/15/2017	16:50
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	16:50
Ethylbenzene	< 2.00	ug/L	6/15/2017	16:50
Freon 113	< 2.00	ug/L	6/15/2017	16:50
Isopropylbenzene	< 2.00	ug/L	6/15/2017	16:50
m,p-Xylene	< 2.00	ug/L	6/15/2017	16:50
Methyl acetate	< 2.00	ug/L	6/15/2017	16:50
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	16:50
Methylcyclohexane	< 2.00	ug/L	6/15/2017	16:50
Methylene chloride	< 5.00	ug/L	6/15/2017	16:50
o-Xylene	< 2.00	ug/L	6/15/2017	16:50
Styrene	< 5.00	ug/L	6/15/2017	16:50
Tetrachloroethene	< 2.00	ug/L	6/15/2017	16:50
Toluene	< 2.00	ug/L	6/15/2017	16:50
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	16:50
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	16:50
Trichloroethene	< 2.00	ug/L	6/15/2017	16:50
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	16:50
Vinyl chloride	< 2.00	ug/L	6/15/2017	16:50

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-10-060717
Lab Sample ID: 172549-03 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**104**	77.8 - 124		6/15/2017 16:50
4-Bromofluorobenzene	**79.5**	78 - 117		6/15/2017 16:50
Pentafluorobenzene	**91.5**	83.2 - 118		6/15/2017 16:50
Toluene-D8	**86.3**	83.7 - 116		6/15/2017 16:50

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42474.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-1-060717		
Lab Sample ID:	172549-04	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	In Progress	umho/cm		

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-1-060717		
Lab Sample ID:	172549-04	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 17:14
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 17:14
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 17:14
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 17:14
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 17:14
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 17:14
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 17:14
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 17:14
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 17:14
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 17:14
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 17:14
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 17:14
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 17:14
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 17:14
1,4-dioxane	< 20.0	ug/L		6/15/2017 17:14
2-Butanone	< 10.0	ug/L		6/15/2017 17:14
2-Hexanone	< 5.00	ug/L		6/15/2017 17:14
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 17:14
Acetone	< 10.0	ug/L		6/15/2017 17:14
Benzene	< 1.00	ug/L		6/15/2017 17:14
Bromochloromethane	< 5.00	ug/L		6/15/2017 17:14
Bromodichloromethane	< 2.00	ug/L		6/15/2017 17:14
Bromoform	< 5.00	ug/L		6/15/2017 17:14
Bromomethane	< 2.00	ug/L		6/15/2017 17:14
Carbon disulfide	< 2.00	ug/L		6/15/2017 17:14
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 17:14
Chlorobenzene	< 2.00	ug/L		6/15/2017 17:14

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-1-060717
Lab Sample ID: 172549-04 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	17:14
Chloroform	< 2.00	ug/L	6/15/2017	17:14
Chloromethane	< 2.00	ug/L	6/15/2017	17:14
cis-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	17:14
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	17:14
Cyclohexane	< 10.0	ug/L	6/15/2017	17:14
Dibromochloromethane	< 2.00	ug/L	6/15/2017	17:14
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	17:14
Ethylbenzene	< 2.00	ug/L	6/15/2017	17:14
Freon 113	< 2.00	ug/L	6/15/2017	17:14
Isopropylbenzene	< 2.00	ug/L	6/15/2017	17:14
m,p-Xylene	< 2.00	ug/L	6/15/2017	17:14
Methyl acetate	< 2.00	ug/L	6/15/2017	17:14
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	17:14
Methylcyclohexane	< 2.00	ug/L	6/15/2017	17:14
Methylene chloride	< 5.00	ug/L	6/15/2017	17:14
o-Xylene	< 2.00	ug/L	6/15/2017	17:14
Styrene	< 5.00	ug/L	6/15/2017	17:14
Tetrachloroethene	< 2.00	ug/L	6/15/2017	17:14
Toluene	< 2.00	ug/L	6/15/2017	17:14
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	17:14
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	17:14
Trichloroethene	**3.68**	ug/L	6/15/2017	17:14
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	17:14
Vinyl chloride	< 2.00	ug/L	6/15/2017	17:14

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-1-060717
Lab Sample ID: 172549-04 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**103**	77.8 - 124		6/15/2017 17:14
4-Bromofluorobenzene	**79.0**	78 - 117		6/15/2017 17:14
Pentafluorobenzene	**89.9**	83.2 - 118		6/15/2017 17:14
Toluene-D8	**87.6**	83.7 - 116		6/15/2017 17:14

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42475.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-3-060717		
Lab Sample ID:	172549-05	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1360**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-3-060717
Lab Sample ID: 172549-05 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 17:38
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 17:38
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 17:38
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 17:38
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 17:38
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 17:38
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 17:38
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 17:38
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 17:38
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 17:38
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 17:38
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 17:38
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 17:38
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 17:38
1,4-dioxane	< 20.0	ug/L		6/15/2017 17:38
2-Butanone	< 10.0	ug/L		6/15/2017 17:38
2-Hexanone	< 5.00	ug/L		6/15/2017 17:38
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 17:38
Acetone	< 10.0	ug/L		6/15/2017 17:38
Benzene	< 1.00	ug/L		6/15/2017 17:38
Bromochloromethane	< 5.00	ug/L		6/15/2017 17:38
Bromodichloromethane	< 2.00	ug/L		6/15/2017 17:38
Bromoform	< 5.00	ug/L		6/15/2017 17:38
Bromomethane	< 2.00	ug/L		6/15/2017 17:38
Carbon disulfide	< 2.00	ug/L		6/15/2017 17:38
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 17:38
Chlorobenzene	< 2.00	ug/L		6/15/2017 17:38

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-3-060717
Lab Sample ID: 172549-05 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	17:38
Chloroform	< 2.00	ug/L	6/15/2017	17:38
Chloromethane	< 2.00	ug/L	6/15/2017	17:38
cis-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	17:38
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	17:38
Cyclohexane	< 10.0	ug/L	6/15/2017	17:38
Dibromochloromethane	< 2.00	ug/L	6/15/2017	17:38
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	17:38
Ethylbenzene	< 2.00	ug/L	6/15/2017	17:38
Freon 113	< 2.00	ug/L	6/15/2017	17:38
Isopropylbenzene	< 2.00	ug/L	6/15/2017	17:38
m,p-Xylene	< 2.00	ug/L	6/15/2017	17:38
Methyl acetate	< 2.00	ug/L	6/15/2017	17:38
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	17:38
Methylcyclohexane	< 2.00	ug/L	6/15/2017	17:38
Methylene chloride	< 5.00	ug/L	6/15/2017	17:38
o-Xylene	< 2.00	ug/L	6/15/2017	17:38
Styrene	< 5.00	ug/L	6/15/2017	17:38
Tetrachloroethene	< 2.00	ug/L	6/15/2017	17:38
Toluene	< 2.00	ug/L	6/15/2017	17:38
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	17:38
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	17:38
Trichloroethene	< 2.00	ug/L	6/15/2017	17:38
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	17:38
Vinyl chloride	< 2.00	ug/L	6/15/2017	17:38

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-3-060717
Lab Sample ID: 172549-05 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.8 - 124		6/15/2017 17:38
4-Bromofluorobenzene	**76.5**	78 - 117	*	6/15/2017 17:38
Pentafluorobenzene	**89.9**	83.2 - 118		6/15/2017 17:38
Toluene-D8	**86.5**	83.7 - 116		6/15/2017 17:38

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42476.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-13R-060717		
Lab Sample ID:	172549-06	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**826**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-13R-060717		
Lab Sample ID:	172549-06	**Date Sampled:**	6/7/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 18:02
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 18:02
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 18:02
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 18:02
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 18:02
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 18:02
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 18:02
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 18:02
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 18:02
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:02
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 18:02
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 18:02
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:02
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:02
1,4-dioxane	< 20.0	ug/L		6/15/2017 18:02
2-Butanone	< 10.0	ug/L		6/15/2017 18:02
2-Hexanone	< 5.00	ug/L		6/15/2017 18:02
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 18:02
Acetone	< 10.0	ug/L		6/15/2017 18:02
Benzene	< 1.00	ug/L		6/15/2017 18:02
Bromochloromethane	< 5.00	ug/L		6/15/2017 18:02
Bromodichloromethane	< 2.00	ug/L		6/15/2017 18:02
Bromoform	< 5.00	ug/L		6/15/2017 18:02
Bromomethane	< 2.00	ug/L		6/15/2017 18:02
Carbon disulfide	< 2.00	ug/L		6/15/2017 18:02
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 18:02
Chlorobenzene	< 2.00	ug/L		6/15/2017 18:02

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-13R-060717
Lab Sample ID: 172549-06 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	18:02
Chloroform	< 2.00	ug/L	6/15/2017	18:02
Chloromethane	< 2.00	ug/L	6/15/2017	18:02
cis-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	18:02
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	18:02
Cyclohexane	< 10.0	ug/L	6/15/2017	18:02
Dibromochloromethane	< 2.00	ug/L	6/15/2017	18:02
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	18:02
Ethylbenzene	< 2.00	ug/L	6/15/2017	18:02
Freon 113	< 2.00	ug/L	6/15/2017	18:02
Isopropylbenzene	< 2.00	ug/L	6/15/2017	18:02
m,p-Xylene	< 2.00	ug/L	6/15/2017	18:02
Methyl acetate	< 2.00	ug/L	6/15/2017	18:02
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	18:02
Methylcyclohexane	< 2.00	ug/L	6/15/2017	18:02
Methylene chloride	< 5.00	ug/L	6/15/2017	18:02
o-Xylene	< 2.00	ug/L	6/15/2017	18:02
Styrene	< 5.00	ug/L	6/15/2017	18:02
Tetrachloroethene	< 2.00	ug/L	6/15/2017	18:02
Toluene	< 2.00	ug/L	6/15/2017	18:02
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	18:02
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	18:02
Trichloroethene	**7.37**	ug/L	6/15/2017	18:02
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	18:02
Vinyl chloride	< 2.00	ug/L	6/15/2017	18:02

