REMEDIAL ACTION COMPLETION REPORT

PROJECT SITE:

SPARTANS' SQUARE SHOPPING CENTER
NWC ILLINOIS ROUTE 53 & ALEXANDER CIRCLE
(3-23 TERRACE LANE, 615-625 ACCESS DRIVE)
ROMEOVILLE, WILL COUNTY, ILLINOIS
IEPA BOL SITE NO. 1970905180

PREPARED FOR:

VILLAGE OF ROMEOVILLE
1050 W. ROMEO ROAD
ROMEOVILLE, ILLINOIS 60446

PREPARED BY:

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This report has been prepared by V3 Companies (V3), on behalf of the Remediation Applicant, in conformance with the requirements of 35 IAC Section 740.455 for the purpose of documenting the Remedial Action Completion Report at the Remediation Site.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Remediation Verification Data

APPENDICES

EXECUTIVE SUMMARY

V3 Companies (V3) prepared this Remedial Action Completion Report (RACR) on behalf of the Village of Romeoville, the Remediation Applicant, for the remediation site referred to as Spartans' Square Shopping Center (Site). The Site is located at the northwest corner of Illinois Route 53 and Alexander Circle, in Romeoville, Illinois (**Figure 1.1**). The RACR describes the remedial actions performed to address the environmental issues associated with the historical dry cleaning operations. **Figure 2.1** depicts the site boundary.

The subject of this RACR is to document the successful remediation of VOC impacts. More specifically, the report summarizes the following:

- field activities performed;
- remedial action in accordance with the approved RAP;
- results of the post-remediation sampling data; and
- documentation of Tier 1 and Tier 2 ROs.

Based upon previous Site investigations, the following recognized environmental conditions (RECs) were defined for the Site:

- **VOCs Impacts from Former Dry Cleaning Operations:** This includes soil and groundwater VOC impacts that resulted from former dry cleaners operations at the Site.
- **Metals in Groundwater:** This includes metals groundwater impacts identified in two wells sampled on the southeast side of the Site.

Contaminants of concern (COCs) at the Site:

- Soils: VOCs (tetrachloroethylene, trichloroethylene)
- Groundwater: VOCs (tetrachloroethylene, bromodichloromethane, bromoform, chloroform) and Metals (aluminum, iron, lead, manganese).

Remedial Activities

Remedial Actions (RAs) were conducted at the Site between December 2013 and May 2014 in accordance with the Remedial Action Plan. The proposed and final remediation areas are depicted in **Figures 3.1-3.2** and **3.3**, respectively. Remedial measures within these areas included in-situ soil treatment of soil that exceeded soil saturation limits and land disposal restriction concentrations of VOCs. Remedial activities were performed under the supervision and direction of V3.

As a brief overview, the purpose and area of initial treatment was:

- Perform soil remediation (in-situ chemical treatment) at and in the vicinity of soil borings SM-GP-08 and SM-GP-108 (the main treatment area), and along adjoining underground utility lines. The general treatment area of 60 feet x 45 feet encompassing these locations and features is shown on **Figures 3.1** and **3.2**. Specifically, the proposed treated areas are:
    - At and between boring locations SM-GP-08 and SM-GP-108, an area of 35 feet by 15 feet and depth of 7.5 to 13.5 feet below ground surface (bgs) at SM-GP-108 and a shallower interval of 5 to 8 feet deep at SM-GP-08, and

- Along the existing water line (30 feet long by 6 feet wide) at depths of generally 3 to 6 feet bgs and along the existing sewer line (85 feet long by 6 feet wide) at depths of 6 to 9 feet bgs (depending on the actual depths of utility lines).

Remediation verification sampling was conducted following the implementation of the remedial actions. Additional soil remediation was performed when the initial verification samples did not meet the remediation goals. The final verification samples met the remediation goals by either meeting TACO Tier 1 industrial/commercial ROs or via a statistical analysis of the laboratory analytical results. The final remediation area was approximately 40 feet wide by 56 feet long.

Figure 3.3 summarizes the completion of remediation activities.

Post-Remediation TACO Evaluation and Conclusion

Verification sampling locations and results presented in **Figure 3.3** and in **Table 2.1**, illustrate that the remediation addressed the VOC concentrations in soil above Land Disposal Restrictions (LDRs) and soil saturation limits. A limited area of soils remain that may contain residual VOC concentrations and low-level solvent odors, and some soils contain concentrations above Tier 1 ROs for the soil component of the groundwater ingestion route only. These soils, if excavated in the future, will require off-site disposal if they cannot be used onsite in accordance with IEPA rules and regulations. In addition, a limited area of groundwater contains PCE above Tier 1 ROs (as documented in the Supplemental CSI-ROR-RAP).

Based on the Tier 1 and 2 evaluations, the Site can qualify for an NFR determination without the need for engineered barriers, once exposure routes are excluded through the placement of a deed restriction on the property that would employ the following institutional controls:

- Restrict site usage to industrial-commercial land use;
- Restrict groundwater usage at the Site and off-site utilizing the Village's existing limited groundwater-use ordinance; and
- Require any existing or future buildings located over the current extent of soil gas and/or groundwater contamination to have a full concrete slab-on-grade floor or full concrete basement floor and walls with no sump(s).

A base map for the Remediation Site Boundary is provided in **Figure 4.1**.

1.0 INTRODUCTION

On behalf of the Village of Romeoville, the Remediation Applicant, V3 Companies, Ltd. (V3) is submitting this Remedial Action Completion Report (RACR) prepared in conformance with the requirements of 35 IAC Section 740.455 for IEPA review and comment. The RACR documents the remedial actions needed to address environmental issues associated with the historical dry cleaning operations located at the Spartans' Square Shopping Center (Site) in Romeoville, Illinois (**Figure 1.1**). **Figure 2.1** generally depicts the former site conditions.

Based upon previous Site investigations and historical features, the following RECs were defined for the Site:

- **VOCs Impacts from Former Dry Cleaning Operations:** This includes soil and groundwater VOC impacts that resulted from former dry cleaners operations at the Site.

- **Metals in Groundwater:** This includes metals groundwater impacts identified in two wells sampled on the southeast side of the Site.

The implemented remedial action addressed the VOCs in soil impacts. The primary remedial goals of the RAP include:

- Perform soil remediation (in-situ chemical oxidation via soil mixing) at and in the vicinity of soils with elevated VOC concentrations, to meet RCRA Alternative Land Disposal Restriction (LDR) Treatment Standards for Contaminated Soil (35 IAC Part 728.149 and 40 FDR Part 268.49), and to remove the need for pre-treatment of in-situ soils prior to disposing at a landfill, should it be necessary to remove contaminated soils from the Site in the future. Specifically, the following LDRs were used as the remediation objectives (ROs) for the primary contaminant of concern (COC) and related degradation products:

    - Tetrachloroethylene (PCE): 60 mg/kg
    - Trichloroethylene (TCE): 60 mg/kg
    - 1,1,1-trichloroethane or 1,1,2-trichloroethane (TCA): 60 mg/kg each
    - Trans-1,2-dichloroethane (DCE): 300 mg/kg
    - Vinyl chloride (VC): 60 mg/kg

    With the exception of PCE, the other COCs are currently below LDRs. However, the additional LDRs are provided for reference, if needed. *Note: Based on laboratory analytical results, the site soil concentrations for TCA, DCE and VC are 'non-detect' and one sample had a TCE concentration that exceeds the Tier 1 soil migration to groundwater RO.*

- Following the in-situ soil treatment, any remaining TACO risks in excess of Tier 1 industrial-commercial ROs will be addressed using institutional controls (for example, a groundwater use restriction).

The RACR has been prepared in general conformance with the requirements of 35 IAC Section 740.455, with institutional controls in accordance with 35 IAC Section 742.1000.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION AND HISTORY

The Spartans' Square Shopping Center (Site) is located at the northwest corner of Illinois Route 53 and Alexander Circle, in Romeoville (**Figure 1.1**). The Site is located in a commercial area.

The Site previously contained the Spartans' Square Shopping Center, a 57,187 square foot, one-story strip mall built from 1961-1971. Spartans' Square Shopping Center was last occupied by a restaurant, a self-serve laundromat, several salons, a currency exchange and a hardware store. The long history of historical dry cleaning operations at the Laundromat tenant space has resulted in environmental impacts to soil and groundwater beneath the Site.

The Site has been vacant since demolition of the shopping center in June 2013. The intended reuse of the Site is commercial. Redevelopment of the Site and surrounding area as Uptown Square will contain retail, office, civic uses and public spaces in a pedestrian friendly environment. Construction on the western lot adjoining the Site has been completed with the Village's new Recreation, Athletic, Entertainment and Community Center (RAEC), and associated parking, access roads and utilities. The subject Site is proposed for commercial / retail land use.

The *Supplemental Comprehensive Site Investigation / Remedial Objectives Report / Remedial Action Plan* (CSI/ROR/RAP) was presented in June 2013 along with a June 21, 2013 letter *Response to February 18, 2011 review letter of CSI/ROR*. An *Amendment 1 Supplemental CSI/ROR/RAP* letter was submitted in August 1, 2013. The RAP was approved in the August 14, 2013 IEPA review letter of the Supplemental CSI/ROR/RAP and Amendment 1.

2.2 RECOGNIZED ENVIRONMENTAL CONDITIONS

The following summarizes the resulting Site RECs designated in the CSI:

- **REC 1 – Former Dry Cleaning Operations**
- **REC 2 – Hydraulic Lifts**
- **REC 3 – East Adjacent Gas Station**

Based upon the findings of the field observations and laboratory sample analyses, V3 has not identified impacts associated with REC 2 and REC 3. As a result, V3 has redefined the three previous Site RECs as two RECs:

- **VOCs Impacts from Former Dry Cleaning Operations:** This includes soil and groundwater VOC impacts that resulted from former dry cleaners operations at the Site.
    - VOCs were identified in excess of Tier 1 ROs in multiple soil samples and monitoring wells. Identified PCE concentrations and its daughter products are due to former dry cleaning operations. Chloroform is also identified as a historical dry cleaning solvent. However, the presence of chloroform, bromodichloromethane, and bromoform could be the result of disinfection byproducts of drinking water or laboratory standard reagents for analysis, unrelated to the Site. BTEX was not identified in the laboratory analyses above Tier 1 ROs, and only one low detection of toluene was reported.

- The exposure pathways of concern are Tier 1 soil ingestion, inhalation, soil component of the groundwater ingestion route and direct groundwater ingestion.

VOC concentrations from the former dry cleaner operations are addressed by remediation activities outlined in **Section 3.1**. Residual concentrations following remediation will be managed using Tier 2 modeling and institutional controls.

- **Metals in Groundwater:** This includes metals groundwater impacts identified in two wells sampled on the southeast side of the Site.
  - Four metals (aluminum, iron, lead and manganese) have been identified in groundwater in excess of Tier 1 RO at two wells. However, it is not apparent that the encountered concentrations represent a notable groundwater concern, and may be the result of relatively high suspended solids within collected samples.
  - The exposure pathway of concern for metals is only the Tier 1 direct groundwater ingestion route.

Metal concentrations in groundwater were previously addressed by Tier 2 modeling in **Section 3.4** of the Supplemental CSI-ROR/RAP. The Village of Romeoville groundwater ordinance will be used as an institutional control for on-site and off-site groundwater use restriction. Off-site notification will be required to those off-site property owners potentially affected.

3.0 REMEDIAL ACTIVITIES

Remedial actions (RAs) were conducted at the Site between December 2013 and June 2014. The RAs were conducted in accordance with IEPA's August 14, 2013 approval of the RAP.

The proposed remediation area and treatment area are depicted in **Figures 3.1** and **3.2;** the actual treated area is depicted in **Figure 3.3.** RAs within the area included in-situ chemical soil treatment. Redox Tech, LLC of Downers Grove, Illinois, was retained as the remediation contractor to perform chemical treatment of impacted soil.

Verification sampling activities were conducted by V3 during implementation of the RAs, in accordance with SW-846 and using standard methods and protocols. Verification samples were collected from the remediation areas, as indicated on **Figure 3.3**, and as discussed in the following sections.

STAT Analysis Corporation, Inc. (STAT) in Chicago, Illinois analyzed soil samples in accordance with the requirements of US EPA SW-846. Analyses were performed using standard U.S. EPA methodologies, in accordance with SRP and TACO requirements. STAT is a NELAP accredited laboratory (see **Appendix B**). Verification sample results are summarized in **Table 2.1**. Laboratory results are contained in **Appendix B.2**.

3.1 IN-SITU SOIL TREATMENT

The objective of the soil treatment was to perform soil remediation (in-situ chemical oxidation via soil mixing) at and in the vicinity of soils with elevated VOC concentrations, to meet RCRA Alternative Land Disposal Restriction (LDR) Treatment Standards for Contaminated Soil (35 IAC Part 728.149 and 40 FDR Part 268.49). This eliminates the additional cost to pre-treat in-situ soils prior to disposing at a landfill, should it be necessary to remove contaminated soils from the Site in the future.

Specifically, the following LDRs were selected as the remediation objectives (ROs) for the primary COC and related degradation products:

- Tetrachloroethylene (PCE): 60 mg/kg
- Trichloroethylene (TCE): 60 mg/kg
- 1,1,1-trichloroethane or 1,1,2-trichloroethane (TCA): 60 mg/kg each
- Trans-1,2-dichloroethane (DCE): 300 mg/kg
- Vinyl chloride (VC): 60 mg/kg

Following the in-situ soil treatment, any remaining TACO risks in excess of Tier 1 industrial-commercial ROs will be addressed using institutional controls.

The remedial plan consisted of the following elements:

- Chemical Oxidation
- Verification Sampling

Soil remediation (in-situ treatment) was performed at and in the vicinity of soil borings SM-GP-08 and SM-GP-108 (the primary treatment area), and along adjoining underground utility lines. The general treatment area of 60 feet x 45 feet encompassing these locations and features is shown on **Figures 3.1** and **3.2**. Specifically, the treated areas are:

- At and between boring locations SM-GP-08 and SM-GP-108, an area of 35 feet by 15 feet and depth of 7.5 to 13.5 feet bgs at SM-GP-108 and a shallower interval of 5 to 8 feet deep at SM-GP-08, and
- Along the existing water line (30 feet long by 6 feet wide) at depths of generally 3 to 6 feet bgs and along the existing sewer line (85 feet long by 6 feet wide) at depths of 6 to 9 feet bgs (depending on the actual depths of utility lines).

Verification samples were collected to assess when the "clean" limits of the remediation area had been reached.

3.1.1 Chemical Oxidation Treatment (December 2013) and Verification Sampling

On December 5, 2013 overburden soils in the remediation treatment area were excavated to a depth of three feet from original grade and stockpiled adjacent to the area.

Once overburden soils were removed, Redox Tech, LLC performed in-situ soil mixing of potassium permanganate (RemOX®) from December 9 through December 11, 2013 to treat the contaminants of concern located at the Site, specifically tetracholorethene (PCE), by methods of in-situ chemical oxidation (ISCO). A total of 7,000 pounds of potassium permanganate was mixed into the affected soils surrounding soil borings SM-GP-08 and SM-GP-108 (the primary treatment area) and adjoining underground utility lines totaling approximately 915 square feet with depths ranging from 3 feet to 13.5 feet below ground surface.

Prior to chemical treatment, Redox Tech, LLC collected a soil sample from the highest PCE concentration (SM-GP-108) located within the treatment area using direct push Geoprobe® methods. The soil sample was analyzed for total oxidant demand (TOD), which was used by the remediation contractor to quantify the amount of potassium permanganate (RemOX®) required for the treatment.

Potassium permanganate (RemOX®) is a sustained-release remediation product designed to dissolve passively in a water solution to treat chlorinated solvents and chlorinated alkanes.

Containers of potassium permanganate (RemOX®) ranging from 1,000 to 2,000 pounds were applied to the dry soils in the treatment area using a backhoe. Once applied, the chemical was mixed thoroughly into the dry soil to ensure horizontal and vertical dispersion of the chemical. Treated soils consisted mainly of sand and gravel. Upon completion of the dry mixing, potable water was added to the soil and remixed in order to solubilize the oxidant and help with distribution. Approximately 2,000 gallons of water was pumped from a nearby fire hydrant and applied to the treated soil.

During the chemical treatment, groundwater was encountered at approximately 10 feet bgs, which facilitated treatment of residual COCs.

Per the remediation contractor's direction, soil verification samples were collected four weeks after the initial potassium permanganate (RemOX®) treatment to allow sufficient oxidation of contaminated soils. On February 4, 2014, V3 returned to the Site with Johnson Probing to collect verification samples **SM-EX-201** to **SM-EX-209**. Borings were advanced to a maximum depth of 8 feet below ground surface (bgs) along the perimeter of the treatment area using direct push Geoprobe® soil sampling methods. Soil samples were collected continuously using new 2-inch diameter, 4- to 5-foot long clear plastic liners. Because of Site constraints and limitations of the Geoprobe, only sidewall verification samples were collected during this visit.

On February 14, 2014 V3 revisited the Site with Robinette Demolition, Inc. (Robinette) to collect bottom verification samples (**SM-EX-210** to **SM-EX-215**) and one sidewall sample (**SM-EX-216**) within the treatment area. Samples were collected using a backhoe equipped with an auger bit to penetrate the deep frost line, followed by a bucket to collect soil samples.

Soil samples **SM-EX-207** and **SM-EX-208** collected along the west and south sidewalls of the treatment area contained PCE exceedances above the industrial-commercial ingestion and LDR goals. To delineate the PCE exceedances, V3 dug three trenches: one to the south, one to the southeast and one to the southwest around the treatment area. Soils were classified and screened in the field for VOCs utilizing a photoionization detector (PID). A total of five soil samples (**SM-EX-217** to **SM-EX-221**) were collected from the three trenches and analyzed for VOCs. Refer to **Table 2.1** for the analytical results.

3.1.2 Chemical Oxidation Treatment (April 2014) and Verification Sampling

Based on analytical results, a second round of chemical treatment was performed for the west and south portions of the treatment area in order to meet remediation goals. On April 7, 2014 Redox Tech, LLC applied a second application of potassium permanganate (RemOX®). The target areas were systematically addressed applying a total of 5,000 pounds of chemical across an area of approximately 500 square feet, within the depth interval of 3 feet to 9 feet bgs. The chemical was mixed into the soil with approximately 1,500 gallons of potable water from a nearby fire hydrant.

The original primary treatment area was expanded 10 feet south and 15 feet west to include the identified contamination having PCE exceedances. The 3 feet of overburden was excavated from the expanded treatment area by Redox Tech, and stockpiled adjacent to the work area.

After treatment, V3 waited four weeks to collect verification samples. V3 returned to the Site on May 8, 2014 with RW Collins to collect a total of 10 sidewall and bottom verification samples (**SM-EX-301** to **SM-EX-310**). Soil samples were collected using a combo rig and screened in the field for VOCs utilizing a photoionization detector (PID).

Soil sample **SM-EX-305** collected within the southern section of the treatment area had PCE exceedances above the industrial-commercial ingestion RO and the LDR goal of 60 mg/kg. Two nearby samples contained PCE concentrations above industrial-commercial ingestion but were below the LDR goal. This prompted the need for additional chemical treatment, which is discussed below.