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-13R-060717
Lab Sample ID: 172549-06 **Date Sampled:** 6/7/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**106**	77.8 - 124		6/15/2017 18:02
4-Bromofluorobenzene	**77.1**	78 - 117	*	6/15/2017 18:02
Pentafluorobenzene	**87.3**	83.2 - 118		6/15/2017 18:02
Toluene-D8	**87.0**	83.7 - 116		6/15/2017 18:02

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42477.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	PW-1-060817		
Lab Sample ID:	172549-07	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1440**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: PW-1-060817
Lab Sample ID: 172549-07 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 20:25
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 20:25
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 20:25
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 20:25
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 20:25
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 20:25
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 20:25
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 20:25
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 20:25
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 20:25
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 20:25
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 20:25
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 20:25
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 20:25
1,4-dioxane	< 20.0	ug/L		6/15/2017 20:25
2-Butanone	< 10.0	ug/L		6/15/2017 20:25
2-Hexanone	< 5.00	ug/L		6/15/2017 20:25
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 20:25
Acetone	**8.09**	ug/L	J	6/15/2017 20:25
Benzene	< 1.00	ug/L		6/15/2017 20:25
Bromochloromethane	< 5.00	ug/L		6/15/2017 20:25
Bromodichloromethane	< 2.00	ug/L		6/15/2017 20:25
Bromoform	< 5.00	ug/L		6/15/2017 20:25
Bromomethane	< 2.00	ug/L		6/15/2017 20:25
Carbon disulfide	< 2.00	ug/L		6/15/2017 20:25
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 20:25
Chlorobenzene	< 2.00	ug/L		6/15/2017 20:25

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: PW-1-060817
Lab Sample ID: 172549-07 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	20:25
Chloroform	< 2.00	ug/L	6/15/2017	20:25
Chloromethane	< 2.00	ug/L	6/15/2017	20:25
cis-1,2-Dichloroethene	**3.88**	ug/L	6/15/2017	20:25
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	20:25
Cyclohexane	< 10.0	ug/L	6/15/2017	20:25
Dibromochloromethane	< 2.00	ug/L	6/15/2017	20:25
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	20:25
Ethylbenzene	< 2.00	ug/L	6/15/2017	20:25
Freon 113	< 2.00	ug/L	6/15/2017	20:25
Isopropylbenzene	< 2.00	ug/L	6/15/2017	20:25
m,p-Xylene	< 2.00	ug/L	6/15/2017	20:25
Methyl acetate	< 2.00	ug/L	6/15/2017	20:25
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	20:25
Methylcyclohexane	< 2.00	ug/L	6/15/2017	20:25
Methylene chloride	< 5.00	ug/L	6/15/2017	20:25
o-Xylene	< 2.00	ug/L	6/15/2017	20:25
Styrene	< 5.00	ug/L	6/15/2017	20:25
Tetrachloroethene	< 2.00	ug/L	6/15/2017	20:25
Toluene	< 2.00	ug/L	6/15/2017	20:25
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	20:25
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	20:25
Trichloroethene	**8.39**	ug/L	6/15/2017	20:25
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	20:25
Vinyl chloride	< 2.00	ug/L	6/15/2017	20:25

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: PW-1-060817
Lab Sample ID: 172549-07 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**110**	77.8 - 124		6/15/2017 20:25
4-Bromofluorobenzene	**75.4**	78 - 117	*	6/15/2017 20:25
Pentafluorobenzene	**84.4**	83.2 - 118		6/15/2017 20:25
Toluene-D8	**84.5**	83.7 - 116		6/15/2017 20:25

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42483.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-7-060817		
Lab Sample ID:	172549-08	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1090**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-7-060817		
Lab Sample ID:	172549-08	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 18:26
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 18:26
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 18:26
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 18:26
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 18:26
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 18:26
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 18:26
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 18:26
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 18:26
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:26
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 18:26
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 18:26
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:26
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:26
1,4-dioxane	< 20.0	ug/L		6/15/2017 18:26
2-Butanone	< 10.0	ug/L		6/15/2017 18:26
2-Hexanone	< 5.00	ug/L		6/15/2017 18:26
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 18:26
Acetone	**10.1**	ug/L		6/15/2017 18:26
Benzene	< 1.00	ug/L		6/15/2017 18:26
Bromochloromethane	< 5.00	ug/L		6/15/2017 18:26
Bromodichloromethane	< 2.00	ug/L		6/15/2017 18:26
Bromoform	< 5.00	ug/L		6/15/2017 18:26
Bromomethane	< 2.00	ug/L		6/15/2017 18:26
Carbon disulfide	< 2.00	ug/L		6/15/2017 18:26
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 18:26
Chlorobenzene	< 2.00	ug/L		6/15/2017 18:26

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-7-060817
Lab Sample ID: 172549-08 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	18:26
Chloroform	< 2.00	ug/L	6/15/2017	18:26
Chloromethane	< 2.00	ug/L	6/15/2017	18:26
cis-1,2-Dichloroethene	**5.15**	ug/L	6/15/2017	18:26
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	18:26
Cyclohexane	< 10.0	ug/L	6/15/2017	18:26
Dibromochloromethane	< 2.00	ug/L	6/15/2017	18:26
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	18:26
Ethylbenzene	< 2.00	ug/L	6/15/2017	18:26
Freon 113	< 2.00	ug/L	6/15/2017	18:26
Isopropylbenzene	< 2.00	ug/L	6/15/2017	18:26
m,p-Xylene	< 2.00	ug/L	6/15/2017	18:26
Methyl acetate	< 2.00	ug/L	6/15/2017	18:26
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	18:26
Methylcyclohexane	< 2.00	ug/L	6/15/2017	18:26
Methylene chloride	< 5.00	ug/L	6/15/2017	18:26
o-Xylene	< 2.00	ug/L	6/15/2017	18:26
Styrene	< 5.00	ug/L	6/15/2017	18:26
Tetrachloroethene	< 2.00	ug/L	6/15/2017	18:26
Toluene	< 2.00	ug/L	6/15/2017	18:26
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	18:26
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	18:26
Trichloroethene	**21.1**	ug/L	6/15/2017	18:26
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	18:26
Vinyl chloride	< 2.00	ug/L	6/15/2017	18:26

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-7-060817
Lab Sample ID: 172549-08 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**105**	77.8 - 124		6/15/2017 18:26
4-Bromofluorobenzene	**79.2**	78 - 117		6/15/2017 18:26
Pentafluorobenzene	**87.9**	83.2 - 118		6/15/2017 18:26
Toluene-D8	**87.1**	83.7 - 116		6/15/2017 18:26

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42478.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	ESI-6-060817		
Lab Sample ID:	172549-09	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1240**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-6-060817
Lab Sample ID: 172549-09 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 20.0	ug/L		6/15/2017 19:14
1,1,2,2-Tetrachloroethane	< 20.0	ug/L		6/15/2017 19:14
1,1,2-Trichloroethane	< 20.0	ug/L		6/15/2017 19:14
1,1-Dichloroethane	< 20.0	ug/L		6/15/2017 19:14
1,1-Dichloroethene	< 20.0	ug/L		6/15/2017 19:14
1,2,3-Trichlorobenzene	< 50.0	ug/L		6/15/2017 19:14
1,2,4-Trichlorobenzene	< 50.0	ug/L		6/15/2017 19:14
1,2-Dibromo-3-Chloropropane	< 100	ug/L		6/15/2017 19:14
1,2-Dibromoethane	< 20.0	ug/L		6/15/2017 19:14
1,2-Dichlorobenzene	< 20.0	ug/L		6/15/2017 19:14
1,2-Dichloroethane	< 20.0	ug/L		6/15/2017 19:14
1,2-Dichloropropane	< 20.0	ug/L		6/15/2017 19:14
1,3-Dichlorobenzene	< 20.0	ug/L		6/15/2017 19:14
1,4-Dichlorobenzene	< 20.0	ug/L		6/15/2017 19:14
1,4-dioxane	< 200	ug/L		6/15/2017 19:14
2-Butanone	< 100	ug/L		6/15/2017 19:14
2-Hexanone	< 50.0	ug/L		6/15/2017 19:14
4-Methyl-2-pentanone	< 50.0	ug/L		6/15/2017 19:14
Acetone	< 100	ug/L		6/15/2017 19:14
Benzene	< 10.0	ug/L		6/15/2017 19:14
Bromochloromethane	< 50.0	ug/L		6/15/2017 19:14
Bromodichloromethane	< 20.0	ug/L		6/15/2017 19:14
Bromoform	< 50.0	ug/L		6/15/2017 19:14
Bromomethane	< 20.0	ug/L		6/15/2017 19:14
Carbon disulfide	< 20.0	ug/L		6/15/2017 19:14
Carbon Tetrachloride	< 20.0	ug/L		6/15/2017 19:14
Chlorobenzene	< 20.0	ug/L		6/15/2017 19:14

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-6-060817
Lab Sample ID: 172549-09 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 20.0	ug/L	6/15/2017	19:14
Chloroform	< 20.0	ug/L	6/15/2017	19:14
Chloromethane	< 20.0	ug/L	6/15/2017	19:14
cis-1,2-Dichloroethene	**181**	ug/L	6/15/2017	19:14
cis-1,3-Dichloropropene	< 20.0	ug/L	6/15/2017	19:14
Cyclohexane	< 100	ug/L	6/15/2017	19:14
Dibromochloromethane	< 20.0	ug/L	6/15/2017	19:14
Dichlorodifluoromethane	< 20.0	ug/L	6/15/2017	19:14
Ethylbenzene	< 20.0	ug/L	6/15/2017	19:14
Freon 113	< 20.0	ug/L	6/15/2017	19:14
Isopropylbenzene	< 20.0	ug/L	6/15/2017	19:14
m,p-Xylene	< 20.0	ug/L	6/15/2017	19:14
Methyl acetate	< 20.0	ug/L	6/15/2017	19:14
Methyl tert-butyl Ether	< 20.0	ug/L	6/15/2017	19:14
Methylcyclohexane	< 20.0	ug/L	6/15/2017	19:14
Methylene chloride	< 50.0	ug/L	6/15/2017	19:14
o-Xylene	< 20.0	ug/L	6/15/2017	19:14
Styrene	< 50.0	ug/L	6/15/2017	19:14
Tetrachloroethene	< 20.0	ug/L	6/15/2017	19:14
Toluene	< 20.0	ug/L	6/15/2017	19:14
trans-1,2-Dichloroethene	< 20.0	ug/L	6/15/2017	19:14
trans-1,3-Dichloropropene	< 20.0	ug/L	6/15/2017	19:14
Trichloroethene	**431**	ug/L	6/15/2017	19:14
Trichlorofluoromethane	< 20.0	ug/L	6/15/2017	19:14
Vinyl chloride	< 20.0	ug/L	6/15/2017	19:14

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: ESI-6-060817
Lab Sample ID: 172549-09 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**109**	77.8 - 124		6/15/2017 19:14
4-Bromofluorobenzene	**75.8**	78 - 117	*	6/15/2017 19:14
Pentafluorobenzene	**88.7**	83.2 - 118		6/15/2017 19:14
Toluene-D8	**86.3**	83.7 - 116		6/15/2017 19:14

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42480.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	DUP-A-060817		
Lab Sample ID:	172549-10	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1260**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	DUP-A-060817		
Lab Sample ID:	172549-10	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 20.0	ug/L		6/15/2017 19:38
1,1,2,2-Tetrachloroethane	< 20.0	ug/L		6/15/2017 19:38
1,1,2-Trichloroethane	< 20.0	ug/L		6/15/2017 19:38
1,1-Dichloroethane	< 20.0	ug/L		6/15/2017 19:38
1,1-Dichloroethene	< 20.0	ug/L		6/15/2017 19:38
1,2,3-Trichlorobenzene	< 50.0	ug/L		6/15/2017 19:38
1,2,4-Trichlorobenzene	< 50.0	ug/L		6/15/2017 19:38
1,2-Dibromo-3-Chloropropane	< 100	ug/L		6/15/2017 19:38
1,2-Dibromoethane	< 20.0	ug/L		6/15/2017 19:38
1,2-Dichlorobenzene	< 20.0	ug/L		6/15/2017 19:38
1,2-Dichloroethane	< 20.0	ug/L		6/15/2017 19:38
1,2-Dichloropropane	< 20.0	ug/L		6/15/2017 19:38
1,3-Dichlorobenzene	< 20.0	ug/L		6/15/2017 19:38
1,4-Dichlorobenzene	< 20.0	ug/L		6/15/2017 19:38
1,4-dioxane	< 200	ug/L		6/15/2017 19:38
2-Butanone	< 100	ug/L		6/15/2017 19:38
2-Hexanone	< 50.0	ug/L		6/15/2017 19:38
4-Methyl-2-pentanone	< 50.0	ug/L		6/15/2017 19:38
Acetone	< 100	ug/L		6/15/2017 19:38
Benzene	< 10.0	ug/L		6/15/2017 19:38
Bromochloromethane	< 50.0	ug/L		6/15/2017 19:38
Bromodichloromethane	< 20.0	ug/L		6/15/2017 19:38
Bromoform	< 50.0	ug/L		6/15/2017 19:38
Bromomethane	< 20.0	ug/L		6/15/2017 19:38
Carbon disulfide	< 20.0	ug/L		6/15/2017 19:38
Carbon Tetrachloride	< 20.0	ug/L		6/15/2017 19:38
Chlorobenzene	< 20.0	ug/L		6/15/2017 19:38

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	DUP-A-060817		
Lab Sample ID:	172549-10	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Chloroethane	< 20.0	ug/L	6/15/2017	19:38
Chloroform	< 20.0	ug/L	6/15/2017	19:38
Chloromethane	< 20.0	ug/L	6/15/2017	19:38
cis-1,2-Dichloroethene	**183**	ug/L	6/15/2017	19:38
cis-1,3-Dichloropropene	< 20.0	ug/L	6/15/2017	19:38
Cyclohexane	< 100	ug/L	6/15/2017	19:38
Dibromochloromethane	< 20.0	ug/L	6/15/2017	19:38
Dichlorodifluoromethane	< 20.0	ug/L	6/15/2017	19:38
Ethylbenzene	< 20.0	ug/L	6/15/2017	19:38
Freon 113	< 20.0	ug/L	6/15/2017	19:38
Isopropylbenzene	< 20.0	ug/L	6/15/2017	19:38
m,p-Xylene	< 20.0	ug/L	6/15/2017	19:38
Methyl acetate	< 20.0	ug/L	6/15/2017	19:38
Methyl tert-butyl Ether	< 20.0	ug/L	6/15/2017	19:38
Methylcyclohexane	< 20.0	ug/L	6/15/2017	19:38
Methylene chloride	< 50.0	ug/L	6/15/2017	19:38
o-Xylene	< 20.0	ug/L	6/15/2017	19:38
Styrene	< 50.0	ug/L	6/15/2017	19:38
Tetrachloroethene	< 20.0	ug/L	6/15/2017	19:38
Toluene	< 20.0	ug/L	6/15/2017	19:38
trans-1,2-Dichloroethene	< 20.0	ug/L	6/15/2017	19:38
trans-1,3-Dichloropropene	< 20.0	ug/L	6/15/2017	19:38
Trichloroethene	**450**	ug/L	6/15/2017	19:38
Trichlorofluoromethane	< 20.0	ug/L	6/15/2017	19:38
Vinyl chloride	< 20.0	ug/L	6/15/2017	19:38

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: DUP-A-060817
Lab Sample ID: 172549-10 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**109**	77.8 - 124		6/15/2017 19:38
4-Bromofluorobenzene	**75.2**	78 - 117	*	6/15/2017 19:38
Pentafluorobenzene	**87.0**	83.2 - 118		6/15/2017 19:38
Toluene-D8	**86.0**	83.7 - 116		6/15/2017 19:38

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42481.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier:	PW-3R-060817		
Lab Sample ID:	172549-11	**Date Sampled:**	6/8/2017
Matrix:	Groundwater	**Date Received:**	6/13/2017

Conductivity

Analyte	Result	Units	Qualifier	Date Analyzed
Conductivity	**1440**	umho/cm		6/16/2017

Method Reference(s): SM22 2510 B

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, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: PW-3R-060817
Lab Sample ID: 172549-11 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 20.0	ug/L		6/15/2017 20:02
1,1,2,2-Tetrachloroethane	< 20.0	ug/L		6/15/2017 20:02
1,1,2-Trichloroethane	< 20.0	ug/L		6/15/2017 20:02
1,1-Dichloroethane	< 20.0	ug/L		6/15/2017 20:02
1,1-Dichloroethene	< 20.0	ug/L		6/15/2017 20:02
1,2,3-Trichlorobenzene	< 50.0	ug/L		6/15/2017 20:02
1,2,4-Trichlorobenzene	< 50.0	ug/L		6/15/2017 20:02
1,2-Dibromo-3-Chloropropane	< 100	ug/L		6/15/2017 20:02
1,2-Dibromoethane	< 20.0	ug/L		6/15/2017 20:02
1,2-Dichlorobenzene	< 20.0	ug/L		6/15/2017 20:02
1,2-Dichloroethane	< 20.0	ug/L		6/15/2017 20:02
1,2-Dichloropropane	< 20.0	ug/L		6/15/2017 20:02
1,3-Dichlorobenzene	< 20.0	ug/L		6/15/2017 20:02
1,4-Dichlorobenzene	< 20.0	ug/L		6/15/2017 20:02
1,4-dioxane	< 200	ug/L		6/15/2017 20:02
2-Butanone	< 100	ug/L		6/15/2017 20:02
2-Hexanone	< 50.0	ug/L		6/15/2017 20:02
4-Methyl-2-pentanone	< 50.0	ug/L		6/15/2017 20:02
Acetone	< 100	ug/L		6/15/2017 20:02
Benzene	< 10.0	ug/L		6/15/2017 20:02
Bromochloromethane	< 50.0	ug/L		6/15/2017 20:02
Bromodichloromethane	< 20.0	ug/L		6/15/2017 20:02
Bromoform	< 50.0	ug/L		6/15/2017 20:02
Bromomethane	< 20.0	ug/L		6/15/2017 20:02
Carbon disulfide	< 20.0	ug/L		6/15/2017 20:02
Carbon Tetrachloride	< 20.0	ug/L		6/15/2017 20:02
Chlorobenzene	< 20.0	ug/L		6/15/2017 20:02