3.1.3 Chemical Oxidation Treatment (June 2014) Final Verification Sampling

Analytical results indicated a third round of chemical treatment was needed for a limited area of the southeast portion of the soil treatment area. On June 10, 2014, Redox Tech performed in-situ soil mixing using a dilute solution of hydrogen peroxide. The treatment area was approximately 120 square feet, targeting the area of samples **SM-EX-305**, **SM-EX-306** and **SM-EX-309**, in the depth interval of 3 to 9 feet below grade.

Approximately 260 gallons of 50 weight-percent hydrogen peroxide (2,600 pounds) was delivered to the site in a 275-gallon tote. The hydrogen peroxide was diluted to form a solution of approximately 7 weight-percent using potable water from a nearby fire hydrant. The diluted solution was prepared in a 550-gallon mixing tank and applied via transfer hoses and an air diaphragm pump, as the backhoe mixed the soils. Approximately 2,200 gallons of hydrogen peroxide solution was applied over a period of 3 hours.

V3 returned to the Site on June 19, 2014 to collect a total of 3 verification samples (**SM-EX-311** to **SM-EX-313**) within the homogenous soil mixture. Soils were classified and screened in the field for VOCs utilizing a photoionization detector (PID).

Based on analytical results, the verification samples were found to be below LDRs and the industrial-commercial ingestion RO, with the exception of sample **SM-EX-313**, which is above the ingestion limit of 20 mg/kg for PCE. A 95% upper confidence limit (UCL) calculation was performed on the PCE analytical results to determine if sampled soils could remain without the an engineered barrier being required (based on Tier 1). The process and findings of the 95% UCL calculations are discussed in **Section 4.2.2** of this report.

In summary, soils impacted by PCE were chemically treated in a general square-shaped area totaling approximately 1,950 square feet (about 40 feet wide by 56 feet long), throughout the depth interval of 3 to 13.5 feet below original grade.

After completion of soil treatment activities, the ground surface within the remediation excavation was approximately 3 feet below the surrounding grade. The overburden soils that had been stockpiled in the remediation area are suitable for backfilling the remediation excavation.

3.2 IMPORT SOIL SAMPLING

The proposed Site development plan called for the Remediation Site to be raised approximately 1.5 feet above the post-demolition ground surface. V3 sampled a potential source of fill soil (the proposed detention pond, located west-adjacent to the Remediation Site), to determine the suitability of these soils for use as fill on the Remediation Site.

A portion of the planned detention pond was gridded into cells, each of which was sampled at discrete depth intervals. Eight samples were analyzed for a comprehensive list of chemical compounds (i.e., the Target Analyte List). Analytical results were compared to TACO Tier 1, Class I Residential ROs. Only soils meeting these ROs would be allowed for import to the Site. Refer to **Appendix E** for documentation of the import soil sampling procedures and analytical results.

Due to changes in the Site development schedule, no fill was imported to the Site from the completed detention pond, and no fill has been imported as of this writing. The potential need for fill soil at the Remediation Site is yet to be determined.

4.0 TACO EVALUATION (POST-REMEDIATION)

This section presents a discussion of RECs, COCs above Tier 1 ROs, exposure pathways, and the results of the Tier 1 evaluation completed for the Site. The TACO evaluation provided in the following sections is intended to reflect the completion of the remedial measures.

Table 2.1 provides the compliance data used in this post-remediation TACO evaluation and summarizes COC concentrations for detected compounds. The data set used for the post-remediation compliance evaluation includes verification sampling analytical results.

The TACO evaluation is discussed in the following sections.

4.1 BASELINE SITE TACO CONDITIONS

The results of the remediation verification were the basis for these TACO evaluations. The Site COCs include VOCs in soil.

The applicable land use designation for the Site is industrial-commercial with a construction worker scenario. Soil results were compared to Tier 1 Class I standards.

4.1.1 TACO SUBPART C EVALUATION

The following sections discuss the additional data as related to the exposure route evaluation required by 35 IAC 742, Subpart C. After the completion of remedial measures described in **Section 3.0**, the compliance data have not identified conditions which, when assessed pursuant to the criteria listed at 35 IAC Section 742.305: a) through f) could be viewed as a Subpart C source.

4.1.1.1 Free Product Determination

An evaluation of soil attenuation capacity, soil saturation limit, and soil observations for the Site indicates that free product is not present in soils.

Soil attenuation capacity, as measured by the conservative TACO default value of 0.2% (2,000 mg/kg), has not been exceeded when compared to the sum of organics in each boring. A site-specific value for organic carbon content (foc) of 0.81% was calculated for the native soil sample SM-GP-101 (10-12 feet).

4.1.1.2 Waste Determinations

Based on the remedial activities and post-remediation data at the Site,

- No characteristics of reactivity have been identified;
- No characteristics of inorganic toxicity have been identified; and
- Soil does not exhibit pH values less than or equal to 2.0 or greater than or equal to 12.5.

Verification results did not identify evidence of characteristic hazardous conditions. See waste characterization sample **SM-WC-01** in **Appendix B.2** and verification samples in **Table 2.1** for documentation.

4.1.1.3 Subpart C PCBs Determination

PCB concentrations were not detected in the soils during the site investigation and are not Site COCs.

4.2 VOCs IMPACTS FROM FORMER DRY CLEANING OPERATIONS

Impacted materials were chemically treated in-situ as discussed in **Section 3.1**. The verification sample locations for the soil treatment are located on **Figure 3.3** and the Tier 1 data are summarized on **Table 1.1** and **2.1**.

Evaluation of the verification samples from the remedial excavation is provided below and does not include data for soil that was chemically treated or re-treated.

4.2.1 TIER 1 EVALUATION

Soil Ingestion Exposure Route:
Evaluation of the verification data indicates the ingestion RO was exceeded for tetrachloroethene (PCE) at one location, sample **SM-EX-315 (5)**. However, this sample is being evaluated under a 95% UCL for final compliance. Refer to **Section 4.2.2** for the UCL calculation.

Soil Inhalation Exposure Route:
Evaluation of the verification data indicates the outdoor inhalation RO has not been exceeded.

The indoor inhalation was previously reviewed in the Supplemental CSI-ROR-RAP and indicates site compliance using soil gas and groundwater results. Based on the use of Part 742 Appendix B, Table H to determine compliance and the residual VOCs that remain on-site, an institutional control is required to address the construction of future buildings. Refer to **Section 4.2.4**.

Soil Component of the Groundwater Ingestion Exposure Route:
Evaluation of the verification data indicates the Tier 1, Class I soil component of the groundwater ingestion ROs are exceeded for the following COCs:

- Tetrachloroethene in samples SM-EX-201(8), SM-EX-204(7), SM-EX-206(7), SM-EX-209(7), SM-EX-210(7), SM-EX-210(9), SM-EX-211(7), SM-EX-211(9), SM-EX-212(7), SM-EX-213(6), SM-EX-214(9), SM-EX-214(13), SM-EX-215(8), SM-EX-215(10), SM-EX-220(7), SM-EX-221(7), SM-EX-301(5), SM-EX-302(5), SM-EX-303(5), SM-EX-304(5), SM-EX-307(5), SM-EX-308(5), SM-EX-310(5), SM-EX-311(5), SM-EX-312(5) and SM-EX-313(5).

Institutional controls and groundwater modeling were applied to exclude the ingestion pathway in the areas where the soil component of the Class I groundwater ingestion exposure route RO is exceeded. Refer to **Section 4.2.3** for Tier 2 evaluation.

4.2.2 TETRACHLOROETHENE INGESTION TIER 1 EVALUATION

Evaluation of the site data indicates that tetrachloroethene exceeds the Tier 1 ingestion RO for industrial-commercial land use (20 mg/kg) at one location. The exceedance of the ingestion RO was documented at sample location **SM-EX-313**: 25 mg/kg at 5 feet deep.

Pursuant to IAC Part 742.225, a statistically valid approach for evaluating the average treatment area concentration of tetrachloroethene at the Site was employed. The objective of this evaluation was to determine whether the 95% Upper Confidence Limit (UCL) for the treatment area tetrachloroethene data/results (sample population) is less than the 95% UCL soil concentration for tetrachloroethene at 20 mg/kg.

The following statistical procedures were employed:

- Shapiro-Wilk Test of Normality.
- Evaluation of the Upper Confidence Limit (UCL) on the mean at a 95% probability.

Prior to calculating the treatment area average concentration, a Shapiro-Wilk Test of Normality was used to determine if the data set is normally distributed. V3 used the USEPA statistical software package ProUCL to perform the Shapiro-Wilk Test on the data. The details of the calculation are presented in the following paragraph and on the data and calculation sheets provided in **Appendix C**.

The analytical data set for the 3- to 11-foot depth interval (from 30 soil samples) was used for the calculations. The Shapiro-Wilk test and calculation of the mean were then performed. The calculated "W" value was less than the critical "W" value, which indicated that the data was not normally or log-normally distributed. Therefore, the site-wide data for tetrachloroethene would need to use another method in determining a mean of the data and 95% upper confidence limit (UCL).

The mean and 95% UCL of the data was calculated using ProUCL. The treatment area mean concentration for tetrachloroethene was calculated to be equal to 5.213 mg/kg. The 95% UCL for the tetrachloroethene data was calculated using nonparametric statistics and the 95% Adjusted Gamma UCL. Therefore, the resultant 95% UCL was 8.501 mg/kg. The calculated 95% UCL (8.5 mg/kg) is less than the 95% UCL soil ingestion concentration for tetrachloroethene (20 mg/kg). In addition, the 95% UCL was also calculated for the soil interval of 5-7 feet within the treatment area and for the entire site data after treatment. The resulting calculations also achieved the Tier 1 ingestion RO. Therefore, an engineered barrier is not required at sample **SM-EX-313**.

4.2.3 TIER 2 EVALUATION

When investigation data for a COC are less than Tier 1 ROs, no further TACO evaluation or remedial action is necessary. Tier 2 evaluations (described below) were performed for remaining post-treatment COCs not eliminated from consideration under Tier 1. Tier 2 remediation objectives were determined by RBCA modeling for the soil component of the groundwater ingestion exposure route. The Tier 2 modeling documentation and summary tables are attached in **Appendix D,** and the Tier 2 results are discussed below.

Tier 2 groundwater ROs can be developed if a groundwater use restriction is used to "move" the Tier 1 compliance point. For this Remediation Site, the property boundary is the compliance point. Tier 1 Class I ROs are used for evaluating groundwater compliance.

Tier 2 Evaluation

Based on the Tier 1 evaluation, a Tier 2 evaluation was performed to develop site-specific, risk-based soil remediation objectives in accordance with the applicable provisions of Part 742 (IAC Section 742.600 et seq.) for the constituents of concern that exceed Tier 1 remediation objectives for the Soil Component of the Groundwater Ingestion Exposure Route.

A spreadsheet (**Appendix D.4**), which incorporates the equations, algorithms, and default values of the Risk-Based Corrective Action (RBCA) model, was used to develop Tier 2 ROs. V3 completed a RBCA equation R12 simulation for soil samples to address the ingestion route related to groundwater.

Soil Component of the Groundwater Ingestion Exposure Route

Tier 2 ROs were calculated for following constituents detected at concentrations above Tier 1 ROs:

- PCE: SM-EX-201, SM-EX-204, SM-EX-206, SM-EX-209, SM-EX-210, SM-EX-211, SM-EX-214, SM-EX-215, SM-EX-220, SM-EX-221, SM-EX-301, SM-EX-302, SM-EX-303, SM-EX-304, SM-EX-307, SM-EX-308, SM-EX-310, SM-EX-311, SM-EX-312 and SM-EX-313.

The following paragraphs establish the background and basis of the soil component to groundwater exposure pathway Tier 2 simulations.

The Tier 2 modeling was performed using a site-specific hydraulic conductivity value.

V3 completed RBCA equation R12 simulations to determine Tier 2 soil component of the groundwater ingestion remediation objectives. Based on the southeastward direction of groundwater flow, the Site's east and south property boundaries were used as the down-gradient compliance point for the development of the Tier 2 ROs.

The use of the Site boundary as the compliance point will require a groundwater use restriction on the Site, which would prevent the installation and/or use of potable wells. There are no potable groundwater supply wells on site.

A discussion and table summarizing the model parameters (inputs) used in the equations are attached in **Appendix D, Table D.2**, along with simulation results. Calculation documentation is provided in **Appendix D.4**. A Tier 2 RO was calculated for each soil sample above Tier 1 ROs for the soil component of the groundwater ingestion route.

The modeling results are summarized below:

- Based upon the RBCA simulated groundwater concentration, the observed soil concentrations (**Appendix D, Table D.2**) are greater at one location (**SM-EX-313**) for PCE than the calculated Tier 2, Class I groundwater protection remediation objective (e.g., simulations indicate the Class I Tier 1 groundwater RO for PCE would not be achieved at the property boundary, the down-gradient compliance point). The remainder of samples did achieve Tier 1 compliance prior to reaching the property boundary.

*Because the RBCA simulations failed to achieve Tier 1 Class I groundwater ROs at the property boundary, the existing Village of Romeoville groundwater ordinance will be used as an institutional control for on-site and off-site groundwater use restrictions. However, notification of potential groundwater contamination to off-site property owners is required. A draft of the notification letter that would be provided to the affected owners is provided in **Appendix G**, along with a map of the potentially affected area.*

4.2.4 TACO SUMMARY

The results of the in-situ chemical soil treatment indicated soil no longer contains VOC concentrations above LDRs. TACO Subpart C source materials are no longer present (e.g., exceedance of soil saturation limits) and exposure routes can be excluded. Tier 1 evaluation of the remediation verification sampling data indicates Tier 1 soil component of the groundwater ingestion RO exceedances remain, but are to be managed under an institutional control.

Based on the Tier 1 and Tier 2 evaluations, the following institutional controls are required:

- Restrict site usage to industrial-commercial land use;
- Restrict groundwater usage at the Site and off-site utilizing the Village's existing limited-groundwater use area ordinance; and
- Require any existing or future buildings located over the current extent of soil gas and/or groundwater contamination to have a full concrete slab-on-grade floor or full concrete basement floor and walls with no sump(s).

It is our understanding that if a sump in a basement is desired, its design must include an appropriate vapor control technology that must be submitted to IEPA and approved for use beforehand.

4.3 GROUNDWATER NOTIFICATION

Tier 2 modeling of the soil to groundwater and groundwater direct ingestions exposure pathways was completed and documented within the Supplemental CSIR / ROR / RAP, along with the post-remediation Tier 2 as provided in **Section 4.2.3** above. A notification letter for off-site properties potentially affected by off-site migration of contamination is required. The notification letters will satisfy the requirements of 742.1015(c). Five adjoining properties were identified through Tier 2 modeling as containing potential off-site migration of COCs. The current owners of the potentially affected parcels are identified below for notification purposes.

Notification Contact Info			
PIN	**Address**	**Owner Contact / Representative**	**Owner Contact / Representative Address**
12-02-34-102-003-0000	Shell 1 Alexander Cir Romeoville, IL 60446	VANDAN LLC	6 N 232 DINAH RD MEDINAH IL 60157
12-02-34-111-002-0000	Route 66 Auto Mart Inc. 639 N Independence Blvd Romeoville, IL 60446	GERVASE, JOHN M	148 CIRCLE RIDGE DR BURR RIDGE IL 60527
12-02-34-111-009-0000	N INDEPENDENCE BL ROMEOVILLE, IL 60446	SPANDONIDIS, STAVROS	667 MEADOWDALE DR, ROMEOVILLE IL 60446
NA	Portion of IL Route 53 (Independence Blvd)	IDOT, District 1	201 West Center Court Schaumburg, Illinois 60196-1096

Notification Contact Info - Continued			
PIN	**Address**	**Owner Contact / Representative**	**Owner Contact / Representative Address**
NA	Portion of Alexander Circle	Village of Romeoville, Attn: Village Clerk	1050 W ROMEO RD ROMEOVILLE IL 60446

A scaled map, identifying the property lines for the Site and adjoining properties, along with the area of modeled potential groundwater contamination is provided as **Figure G** under **Appendix G**. A draft notification letter is provided in **Appendix G**. The approved limited groundwater ordinance, which includes the Remediation Site, is provided in **Appendix H**.

5.0 CONCLUSIONS

The current and future land use is designated “commercial”. A comparison of remediation verification data to applicable Tier 1 and 2 ROs indicates compliance, with the exception of a few samples that will managed by institutional controls. Active remediation was performed, consisting of insitu soil chemical mixing. However, a limited area of soils remain that may contain residual VOC concentrations and low-level solvent odors, and some soils contain concentrations above Tier 1 ROs for the soil component of the groundwater ingestion route. These soils, if excavated in the future, will require off-site disposal if they cannot be used onsite in accordance with IEPA rules and regulations. In addition, a limited area of groundwater contains PCE above Tier 1 ROs (as documented in the Supplemental CSI-ROR-RAP).

An NFR letter is warranted without the need for engineered barriers, once exposure routes are excluded through the placement of a deed restriction on the property that would:

- Restrict site usage to industrial-commercial land use;
- Restrict groundwater usage at the Site and off-site utilizing the Village’s existing limited groundwater-use ordinance; and
- Require any existing or future buildings located over the current extent of soil gas and/or groundwater contamination to have a full concrete slab-on-grade floor or full concrete basement floor and walls with no sump(s).

A base map for the Remediation Site Boundary is provided in **Figure 4.1**.

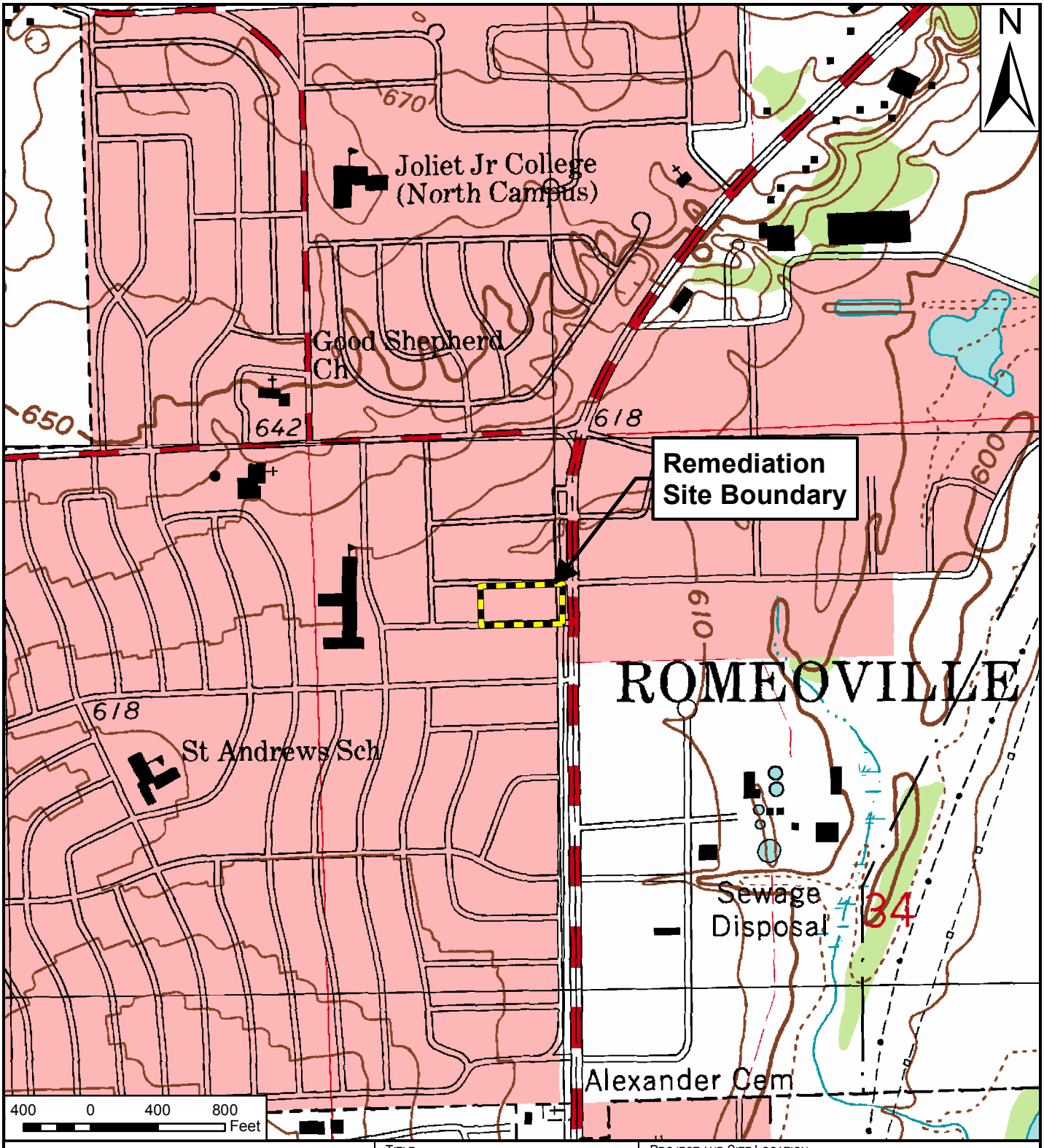
6.0 LICENSED PROFESSIONAL ENGINEER AFFIRMATION

I attest that all Site remedial activities that are the subject of this report were performed under my direction and this document and all Appendices were prepared under my direction or reviewed by me, and, to the best of my knowledge and belief, the work described in the plan or report has been designed or completed in accordance with the Act, 35 Ill. Adm. Code 740, and generally accepted engineering practices, and the information presented is accurate and complete, except as otherwise noted.