PARADIGM ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: PW-3R-060817
Lab Sample ID: 172549-11 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Chloroethane	< 20.0	ug/L		6/15/2017	20:02
Chloroform	< 20.0	ug/L		6/15/2017	20:02
Chloromethane	< 20.0	ug/L		6/15/2017	20:02
cis-1,2-Dichloroethene	**1990**	ug/L		6/15/2017	20:02
cis-1,3-Dichloropropene	< 20.0	ug/L		6/15/2017	20:02
Cyclohexane	< 100	ug/L		6/15/2017	20:02
Dibromochloromethane	< 20.0	ug/L		6/15/2017	20:02
Dichlorodifluoromethane	< 20.0	ug/L		6/15/2017	20:02
Ethylbenzene	< 20.0	ug/L		6/15/2017	20:02
Freon 113	< 20.0	ug/L		6/15/2017	20:02
Isopropylbenzene	< 20.0	ug/L		6/15/2017	20:02
m,p-Xylene	< 20.0	ug/L		6/15/2017	20:02
Methyl acetate	< 20.0	ug/L		6/15/2017	20:02
Methyl tert-butyl Ether	< 20.0	ug/L		6/15/2017	20:02
Methylcyclohexane	< 20.0	ug/L		6/15/2017	20:02
Methylene chloride	< 50.0	ug/L		6/15/2017	20:02
o-Xylene	< 20.0	ug/L		6/15/2017	20:02
Styrene	< 50.0	ug/L		6/15/2017	20:02
Tetrachloroethene	< 20.0	ug/L		6/15/2017	20:02
Toluene	< 20.0	ug/L		6/15/2017	20:02
trans-1,2-Dichloroethene	**10.2**	ug/L	J	6/15/2017	20:02
trans-1,3-Dichloropropene	< 20.0	ug/L		6/15/2017	20:02
Trichloroethene	**229**	ug/L		6/15/2017	20:02
Trichlorofluoromethane	< 20.0	ug/L		6/15/2017	20:02
Vinyl chloride	**861**	ug/L		6/15/2017	20:02

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: PW-3R-060817
Lab Sample ID: 172549-11 **Date Sampled:** 6/8/2017
Matrix: Groundwater **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**109**	77.8 - 124		6/15/2017 20:02
4-Bromofluorobenzene	**76.0**	78 - 117	*	6/15/2017 20:02
Pentafluorobenzene	**89.3**	83.2 - 118		6/15/2017 20:02
Toluene-D8	**85.0**	83.7 - 116		6/15/2017 20:02

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42482.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: Trip Blank
Lab Sample ID: 172549-12 **Date Sampled:** 6/7/2017
Matrix: Water **Date Received:** 6/13/2017

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		6/15/2017 18:50
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		6/15/2017 18:50
1,1,2-Trichloroethane	< 2.00	ug/L		6/15/2017 18:50
1,1-Dichloroethane	< 2.00	ug/L		6/15/2017 18:50
1,1-Dichloroethene	< 2.00	ug/L		6/15/2017 18:50
1,2,3-Trichlorobenzene	< 5.00	ug/L		6/15/2017 18:50
1,2,4-Trichlorobenzene	< 5.00	ug/L		6/15/2017 18:50
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L		6/15/2017 18:50
1,2-Dibromoethane	< 2.00	ug/L		6/15/2017 18:50
1,2-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:50
1,2-Dichloroethane	< 2.00	ug/L		6/15/2017 18:50
1,2-Dichloropropane	< 2.00	ug/L		6/15/2017 18:50
1,3-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:50
1,4-Dichlorobenzene	< 2.00	ug/L		6/15/2017 18:50
1,4-dioxane	< 20.0	ug/L		6/15/2017 18:50
2-Butanone	< 10.0	ug/L		6/15/2017 18:50
2-Hexanone	< 5.00	ug/L		6/15/2017 18:50
4-Methyl-2-pentanone	< 5.00	ug/L		6/15/2017 18:50
Acetone	**12.4**	ug/L		6/15/2017 18:50
Benzene	< 1.00	ug/L		6/15/2017 18:50
Bromochloromethane	< 5.00	ug/L		6/15/2017 18:50
Bromodichloromethane	< 2.00	ug/L		6/15/2017 18:50
Bromoform	< 5.00	ug/L		6/15/2017 18:50
Bromomethane	< 2.00	ug/L		6/15/2017 18:50
Carbon disulfide	< 2.00	ug/L		6/15/2017 18:50
Carbon Tetrachloride	< 2.00	ug/L		6/15/2017 18:50
Chlorobenzene	< 2.00	ug/L		6/15/2017 18:50

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: Trip Blank
Lab Sample ID: 172549-12
Matrix: Water
Date Sampled: 6/7/2017
Date Received: 6/13/2017

Chloroethane	< 2.00	ug/L	6/15/2017	18:50
Chloroform	< 2.00	ug/L	6/15/2017	18:50
Chloromethane	< 2.00	ug/L	6/15/2017	18:50
cis-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	18:50
cis-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	18:50
Cyclohexane	< 10.0	ug/L	6/15/2017	18:50
Dibromochloromethane	< 2.00	ug/L	6/15/2017	18:50
Dichlorodifluoromethane	< 2.00	ug/L	6/15/2017	18:50
Ethylbenzene	< 2.00	ug/L	6/15/2017	18:50
Freon 113	< 2.00	ug/L	6/15/2017	18:50
Isopropylbenzene	< 2.00	ug/L	6/15/2017	18:50
m,p-Xylene	< 2.00	ug/L	6/15/2017	18:50
Methyl acetate	< 2.00	ug/L	6/15/2017	18:50
Methyl tert-butyl Ether	< 2.00	ug/L	6/15/2017	18:50
Methylcyclohexane	< 2.00	ug/L	6/15/2017	18:50
Methylene chloride	< 5.00	ug/L	6/15/2017	18:50
o-Xylene	< 2.00	ug/L	6/15/2017	18:50
Styrene	< 5.00	ug/L	6/15/2017	18:50
Tetrachloroethene	< 2.00	ug/L	6/15/2017	18:50
Toluene	< 2.00	ug/L	6/15/2017	18:50
trans-1,2-Dichloroethene	< 2.00	ug/L	6/15/2017	18:50
trans-1,3-Dichloropropene	< 2.00	ug/L	6/15/2017	18:50
Trichloroethene	< 2.00	ug/L	6/15/2017	18:50
Trichlorofluoromethane	< 2.00	ug/L	6/15/2017	18:50
Vinyl chloride	< 2.00	ug/L	6/15/2017	18:50

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 172549

Client: **C&S Companies**

Project Reference: JCC

Sample Identifier: Trip Blank
Lab Sample ID: 172549-12 **Date Sampled:** 6/7/2017
Matrix: Water **Date Received:** 6/13/2017

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**107**	77.8 - 124		6/15/2017 18:50
4-Bromofluorobenzene	**75.7**	78 - 117	*	6/15/2017 18:50
Pentafluorobenzene	**86.0**	83.2 - 118		6/15/2017 18:50
Toluene-D8	**85.9**	83.7 - 116		6/15/2017 18:50

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x42479.D

Report Prepared Friday, June 16, 2017

PARADIGM
ENVIRONMENTAL SERVICES, INC.

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

PARADIGM
ENVIRONMENTAL SERVICES, INC

CHAIN OF CUSTODY

1 of 2 1 of 3

REPORT TO:		INVOICE TO:		
CLIENT:	C&S Engineers	CLIENT:	Same	LAB PROJECT ID: 172549
ADDRESS:	141 Elm Street	ADDRESS:		
CITY:	Buffalo STATE: NY ZIP 14025	CITY: STATE: ZIP:		Quotation #:
PHONE:	716-955-3021	PHONE:		Email:
ATTN:	Cody Martin	ATTN:		

PROJECT REFERENCE: JCC

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	Chloride	Specific Conductance	Dissolved Oxygen	REMARKS	PARADIGM LAB SAMPLE NUMBER
6/7/17	10:05		X	ESI-12-060717	WG	5	X	X	X	X		01
	11:16		X	ESI-11-060717	WG	5						02
	12:15		X	ESI-10-060717		5						03
	14:10		X	ESI-1-060717		5						04
	14:50		X	ESI-3-060717		5						05
	15:45		X	ESI-13R-060717		5						06
6/8/17	10:40		X	PW-1-060817		15					MS/MSD	07
	11:45		X	ESI-7-060817		5						08
	12:30		X	ESI-6-060817		5					Sub sent directly	09
	12:30		X	DUP-A-060817		5					to sub lab. GP 6/13/17	10

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	X
Rush 2 day		Category B	X		
Rush 1 day					
Other		Other		Other EDD	
please indicate date needed:		please indicate package needed:		please indicate EDD needed :	

Sampled By: Cody Martin 6/8/17 13:45 — Date/Time — Total Cost:

Relinquished By: Cody Martin 6/9/17 10:42 — Date/Time

Received By: James Steiner 6/9/17 10:42 — Date/Time — P.I.F.

Received @ Lab By: JR 6/13/17 17:42 — Date/Time

6°C iced 6/12/17 13:17. Custody seal intact, signed, dated. GP 6/12/17

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM
ENVIRONMENTAL SERVICES, INC.

CHAIN OF CUSTODY

2 of 2 2 of 3

REPORT TO:		INVOICE TO:		
CLIENT: C&S Engineers		CLIENT: Same		LAB PROJECT ID: 172549
ADDRESS: 141 Elm Street		ADDRESS:		
CITY: Buffalo STATE: NY ZIP: 14025		CITY: STATE: ZIP:		Quotation #:
PHONE: 955-7301		PHONE:		Email:
ATTN: Cody Martin		ATTN:		

PROJECT REFERENCE

JCC

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	Dissolved Gases, Ethane/Ethene	REMARKS	PARADIGM LAB SAMPLE NUMBER
6/8/17	13:45		X	PW-3R-060817	WG	4	XXX	X		11
6/7/17	—			Trip Blank per sample label GP 6/13/17	WA	1	X			12

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	X
Rush 2 day		Category B	X		
Rush 1 day					
Other		Other		Other EDD	
please indicate date needed:		please indicate package needed:		please indicate EDD needed :	

Sampled By — Date/Time: 6/8/17 13:45 — Total Cost:

Relinquished By — Date/Time: 6/9/17 10:42

Received By — Date/Time: 6/9/17 10:42 — P.I.F.

Received @ Lab By — Date/Time: 6/13/17 17:42

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

PARADIGM

Chain of Custody Supplement

Client: C+S Engineers **Completed by:** Glenn Pezzulo

Lab Project ID: 172549 **Date:** 6/13/17

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		X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	6°C iced 6/12/17 13:17		
Sufficient Sample Quantity	X		
Comments	Samples for Chloride, Dissolved Oxygen sent directly to sub lab.		

ANALYTICAL REPORT

Lab Number:	L1719304
Client:	Paradigm Environmental Services 179 Lake Avenue Rochester, NY 14608
ATTN:	Jane Daloia
Phone:	(585) 647-2530
Project Name:	JCC
Project Number:	JCC
Report Date:	06/16/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1719304-01	ESI-12-060717	WATER	Not Specified	06/07/17 10:05	06/09/17
L1719304-02	ESI-11-060717	WATER	Not Specified	06/07/17 11:16	06/09/17
L1719304-03	ESI-10-060717	WATER	Not Specified	06/07/17 12:15	06/09/17
L1719304-04	ESI-1-060717	WATER	Not Specified	06/07/17 14:10	06/09/17
L1719304-05	ESI-3-060717	WATER	Not Specified	06/07/17 14:50	06/09/17
L1719304-06	ESI-13R-060717	WATER	Not Specified	06/07/17 15:45	06/09/17
L1719304-07	PW-1-060817	WATER	Not Specified	06/08/17 10:40	06/09/17
L1719304-08	ESI-7-060817	WATER	Not Specified	06/08/17 11:45	06/09/17
L1719304-09	ESI-6-060817	WATER	Not Specified	06/08/17 12:30	06/09/17
L1719304-10	DUP-A-060817	WATER	Not Specified	06/08/17 12:30	06/09/17
L1719304-11	PW3R060817	WATER	Not Specified	06/08/17 13:45	06/09/17

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

At the client's request, the analysis of Specific Conductance was performed on L1719304-04.

Dissolved Oxygen

L1719304-01, -02, -03, -05 through -11 were analyzed with the method required holding time exceeded.

Specific Conductance @ 25 C

L1719304-04 was analyzed with the method required holding time exceeded.

Chloride

The WG1011945-4 MS recovery (50%), performed on L1719304-07, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 06/16/17

INORGANICS
&
MISCELLANEOUS

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-01
Client ID: ESI-12-060717
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/07/17 10:05
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	200		mg/l	10	2.0	10	-	06/10/17 18:49	1,9251	MR
Dissolved Oxygen	3.2		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-02
Client ID: ESI-11-060717
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/07/17 11:16
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	150		mg/l	10	2.0	10	-	06/10/17 18:51	1,9251	MR
Dissolved Oxygen	10.		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-03
Client ID: ESI-10-060717
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/07/17 12:15
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	190		mg/l	10	2.0	10	-	06/10/17 18:53	1,9251	MR
Dissolved Oxygen	6.4		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-04
Client ID: ESI-1-060717
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/07/17 14:10
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance	880		umhos/cm	10	10.	1	-	06/12/17 17:07	4,120.1	AS
Chloride	170		mg/l	10	2.0	10	-	06/10/17 18:55	1,9251	MR

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-05
Client ID: ESI-3-060717
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/07/17 14:50
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	270		mg/l	10	2.0	10	-	06/10/17 19:14	1,9251	MR
Dissolved Oxygen	5.9		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-06
Client ID: ESI-13R-060717
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/07/17 15:45
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	160		mg/l	10	2.0	10	-	06/10/17 19:16	1,9251	MR
Dissolved Oxygen	6.0		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-07
Client ID: PW-1-060817
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/08/17 10:40
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	290		mg/l	10	2.0	10	-	06/10/17 19:19	1,9251	MR
Dissolved Oxygen	4.4		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-08
Client ID: ESI-7-060817
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/08/17 11:45
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	220		mg/l	10	2.0	10	-	06/10/17 19:25	1,9251	MR
Dissolved Oxygen	9.0		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-09
Client ID: ESI-6-060817
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/08/17 12:30
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Dissolved Oxygen	2.4		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-10
Client ID: DUP-A-060817
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/08/17 12:30
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	230		mg/l	10	2.0	10	-	06/10/17 19:27	1,9251	MR
Dissolved Oxygen	3.0		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

SAMPLE RESULTS

Lab ID: L1719304-11
Client ID: PW3R060817
Sample Location: Not Specified
Matrix: Water

Date Collected: 06/08/17 13:45
Date Received: 06/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Dissolved Oxygen	ND		mg/l	0.10	0.10	1	-	06/10/17 04:40	121,4500O-C	JT

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-08,10 Batch: WG1011945-1										
Chloride	0.61	J	mg/l	1.0	0.20	1	-	06/10/17 17:47	1,9251	MR

Lab Control Sample Analysis

Batch Quality Control

Project Name: JCC

Project Number: JCC

Lab Number: L1719304

Report Date: 06/16/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08,10 Batch: WG1011945-2								
Chloride	97		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG1012309-1								
Specific Conductance	101		-		99-101	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08,10 QC Batch ID: WG1011945-4 QC Sample: L1719304-07 Client ID: PW-1-060817												
Chloride	290	20	300	**50**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03,05-11 QC Batch ID: WG1011845-1 QC Sample: L1719304-07 Client ID: PW-1-060817						
Dissolved Oxygen	4.4	4.4	mg/l	0		
General Chemistry - Westborough Lab Associated sample(s): 01-08,10 QC Batch ID: WG1011945-3 QC Sample: L1719304-07 Client ID: PW-1-060817						
Chloride	290	290	mg/l	0		7
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG1012309-2 QC Sample: L1719304-04 Client ID: ESI-1-060717						
Specific Conductance	880	880	umhos/cm	0		20

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1719304-01A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-01B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-02A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-02B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-03A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-03B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-04A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-04B	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		COND-120(1)
L1719304-04C	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		HOLD-WETCHEM(0)
L1719304-05A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-05B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-06A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-06B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-07A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-07B	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-07C	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-07D	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-07E	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-08A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-08B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-09A	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)
L1719304-10A	Plastic 120ml unpreserved	A	7	7	2.5	Y	Absent		CL-9251(28)
L1719304-10B	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)

*Values in parentheses indicate holding time in days

Project Name: JCC
Project Number: JCC

Lab Number: L1719304
Report Date: 06/16/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1719304-11A	BOD bottle Powder Pillow preserved	A	N/A	N/A	2.5	Y	Absent		DO-4500(.3)

*Values in parentheses indicate holding time in days

Project Name:	JCC	**Lab Number:**	L1719304
Project Number:	JCC	**Report Date:**	06/16/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers

Project Name:	JCC	**Lab Number:**	L1719304
Project Number:	JCC	**Report Date:**	06/16/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	JCC	**Lab Number:**	L1719304
Project Number:	JCC	**Report Date:**	06/16/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 OF 2
L1719304

CHAIN OF CUSTODY

148071

REPORT TO:		INVOICE TO:			
COMPANY:	Paradigm Environmental	COMPANY:	Same	LAB PROJECT #:	CLIENT PROJECT #:
ADDRESS:	179 Lake Avenue	ADDRESS:			
CITY:	Rochester STATE: NY ZIP: 14608	CITY:	STATE: ZIP:	TURNAROUND TIME: (WORKING DAYS)	
PHONE:	FAX:	PHONE:	FAX:	STD	OTHER
PROJECT NAME/SITE NAME: JCC		ATTN: Kate Hansen	ATTN: Meridith Dillman	☐ 1 ☐ 2 ☐ 3 ☒ 5	
		COMMENTS: Please email results to khansen@paradigmenv.com and reporting@paradigmenv.com		Date Due:	

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	chloride	dissolved O2	REMARKS	PARADIGM LAB SAMPLE NUMBER
1	6-7-17	10:05	1	X	ESI-12-060717	WG	3	1	1		
2		11:16	1	X	ESI-11-060717		3	1	1		
3		12:15	1	X	ESI-10-060717		3	1	1		
4		14:10	1	X	ESI-1-060717		3	1	1		
5		14:50	1	X	ESI-3-060717		2	1	1		
6	↓	15:45	1	X	ESI-13R-060717		3	1	1		
7	6-8-17	10:40	1	X	FWH-060817		5	3	1	MS/MSD	
8		11:45	1	X	ESI-7-060817		2	1	1		
9		12:30	1	X	ESI-6-060817		1	0	1		
10	↓	12:30	1	X	DUP-A-060817	↓	3	1	1		

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y ☐	N ☐
Comments:		
Preservation:	Y ☐	N ☐
Comments:		
Holding Time:	Y ☐	N ☐
Comments:		
Temperature:	Y ☐	N ☐
Comments:		

CATEGORY "B"

Client

	Date/Time
Sampled By: James Steenier	6/09/17 1445
Relinquished By:	6.9.17 @1445
Received By:	6.9.17 @1445
Rec By:	6.9.17 @1445
~~Received By~~:	
Received @ Lab By:	6/10/17 01:25

Total Cost:

P.I.F.

Serial_No:06161713:40

L1719304

2 OF 2

148071

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:			
COMPANY:	Paradigm Environmental	COMPANY:	Same	LAB PROJECT #:	CLIENT PROJECT #:
ADDRESS:	179 Lake Avenue	ADDRESS:			
CITY:	Rochester STATE: NY ZIP: 14608	CITY:	STATE: ZIP:	TURNAROUND TIME: (WORKING DAYS)	
PHONE:	FAX:	PHONE:	FAX:	STD	OTHER
PROJECT NAME/SITE NAME: JCC	ATTN: Kate Hansen	ATTN:	Meridith Dillman	☐ 1 ☐ 2 ☐ 3 ☒ 5	
	COMMENTS: Please email results to khansen@paradigmenv.com and reporting@paradigmenv.com			Date Due:	

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER OF CONTAINERS	Chloride	7023/1978								REMARKS	PARADIGM LAB SAMPLE NUMBER				
1	6-8-17	13:45	1	X	PW3R060817WG		2	X	X													
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

****LAB USE ONLY BELOW THIS LINE****

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y ☐	N ☐
Comments:		
Preservation:	Y ☐	N ☐
Comments:		
Holding Time:	Y ☐	N ☐
Comments:		
Temperature:	Y ☐	N ☐
Comments:		

CATAGORY "B"

Client

Sampled By	James Steiner	Date/Time 6/9/17 1445
Relinquished By		Date/Time 6.9.17 @ 1445
Received By	Rel By:	Date/Time 6.9.17 @ 1445
Received By		Date/Time 6/10/17 01:25
Received @ Lab By		Date/Time

Total Cost:

P.I.F.