Rachael K. Berthiaume, P.E.
V3 COMPANIES

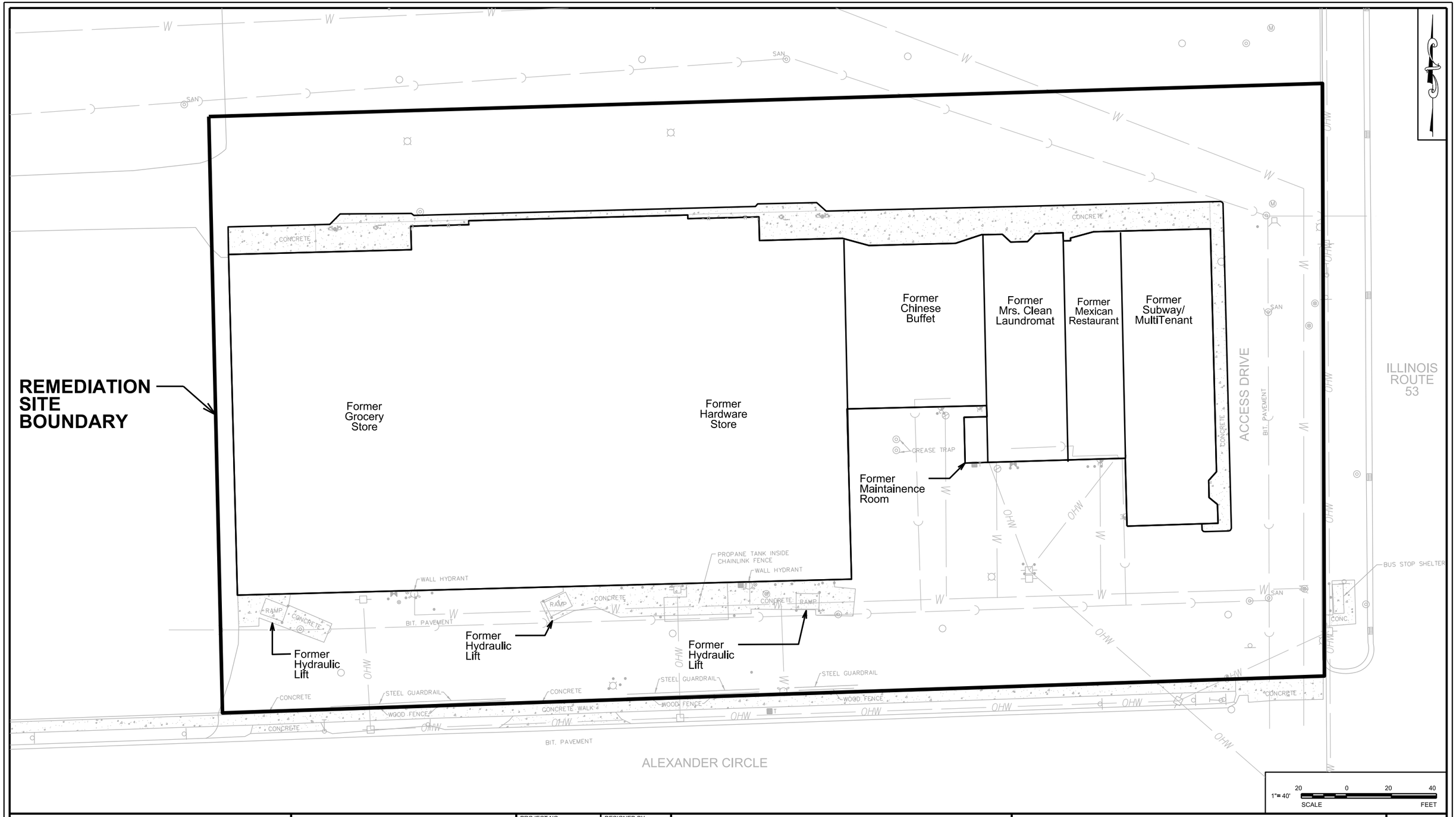
August 2014
Date

FIGURES



V3 Companies
7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

TITLE: **Site Location Map**	PROJECT AND SITE LOCATION: **Spartans' Square Shopping Center NWC Illinois Route 53 and Alexander Circle Romeoville, Illinois 60446**		
BASE LAYER: USGS Topographic Map (1998)	PROJECT NO. 07292CU2011.HAZ	FIGURE: 1.1	SHEET: 1 OF: 1
CLIENT: **Village of Romeoville 13 Montrose Drive Romeoville, Illinois 60446**	QUADRANGLE: Romeoville, IL	DATE: 08/15/14	SCALE: See Scale Bar



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REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NO.: 07292CU2011.HAZ	DESIGNED BY: KJW
FILE NAME: FIGbase07292	DRAWN BY: KJW
DATE: 08/15/14	CHECKED BY: CAM
SCALE: 1"=40'	PROJECT MANAGER: CAM

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

SITE BASE MAP

DRAWING NO. **2.1**

07292CU2011.HAZ - SITE BASE MAP

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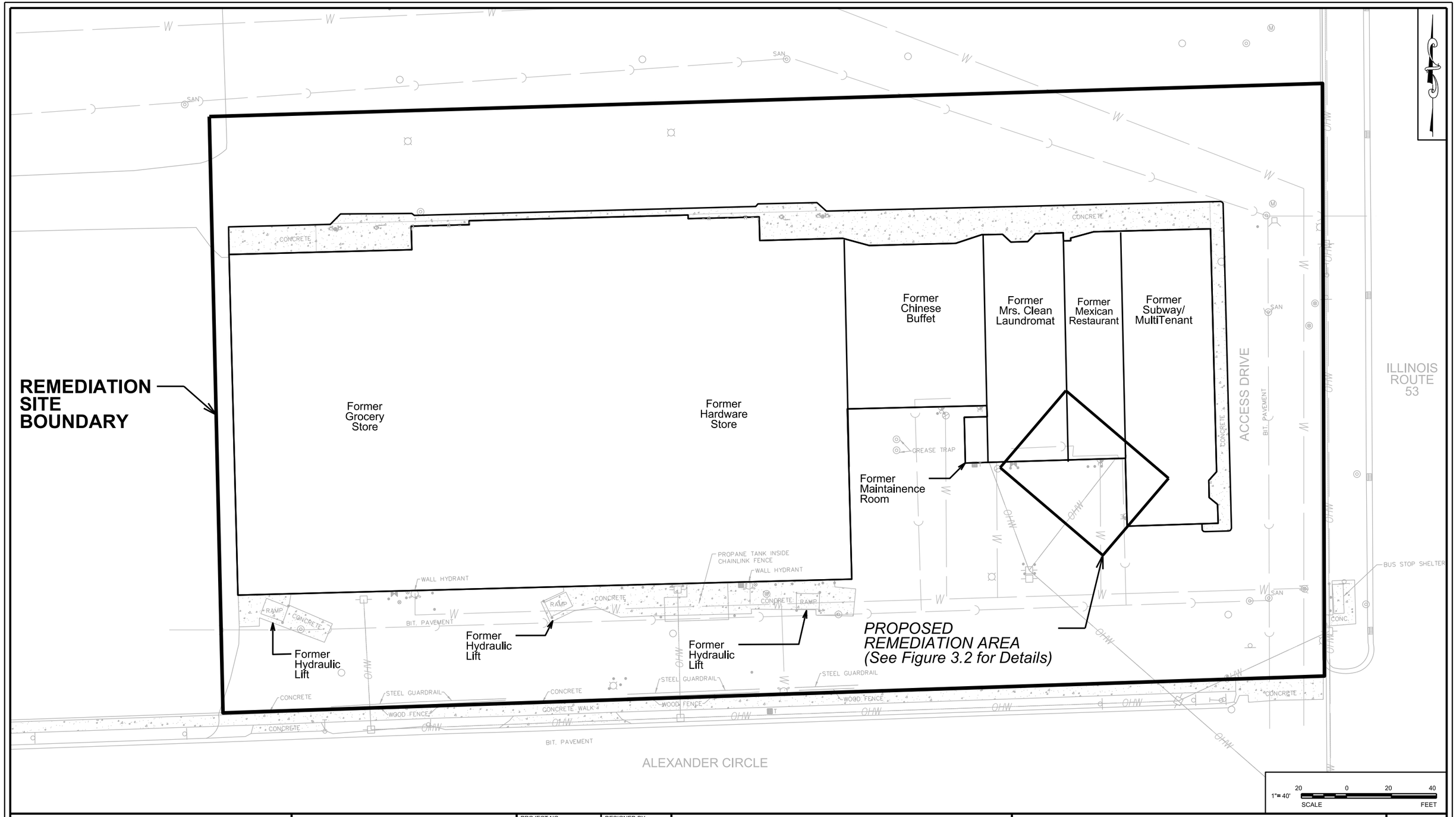

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NO.	DATE	DESCRIPTION

PROJECT NO.: 07292CU2011.HAZ	DESIGNED BY: KJW
FILE NAME: FIGprem07292	DRAWN BY: KJW
DATE: 08/15/14	CHECKED BY: CAM
SCALE: 1"=40'	PROJECT MANAGER: CAM

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

PROPOSED REMEDIATION AREA

DRAWING NO. **3.1**

07292CU2011.HAZ - PROPOSED SOIL REMEDIATION AREA

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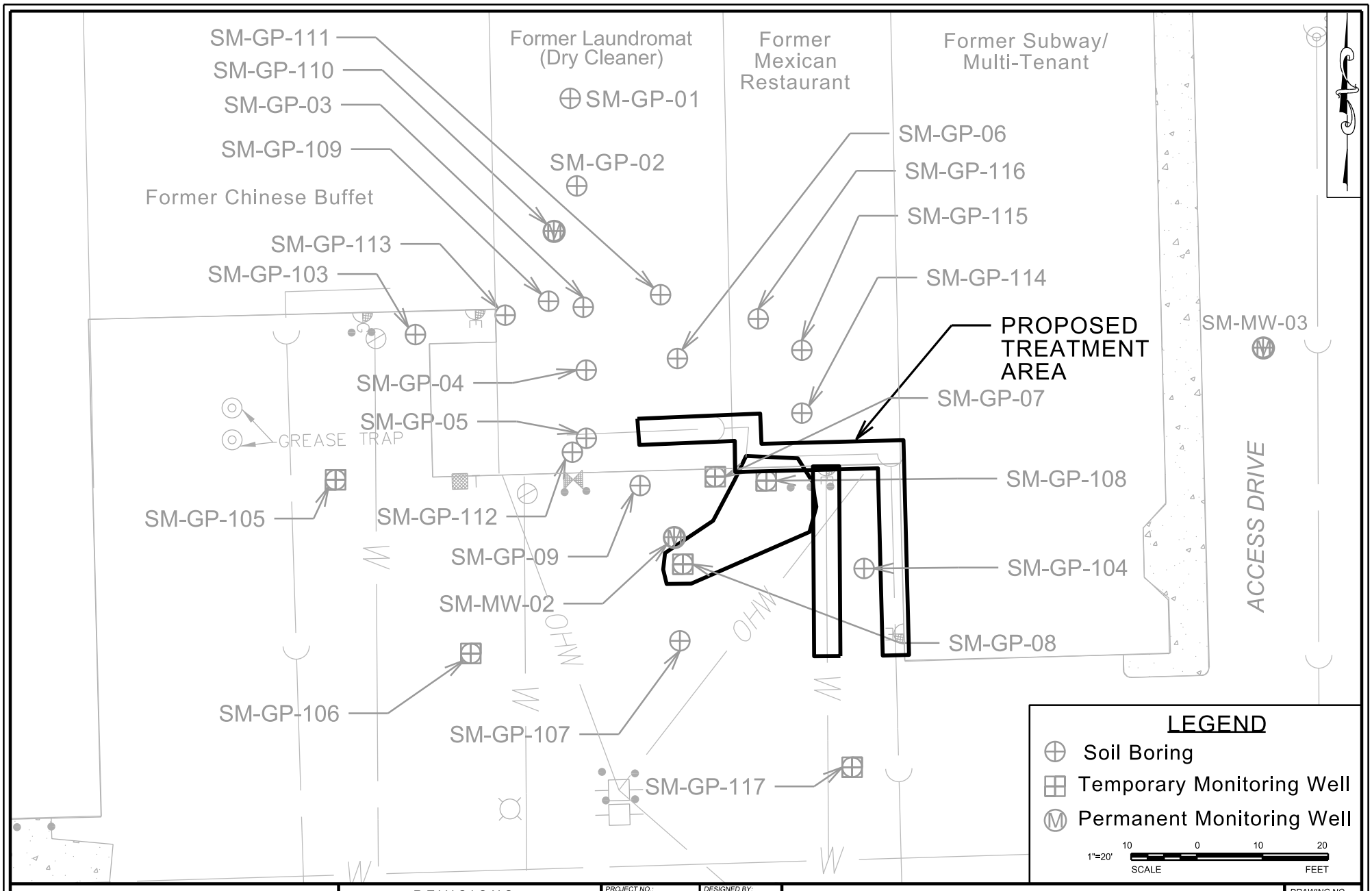

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NO.	DATE	DESCRIPTION

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FILE NAME: FIGtreatment07292	DRAWN BY: KJW
DATE: 08/15/14	CHECKED BY: CAM
SCALE: 1"=20'	PROJECT MANAGER: CAM

PROPOSED IN-SITU TREATMENT AREA

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

DRAWING NO. **3.2**

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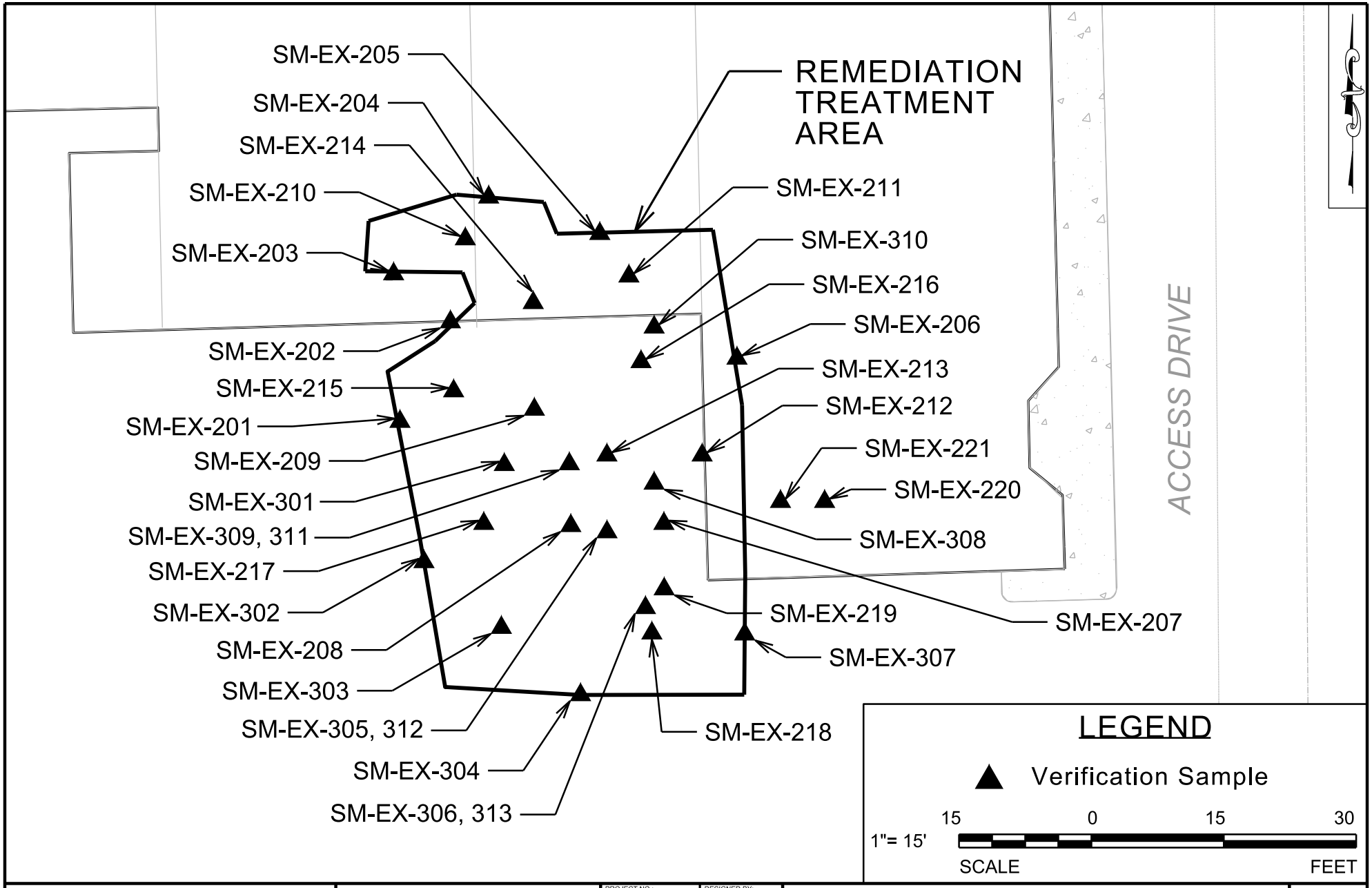

LEGEND

▲ Verification Sample

15 0 15 30

1"= 15'

SCALE FEET

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REVISIONS		
NO.	DATE	DESCRIPTION