APPENDIX B
GROUNDWATER USE CERTIFICATION

Jamestown Container Reality Inc.
14 Deming Drive
Falconer, NY 14733

November 21, 2017

Re: Site Name:	Dowcraft, South Dow Street
Site No:	907020
Site Address:	65 South Dow Street, Falconer, NY 14733

To Whom it May Concern,

This confirms that the above referenced property is owned by Jamestown Container Realty Inc. As the property owner, Jamestown Container Reality Inc. herby certifies that it is not using any ground water drawn from the property.

If you need anything further, please advise.

Sincerely,

Joseph R. Palmeri
Vice President / COO

APPENDIX C
CONSTRUCTION COMPLETION REPORTS

mitigation tech *vapor intrusion specialists*

April 8, 2017

Mr. Cody Martin
Project Manager
C & S Companies
141 Elm Street, Suite 100
Buffalo, NY 14203
Via email: Cody Martin <cmartin@cscos.com>

Re: Jamestown Container Companies – 65 South Dow St., Falconer, NY 14733
Construction Completion Report for SSD System - Building 9

CONSTRUCTION COMPLETION REPORT

1. OVERVIEW

This document presents a construction report, performance evaluation, O&M advice and certification of effectiveness for the Sub-Slab Depressurization system (SSDS) installed by *Mitigation Tech* at 65 South Dow St., Falconer, NY 14733, Building 9, as commissioned March 27, 2017.

Following an SSD construction plan (dated October 18, 2016) informed by a general building assessment performed August 19, 2016, two multi-suction point SSD Systems were installed using principles and equipment typically used for soil vapor intrusion mitigation in buildings. The primary objective of implementing this preemptive measure was to mitigate potential intrusion of soil vapors. This would be achieved by maintaining a negative pressure of at least .002 water column inches (wci) below the slab relative to the air pressure above the slab. All work is in compliance with the NYS DOH document, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

2. BUILDING ASSESSMENT AND SYSTEM CONSTRUCTION

Confirmatory sub-slab air communication testing was performed at job start March 21, 2017 to refine data obtained from the preliminary building assessment. Work continued with an analysis of appropriate locations for fans, suction cavities and other SSD system components. It was determined that two fan systems were more practicable than a single fan system. Both for physical protection and minimum impact on active use areas, riser pipes were surface mounted near columns or perimeter walls; horizontal pipe was installed as close to ceiling and established raceways as possible. Work was coordinated with client to minimize disturbance of work areas, relocate obstacles and control dust. Vacuum and air flow measurements were performed continuously during construction to ensure integrity of design. Various fans were evaluated in place and in combination to determine the most effective configuration. At commissioning, all components inspected for condition and proper operation. Premises left in clean condition.

Key on site personnel were Aaron Hurysz and Robert Beck, both highly experienced soil vapor intrusion technicians. Weather conditions were favorable. Daily tailgate meetings were held to review the daily work objectives and relevant aspects of the Health & Safety Plan. No accidents or incidents occurred during the construction.

3. SUB-SLAB DEPRESSURIZATION SYSTEM GENERAL DESCRIPTION

3.1. Introduction. The SSDS is maintaining sub-slab vacuum at all subject areas. The system consists of (2) sidewall mounted fans connected by manifold piping to vapor extraction points. The system was constructed using principles and equipment typically used for radon mitigation in buildings as detailed in the United States Environmental Protection Agency (EPA) EPA 402-K-03-007 (May 2006), and the final NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The SSDS was installed as a permanent, integral addition to the structure. The key components of the SSDS are described below and are shown on an as-built diagram labeled "Sub-Slab System Diagram."

3.2. Suction Points. The suction points consists of a 5" core boring into the slab through which 1- 2 cubic feet of sub-slab material has been removed. Mechanically suspended 3" SCH 40 PVC pipe has been inserted into the boring and sealed with urethane sealant.

3.3. Riser Piping. The riser piping consists of 3" SCH 40 PVC pipe that follows a route from the extraction point to a 4" trunk line, then to the exterior mounted vacuum fan. Weatherproof flashing or sealant has been applied to all penetrations. Vent pipes were installed at a pitch that ensures that any rainwater or condensation within the pipes drains downward into the ground beneath the slab. Piping is independently supported, and not supported from existing building mechanical systems. Piping is labeled at each level as "Sub-Slab Vent". Piping is connected using manufacturer's approved methods.

3.4. Exhaust Fans. Exhaust fans has been field selected for specific performance properties. Models: 1) Festa Radon Technologies "Force" producing 4.5 wci at 55 CFM, at 300 watts; 2) RADONAWAY RP-265, producing 2.0 wci at 50 CFM, at 120 watts. Fans have an exterior disconnect switch. Fans are mounted with rubber Fernco couplings, for simplified replacement. No air intakes are present within 10' of the exhaust points.

3.5. Instrumentation and Control. There is no centralized instrumentation or control for the SSDS. The fans can be switched either from the adjacent positioned disconnect or at the marked breakers #36 and #42 on the panel box centrally located on the east wall. The exhaust fan systems are equipped with a vacuum indicator mounted in a visible location on a riser pipe per the attached schematic. The indicator consists of an oil filled U-tube style manometer. The indicator can be inspected by observing the level of colored fluid. The indicator is designed primarily to give a simple visual check that vacuum is present in the riser pipe, specifically by observation that the fluid levels on each side of the indicator are not even. Indicator is marked at level observed on March 27, 2017.

3.6 Sealing measures. Polyurethane sealants have been applied to control joints, floor cracks and slab penetrations to enhance the barrier between sub-slab and ambient air and improve the efficiency of the SSD System. Smoke testing has been employed to guide sealing operations. Materials used include Sika Sikaflex 1c-SLself-leveling joint sealant and Sika1a Sealant.

3.7 Monitoring Points. Monitoring Points are indicated on the system diagram. These consist of ¾" drill points through the slab into which a digital micromanometer probe can be inserted. They are semi-permanently closed with backer and urethane sealant. These were established to aid in original system design and confirmatory testing, and in some cases are difficult to access. The primary future use would be in recertification of system effectiveness.

3.8 System Configuration (see attached schematic for component locations)

Basic Systems

- West System - FESTA RADON TECHNOLOGIES "Force" centrifugal blower, roof level sidewall exhaust; w/ (3) dedicated suction points, main plant, per attached schematic
- East System - RADONAWAY RP-265 centrifugal blower roof level sidewall exhaust; w/ (2) dedicated suction points, main plant, per attached schematic

Common Elements:

- Comprehensive diagnostics to optimize component type and placement
- Suction points as follows: connection via 3" Schedule 40 PVC pipe, to cavity in sub-slab, with urethane seal; access hole to suction cavity by 5"core drill; suction cavity to consists of approximately 1 cu. ft. excavated material in sub-slab
- Proportioning valves for suction risers where required
- All exhaust points minimum 10' from any air intakes
- Exterior switch and *Sealtight* and/or MC conduit from fan housing to building interior; connection to panel with EMT or MC conduit
- U-tube style vacuum indicator per system, on vertical pipe run
- Urethane sealant with closed cell backer at slab joints, accessible cracks and penetrations
- Horizontal pipe as high as practicable, with metal bracketing direct to structure, sloped as required, above drop ceiling where applicable
- (6) vacuum test points to verify pressure extension field
- At completion, perform backdraft testing, measure pressure differentials and document; label components and provide system description and operational instructions
- Consult with client to develop operation, maintenance and periodic inspection plan
- Two year warranty; labor, installed components and sub-slab depressurization to objective (or greater); warranty is transferable and assignable to future owners of the building.

3.9 PERFORMANCE EVALUATION

Measurement date – March 27, 2017 - In order to verify system effectiveness and as a performance evaluation, test points were established at various distances from the suction cavities suitable to verify that the sub-slab of the subject area was being depressurized at least to the objective. See schematic for point locations.

TP #	Value (neg wci)
1	.014
2	.023
3	.007
4	.014
5	.012
6	.014

East system vacuum gauge value --- 2.0 wci
West system vacuum gauge value --- 4.5 wci

4. SUB-SLAB DEPRESSURIZATION SYSTEM OPERATION

4.1. The fans should be kept in continuous operation. New York State Soil Vapor Intrusion Guidance (2006) specifies that operation, maintenance and monitoring of the SSD system should be included as part of site management.

4.2. Reset. Fans restart automatically in event of power loss.

4.3. In the event of unusual fan noise, failure to start, physical damage, or repeated circuit breaker trip, turn fan off and call for service. MITIGATION TECH – 800-637-9228

4.4. Regularly inspect system oil filled U-tube type manometers to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid.

4.5. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 800-637-9228

4.6. Ensure that a periodic inspection is performed

5. SSD SYSTEM PERFORMANCE MONITORING RECOMMENDATIONS

5.1. Monthly Monitoring

5.1.1. Inspect fan vacuum indicator to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid.

5.1.2. Record the observed measurement for each fan vacuum indicator on form labeled "SSD System Vacuum Gauge Record". Store all forms in the facility maintenance office.

5.1.3. Inspect visible components of SSD system for degraded condition.

5.1.4. For reporting, call MITIGATION TECH at 800-637-9228

5.2. Annual Inspection

5.2.1. Conduct a visual inspection of the complete System (e.g., vent fans, piping, warning devices, labeling)

5.2.2. Inspect all components for condition and proper operation;

5.2.3. Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the NYS DOH VI Guidance (i.e.; with the systems running, use smoke sticks to check for leaks through concrete cracks, floor joints and at the suction points; any leaks will be resealed until smoke is no longer observed flowing through the opening).

5.2.4. Inspect the exhaust or discharge point of each exhaust fan to verify that no air intakes have been located within 10 feet

5.2.5. Conduct pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the entire slab). Perform a differential pressure reading at least one vacuum test point.

5.2.6. Interview appropriate building occupants seeking comments and observations regarding the operation of the System

5.2.7. Check to see that the circuit breakers controlling the circuits on which the soil vapor vent fans operate are labeled "Soil Vapor System"

5.3. Annual Certification of Effectiveness

5.3.1. Upon completion of the tasks outlined in section 5.2 above, the installing contractor should submit a Certification of Effectiveness document, stating that the SSD system continues to perform to the purpose for which it was designed.

6. SUB-SLAB DEPRESSURIZATION SYSTEM MAINTENANCE

6.1. Routine Maintenance

6.1.1. Perform procedures as specified in sections 5.2 and 5.3

6.1.2. There are no routine component replacement procedures; Replace components upon findings of damage or failure

6.2. Non-Routine Maintenance

6.2.1. Non-routine maintenance may also be appropriate during the operation of the mitigation system. Examples of such situations include the following:

6.2.2. It is determined through inspection or notification by others that the vacuum gauge indicates the mitigation system is not operating properly

6.2.3. the mitigation system becomes damaged

6.2.4. the building has undergone renovations that may reduce the effectiveness of the mitigation system.

Certification

I hereby certify that the SSD Systems at this location are installed properly and are effective in achieving the above stated objective.

End of Report

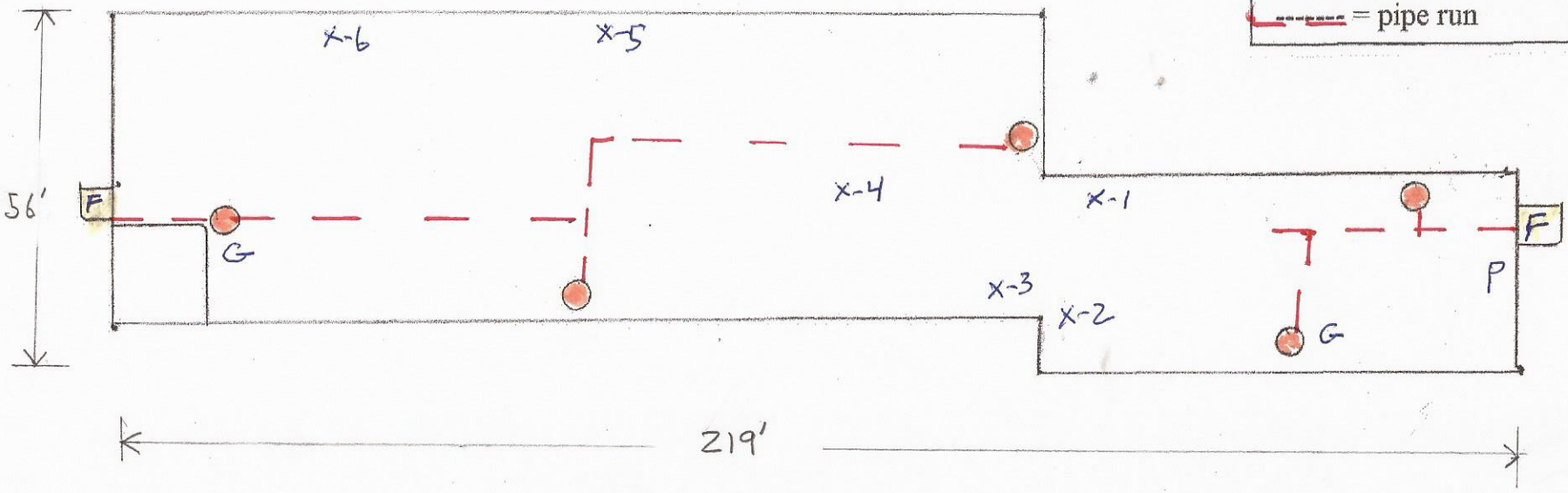
Thank you

Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

55 SHUMWAY ROAD, BROCKPORT, NEW YORK, 14420 * OFFICE/FAX 585-637-7430

SUB-SLAB DEPRESSURIZATION SYSTEM

Legend
F = fan w/exterior switch
P = circuit breaker
G = vacuum gauge
● = suction point
X = test point
---- = pipe run



Building #9 - SSDS

SUB-SLAB DEPRESSURIZATION SYSTEM DIAGRAM
Jamestown Container Companies – 65 South Dow St., Falconer, NY 14733
Installed by: Mitigation Tech, 55 Shumway Rd., Brockport, NY 14420
Date of Completion: March 27, 2017 Phone: 1-800-637-9228

October 12, 2017

Mr. Cody Martin
Project Manager
C & S Companies
141 Elm Street, Suite 100
Buffalo, NY 14203
Via email: Cody Martin <cmartin@cscos.com>

Re: Jamestown Container Companies – 65 South Dow St., Falconer, NY 14733
Construction Completion Report for SSD System - Building 5 & 6

CONSTRUCTION COMPLETION REPORT

1. OVERVIEW

This document presents a construction report, performance evaluation, O&M advice and certification of effectiveness for the Sub-Slab Depressurization (SSDS) and Crawlspace Ventilation System (CVS) installed by *Mitigation Tech* at 65 South Dow St., Falconer, NY 14733, Buildings 5 & 6, as commissioned August 4, 2017.

Following a Design/Build SSD construction plan (dated April 4, 2017) and modified based on continuing assessments performed during construction, five single suction point SSD Systems were installed using principles and equipment typically used for soil vapor intrusion mitigation in buildings. The primary objective of implementing this preemptive measure was to mitigate potential intrusion of soil vapors. This would be achieved by maintaining a negative pressure of at least .002 water column inches (wci) below the slab relative to the air pressure above the slab, specifically in the sub-slab compartments in the southernmost sections of the buildings. All work is in compliance with the NYS DOH document, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

2. BUILDING ASSESSMENT AND SYSTEM CONSTRUCTION

Extensive sub-slab air communication testing and building assessment was performed at job start to refine data obtained from the preliminary building assessment. Both building #5 and #6 are characterized by systems of sub-slab structural arches and grade beams crisscrossing in a north to south and east to west pattern. The sub-slab spaces are either inaccessible or difficult to access.

In the case of Building #5, extensive backfilling has occurred over time, mostly via concrete patch, so that soil is present immediately below the surface in the central and northernmost portions of the foundation. The southernmost section is an open crawlspace with a dirt floor, wet in many sections. Four east to west grade beams define five compartments. We determined that active ventilation of southernmost sub-slab compartment bounded by Buildings # 4 and #6A would constitute a zone of defense to intercept soil vapor migrating from the south. This would also

create some limited depressurization north of the first grade beam. In the case of Building #6, the sub-space of is in essence a crawlspace and ventilation is the most appropriate strategy to divert vapors from the building interior.

It was determined that five independent fan systems were necessary and practicable for creating sufficient air flow and exchange. Work continued with an analysis of appropriate locations for fans, suction cavities and other SSD system components. Both for physical protection and minimum impact on active use areas, riser pipes were surface mounted on exterior walls. Work was coordinated with client to minimize disturbance of work areas, relocate obstacles and control dust. Vacuum and air flow measurements were performed continuously during construction to ensure integrity of design. Various fans were evaluated in place and in combination to determine the most effective configuration. At commissioning, all components inspected for condition and proper operation. Premises left in clean condition.

Key on site personnel were Aaron Hurysz and Robert Beck, both highly experienced soil vapor intrusion technicians. Weather conditions were favorable. Daily tailgate meetings were held to review the daily work objectives and relevant aspects of the Health & Safety Plan. No accidents or incidents occurred during the construction.

3. SUB-SLAB DEPRESSURIZATION SYSTEM GENERAL DESCRIPTION

3.1. Introduction. The SSDS/CVS is maintaining sub-slab vacuum at all subject areas. The system consists of (5) sidewall mounted fans connected to vapor extraction points. The system was constructed using principles and equipment typically used for radon mitigation in buildings as detailed in the United States Environmental Protection Agency (EPA) EPA 402-K-03-007 (May 2006), and the final NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The SSDS was installed as a permanent, integral addition to the structure. The key components of the SSDS are described below and are shown on an as-built diagram labeled "Sub-Slab System Diagram."

3.2. Suction Points. The suction points consists of a 10" core boring into the slab directly to crawlspace voids. Mechanically suspended 8" SCH 40 PVC pipe has been inserted into the boring and sealed with urethane sealant.

3.3. Riser Piping. The riser piping consists of 8" SCH 40 PVC pipe that follows a route from the extraction point to the exterior mounted vacuum fan. Weatherproof flashing or sealant has been applied to all penetrations. Vent pipes were installed at a pitch that ensures that any rainwater or condensation within the pipes drains downward into the ground beneath the slab. Piping is independently supported, and not supported from existing building mechanical systems. Piping is labeled at each level as "Sub-Slab Vent". Piping is connected using manufacturer's approved methods.

3.4. Exhaust Fans. Exhaust fans has been field selected for specific performance properties. Model: RADONAWAY RP-380 producing 5.0 wci at 350 CFM, at 140 watts. Fans have an exterior disconnect switch. Fans are mounted with rubber Fernco couplings, for simplified replacement.

3.5. Instrumentation and Control. There is no centralized instrumentation or control for the SSDS. The fans can be switched either from the adjacent positioned disconnect or at the marked breakers on the panel box centrally located. (Labeled "P" on schematic) The exhaust fan systems are equipped with a vacuum indicator mounted in a visible location near the riser pipe per the attached schematic. The indicator consists of a dial style manometer, Dwyer Model 5001 or oil filled U-tube. The indicator can be inspected by observing the position of the dial needle or oil level. (Labeled "G" on schematic) The indicator is designed primarily to give a simple visual check that vacuum is present in the riser pipe. Indicator is marked at level observed on August 4, 2017.