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FILE NAME:	FIGver07292
DATE:	08/15/14
SCALE:	1"=15'
DESIGNED BY:	KJW
DRAWN BY:	KJW
CHECKED BY:	CAM
PROJECT MANAGER:	CAM

REMEDIATION TREATMENT AREA AND VERIFICATION SAMPLE LOCATIONS

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

DRAWING NO. **3.3**

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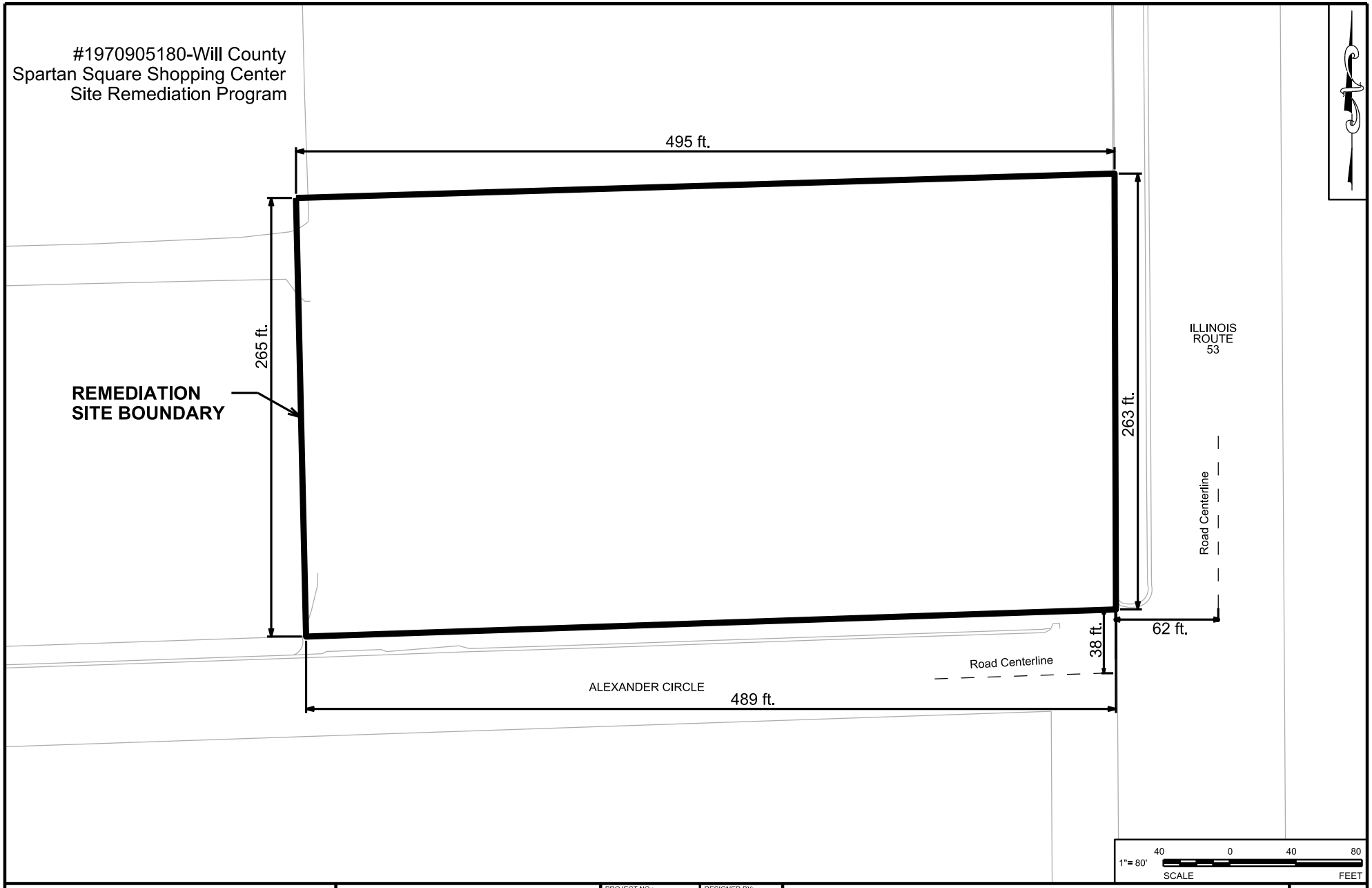
#1970905180-Will County
Spartan Square Shopping Center
Site Remediation Program



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NO.	DATE	DESCRIPTION

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FILE NAME: FIGnfr07292	DRAWN BY: KJW
DATE: 08/15/14	CHECKED BY: CAM
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SITE NFR BASE MAP

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

DRAWING NO. 4.1

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TABLES

TABLE 1.1 SUMMARY OF SOIL AND GROUNDWATER SAMPLES
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

					ANALYSES PERFORMED							TIER 1 REMEDIATION OBJECTIVES EXCEEDANCES						
													Industrial-Commercial		Construction Worker		Soil Component of the Groundwater Ingestion Exposure Route	Groundwater	
SAMPLE I.D.	Soil Sample Depth	*Soil Sample*	*Groundwater Sample*	*Soil Gas Sample*	VOCs	BTEX+MTBE	SVOCs	PNAs	TAL Metals	Pesticides/PCBs	Exceedances of TACO Tier 1 Remediation Objectives		Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class I	Exposure Pathway Resolution
ERS Monitoring Wells																			
MW-9 (Sampled by ERS 10/11/06)			X			X		X			5 PNAs							BAA, BBF, BKF, BAP, IP	Off-site
MW-10 (Sampled by ERS 10/11/06)			X			X		X			4 PNAs							BAA, BBF, BKF, BAP (see updated V3 sample)	resampled (see updated V3 sample)
MW-10 (Sampled by V3 11/19/08)			X		X			X											
V3 Investigation January 2008																			
SM-GP-01	0-2	X			X														
SM-GP-02	2-4	X			X														
	0-2	X			X						1 VOC						PCE		Tier 2
SM-GP-03	6-7	X			X														
SM-GP-04	0-2	X			X														
	0-2	X			X														
SM-GP-05	2-4	X			X														
SM-GP-07	10-12	X			X						1 VOC						PCE		Tier 2
SM-GP-07-GW (Temp Well) SM-GP-07			X		X						1 VOC							PCE	Tier 2
SM-GP-08	8-10	X			X						1 VOC			PCE		PCE	PCE		Tier 2
SM-GP-08-GW (Temp Well) SM-GP-08			X		X						1 VOC							PCE	Tier 2
SM-GP-09	0-2	X			X														
V3 Supplemental Investigation April 2008																			
SM-GP-10	4-6	X						X											
SM-GP-11	6-8	X						X											
SM-GP-12	4-6	X						X											
SM-GP-13 (GW) (Temp Well) SM-GP-13			X		X														
SM-GP-14 (GW) (Temp Well) SM-GP-14 [off-Site]			X			X													
SM-GP-15	0-2	X			X														
SM-GP-15 (GW) (Temp Well) SM-GP-15			X		X														
SM-GP-16 (GW) (Temp Well) SM-GP-16			X		X														
SM-GP-17 (GW) (Temp Well) SM-GP-17			X		X														
SM-GP-18 (GW) (Temp Well) SM-GP-18			X		X														
V3/OSE Supplemental Investigation November 2008																			
X101 SM-GP-101	10-12	X			X		X		X										
X102 SM-GP-102	14-16	X			X		X	X	X	X									
X103 SM-GP-103	10-11	X			X						1 VOC						PCE		Tier 2
X104 SM-GP-104	10-11	X			X		X				1 VOC						PCE		Tier 2
X105A SM-GP-105	2-3	X			X														
X105B SM-GP-105	10-11	X			X														
G105 (Temp Well) SM-GP-105			X		X														
X106 SM-GP-106	10-11	X			X														
G106 (Temp Well) SM-GP-106			X		X														
X107A SM-GP-107 MS/MSD	2-3	X			X						1 VOC						PCE		Tier 2
X107B SM-GP-107 MS/MSD	7-9	X			X						1 VOC						PCE		Tier 2
X108A SM-GP-108	2-3	X			X														
X108B SM-GP-108 MS/MSD	10-11	X			X			X			2 VOCs, Exceeds Soil Sat. for PCE		PCE	PCE		PCE	PCE, TCE		Chemical Soil Treatment
G108 (Temp Well) SM-GP-108			X		X		X		X	X	1 VOC							PCE	Tier 2
X110A SM-GP-110	2-3	X			X														
X110B SM-GP-110	10-11	X			X						1 VOC						PCE		Tier 2
G110 (Temp Well) SM-GP-110			X		X														

TABLE 1.1 SUMMARY OF SOIL AND GROUNDWATER SAMPLES
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

					ANALYSES PERFORMED							TIER 1 REMEDIATION OBJECTIVES EXCEEDANCES						
												Industrial-Commercial		Construction Worker		Soil Component of the Groundwater Ingestion Exposure Route	Groundwater	
SAMPLE I.D.	Soil Sample Depth	*Soil Sample*	*Groundwater Sample*	*Soil Gas Sample*	VOCs	BTEX+MTBE	SVOCs	PNAs	TAL Metals	Pesticides/PCBs	Exceedances of TACO Tier 1 Remediation Objectives	Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class I	Exposure Pathway Resolution
X111A SM-GP-111	2-3	X			X		X		X	X								
X111B SM-GP-111	8-9	X			X			X	X	X	1 VOC					PCE		Tier 2
X112A SM-GP-112	2-3	X			X													
X112B SM-GP-112	8-9	X			X													
X113A SM-GP-113	5-6	X			X													
X113B SM-GP-113	7-8	X			X													
X114A SM-GP-114	2-3	X			X		X		X	X								
X114B SM-GP-114	8-9	X			X			X			1 VOC					PCE		Tier 2
X115 SM-GP-115	7.5-8.5	X			X			X			1 VOC					PCE		Tier 2
X116 SM-GP-116	7.5-8.5	X			X			X			1 VOC					PCE		Tier 2
X11 7 SM-GP-117	10-11	X			X		X		X	X	1 VOC					PCE		Tier 2
G117 (Temp Well) SM-GP-117			X		X		X	X	X	X	1 VOC						PCE	Tier 2
X118A SM-GP-118	2-3	X			X													
X118B SM-GP-118	9-10	X			X													
V3/OSE Well Installation May 2009																		
G101 SM-MW-01 G101 MS/MSD			X		X		X		X	X	1 VOC, 3 Metals						PCE, Al, Fe, Pb, Mn	Tier 2
G102 SM-MW-02			X		X		X		X	X	4 VOCs						PCE, BDM, Bromoform, Chloroform	Tier 2
G103 SM-MW-03			X		X		X		X	X	3 VOCs						BDM, Chloroform, PCE	Tier 2
G104 SM-MW-04			X		X		X		X	X	4 Metals						Al, Fe, Pb, Mn	Tier 2
V3 Soil Gas Survey February 2013																		
SM-SG-01				X	X													
SM-SG-02				X	X													
SM-SG-03				X	X													
SM-SG-04				X	X													
SM-SG-05				X	X													
SM-SG-06				X	X													
V3 Remediation February 2014 to June 2014																		
SM-EX-201(8)	8	X			X						1 VOC					PCE		Tier 2
SM-EX-202(6.5)	6.5	X			X													
SM-EX-203(7)	7	X			X													
SM-EX-204(7)	7	X			X						1 VOC					PCE		Tier 2
SM-EX-205(7)	7	X			X													
SM-EX-206(7)	7	X			X						1 VOC					PCE		Tier 2
SM-EX-207(7)	7	X			X						1 VOC	PCE	PCE		PCE	PCE		
SM-EX-208(4)	7	X			X						2 VOCs	PCE	PCE		PCE	PCE, TCE		Chemical Soil Treatment
SM-EX-209(7)	7	X			X						1 VOC					PCE		Tier 2
SM-EX-210(7)	6.5	X			X						1 VOC					PCE		Tier 2
SM-EX-210(9)	6.5	X			X						1 VOC					PCE		Tier 2
SM-EX-211(7)	7	X			X						1 VOC					PCE		Tier 2
SM-EX-211(9)	9	X			X						1 VOC					PCE		Tier 2
SM-EX-212(7)	7	X			X						1 VOC					PCE		
SM-EX-212(9)	9	X			X						1 VOC					PCE		Chemical Soil Treatment
SM-EX-213(4)	4	X			X						1 VOC					PCE		
SM-EX-213(6)	6	X			X						1 VOC					PCE		
SM-EX-214(9)	9	X			X						1 VOC					PCE		Tier 2
SM-EX-214(13)	13	X			X						1 VOC					PCE		Tier 2
SM-EX-215(8)	8	X			X						1 VOC					PCE		Tier 2
SM-EX-215(10)	10	X			X						1 VOC					PCE		Tier 2
SM-EX-216(4)	4	X			X						1 VOC					PCE		
SM-EX-217(5)	5	X			X						1 VOC		PCE		PCE	PCE		Chemical Soil Treatment
SM-EX-218(7)	7	X			X						1 VOC					PCE		
SM-EX-219(7)	7	X			X						1 VOC					PCE		
SM-EX-220(7)	7	X			X						1 VOC					PCE		Tier 2
SM-EX-221(7)	7	X			X						1 VOC					PCE		Tier 2
SM-EX-301(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-302(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-303(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-304(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-305(5)	5	X			X						1 VOC		PCE		PCE	PCE		
SM-EX-306(5)	5	X			X						1 VOC		PCE		PCE	PCE		Chemical Soil Treatment
SM-EX-307(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-308(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-309(5)	5	X			X						1 VOC		PCE		PCE	PCE		Chemical Soil Treatment
SM-EX-310(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-311(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-312(5)	5	X			X						1 VOC					PCE		Tier 2
SM-EX-313(5)	5	X			X						1 VOC		PCE			PCE		Tier 2, 95% UCL

BAA =Benzo(a)anthracene, BBF= Benzo(b)fluoranthene, BAP=Benzo(a)pyrene, BKF=benzo(k)flouranthene, IP=Indeno(1,2,3, cd)pyrene
PCE= Tetrachloroethene, TCE=Trichloroethene, BDM= Bromodichloromethane
Chemicals with laboratory reporting limits > Remediation Objectives are not indicated on th
Al=Aluminum, Fe=Iron, Pb=Lead, Mn=Manganese
MS/MSD = Matrix Spike/Matrix Spike Duplicate
SM-GP-101 = V3 Geoprobe (GP) Location
X112 = OSE Sample/Boring Location
G105 = OSE Sample/Well Location
SM-MW-01 = V3 Monitoring Well (MW) Location

TABLE 2.1 - SOIL ANALYTICAL RESULTS (VOCs)
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Industrial-Commercial						V3									
	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Route Values		02/04/14	02/04/14	02/04/14	02/04/14	02/04/14	02/04/14	02/04/14	02/04/14	02/04/14	02/04/14
	Industrial-Commercial		Construction Worker				SM-EX-201 (8)	SM-EX-202 (6.5)	SM-EX-203 (7)	SM-EX-204 (7)	SM-EX-205 (7)	SM-EX-206 (7)	SM-EX-207 (7)	SM-EX-208 (4)	SM-EX-209 (7)	SM-EX-210 (7)
Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ADL (mg/kg)	8 ft mg/kg	6.5 ft mg/kg	7 ft mg/kg	7 ft mg/kg	7 ft mg/kg	7 ft mg/kg	7 ft mg/kg	4 ft mg/kg	7 ft mg/kg	7 ft mg/kg
Volatile Organic Compounds (Method - 8260B)													Chemically Retreated	Chemically Retreated		
Acetone	----g	100,000d	----g	100,000d	25b	*	0.13	< 0.12	< 0.12	< 0.1	< 0.079	0.12	< 4.5	< 5.2	< 5	2.1
Benzene	100e	1.6e	2,300e	2.2e	0.03	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Bromodichloromethane (Dichlorobromomethane)	92e	3,000d	2,000e	3,000d	0.6	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Bromoform	720e	100e	16,000e	140e	0.8	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Bromomethane (methylene bromide) [NT]	---c	44b	1,800b	2.8b	---c	**	< 0.012	< 0.016	< 0.016	< 0.014	< 0.011	< 0.014	< 0.59	< 0.69	< 0.66	< 0.0088
2-Butanone (MEK) [NT]	1,000,000b	25,000d,x	120,000b	730b	17b	NA	< 0.088	< 0.12	< 0.12	< 0.1	< 0.079	< 0.1	< 4.5	< 5.2	< 5	0.21
Carbon disulfide	200,000b	720d	20,000b	9.0b	32b	*	< 0.059	< 0.078	< 0.079	< 0.068	< 0.053	< 0.069	< 3	< 3.5	< 3.3	< 0.044
Carbon tetrachloride	44e	0.64e	410b	0.90e	0.07	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Chlorobenzene (Monochlorobenzene)	41,000b	210b	4,100b	1.3b	1	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Chlorodibromomethane (Dibromochloromethane)	41,000b	1,300d	41,000b	1,300d	0.4	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Chloroethane [NT]	---c	1,500d	20,000b	39b	---c	**	< 0.012	< 0.016	< 0.016	< 0.014	< 0.011	< 0.014	< 0.59	< 0.69	< 0.66	< 0.0088
Chloroform	940e	0.54e	2,000b	0.76e	0.6	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Chloromethane [NT]	---c	180b	---c	5b	---c,h	**	< 0.012	< 0.016	< 0.016	< 0.014	< 0.011	< 0.014	< 0.59	< 0.69	< 0.66	< 0.0088
1,1-Dichloroethane	200,000b	1,700d	200,000b	130b	23b	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
1,2-Dichloroethane (Ethylene dichloride)	63e	0.70e	1,400e	0.99e	0.02	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
1,1-Dichloroethene (1,1-Dichloroethylene)	100,000b	470d	10,000b	3.0b	0.06	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene)	20,000b	1,200d	20,000b	1,200d	0.4	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	41,000b	3,100d	41,000b	3,100d	0.7	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
1,2-Dichloropropane	84e	23b	1,800e	0.50b	0.03	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
cis-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0024	< 0.0031	< 0.0032	< 0.0027	< 0.0021	< 0.0028	< 0.12	< 0.14	< 0.13	< 0.0018
trans-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0024	< 0.0031	< 0.0032	< 0.0027	< 0.0021	< 0.0028	< 0.12	< 0.14	< 0.13	< 0.0018
Ethylbenzene	200,000b	400d	20,000b	58b	13	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
2-Hexanone [NT]	10,000b	720b	1,000b	47b	0.16b	**	< 0.024	< 0.031	< 0.032	< 0.027	< 0.021	< 0.028	< 1.2	< 1.4	< 1.3	< 0.018
4-Methyl-2-pentanone (MIBK) [NT]	160,000b	3,100d	160,000b	340b	2.5b	NA	< 0.024	< 0.031	< 0.032	< 0.027	< 0.021	< 0.028	< 1.2	< 1.4	< 1.3	< 0.018
Methylene chloride (Dichloromethane)	760e	24e	12,000b	34e	0.02e	*	< 0.012	< 0.016	< 0.016	< 0.014	< 0.011	< 0.014	< 0.59	< 0.69	< 0.66	< 0.0088
MTBE (methyl tertiary-butyl ether)	20,000b	8,800d	2,000b	140b	0.32	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Styrene	410,000b	1,500d	41,000b	430b	4	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
1,1,2,2-Tetrachloroethane [NT]	27e	1.2e	620e	1.7e	0.0035e	**	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Tetrachloroethene (Perchloroethylene)	110e	20e	2,400e	28e	0.06	*	4	0.03	0.031	0.079	0.042	0.21	140	130	13	0.57
Toluene	410,000b	650d	410,000b	42b	12	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
1,1,1-Trichloroethane	---c	1,200d	--c	1,200d	2	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
1,1,2-Trichloroethane	8,200b	1,800d	8,200b	1,800d	0.02	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Trichloroethene (Trichloroethylene)	520e	8.9e	1,200b	12e	0.06	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	0.89	< 0.33	< 0.0044
Vinyl Chloride	7.9e	1.1e	170e	1.1b	0.01	*	< 0.0059	< 0.0078	< 0.0079	< 0.0068	< 0.0053	< 0.0069	< 0.3	< 0.35	< 0.33	< 0.0044
Xylenes (total)	410,000b	320d	41,000b	5.6b	150	*	< 0.018	< 0.023	< 0.024	< 0.02	< 0.016	< 0.021	< 0.89	< 1	< 0.99	< 0.013

Part 742 Notes
* indicates that the ADL is less than or equal to the specified remediation objective.
** indicates that the value is not listed in TACO, Section 742, Table A or B.
NA means Not Available; no PQL or EQL available in USEPA analytical methods.

	V3 Table Notes:
0.11	Indicates exceedance of Tier 1 remediation objective
0.11	Indicates lab detection limit is greater than remediation objective
---	Indicates chemical not analyzed or not sampled
(1)	(1) indicates value is for (1,3-Dichloropropylene, cis+trans)
[NT]	[NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, revised 10/30/2012. Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html
	See attached for soil remediation objective notations

Prepared by/Date KJW 08/15/14
Checked by/Date RKB 08/18/14

TABLE 2.1 - SOIL ANALYTICAL RESULTS (VOCs)
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Industrial-Commercial						V3									
	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Route Values		02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14
	Industrial-Commercial		Construction Worker				SM-EX-210 (9)	SM-EX-211 (7)	SM-EX-211 (9)	SM-EX-212 (7)	SM-EX-212 (9)	SM-EX-213 (4)	SM-EX-213 (6)	SM-EX-214 (9)	SM-EX-214 (13)	SM-EX-215 (8)
Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ADL (mg/kg)	9 ft mg/kg	7 ft mg/kg	9 ft mg/kg	7 ft mg/kg	9 ft mg/kg	4 ft mg/kg	6 ft mg/kg	9 ft mg/kg	13 ft mg/kg	8 ft mg/kg
Volatile Organic Compounds (Method - 8260B)										Within Area Chemically Retreated						
Acetone	----g	100,000d	----g	100,000d	25b	*	0.94	1.7	1.5	1.9	0.093	< 0.91	2.5	2.5	0.47	2.6
Benzene	100e	1.6e	2,300e	2.2e	0.03	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Bromodichloromethane (Dichlorobromomethane)	92e	3,000d	2,000e	3,000d	0.6	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Bromoform	720e	100e	16,000e	140e	0.8	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	0.047
Bromomethane (methylene bromide) [NT]	---c	44b	1,800b	2.8b	---c	**	< 0.011	< 0.47	< 0.48	< 0.43	< 0.012	< 0.45	< 0.4	< 0.47	< 0.016	< 0.0079
2-Butanone (MEK) [NT]	1,000,000b	25,000d,x	120,000b	730b	17b	NA	0.21	< 3.5	< 3.6	< 3.3	< 0.089	< 3.4	< 3	< 3.5	< 0.12	0.2
Carbon disulfide	200,000b	720d	20,000b	9.0b	32b	*	< 0.054	< 2.3	< 2.4	< 2.2	< 0.06	< 2.3	< 2	< 2.4	< 0.08	< 0.04
Carbon tetrachloride	44e	0.64e	410b	0.90e	0.07	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Chlorobenzene (Monochlorobenzene)	41,000b	210b	4,100b	1.3b	1	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Chlorodibromomethane (Dibromochloromethane)	41,000b	1,300d	41,000b	1,300d	0.4	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Chloroethane [NT]	---c	1,500d	20,000b	39b	---c	**	< 0.011	< 0.47	< 0.48	< 0.43	< 0.012	< 0.45	< 0.4	< 0.47	< 0.016	< 0.0079
Chloroform	940e	0.54e	2,000b	0.76e	0.6	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Chloromethane [NT]	---c	180b	---c	5b	---c,h	**	< 0.011	< 0.47	< 0.48	< 0.43	< 0.012	< 0.45	< 0.4	< 0.47	< 0.016	< 0.0079
1,1-Dichloroethane	200,000b	1,700d	200,000b	130b	23b	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
1,2-Dichloroethane (Ethylene dichloride)	63e	0.70e	1,400e	0.99e	0.02	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
1,1-Dichloroethene (1,1-Dichloroethylene)	100,000b	470d	10,000b	3.0b	0.06	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene)	20,000b	1,200d	20,000b	1,200d	0.4	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	41,000b	3,100d	41,000b	3,100d	0.7	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
1,2-Dichloropropane	84e	23b	1,800e	0.50b	0.03	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
cis-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0022	< 0.094	< 0.096	< 0.087	< 0.0024	< 0.091	< 0.081	< 0.094	< 0.0032	< 0.0016
trans-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0022	< 0.094	< 0.096	< 0.087	< 0.0024	< 0.091	< 0.081	< 0.094	< 0.0032	< 0.0016
Ethylbenzene	200,000b	400d	20,000b	58b	13	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
2-Hexanone [NT]	10,000b	720b	1,000b	47b	0.16b	**	< 0.022	< 0.94	< 0.96	< 0.87	< 0.024	< 0.91	< 0.81	< 0.94	< 0.032	< 0.016
4-Methyl-2-pentanone (MIBK) [NT]	160,000b	3,100d	160,000b	340b	2.5b	NA	< 0.022	< 0.94	< 0.96	< 0.87	< 0.024	< 0.91	< 0.81	< 0.94	< 0.032	< 0.016
Methylene chloride (Dichloromethane)	760e	24e	12,000b	34e	0.02e	*	< 0.011	< 0.47	< 0.48	< 0.43	< 0.012	< 0.45	< 0.4	< 0.47	< 0.016	< 0.0079
MTBE (methyl tertiary-butyl ether)	20,000b	8,800d	2,000b	140b	0.32	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Styrene	410,000b	1,500d	41,000b	430b	4	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
1,1,2,2-Tetrachloroethane [NT]	27e	1.2e	620e	1.7e	0.0035e	**	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Tetrachloroethene (Perchloroethylene)	110e	20e	2,400e	28e	0.06	*	0.83	3	3.6	8.8	0.33	8.9	11	4.3	0.46	0.34
Toluene	410,000b	650d	410,000b	42b	12	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
1,1,1-Trichloroethane	---c	1,200d	--c	1,200d	2	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
1,1,2-Trichloroethane	8,200b	1,800d	8,200b	1,800d	0.02	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Trichloroethene (Trichloroethylene)	520e	8.9e	1,200b	12e	0.06	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Vinyl Chloride	7.9e	1.1e	170e	1.1b	0.01	*	< 0.0054	< 0.23	< 0.24	< 0.22	< 0.006	< 0.23	< 0.2	< 0.24	< 0.008	< 0.004
Xylenes (total)	410,000b	320d	41,000b	5.6b	150	*	< 0.016	< 0.7	< 0.72	< 0.65	< 0.018	< 0.68	< 0.61	< 0.71	< 0.024	< 0.012

Part 742 Notes

* indicates that the ADL is less than or equal to the specified remediation objective.
** indicates that the value is not listed in TACO, Section 742, Table A or B.
NA means Not Available; no PQL or EQL available in USEPA analytical methods.

	V3 Table Notes:
0.11	Indicates exceedance of Tier 1 remediation objective
0.11	Indicates lab detection limit is greater than remediation objective
---	Indicates chemical not analyzed or not sampled
(1)	(1) indicates value is for (1,3-Dichloropropylene, cis+trans)
[NT]	[NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, revised 10/30/2012.
	Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html
	See attached for soil remediation objective notations

Prepared by/Date KJW 08/15/14
Checked by/Date RKB 08/18/14

TABLE 2.1 - SOIL ANALYTICAL RESULTS (VOCs)
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Industrial-Commercial						V3									
	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Route Values		02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	02/14/14	05/08/14	05/08/14	05/08/14
	Industrial-Commercial		Construction Worker				SM-EX-215 (10)	SM-EX-216 (4)	SM-EX-217 (5)	SM-EX-218 (7)	SM-EX-219 (7)	SM-EX-220(7)	SM-EX-221(7)	SM-EX-301 (5)	SM-EX-302 (5)	SM-EX-303 (5)
Chemical Name	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**ADL (mg/kg)**	10 ft mg/kg	4 ft mg/kg	5 ft mg/kg	7 ft mg/kg	7 ft mg/kg	7 ft mg/kg	7 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg
Volatile Organic Compounds (Method - 8260B)								**Chemically Retreated**	**Chemically Retreated**	**Chemically Retreated**	**Chemically Retreated**					
Acetone	----g	100,000d	----g	100,000d	25b	*	2	1.3	< 4.8	< 3.9	< 4.2	< 3.4	< 3.5	1.1	1.1	0.62
Benzene	100e	1.6e	2,300e	2.2e	0.03	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Bromodichloromethane (Dichlorobromomethane)	92e	3,000d	2,000e	3,000d	0.6	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Bromoform	720e	100e	16,000e	140e	0.8	*	0.025	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Bromomethane (methylene bromide) [NT]	---c	44b	1,800b	2.8b	---c	**	< 0.0084	< 0.4	< 0.64	< 0.52	< 0.56	< 0.46	< 0.47	< 0.0071	< 0.0072	< 0.0082
2-Butanone (MEK) [NT]	1,000,000b	25,000d,x	120,000b	730b	17b	NA	0.18	< 3	< 4.8	< 3.9	< 4.2	< 3.4	< 3.5	0.32	0.38	0.19
Carbon disulfide	200,000b	720d	20,000b	9.0b	32b	*	< 0.042	< 2	< 3.2	< 2.6	< 2.8	< 2.3	< 2.4	< 0.036	< 0.036	< 0.041
Carbon tetrachloride	44e	0.64e	410b	0.90e	0.07	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Chlorobenzene (Monochlorobenzene)	41,000b	210b	4,100b	1.3b	1	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Chlorodibromomethane (Dibromochloromethane)	41,000b	1,300d	41,000b	1,300d	0.4	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Chloroethane [NT]	---c	1,500d	20,000b	39b	---c	**	< 0.0084	< 0.4	< 0.64	< 0.52	< 0.56	< 0.46	< 0.47	< 0.0071	< 0.0072	< 0.0082
Chloroform	940e	0.54e	2,000b	0.76e	0.6	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Chloromethane [NT]	---c	180b	---c	5b	---c,h	**	< 0.0084	< 0.4	< 0.64	< 0.52	< 0.56	< 0.46	< 0.47	< 0.0071	< 0.0072	< 0.0082
1,1-Dichloroethane	200,000b	1,700d	200,000b	130b	23b	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
1,2-Dichloroethane (Ethylene dichloride)	63e	0.70e	1,400e	0.99e	0.02	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
1,1-Dichloroethene (1,1-Dichloroethylene)	100,000b	470d	10,000b	3.0b	0.06	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene)	20,000b	1,200d	20,000b	1,200d	0.4	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	41,000b	3,100d	41,000b	3,100d	0.7	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
1,2-Dichloropropane	84e	23b	1,800e	0.50b	0.03	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
cis-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0017	< 0.08	< 0.13	< 0.1	< 0.11	< 0.092	< 0.094	< 0.0014	< 0.0014	< 0.0016
trans-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0017	< 0.08	< 0.13	< 0.1	< 0.11	< 0.092	< 0.094	< 0.0014	< 0.0014	< 0.0016
Ethylbenzene	200,000b	400d	20,000b	58b	13	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
2-Hexanone [NT]	10,000b	720b	1,000b	47b	0.16b	**	< 0.017	< 0.8	< 1.3	< 1	< 1.1	< 0.92	< 0.94	< 0.014	0.016	< 0.016
4-Methyl-2-pentanone (MIBK) [NT]	160,000b	3,100d	160,000b	340b	2.5b	NA	< 0.017	< 0.8	< 1.3	< 1	< 1.1	< 0.92	< 0.94	< 0.014	< 0.014	< 0.016
Methylene chloride (Dichloromethane)	760e	24e	12,000b	34e	0.02e	*	< 0.0084	< 0.4	< 0.64	< 0.52	< 0.56	< 0.46	< 0.47	< 0.0071	< 0.0072	< 0.0082
MTBE (methyl tertiary-butyl ether)	20,000b	8,800d	2,000b	140b	0.32	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Styrene	410,000b	1,500d	41,000b	430b	4	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
1,1,2,2-Tetrachloroethane [NT]	27e	1.2e	620e	1.7e	0.0035e	**	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Tetrachloroethene (Perchloroethylene)	110e	20e	2,400e	28e	0.06	*	0.37	4.4	67	6.1	18	7.7	8	5.1	1.5	13
Toluene	410,000b	650d	410,000b	42b	12	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
1,1,1-Trichloroethane	---c	1,200d	--c	1,200d	2	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
1,1,2-Trichloroethane	8,200b	1,800d	8,200b	1,800d	0.02	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Trichloroethene (Trichloroethylene)	520e	8.9e	1,200b	12e	0.06	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Vinyl Chloride	7.9e	1.1e	170e	1.1b	0.01	*	< 0.0042	< 0.2	< 0.32	< 0.26	< 0.28	< 0.23	< 0.24	< 0.0036	< 0.0036	< 0.0041
Xylenes (total)	410,000b	320d	41,000b	5.6b	150	*	< 0.013	< 0.6	< 0.96	< 0.79	< 0.84	< 0.69	< 0.71	< 0.011	< 0.011	< 0.012

Part 742 Notes

* indicates that the ADL is less than or equal to the specified remediation objective.
** indicates that the value is not listed in TACO, Section 742, Table A or B.
NA means Not Available; no PQL or EQL available in USEPA analytical methods.

	V3 Table Notes:
0.11	Indicates exceedance of Tier 1 remediation objective
0.11	Indicates lab detection limit is greater than remediation objective
---	Indicates chemical not analyzed or not sampled
(1)	(1) indicates value is for (1,3-Dichloropropylene, cis+trans)
[NT]	[NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, revised 10/30/2012.
	Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html
	See attached for soil remediation objective notations

Prepared by/Date KJW 08/15/14
Checked by/Date RKB 08/18/14

TABLE 2.1 - SOIL ANALYTICAL RESULTS (VOCs)
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Industrial-Commercial						V3									
	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Route Values		05/08/14	05/08/14	05/08/14	05/08/14	05/08/14	05/08/14	05/08/14	06/19/14	06/19/14	06/19/14
	Industrial-Commercial		Construction Worker				SM-EX-304 (5)	SM-EX-305 (5)	SM-EX-306 (5)	SM-EX-307 (5)	SM-EX-308 (5)	SM-EX-309 (5)	SM-EX-310 (5)	SM-EX-311 (5)	SM-EX-312 (5)	SM-EX-313 (5)
Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ADL (mg/kg)	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg	5 ft mg/kg
Volatile Organic Compounds (Method - 8260B)								Chemically Retreated	Chemically Retreated			Chemically Retreated				
Acetone	----g	100,000d	----g	100,000d	25b	*	1.4	0.69	0.93	1.4	1.0	0.55	1.7	< 0.089	0.12	0.096
Benzene	100e	1.6e	2,300e	2.2e	0.03	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Bromodichloromethane (Dichlorobromomethane)	92e	3,000d	2,000e	3,000d	0.6	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Bromoform	720e	100e	16,000e	140e	0.8	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Bromomethane (methylene bromide) [NT]	---c	44b	1,800b	2.8b	---c	**	< 0.0082	< 0.0089	< 0.0086	< 0.0089	< 0.0082	< 0.0073	< 0.0087	< 0.012	< 0.012	< 0.0098
2-Butanone (MEK) [NT]	1,000,000b	25,000d,x	120,000b	730b	17b	NA	0.32	0.23	0.89	0.37	0.38	0.18	0.37	< 0.089	< 0.09	< 0.074
Carbon disulfide	200,000b	720d	20,000b	9.0b	32b	*	< 0.041	< 0.044	< 0.043	< 0.045	< 0.041	< 0.037	< 0.043	< 0.06	< 0.06	< 0.049
Carbon tetrachloride	44e	0.64e	410b	0.90e	0.07	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Chlorobenzene (Monochlorobenzene)	41,000b	210b	4,100b	1.3b	1	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Chlorodibromomethane (Dibromochloromethane)	41,000b	1,300d	41,000b	1,300d	0.4	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Chloroethane [NT]	---c	1,500d	20,000b	39b	---c	**	< 0.0082	< 0.0089	< 0.0086	< 0.0089	< 0.0082	< 0.0073	< 0.0087	< 0.012	< 0.012	< 0.0098
Chloroform	940e	0.54e	2,000b	0.76e	0.6	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Chloromethane [NT]	---c	180b	---c	5b	---c,h	**	< 0.0082	< 0.0089	< 0.0086	< 0.0089	< 0.0082	< 0.0073	< 0.0087	< 0.012	< 0.012	< 0.0098
1,1-Dichloroethane	200,000b	1,700d	200,000b	130b	23b	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
1,2-Dichloroethane (Ethylene dichloride)	63e	0.70e	1,400e	0.99e	0.02	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
1,1-Dichloroethene (1,1-Dichloroethylene)	100,000b	470d	10,000b	3.0b	0.06	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene)	20,000b	1,200d	20,000b	1,200d	0.4	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	41,000b	3,100d	41,000b	3,100d	0.7	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
1,2-Dichloropropane	84e	23b	1,800e	0.50b	0.03	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
cis-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0016	< 0.0018	< 0.0017	< 0.0018	< 0.0016	< 0.0015	< 0.0017	< 0.0023	< 0.0024	< 0.0019
trans-1,3-Dichloropropene (1)	57e	2.1e	1,200e	0.39b	0.004e	0.005	< 0.0016	< 0.0018	< 0.0017	< 0.0018	< 0.0016	< 0.0015	< 0.0017	< 0.0023	< 0.0024	< 0.0019
Ethylbenzene	200,000b	400d	20,000b	58b	13	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
2-Hexanone [NT]	10,000b	720b	1,000b	47b	0.16b	**	< 0.016	< 0.018	0.061	< 0.018	0.017	< 0.015	< 0.017	< 0.023	< 0.024	< 0.019
4-Methyl-2-pentanone (MIBK) [NT]	160,000b	3,100d	160,000b	340b	2.5b	NA	< 0.016	< 0.018	< 0.017	< 0.018	< 0.016	< 0.015	< 0.017	< 0.023	< 0.024	< 0.019
Methylene chloride (Dichloromethane)	760e	24e	12,000b	34e	0.02e	*	< 0.0082	< 0.0089	< 0.0086	< 0.0089	< 0.0082	< 0.0073	< 0.0087	< 0.012	< 0.012	< 0.0098
MTBE (methyl tertiary-butyl ether)	20,000b	8,800d	2,000b	140b	0.32	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Styrene	410,000b	1,500d	41,000b	430b	4	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
1,1,2,2-Tetrachloroethane [NT]	27e	1.2e	620e	1.7e	0.0035e	**	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Tetrachloroethene (Perchloroethylene)	110e	20e	2,400e	28e	0.06	*	1.2	89	32	1.2	12	31	1.4	7.8	13	25
Toluene	410,000b	650d	410,000b	42b	12	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
1,1,1-Trichloroethane	---c	1,200d	--c	1,200d	2	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
1,1,2-Trichloroethane	8,200b	1,800d	8,200b	1,800d	0.02	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Trichloroethene (Trichloroethylene)	520e	8.9e	1,200b	12e	0.06	*	< 0.0041	0.0093	0.0075	< 0.0045	< 0.0041	0.0074	< 0.0043	< 0.006	< 0.006	< 0.0049
Vinyl Chloride	7.9e	1.1e	170e	1.1b	0.01	*	< 0.0041	< 0.0044	< 0.0043	< 0.0045	< 0.0041	< 0.0037	< 0.0043	< 0.006	< 0.006	< 0.0049
Xylenes (total)	410,000b	320d	41,000b	5.6b	150	*	< 0.012	< 0.013	< 0.013	< 0.013	< 0.012	< 0.011	< 0.013	< 0.018	< 0.018	< 0.015

Part 742 Notes

* indicates that the ADL is less than or equal to the specified remediation objective.
** indicates that the value is not listed in TACO, Section 742, Table A or B.
NA means Not Available; no PQL or EQL available in USEPA analytical methods.