3.6 Sealing measures. Polyurethane sealants have been applied to control joints, floor cracks and slab penetrations to enhance the barrier between sub-slab and ambient air and improve the efficiency of the SSD System.

Smoke testing has been employed to guide sealing operations. Materials used include Sika Sikaflex 1c-SLself-leveling joint sealant and Sika1a Sealant.

3.7 Monitoring Points. Monitoring Points are indicated on the system diagram. These consist of ¾" drill points through the slab into which a digital micromanometer probe can be inserted. They are semi-permanently closed with backer and urethane sealant. These were established to aid in original system design and confirmatory testing, and in some cases are difficult to access. The primary future use would be in recertification of system effectiveness.

3.8 System Configuration (see attached schematic for component locations)

Furnish and Install:

- Building 5 - east to west space defined by south perimeter wall and southernmost east to west interior footer - (2) RADONAWAY RP-380 high air flow blowers, sidewall mount, to provide sub-slab ventilation via 8" schedule 40 PVC; to conduct soil vapor from riser pipes to exhaust fan roof exhaust, with rubber connector fittings
- Building 6 - (includes influence at Building #5 sump room) - (3) RADONAWAY RP-380 high air flow blowers, sidewall mount, to provide sub-slab ventilation via 8" schedule 40 PVC; to conduct soil vapor from riser pipes to exhaust fan roof exhaust, with rubber connector fittings
- Evaluate and repair as necessary, foundation vents and openings (some left open to allow for controlled through ventilation)
- Continuous building assessment and sub-slab vacuum measurement to optimize design
- Pre-construction consultation to obtain approval for component placements
- All interior pipe SCH 40 PVC with appropriate metal hangers, riser clamps, and additional accessories to properly attach components directly to structural members; sloped as required; routing to avoid interference with other building systems
- Exterior switch and *Sealtight* and/or MC conduit from fan housing to nearest electrical panel; extra cost if panel has insufficient capacity; final panel hookup by others at other's expense
- (5) Magnahelic Series 5001 vacuum indicators
- Urethane sealant at slab joints, accessible cracks and penetrations; backer where necessary
- At completion, perform backdraft testing, label components and provide system description and operating instructions
- At completion, confirm pressure differentials
- Consult with client representatives to develop operation, maintenance and periodic inspection plan
- Two year warranty; labor, installed components and sub-slab depressurization to objective (or greater)

3.9 PERFORMANCE EVALUATION

Measurement date – August 7, 2017 - In order to verify system effectiveness and as a performance evaluation, test points were established at various distances from the suction cavities suitable to verify that the sub-slab of the subject area was being depressurized at least to the objective. See schematic for point locations. (Labeled "TP" on schematic) Downward movement of test smoke was observed at each location and in addition, negative pressure values of -.004 or better were observed.

4. SUB-SLAB DEPRESSURIZATION SYSTEM OPERATION

4.1. The fans should be kept in continuous operation. New York State Soil Vapor Intrusion Guidance (2006) specifies that operation, maintenance and monitoring of the SSD system should be included as part of site management.

4.2. Reset. Fans restart automatically in event of power loss.

4.3. In the event of unusual fan noise, failure to start, physical damage, or repeated circuit breaker trip, turn fan off and call for service. MITIGATION TECH – 800-637-9228

4.4. Regularly inspect system dial manometers to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark.

4.5. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 800-637-9228

4.6. Ensure that a periodic inspection is performed

5. SSD SYSTEM PERFORMANCE MONITORING RECOMMENDATIONS

5.1. Monthly Monitoring

5.1.1. Inspect fan vacuum indicator to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark.

5.1.2. Record the observed measurement for each fan vacuum indicator on form labeled "SSD System Vacuum Gauge Record". Store all forms in the facility maintenance office.

5.1.3. Inspect visible components of SSD system for degraded condition.

5.1.4. For reporting, call MITIGATION TECH at 800-637-9228

5.2. Annual Inspection

5.2.1. Conduct a visual inspection of the complete System (e.g., vent fans, piping, warning devices, labeling)

5.2.2. Inspect all components for condition and proper operation;

5.2.3. Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the NYS DOH VI Guidance (i.e.; with the systems running, use smoke sticks to check for leaks through concrete cracks, floor joints and at the suction points; any leaks will be resealed until smoke is no longer observed flowing through the opening).

5.2.4. Inspect the exhaust or discharge point of each exhaust fan to verify that no air intakes have been located within 10 feet

5.2.5. Conduct pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the entire slab). Perform a differential pressure reading at least one vacuum test point.

5.2.6. Interview appropriate building occupants seeking comments and observations regarding the operation of the System

5.2.7. Check to see that the circuit breakers controlling the circuits on which the soil vapor vent fans operate are labeled "Soil Vapor System"

5.3. Annual Certification of Effectiveness

5.3.1. Upon completion of the tasks outlined in section 5.2 above, the installing contractor should submit a Certification of Effectiveness document, stating that the SSD system continues to perform to the purpose for which it was designed.

6. SUB-SLAB DEPRESSURIZATION SYSTEM MAINTENANCE

6.1. Routine Maintenance

6.1.1. Perform procedures as specified in sections 5.2 and 5.3

6.1.2. There are no routine component replacement procedures; Replace components upon findings of damage or failure

6.2. Non-Routine Maintenance

6.2.1. Non-routine maintenance may also be appropriate during the operation of the mitigation system. Examples of such situations include the following:

6.2.2. It is determined through inspection or notification by others that the vacuum gauge indicates the mitigation system is not operating properly

6.2.3. the mitigation system becomes damaged

6.2.4. the building has undergone renovations that may reduce the effectiveness of the mitigation system.

Certification

I hereby certify that the SSD Systems at this location are installed properly and are effective in achieving the above stated objective.

Thank you

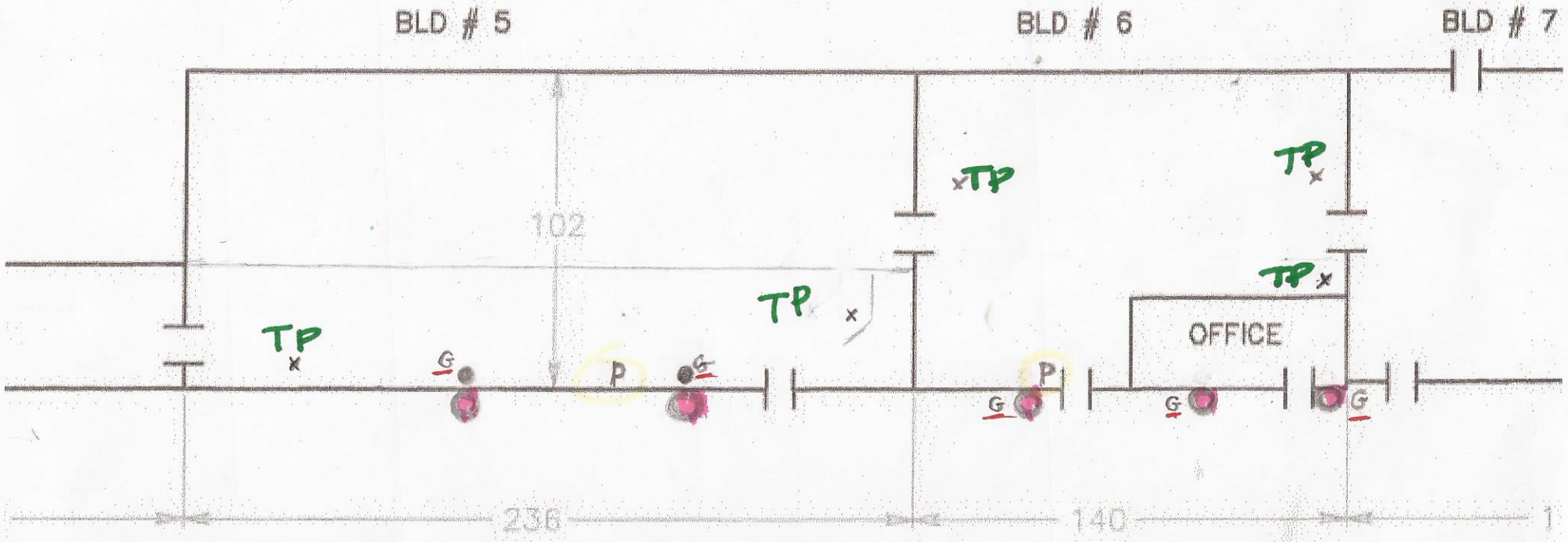
Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

55 SHUMWAY ROAD, BROCKPORT, NEW YORK, 14420 * OFFICE/FAX 585-637-7430

● = FAN/SUCTION POINT

G = GAUGE P = PANEL

TP = VACUUM TEST POINT



SUB-SLAB DEPRESSURIZATION/VENTILATION SYSTEM DIAGRAM
Jamestown Container Companies – 65 South Dow St., Falconer, NY 14733
Buildings #5 & #6

Installed by: Mitigation Tech, 55 Shumway Rd., Brockport, NY 14420
Date of Completion: August 4, 2017

APPENDIX D

INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **907020**

Site Name Dowcraft, South Dow Street

Site Address: 65 South Dow Street Zip Code: 14733
City/Town: Falconer
County: Chautauqua
Site Acreage: 2.2

Reporting Period: October 31, 2016 to October 31, 2017

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

SITE NO. 907020

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
104-12-2	Bruce Janowski, Jamestown Container Real	Ground Water Use Restriction Landuse Restriction Monitoring Plan O&M Plan

Box 4

Description of Engineering Controls

None Required

Not Applicable/No EC's

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 907020

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I DANIEL RIGER at C&S ENGINEERS, 141 ELM ST, BUFFALO NY

print name print business address

am certifying as REMEDIAL PARTY (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

11/29/30

Date