	V3 Table Notes:
0.11	Indicates exceedance of Tier 1 remediation objective
0.11	Indicates lab detection limit is greater than remediation objective
---	Indicates chemical not analyzed or not sampled
(1)	(1) indicates value is for (1,3-Dichloropropylene, cis+trans)
[NT]	[NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, revised 10/30/2012. Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html
	See attached for soil remediation objective notations

Prepared by/Date KJW 08/15/14
Checked by/Date RKB 08/18/14

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

PHOTO 1
Date: 12/05/13

Clean overburden soils excavated in treatment area to a depth of three feet below grade, facing northeast.

PHOTO 2
Date: 12/05/13

Overburden soils stockpiled next to treatment area, facing east.

PHOTO 3
Date: 12/09/13

View of treatment area, facing northwest.

PHOTO 4
Date: 12/09/13

Excavating to remediation depth in treatment area, facing southwest.

PHOTO 5
Date: 12/10/13

Bags containing potassium permanganate (RemOX®) next to west side of treatment area, facing northeast.

PHOTO 6
Date: 12/11/13

Potassium permanganate (RemOX®) being applied to southern portion of treatment area, facing south.

PHOTO 7
Date: 12/11/13

In-situ soil mixing of potassium permanganate (RemOX®) in northeast portion of treatment area, facing northwest.

PHOTO 8
Date: 12/11/13

Potable water being added to soil in northern portion of treatment area to solubilize and distribute chemical oxidant, facing southeast.

PHOTO 9
Date: 12/11/13

First round of chemical oxidation treatment completed, facing northeast.

Potassium permanganate (RemOX®) is apparent from purple color.

PHOTO 10
Date: 02/04/14

Verification sampling using Johnson Probing and direct-push sampling method in western portion of treatment area, facing southeast.

PHOTO 11
Date: 02/14/14

Verification sampling using Robinette Demolition, Inc. and backhoe in northeast portion of treatment area, facing east.

PHOTO 12
Date: 02/14/14

Trench digging southwest of treatment area to delineate extent of PCE soil contamination, facing southeast.

PHOTO 13
Date: 04/07/14

A portion of the area marked out for the second round of chemical treatment, facing west.

PHOTO 14
Date: 04/07/14

In-situ soil mixing in southern portion of treatment area, facing southwest.

Potassium permanganate (RemOX®) is apparent by purple color.

PHOTO 15
Date: 05/08/14

Verification sampling using RW Collins and combo rig in western portion of treatment area, facing north.

PHOTO 16
Date: 05/08/14

Verification sampling in southern portion of treatment area, facing north

PHOTO 17
Date: 06/10/14

Area marked out for third (and final) round of chemical treatment using hydrogen peroxide, facing north.

PHOTO 18
Date: 06/10/14

Equipment trailer containing hydrogen peroxide mixing tank southwest of treatment area, facing southwest.

PHOTO 19
Date: 06/10/14

Redox Tech, LLC treating soils with hydrogen peroxide solution while backhoe mixes soils.

PHOTO 20
Date: 06/10/14

Mixing treated soils with hydrogen peroxide solution.

The presence of steam indicates the chemical reaction between PCE (dry cleaning solvent) in soil and hydrogen peroxide.

PHOTO 21
Date: 06/10/14

Treatment area after third (final) round of chemical treatment was completed, facing north.

APPENDIX B
LABORATORY RESULTS

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY
NELAP - RECOGNIZED
ENVIRONMENTAL LABORATORY ACCREDITATION

is hereby granted to

STAT ANALYSIS CORPORATION

2242 WEST HARRISON STREET

CHICAGO, IL 60612

NELAP ACCREDITED

ACCREDITATION NUMBER #100445

According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part 186 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part 186. Please contact the Illinois EPA Environmental Laboratory Accreditation Program (IL ELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Illinois is not an endorsement or a guarantee of validity of the data generated by the laboratory.

Celeste M. Crowley
Acting Manager
Environmental Laboratory Accreditation Program

John South
Accreditation Officer
Environmental Laboratory Accreditation Program

Certificate No.: 003254
Expiration Date: 09/30/2014
Issued On: 09/11/2013

State of Illinois
Environmental Protection Agency

Certificate No.: 003254

Awards the Certificate of Approval to:

STAT Analysis Corporation
2242 West Harrison Street
Chicago, IL 60612

According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part 186 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part 186. Please contact the Illinois Environmental Laboratory Accreditation Program (IL ELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditatio the State of Illinois is not an endorsement or a guarantee of validity of the data generated by the laboratory.

FOT Name: Non Potable Water, Inorganic

Method: SM2310B,1997

Matrix Type: NPW

Acidity

Method: SM2320B,1997

Matrix Type: NPW

Alkalinity

Method: SM2340B,1997

Matrix Type: NPW

Hardness

Method: SM2510B,1997

Matrix Type: NPW

Specific Conductance

Method: SM2540B,1997

Matrix Type: NPW

Residue (Total)

Method: SM2540C,1997

Matrix Type: NPW

Residue (TDS)

Method: SM2540D,1997

Matrix Type: NPW

Residue (TSS)

Method: SM2540E,1997

Matrix Type: NPW/SCM

Residue (% Volatile)

Method: SM2540F,1997

Matrix Type: NPW

Residue (settleable)

Method: SM3500Cr-B,2009

Matrix Type: NPW/SCM

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FOT Name: Non Potable Water, Inorganic

Matrix Type: NPW/SCM

Method: SM4500CL-C,1997

Matrix Type: NPW

Chloride

Method: SM4500Cl-G,2000

Matrix Type: NPW

Chlorine, Total Residual

Method: SM4500CN-E,1999

Matrix Type: NPW

Cyanide

Method: SM4500H-B,2000

Matrix Type: NPW

Hydrogen Ion (pH)

Method: SM4500NH3-C,1997

Matrix Type: NPW

Ammonia

Method: SM4500NO3-F,2000

Matrix Type: NPW/SCM

Nitrate

Nitrite (as N)

Nitrate-nitrite (as N)

Method: SM4500P-E,1999

Matrix Type: NPW

Orthophosphate (as P)

Phosphorus

Method: SM5210B,2001

Matrix Type: NPW/SCM

Biochemical Oxygen Demand (BOD)

Carbonaceous Biochemical Oxygen Demand (CBOI

Method: USEPA120.1,1982

Matrix Type: NPW/SCM

Specific Conductance

Method: USEPA150.2,1982

Matrix Type: NPW/SCM

Hydrogen Ion (pH)

Method: USEPA1664A

Matrix Type: NPW/SCM

Method: SM3500Cr-B,2009

Chromium VI

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FOT Name: Non Potable Water, Inorganic

Method: USEPA1664A

Matrix Type: NPW/SCM

Oil and Grease

Method: USEPA200.8,1994

Matrix Type: NPW/SCM

Aluminum
Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Manganese
Molybdenum
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Zinc

Method: USEPA245.1R3.0,1994

Matrix Type: NPW/SCM

Mercury

Method: USEPA410.4R2.0,1993

Matrix Type: NPW/SCM

Chemical Oxygen Demand (COD)

Method: USEPA420.4R1.0,1993

Matrix Type: NPW/SCM

Phenolics

FOT Name: Non Potable Water, Organic

Method: USEPA608

Matrix Type: NPW/SCM

4,4'-DDD
4,4'-DDE
4,4'-DDT
Aldrin
alpha-BHC
beta-BHC
Chlordane
delta-BHC
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
gamma-BHC (Lindane)
Heptachlor

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FOT Name: Non Potable Water, Organic

Method: USEPA608

Matrix Type: NPW/SCM

- Heptachlor epoxide
- Methoxychlor
- PCB-1016
- PCB-1221
- PCB-1232
- PCB-1242
- PCB-1248
- PCB-1254
- PCB-1260
- Toxaphene

Method: USEPA624

Matrix Type: NPW/SCM

- 1,1,1-Trichloroethane
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- 1,2-Dichlorobenzene
- 1,2-Dichloroethane
- 1,2-Dichloropropane
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- 2-Chloroethylvinyl ether
- Acrolein (Propenal)
- Acrylonitrile
- Benzene
- Bromodichloromethane
- Bromoform
- Bromomethane
- Carbon tetrachloride
- Chlorobenzene
- Chloroethane
- Chloroform
- Chloromethane
- cis-1,3-Dichloropropene
- Dibromochloromethane
- Dichloromethane (Methylene chloride)
- Ethylbenzene
- Methyl tert-butyl ether (MTBE)
- Tetrachloroethene
- Toluene
- trans-1,2-Dichloroethene
- trans-1,3-Dichloropropene
- Trichloroethene
- Trichlorofluoromethane
- Vinyl chloride
- Xylenes (total)

Method: USEPA625

Matrix Type: NPW/SCM

- 1,2,4-Trichlorobenzene
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- 2,4,5-Trichlorophenol
- 2,4,6-Trichlorophenol
- 2,4-Dichlorophenol
- 2,4-Dimethylphenol
- 2,4-Dinitrophenol
- 2,4-Dinitrotoluene (2,4-DNT)
- 2,6-Dinitrotoluene (2,6-DNT)
- 2-Chloronaphthalene

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FOT Name: Non Potable Water, Organic

Method: USEPA625

Matrix Type: NPW/SCM

2-Chlorophenol
2-Methyl-4,6-dinitrophenol
2-Nitrophenol
3,3'-Dichlorobenzidine
4-Bromophenyl phenyl ether
4-Chloro-3-methylphenol
4-Chlorophenyl phenyl ether
4-Nitrophenol
Acenaphthene
Acenaphthylene
Anthracene
Benzidine
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Benzyl butyl phthalate
Bis(2-chloroethoxy) methane
Bis(2-chloroethyl) ether
Bis(2-ethylhexyl) phthalate
Chrysene
Dibenz(a,h)anthracene
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd) pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene

FOT Name: Solid and Chemical Materials, Inorganic

Method: 1010A

Matrix Type: NPW/SCM

Ignitability

Method: 1311

Matrix Type: NPW/SCM

TCLP (Organic and Inorganic)

Method: 1312

Matrix Type: NPW/SCM

Synthetic Precipitation Leaching Procedure

Method: 6020A

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FOT Name: Solid and Chemical Materials, Inorganic

Method: 6020A

Matrix Type: NPW/SCM

Aluminum	Antimony
Arsenic	Barium
Beryllium	Boron
Cadmium	Calcium
Chromium	Cobalt
Copper	Iron
Lead	Magnesium
Manganese	Molybdenum
Nickel	Potassium
Selenium	Silver
Sodium	Thallium
Vanadium	Zinc

Method: 7000B

Matrix Type: NPW/SCM

Lead

Method: 7196A

Matrix Type: NPW/SCM

Chromium VI

Method: 7470A

Matrix Type: NPW

Mercury

Method: 7471B

Matrix Type: NPW/SCM

Mercury

Method: 9012A

Matrix Type: NPW/SCM

Cyanide

Method: 9020B

Matrix Type: NPW/SCM

TOX (Total Organic Halides)

Method: 9023

Matrix Type: NPW/SCM

EOX-Extractable Organic Halides

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FOT Name: Solid and Chemical Materials, Inorganic **Method: 9040B**

Matrix Type: NPW

Hydrogen Ion (pH)

Method: 9040C

Matrix Type: NPW

Hydrogen Ion (pH)

Method: 9045C

Matrix Type: NPW/SCM

Hydrogen Ion (pH)

Method: 9045D

Matrix Type: NPW/SCM

Hydrogen Ion (pH)

Method: 9066

Matrix Type: NPW/SCM

Phenolics

Method: 9071B

Matrix Type: NPW/SCM

Oil and Grease Extractable

Method: 9095A

Matrix Type: NPW/SCM

Paint Filter

Method: 9095B

Matrix Type: NPW/SCM

Paint Filter

FOT Name: Solid and Chemical Materials, Organic

Method: 8015B

Matrix Type: NPW/SCM

Diesel range organics (DRO) Ethylene glycol

Gasoline range organics (GRO)

Method: 8015C

Matrix Type: NPW/SCM

Diesel range organics (DRO) Gasoline range organics (GRO)

Method: 8081A

Matrix Type: NPW/SCM

4,4'-DDD 4,4'-DDE

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FOT Name: Solid and Chemical Materials, Organic

Method: 8081A

Matrix Type: NPW/SCM

- 4,4'-DDT
- Aldrin
- alpha-BHC
- alpha-Chlordane
- beta-BHC
- Chlordane - not otherwise specified
- delta-BHC
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Endrin ketone
- gamma-BHC (Lindane)
- gamma-Chlordane
- Heptachlor
- Heptachlor epoxide
- Methoxychlor
- Toxaphene

Method: 8081B

Matrix Type: NPW/SCM

- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Aldrin
- alpha-BHC
- alpha-Chlordane
- beta-BHC
- Chlordane - not otherwise specified
- delta-BHC
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Endrin ketone
- gamma-BHC (Lindane)
- gamma-Chlordane
- Heptachlor
- Heptachlor epoxide
- Methoxychlor
- Toxaphene

Method: 8082

Matrix Type: NPW/SCM

- PCB-1016
- PCB-1221
- PCB-1232
- PCB-1242
- PCB-1248
- PCB-1254
- PCB-1260

Method: 8082A

Matrix Type: NPW/SCM

- PCB-1016
- PCB-1221
- PCB-1232
- PCB-1242

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FOT Name: Solid and Chemical Materials, Organic

Method: 8082A

Matrix Type: NPW/SCM

PCB-1254	PCB-1248
	PCB-1260

Method: 8260B

Matrix Type: NPW/SCM

1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
1,1-Dichloroethane	1,1-Dichloroethene
1,1-Dichloropropene	1,2,3-Trichlorobenzene
1,2,3-Trichloropropane	1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)	1,2-Dichlorobenzene
1,2-Dichloroethane	1,2-Dichloropropane
1,3,5-Trimethylbenzene	1,3-Dichlorobenzene
1,3-Dichloropropane	1,4-Dichlorobenzene
1,4-Dioxane	2,2-Dichloropropane
2-Butanone (Methyl ethyl ketone, MEK)	2-Chloroethyl vinyl ether
2-Chlorotoluene	2-Hexanone
2-Methyl-1-propanol (Isobutyl alcohol)	2-Nitropropane
4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone, MIBk
Acetone	Acrolein (Propenal)
Acrylonitrile	Benzene
Bromobenzene	Bromochloromethane
Bromodichloromethane	Bromoform
Bromomethane	Carbon disulfide
Carbon tetrachloride	Chlorobenzene
Chlorodibromomethane (Dibromochloromethane)	Chloroethane
Chloroform	Chloromethane
cis-1,2-Dichloroethene	cis-1,3-Dichloropropene
Dibromomethane	Dichlorodifluoromethane
Dichloromethane (Methylene chloride)	Diethyl ether
Ethyl acetate	Ethyl ether
Ethylbenzene	Isopropylbenzene
Methyl ethyl ketone	Methyl isobutyl ketone
Methyl-t-butyl ether	m-Xylene
Naphthalene	n-Butanol

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FOT Name: Solid and Chemical Materials, Organic

Method: 8260B

Matrix Type: NPW/SCM

o-Xylene	n-Butylbenzene
p-Xylene	p-Isopropyltoluene
Styrene	sec-Butylbenzene
Tetrachloroethene	tert-Butylbenzene
trans-1,2-Dichloroethene	Toluene
Trichloroethene	trans-1,3-Dichloropropene
Trichlorotrifluoroethane	Trichlorofluoromethane
Vinyl chloride	Vinyl acetate
	Xylenes (Total)

Method: 8270C

Matrix Type: NPW/SCM

1,2,4-Trichlorobenzene	1,2-Dichlorobenzene
1,2-Diphenylhydrazine	1,3-Dichlorobenzene
1,4-Dichlorobenzene	1,4-Dinitrobenzene
1-Methylnaphthalene	2,4,5-Trichlorophenol
2,4,6-Trichlorophenol	2,4-Dichlorophenol
2,4-Dimethylphenol	2,4-Dinitrophenol
2,4-Dinitrotoluene (2,4-DNT)	2,6-Dinitrotoluene (2,6-DNT)
2-Chloronaphthalene	2-Chlorophenol
2-Methylnaphthalene	2-Methylphenol
2-Nitroaniline	2-Nitrophenol
3,3'-Dichlorobenzidine	3-Nitroaniline
4,6-Dinitro-2-methylphenol	4-Bromophenyl phenyl ether
4-Chloro-3-methylphenol	4-Chloroaniline
4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)
4-Nitroaniline	4-Nitrophenol
Acenaphthene	Acenaphthylene
Aniline	Anthracene
Benzidine	Benzo(a)anthracene
Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(g,h,i)perlyene	Benzo(k)fluoranthene
Benzoic acid	Benzyl alcohol
Bis(2-chloroethoxy) methane	Bis(2-chloroethyl) ether
Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl) phthalate
Butyl benzyl phthalate	Carbazole

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FOT Name: Solid and Chemical Materials, Organic

Method: 8270C

Matrix Type: NPW/SCM

Dibenz(a,h)anthracene	Dibenzofuran
Diethyl phthalate	Dimethyl phthalate
Di-n-butyl phthalate	Di-n-octyl phthalate
Diphenylamine	Fluoranthene
Fluorene	Hexachlorobenzene
Hexachlorobutadiene	Hexachlorocyclopentadiene
Hexachloroethane	Indeno(1,2,3-cd) pyrene
Isophorone	m-Cresol (3-Methylphenol)
Naphthalene	Nitrobenzene
N-Nitrosodimethylamine	N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine	o-Cresol (2-Methylphenol)
p-Cresol (4-Methylphenol)	Pentachlorophenol
Phenanthrene	Phenol
Pyrene	Pyridine

Method: 8270D

Matrix Type: NPW/SCM

1,2,4-Trichlorobenzene	1,2-Dichlorobenzene
1,2-Diphenylhydrazine	1,3-Dichlorobenzene
1,4-Dichlorobenzene	1,4-Dinitrobenzene
1-Methylnaphthalene	2,4,5-Trichlorophenol
2,4,6-Trichlorophenol	2,4-Dichlorophenol
2,4-Dimethylphenol	2,4-Dinitrophenol
2,4-Dinitrotoluene (2,4-DNT)	2,6-Dinitrotoluene (2,6-DNT)
2-Chloronaphthalene	2-Chlorophenol
2-Methylnaphthalene	2-Methylphenol (o-Cresol)
2-Nitroaniline	2-Nitrophenol
3,3'-Dichlorobenzidine	3-Nitroaniline
4,6-Dinitro-2-methylphenol	4-Bromophenyl phenyl ether
4-Chloro-3-methylphenol	4-Chloroaniline
4-Chlorophenyl phenyl ether	4-Nitroaniline
4-Nitrophenol	Acenaphthene
Acenaphthylene	Aniline
Anthracene	Benzidine
Benzo(a)anthracene	Benzo(a)pyrene

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FOT Name: Solid and Chemical Materials, Organic

Method: 8270D

Matrix Type: NPW/SCM

Benzo(g,h,i)perlyene	Benzo(b)fluoranthene
Benzoic acid	Benzo(k)fluoranthene
Bis(2-chloroethoxy) methane	Benzyl alcohol
Bis(2-chloroisopropyl) ether	Bis(2-chloroethyl) ether
Butyl benzyl phthalate	Bis(2-ethylhexyl) phthalate
Chrysene	Carbazole
Dibenzofuran	Dibenz(a,h)anthracene
Dimethyl phthalate	Diethyl phthalate
Di-n-octyl phthalate	Di-n-butyl phthalate
Fluoranthene	Diphenylamine
Hexachlorobenzene	Fluorene
Hexachlorocyclopentadiene	Hexachlorobutadiene
Indeno(1,2,3-cd) pyrene	Hexachloroethane
m-Cresol (3-Methylphenol)	Isophorone
Nitrobenzene	Naphthalene
N-Nitrosodi-n-propylamine	N-Nitrosodimethylamine
o-Cresol (2-Methylphenol)	N-Nitrosodiphenylamine
Pentachlorophenol	p-Cresol (4-Methylphenol)
Phenol	Phenanthrene
Pyridine	Pyrene

Method: 8321B

Matrix Type: NPW/SCM

2,4,5-T	2,4,5-TP (Silvex)
2,4-D	2,4-DB
Dalapon	Dicamba
Dichlorprop	Dinoseb
MCPA	MCPP

STAT Analysis Corporation
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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001;AIHA 101160; NVLAP LabCode 101202-

February 13, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

RE: 09292, Spartan's Square, Romeoville, IL STAT Project No: 14020099

Dear Craig McCammack:

STAT Analysis received 9 samples for the referenced project on 2/5/2014 4:20:00 PM. The analytical results are presented in the following report.

This report is revised to reflect changes made after the initial report was issued.

All analyses were performed in accordance with the requirements of 35 IAC part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Catia Giannini
Project Manager

STAT Analysis Corporation

Date: February 13, 2014

Client: V3 Companies of Illinois
Project: 09292, Spartan's Square, Romeoville, IL
Lab Order: 14020099

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14020099-001A	SM-EX-201 (8)		2/4/2014 9:30:00 AM	2/5/2014
14020099-001B	SM-EX-201 (8)		2/4/2014 9:30:00 AM	2/5/2014
14020099-002A	SM-EX-202 (6.5)		2/4/2014 10:30:00 AM	2/5/2014
14020099-002B	SM-EX-202 (6.5)		2/4/2014 10:30:00 AM	2/5/2014
14020099-003A	SM-EX-203 (7)		2/4/2014 11:00:00 AM	2/5/2014
14020099-003B	SM-EX-203 (7)		2/4/2014 11:00:00 AM	2/5/2014
14020099-004A	SM-EX-204 (7)		2/4/2014 11:30:00 AM	2/5/2014
14020099-004B	SM-EX-204 (7)		2/4/2014 11:30:00 AM	2/5/2014
14020099-005A	SM-EX-205 (7)		2/4/2014 12:00:00 PM	2/5/2014
14020099-005B	SM-EX-205 (7)		2/4/2014 12:00:00 PM	2/5/2014
14020099-006A	SM-EX-206 (7)		2/4/2014 12:30:00 PM	2/5/2014
14020099-006B	SM-EX-206 (7)		2/4/2014 12:30:00 PM	2/5/2014
14020099-007A	SM-EX-207 (7)		2/4/2014 1:00:00 PM	2/5/2014
14020099-007B	SM-EX-207 (7)		2/4/2014 1:00:00 PM	2/5/2014
14020099-008A	SM-EX-208 (4)		2/4/2014 1:30:00 PM	2/5/2014
14020099-008B	SM-EX-208 (4)		2/4/2014 1:30:00 PM	2/5/2014
14020099-009A	SM-EX-209 (7)		2/4/2014 2:00:00 PM	2/5/2014
14020099-009B	SM-EX-209 (7)		2/4/2014 2:00:00 PM	2/5/2014

CLIENT: V3 Companies of Illinois
Project: 09292, Spartan's Square, Romeoville, IL
Lab Order: 14020099

CASE NARRATIVE

The VOC soil Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) analyzed 02/08/2014 had recovery of Bromomethane outside of control limits (63%/69.9% (LCS/LCSD) recovery, QC limits 70-130%).

STAT Analysis Corporation
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Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-001

Client Sample ID: SM-EX-201 (8)
Collection Date: 2/4/2014 9:30:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	0.13	0.088		mg/Kg-dry	1	2/9/2014
Benzene	ND	0.0059		mg/Kg-dry	1	2/9/2014
Bromodichloromethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
Bromoform	ND	0.0059		mg/Kg-dry	1	2/9/2014
Bromomethane	ND	0.012		mg/Kg-dry	1	2/9/2014
2-Butanone	ND	0.088		mg/Kg-dry	1	2/9/2014
Carbon disulfide	ND	0.059		mg/Kg-dry	1	2/9/2014
Carbon tetrachloride	ND	0.0059		mg/Kg-dry	1	2/9/2014
Chlorobenzene	ND	0.0059		mg/Kg-dry	1	2/9/2014
Chloroethane	ND	0.012		mg/Kg-dry	1	2/9/2014
Chloroform	ND	0.0059		mg/Kg-dry	1	2/9/2014
Chloromethane	ND	0.012		mg/Kg-dry	1	2/9/2014
Dibromochloromethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,1-Dichloroethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,2-Dichloroethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,1-Dichloroethene	ND	0.0059		mg/Kg-dry	1	2/9/2014
cis-1,2-Dichloroethene	ND	0.0059		mg/Kg-dry	1	2/9/2014
trans-1,2-Dichloroethene	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,2-Dichloropropane	ND	0.0059		mg/Kg-dry	1	2/9/2014
cis-1,3-Dichloropropene	ND	0.0024		mg/Kg-dry	1	2/9/2014
trans-1,3-Dichloropropene	ND	0.0024		mg/Kg-dry	1	2/9/2014
Ethylbenzene	ND	0.0059		mg/Kg-dry	1	2/9/2014
2-Hexanone	ND	0.024		mg/Kg-dry	1	2/9/2014
4-Methyl-2-pentanone	ND	0.024		mg/Kg-dry	1	2/9/2014
Methylene chloride	ND	0.012		mg/Kg-dry	1	2/9/2014
Methyl tert-butyl ether	ND	0.0059		mg/Kg-dry	1	2/9/2014
Styrene	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,1,2,2-Tetrachloroethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
Tetrachloroethene	4	0.52		mg/Kg-dry	50	2/10/2014
Toluene	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,1,1-Trichloroethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
1,1,2-Trichloroethane	ND	0.0059		mg/Kg-dry	1	2/9/2014
Trichloroethene	ND	0.0059		mg/Kg-dry	1	2/9/2014
Vinyl chloride	ND	0.0059		mg/Kg-dry	1	2/9/2014
Xylenes, Total	ND	0.018		mg/Kg-dry	1	2/9/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	9.0	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-002

Client Sample ID: SM-EX-202 (6.5)
Collection Date: 2/4/2014 10:30:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	0.12		mg/Kg-dry	1	2/8/2014
Benzene	ND	0.0078		mg/Kg-dry	1	2/8/2014
Bromodichloromethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
Bromoform	ND	0.0078		mg/Kg-dry	1	2/8/2014
Bromomethane	ND	0.016		mg/Kg-dry	1	2/8/2014
2-Butanone	ND	0.12		mg/Kg-dry	1	2/8/2014
Carbon disulfide	ND	0.078		mg/Kg-dry	1	2/8/2014
Carbon tetrachloride	ND	0.0078		mg/Kg-dry	1	2/8/2014
Chlorobenzene	ND	0.0078		mg/Kg-dry	1	2/8/2014
Chloroethane	ND	0.016		mg/Kg-dry	1	2/8/2014
Chloroform	ND	0.0078		mg/Kg-dry	1	2/8/2014
Chloromethane	ND	0.016		mg/Kg-dry	1	2/8/2014
Dibromochloromethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,1-Dichloroethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,2-Dichloroethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,1-Dichloroethene	ND	0.0078		mg/Kg-dry	1	2/8/2014
cis-1,2-Dichloroethene	ND	0.0078		mg/Kg-dry	1	2/8/2014
trans-1,2-Dichloroethene	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,2-Dichloropropane	ND	0.0078		mg/Kg-dry	1	2/8/2014
cis-1,3-Dichloropropene	ND	0.0031		mg/Kg-dry	1	2/8/2014
trans-1,3-Dichloropropene	ND	0.0031		mg/Kg-dry	1	2/8/2014
Ethylbenzene	ND	0.0078		mg/Kg-dry	1	2/8/2014
2-Hexanone	ND	0.031		mg/Kg-dry	1	2/8/2014
4-Methyl-2-pentanone	ND	0.031		mg/Kg-dry	1	2/8/2014
Methylene chloride	ND	0.016		mg/Kg-dry	1	2/8/2014
Methyl tert-butyl ether	ND	0.0078		mg/Kg-dry	1	2/8/2014
Styrene	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,1,2,2-Tetrachloroethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
Tetrachloroethene	0.03	0.0078		mg/Kg-dry	1	2/8/2014
Toluene	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,1,1-Trichloroethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
1,1,2-Trichloroethane	ND	0.0078		mg/Kg-dry	1	2/8/2014
Trichloroethene	ND	0.0078		mg/Kg-dry	1	2/8/2014
Vinyl chloride	ND	0.0078		mg/Kg-dry	1	2/8/2014
Xylenes, Total	ND	0.023		mg/Kg-dry	1	2/8/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	13.5	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
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R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-003

Client Sample ID: SM-EX-203 (7)
Collection Date: 2/4/2014 11:00:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	0.12		mg/Kg-dry	1	2/8/2014
Benzene	ND	0.0079		mg/Kg-dry	1	2/8/2014
Bromodichloromethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
Bromoform	ND	0.0079		mg/Kg-dry	1	2/8/2014
Bromomethane	ND	0.016		mg/Kg-dry	1	2/8/2014
2-Butanone	ND	0.12		mg/Kg-dry	1	2/8/2014
Carbon disulfide	ND	0.079		mg/Kg-dry	1	2/8/2014
Carbon tetrachloride	ND	0.0079		mg/Kg-dry	1	2/8/2014
Chlorobenzene	ND	0.0079		mg/Kg-dry	1	2/8/2014
Chloroethane	ND	0.016		mg/Kg-dry	1	2/8/2014
Chloroform	ND	0.0079		mg/Kg-dry	1	2/8/2014
Chloromethane	ND	0.016		mg/Kg-dry	1	2/8/2014
Dibromochloromethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,1-Dichloroethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,2-Dichloroethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,1-Dichloroethene	ND	0.0079		mg/Kg-dry	1	2/8/2014
cis-1,2-Dichloroethene	ND	0.0079		mg/Kg-dry	1	2/8/2014
trans-1,2-Dichloroethene	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,2-Dichloropropane	ND	0.0079		mg/Kg-dry	1	2/8/2014
cis-1,3-Dichloropropene	ND	0.0032		mg/Kg-dry	1	2/8/2014
trans-1,3-Dichloropropene	ND	0.0032		mg/Kg-dry	1	2/8/2014
Ethylbenzene	ND	0.0079		mg/Kg-dry	1	2/8/2014
2-Hexanone	ND	0.032		mg/Kg-dry	1	2/8/2014
4-Methyl-2-pentanone	ND	0.032		mg/Kg-dry	1	2/8/2014
Methylene chloride	ND	0.016		mg/Kg-dry	1	2/8/2014
Methyl tert-butyl ether	ND	0.0079		mg/Kg-dry	1	2/8/2014
Styrene	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,1,2,2-Tetrachloroethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
Tetrachloroethene	0.031	0.0079		mg/Kg-dry	1	2/8/2014
Toluene	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,1,1-Trichloroethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
1,1,2-Trichloroethane	ND	0.0079		mg/Kg-dry	1	2/8/2014
Trichloroethene	ND	0.0079		mg/Kg-dry	1	2/8/2014
Vinyl chloride	ND	0.0079		mg/Kg-dry	1	2/8/2014
Xylenes, Total	ND	0.024		mg/Kg-dry	1	2/8/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	10.7	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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R - RPD outside accepted recovery limits
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H - Holding time exceeded

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Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-004

Client Sample ID: SM-EX-204 (7)
Collection Date: 2/4/2014 11:30:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	0.1		mg/Kg-dry	1	2/8/2014
Benzene	ND	0.0068		mg/Kg-dry	1	2/8/2014
Bromodichloromethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
Bromoform	ND	0.0068		mg/Kg-dry	1	2/8/2014
Bromomethane	ND	0.014		mg/Kg-dry	1	2/8/2014
2-Butanone	ND	0.1		mg/Kg-dry	1	2/8/2014
Carbon disulfide	ND	0.068		mg/Kg-dry	1	2/8/2014
Carbon tetrachloride	ND	0.0068		mg/Kg-dry	1	2/8/2014
Chlorobenzene	ND	0.0068		mg/Kg-dry	1	2/8/2014
Chloroethane	ND	0.014		mg/Kg-dry	1	2/8/2014
Chloroform	ND	0.0068		mg/Kg-dry	1	2/8/2014
Chloromethane	ND	0.014		mg/Kg-dry	1	2/8/2014
Dibromochloromethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,1-Dichloroethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,2-Dichloroethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,1-Dichloroethene	ND	0.0068		mg/Kg-dry	1	2/8/2014
cis-1,2-Dichloroethene	ND	0.0068		mg/Kg-dry	1	2/8/2014
trans-1,2-Dichloroethene	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,2-Dichloropropane	ND	0.0068		mg/Kg-dry	1	2/8/2014
cis-1,3-Dichloropropene	ND	0.0027		mg/Kg-dry	1	2/8/2014
trans-1,3-Dichloropropene	ND	0.0027		mg/Kg-dry	1	2/8/2014
Ethylbenzene	ND	0.0068		mg/Kg-dry	1	2/8/2014
2-Hexanone	ND	0.027		mg/Kg-dry	1	2/8/2014
4-Methyl-2-pentanone	ND	0.027		mg/Kg-dry	1	2/8/2014
Methylene chloride	ND	0.014		mg/Kg-dry	1	2/8/2014
Methyl tert-butyl ether	ND	0.0068		mg/Kg-dry	1	2/8/2014
Styrene	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,1,2,2-Tetrachloroethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
Tetrachloroethene	0.079	0.0068		mg/Kg-dry	1	2/8/2014
Toluene	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,1,1-Trichloroethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
1,1,2-Trichloroethane	ND	0.0068		mg/Kg-dry	1	2/8/2014
Trichloroethene	ND	0.0068		mg/Kg-dry	1	2/8/2014
Vinyl chloride	ND	0.0068		mg/Kg-dry	1	2/8/2014
Xylenes, Total	ND	0.02		mg/Kg-dry	1	2/8/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	9.0	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-005

Client Sample ID: SM-EX-205 (7)
Collection Date: 2/4/2014 12:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	0.079		mg/Kg-dry	1	2/9/2014
Benzene	ND	0.0053		mg/Kg-dry	1	2/9/2014
Bromodichloromethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
Bromoform	ND	0.0053		mg/Kg-dry	1	2/9/2014
Bromomethane	ND	0.011		mg/Kg-dry	1	2/9/2014
2-Butanone	ND	0.079		mg/Kg-dry	1	2/9/2014
Carbon disulfide	ND	0.053		mg/Kg-dry	1	2/9/2014
Carbon tetrachloride	ND	0.0053		mg/Kg-dry	1	2/9/2014
Chlorobenzene	ND	0.0053		mg/Kg-dry	1	2/9/2014
Chloroethane	ND	0.011		mg/Kg-dry	1	2/9/2014
Chloroform	ND	0.0053		mg/Kg-dry	1	2/9/2014
Chloromethane	ND	0.011		mg/Kg-dry	1	2/9/2014
Dibromochloromethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,1-Dichloroethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,2-Dichloroethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,1-Dichloroethene	ND	0.0053		mg/Kg-dry	1	2/9/2014
cis-1,2-Dichloroethene	ND	0.0053		mg/Kg-dry	1	2/9/2014
trans-1,2-Dichloroethene	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,2-Dichloropropane	ND	0.0053		mg/Kg-dry	1	2/9/2014
cis-1,3-Dichloropropene	ND	0.0021		mg/Kg-dry	1	2/9/2014
trans-1,3-Dichloropropene	ND	0.0021		mg/Kg-dry	1	2/9/2014
Ethylbenzene	ND	0.0053		mg/Kg-dry	1	2/9/2014
2-Hexanone	ND	0.021		mg/Kg-dry	1	2/9/2014
4-Methyl-2-pentanone	ND	0.021		mg/Kg-dry	1	2/9/2014
Methylene chloride	ND	0.011		mg/Kg-dry	1	2/9/2014
Methyl tert-butyl ether	ND	0.0053		mg/Kg-dry	1	2/9/2014
Styrene	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,1,2,2-Tetrachloroethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
Tetrachloroethene	0.042	0.0053		mg/Kg-dry	1	2/9/2014
Toluene	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,1,1-Trichloroethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
1,1,2-Trichloroethane	ND	0.0053		mg/Kg-dry	1	2/9/2014
Trichloroethene	ND	0.0053		mg/Kg-dry	1	2/9/2014
Vinyl chloride	ND	0.0053		mg/Kg-dry	1	2/9/2014
Xylenes, Total	ND	0.016		mg/Kg-dry	1	2/9/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	5.8	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-006

Client Sample ID: SM-EX-206 (7)
Collection Date: 2/4/2014 12:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	0.12	0.1		mg/Kg-dry	1	2/9/2014
Benzene	ND	0.0069		mg/Kg-dry	1	2/9/2014
Bromodichloromethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
Bromoform	ND	0.0069		mg/Kg-dry	1	2/9/2014
Bromomethane	ND	0.014		mg/Kg-dry	1	2/9/2014
2-Butanone	ND	0.1		mg/Kg-dry	1	2/9/2014
Carbon disulfide	ND	0.069		mg/Kg-dry	1	2/9/2014
Carbon tetrachloride	ND	0.0069		mg/Kg-dry	1	2/9/2014
Chlorobenzene	ND	0.0069		mg/Kg-dry	1	2/9/2014
Chloroethane	ND	0.014		mg/Kg-dry	1	2/9/2014
Chloroform	ND	0.0069		mg/Kg-dry	1	2/9/2014
Chloromethane	ND	0.014		mg/Kg-dry	1	2/9/2014
Dibromochloromethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,1-Dichloroethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,2-Dichloroethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,1-Dichloroethene	ND	0.0069		mg/Kg-dry	1	2/9/2014
cis-1,2-Dichloroethene	ND	0.0069		mg/Kg-dry	1	2/9/2014
trans-1,2-Dichloroethene	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,2-Dichloropropane	ND	0.0069		mg/Kg-dry	1	2/9/2014
cis-1,3-Dichloropropene	ND	0.0028		mg/Kg-dry	1	2/9/2014
trans-1,3-Dichloropropene	ND	0.0028		mg/Kg-dry	1	2/9/2014
Ethylbenzene	ND	0.0069		mg/Kg-dry	1	2/9/2014
2-Hexanone	ND	0.028		mg/Kg-dry	1	2/9/2014
4-Methyl-2-pentanone	ND	0.028		mg/Kg-dry	1	2/9/2014
Methylene chloride	ND	0.014		mg/Kg-dry	1	2/9/2014
Methyl tert-butyl ether	ND	0.0069		mg/Kg-dry	1	2/9/2014
Styrene	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,1,2,2-Tetrachloroethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
Tetrachloroethene	0.21	0.0069		mg/Kg-dry	1	2/9/2014
Toluene	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,1,1-Trichloroethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
1,1,2-Trichloroethane	ND	0.0069		mg/Kg-dry	1	2/9/2014
Trichloroethene	ND	0.0069		mg/Kg-dry	1	2/9/2014
Vinyl chloride	ND	0.0069		mg/Kg-dry	1	2/9/2014
Xylenes, Total	ND	0.021		mg/Kg-dry	1	2/9/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	5.1	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-007

Client Sample ID: SM-EX-207 (7)
Collection Date: 2/4/2014 1:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	4.5		mg/Kg-dry	50	2/8/2014
Benzene	ND	0.3		mg/Kg-dry	50	2/8/2014
Bromodichloromethane	ND	0.3		mg/Kg-dry	50	2/8/2014
Bromoform	ND	0.3		mg/Kg-dry	50	2/8/2014
Bromomethane	ND	0.59		mg/Kg-dry	50	2/8/2014
2-Butanone	ND	4.5		mg/Kg-dry	50	2/8/2014
Carbon disulfide	ND	3		mg/Kg-dry	50	2/8/2014
Carbon tetrachloride	ND	0.3		mg/Kg-dry	50	2/8/2014
Chlorobenzene	ND	0.3		mg/Kg-dry	50	2/8/2014
Chloroethane	ND	0.59		mg/Kg-dry	50	2/8/2014
Chloroform	ND	0.3		mg/Kg-dry	50	2/8/2014
Chloromethane	ND	0.59		mg/Kg-dry	50	2/8/2014
Dibromochloromethane	ND	0.3		mg/Kg-dry	50	2/8/2014
1,1-Dichloroethane	ND	0.3		mg/Kg-dry	50	2/8/2014
1,2-Dichloroethane	ND	0.3		mg/Kg-dry	50	2/8/2014
1,1-Dichloroethene	ND	0.3		mg/Kg-dry	50	2/8/2014
cis-1,2-Dichloroethene	ND	0.3		mg/Kg-dry	50	2/8/2014
trans-1,2-Dichloroethene	ND	0.3		mg/Kg-dry	50	2/8/2014
1,2-Dichloropropane	ND	0.3		mg/Kg-dry	50	2/8/2014
cis-1,3-Dichloropropene	ND	0.12		mg/Kg-dry	50	2/8/2014
trans-1,3-Dichloropropene	ND	0.12		mg/Kg-dry	50	2/8/2014
Ethylbenzene	ND	0.3		mg/Kg-dry	50	2/8/2014
2-Hexanone	ND	1.2		mg/Kg-dry	50	2/8/2014
4-Methyl-2-pentanone	ND	1.2		mg/Kg-dry	50	2/8/2014
Methylene chloride	ND	0.59		mg/Kg-dry	50	2/8/2014
Methyl tert-butyl ether	ND	0.3		mg/Kg-dry	50	2/8/2014
Styrene	ND	0.3		mg/Kg-dry	50	2/8/2014
1,1,2,2-Tetrachloroethane	ND	0.3		mg/Kg-dry	50	2/8/2014
Tetrachloroethene	140	5.9		mg/Kg-dry	1000	2/8/2014
Toluene	ND	0.3		mg/Kg-dry	50	2/8/2014
1,1,1-Trichloroethane	ND	0.3		mg/Kg-dry	50	2/8/2014
1,1,2-Trichloroethane	ND	0.3		mg/Kg-dry	50	2/8/2014
Trichloroethene	ND	0.3		mg/Kg-dry	50	2/8/2014
Vinyl chloride	ND	0.3		mg/Kg-dry	50	2/8/2014
Xylenes, Total	ND	0.89		mg/Kg-dry	50	2/8/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	9.3	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

STAT Analysis Corporation
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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-008

Client Sample ID: SM-EX-208 (4)
Collection Date: 2/4/2014 1:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	5.2		mg/Kg-dry	50	2/8/2014
Benzene	ND	0.35		mg/Kg-dry	50	2/8/2014
Bromodichloromethane	ND	0.35		mg/Kg-dry	50	2/8/2014
Bromoform	ND	0.35		mg/Kg-dry	50	2/8/2014
Bromomethane	ND	0.69		mg/Kg-dry	50	2/8/2014
2-Butanone	ND	5.2		mg/Kg-dry	50	2/8/2014
Carbon disulfide	ND	3.5		mg/Kg-dry	50	2/8/2014
Carbon tetrachloride	ND	0.35		mg/Kg-dry	50	2/8/2014
Chlorobenzene	ND	0.35		mg/Kg-dry	50	2/8/2014
Chloroethane	ND	0.69		mg/Kg-dry	50	2/8/2014
Chloroform	ND	0.35		mg/Kg-dry	50	2/8/2014
Chloromethane	ND	0.69		mg/Kg-dry	50	2/8/2014
Dibromochloromethane	ND	0.35		mg/Kg-dry	50	2/8/2014
1,1-Dichloroethane	ND	0.35		mg/Kg-dry	50	2/8/2014
1,2-Dichloroethane	ND	0.35		mg/Kg-dry	50	2/8/2014
1,1-Dichloroethene	ND	0.35		mg/Kg-dry	50	2/8/2014
cis-1,2-Dichloroethene	ND	0.35		mg/Kg-dry	50	2/8/2014
trans-1,2-Dichloroethene	ND	0.35		mg/Kg-dry	50	2/8/2014
1,2-Dichloropropane	ND	0.35		mg/Kg-dry	50	2/8/2014
cis-1,3-Dichloropropene	ND	0.14		mg/Kg-dry	50	2/8/2014
trans-1,3-Dichloropropene	ND	0.14		mg/Kg-dry	50	2/8/2014
Ethylbenzene	ND	0.35		mg/Kg-dry	50	2/8/2014
2-Hexanone	ND	1.4		mg/Kg-dry	50	2/8/2014
4-Methyl-2-pentanone	ND	1.4		mg/Kg-dry	50	2/8/2014
Methylene chloride	ND	0.69		mg/Kg-dry	50	2/8/2014
Methyl tert-butyl ether	ND	0.35		mg/Kg-dry	50	2/8/2014
Styrene	ND	0.35		mg/Kg-dry	50	2/8/2014
1,1,2,2-Tetrachloroethane	ND	0.35		mg/Kg-dry	50	2/8/2014
Tetrachloroethene	130	6.9		mg/Kg-dry	1000	2/8/2014
Toluene	ND	0.35		mg/Kg-dry	50	2/8/2014
1,1,1-Trichloroethane	ND	0.35		mg/Kg-dry	50	2/8/2014
1,1,2-Trichloroethane	ND	0.35		mg/Kg-dry	50	2/8/2014
Trichloroethene	0.89	0.35		mg/Kg-dry	50	2/8/2014
Vinyl chloride	ND	0.35		mg/Kg-dry	50	2/8/2014
Xylenes, Total	ND	1		mg/Kg-dry	50	2/8/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	14.0	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 13, 2014
Date Printed: February 13, 2014

Client: V3 Companies of Illinois
Lab Order: 14020099
Project: 09292, Spartan's Square, Romeoville, IL
Lab ID: 14020099-009

Client Sample ID: SM-EX-209 (7)
Collection Date: 2/4/2014 2:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/6/2014**		Analyst: **PS**
Acetone	ND	5		mg/Kg-dry	50	2/8/2014
Benzene	ND	0.33		mg/Kg-dry	50	2/8/2014
Bromodichloromethane	ND	0.33		mg/Kg-dry	50	2/8/2014
Bromoform	ND	0.33		mg/Kg-dry	50	2/8/2014
Bromomethane	ND	0.66		mg/Kg-dry	50	2/8/2014
2-Butanone	ND	5		mg/Kg-dry	50	2/8/2014
Carbon disulfide	ND	3.3		mg/Kg-dry	50	2/8/2014
Carbon tetrachloride	ND	0.33		mg/Kg-dry	50	2/8/2014
Chlorobenzene	ND	0.33		mg/Kg-dry	50	2/8/2014
Chloroethane	ND	0.66		mg/Kg-dry	50	2/8/2014
Chloroform	ND	0.33		mg/Kg-dry	50	2/8/2014
Chloromethane	ND	0.66		mg/Kg-dry	50	2/8/2014
Dibromochloromethane	ND	0.33		mg/Kg-dry	50	2/8/2014
1,1-Dichloroethane	ND	0.33		mg/Kg-dry	50	2/8/2014
1,2-Dichloroethane	ND	0.33		mg/Kg-dry	50	2/8/2014
1,1-Dichloroethene	ND	0.33		mg/Kg-dry	50	2/8/2014
cis-1,2-Dichloroethene	ND	0.33		mg/Kg-dry	50	2/8/2014
trans-1,2-Dichloroethene	ND	0.33		mg/Kg-dry	50	2/8/2014
1,2-Dichloropropane	ND	0.33		mg/Kg-dry	50	2/8/2014
cis-1,3-Dichloropropene	ND	0.13		mg/Kg-dry	50	2/8/2014
trans-1,3-Dichloropropene	ND	0.13		mg/Kg-dry	50	2/8/2014
Ethylbenzene	ND	0.33		mg/Kg-dry	50	2/8/2014
2-Hexanone	ND	1.3		mg/Kg-dry	50	2/8/2014
4-Methyl-2-pentanone	ND	1.3		mg/Kg-dry	50	2/8/2014
Methylene chloride	ND	0.66		mg/Kg-dry	50	2/8/2014
Methyl tert-butyl ether	ND	0.33		mg/Kg-dry	50	2/8/2014
Styrene	ND	0.33		mg/Kg-dry	50	2/8/2014
1,1,2,2-Tetrachloroethane	ND	0.33		mg/Kg-dry	50	2/8/2014
Tetrachloroethene	13	0.33		mg/Kg-dry	50	2/8/2014
Toluene	ND	0.33		mg/Kg-dry	50	2/8/2014
1,1,1-Trichloroethane	ND	0.33		mg/Kg-dry	50	2/8/2014
1,1,2-Trichloroethane	ND	0.33		mg/Kg-dry	50	2/8/2014
Trichloroethene	ND	0.33		mg/Kg-dry	50	2/8/2014
Vinyl chloride	ND	0.33		mg/Kg-dry	50	2/8/2014
Xylenes, Total	ND	0.99		mg/Kg-dry	50	2/8/2014
Percent Moisture	**D2974**			Prep Date: **2/5/2014**		Analyst: **VA**
Percent Moisture	9.7	0.2	*	wt%	1	2/6/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
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R - RPD outside accepted recovery limits
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e-mail address: STATinfo@STATAnalysis.com AIHA, NVLAP and NELAP accredited

CHAIN OF CUSTODY RECORD

Nº: 852533 Page : 1 of 1

Company: V3 Companies
Project Number: 09392
Client Tracking No.:
Project Name: Spartan's Seattle
Project Location: Romeoville, IL
Sampler(s): KTW
Report To: Craig McCammack Phone: 630-724-9200
Kristine Wright Fax: 630-724-9202
QC Level: 1 ___ 2 ___ 3 ___ 4 ___ e-mail:

P.O. No.:
Quote No.:

Turn Around:
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	VOCs	Remarks	Lab No.:
SM-EX-201(8)	2/4/14	930	S				4	X		001
SM-EX-202(6.5)		1030						X		002
SM-EX-203(7)		1100						X		003
SM-EX-204(9)		1130						X		004
SM-EX-205(7)		1200						X		005
SM-EX-206(7)		1230						X		006
SM-EX-207(7)		1300						X		007
SM-EX-208(4)		1330						X		008
SM-EX-209(7)		1400						X		009

Relinquished by: (Signature)		Date/Time: 2/5/14 1138
Received by: (Signature)		Date/Time: 2/5/14 1138
Relinquished by: (Signature)		Date/Time: 2/5/14 1620
Received by: (Signature)		Date/Time: 2/5/14 16:20
Relinquished by: (Signature)		Date/Time:
Received by: (Signature)		Date/Time:

Comments: Samples have been treated w/ potassium permanganate. See Attached w/ info Related to it.

Preservation Code: A = None B = HNO_3 C = NaOH D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.: 14020099

Received on Ice: Yes [X] No [ ]

Temperature: 10 °C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 2/5/2014 4:20:00 PM

Work Order Number 14020099 | Received by: DO

Checklist completed by: [signature] 2/5/14 (Signature / Date) | Reviewed by: VG 2/6/14 (Initials / Date)

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 1.0 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: Date contacted: Contacted by:

Response:

Catia Giannini

From: Kristine Wright [kwright@v3co.com]
Sent: Thursday, February 13, 2014 2:37 PM
To: Catia Giannini; Craig McCammack
Subject: RE: 09292, Spartan's Square, Romeoville, IL 14020099

Hi Catia

Its seems someone mis-read the hand writing on my Chain of Custody for this analysis.
Soil sample **SM-EX-208** was collected at **4 ft.** not **7ft.** Can you reissue the report with the correct sample name?
The correct soil sample name should read: **SM-EX-208(4)**

Let me know if you have any questions, thanks
Kristine

From: Catia Giannini [mailto:CGiannini@STATAnalysis.com]
Sent: Wednesday, February 12, 2014 1:38 PM
To: Craig McCammack; Kristine Wright
Subject: 09292, Spartan's Square, Romeoville, IL 14020099

Attached are the report and invoice for project 09292, Spartan's Square, Romeoville, IL.

Catia Giannini
STAT Analysis Corporation
2242 W. Harrison, Suite 200
Chicago, IL 60612
(312)733-0551

<<14020099(V3).pdf>> <<14020099(V3).xls>> <<14020099(V3)Invoice.pdf>>

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February 17, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

RE: 07292, Spartan's Square, Romeoville, IL STAT Project No: 14020309

Dear Craig McCammack:

STAT Analysis received 13 samples for the referenced project on 2/14/2014 5:34:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Catia Giannini
Project Manager

Client: V3 Companies of Illinois
Project: 07292, Spartan's Square, Romeoville, IL
Lab Order: 14020309

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14020309-001A	SM-EX-210 (7)		2/14/2014 10:00:00 AM	2/14/2014
14020309-001B	SM-EX-210 (7)		2/14/2014 10:00:00 AM	2/14/2014
14020309-002A	SM-EX-210 (9)		2/14/2014 10:00:00 AM	2/14/2014
14020309-002B	SM-EX-210 (9)		2/14/2014 10:00:00 AM	2/14/2014
14020309-003A	SM-EX-211 (7)		2/14/2014 10:25:00 AM	2/14/2014
14020309-003B	SM-EX-211 (7)		2/14/2014 10:25:00 AM	2/14/2014
14020309-004A	SM-EX-211 (9)		2/14/2014 10:25:00 AM	2/14/2014
14020309-004B	SM-EX-211 (9)		2/14/2014 10:25:00 AM	2/14/2014
14020309-005A	SM-EX-212 (7)		2/14/2014 12:00:00 PM	2/14/2014
14020309-005B	SM-EX-212 (7)		2/14/2014 12:00:00 PM	2/14/2014
14020309-006A	SM-EX-212 (9)		2/14/2014 12:00:00 PM	2/14/2014
14020309-006B	SM-EX-212 (9)		2/14/2014 12:00:00 PM	2/14/2014
14020309-007A	SM-EX-213 (4)		2/14/2014 11:00:00 AM	2/14/2014
14020309-007B	SM-EX-213 (4)		2/14/2014 11:00:00 AM	2/14/2014
14020309-008A	SM-EX-213 (6)		2/14/2014 11:00:00 AM	2/14/2014
14020309-008B	SM-EX-213 (6)		2/14/2014 11:00:00 AM	2/14/2014
14020309-009A	SM-EX-214 (9)		2/14/2014 9:30:00 AM	2/14/2014
14020309-009B	SM-EX-214 (9)		2/14/2014 9:30:00 AM	2/14/2014
14020309-010A	SM-EX-214 (13)		2/14/2014 9:30:00 AM	2/14/2014
14020309-010B	SM-EX-214 (13)		2/14/2014 9:30:00 AM	2/14/2014
14020309-011A	SM-EX-215 (8)		2/14/2014 8:45:00 AM	2/14/2014
14020309-011B	SM-EX-215 (8)		2/14/2014 8:45:00 AM	2/14/2014
14020309-012A	SM-EX-215 (10)		2/14/2014 8:45:00 AM	2/14/2014
14020309-012B	SM-EX-215 (10)		2/14/2014 8:45:00 AM	2/14/2014
14020309-013A	SM-EX-216 (4)		2/14/2014 10:45:00 AM	2/14/2014
14020309-013B	SM-EX-216 (4)		2/14/2014 10:45:00 AM	2/14/2014

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-001

Client Sample ID: SM-EX-210 (7)
Collection Date: 2/14/2014 10:00:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	2.1	0.85		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.0044		mg/Kg-dry	1	2/16/2014
Bromodichloromethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
Bromoform	ND	0.0044		mg/Kg-dry	1	2/16/2014
Bromomethane	ND	0.0088		mg/Kg-dry	1	2/16/2014
2-Butanone	0.21	0.066		mg/Kg-dry	1	2/16/2014
Carbon disulfide	ND	0.044		mg/Kg-dry	1	2/16/2014
Carbon tetrachloride	ND	0.0044		mg/Kg-dry	1	2/16/2014
Chlorobenzene	ND	0.0044		mg/Kg-dry	1	2/16/2014
Chloroethane	ND	0.0088		mg/Kg-dry	1	2/16/2014
Chloroform	ND	0.0044		mg/Kg-dry	1	2/16/2014
Chloromethane	ND	0.0088		mg/Kg-dry	1	2/16/2014
Dibromochloromethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,2-Dichloroethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethene	ND	0.0044		mg/Kg-dry	1	2/16/2014
cis-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	2/16/2014
trans-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,2-Dichloropropane	ND	0.0044		mg/Kg-dry	1	2/16/2014
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	2/16/2014
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	2/16/2014
Ethylbenzene	ND	0.0044		mg/Kg-dry	1	2/16/2014
2-Hexanone	ND	0.018		mg/Kg-dry	1	2/16/2014
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	2/16/2014
Methylene chloride	ND	0.0088		mg/Kg-dry	1	2/16/2014
Methyl tert-butyl ether	ND	0.0044		mg/Kg-dry	1	2/16/2014
Styrene	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,1,2,2-Tetrachloroethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
Tetrachloroethene	0.57	0.21		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,1,1-Trichloroethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
1,1,2-Trichloroethane	ND	0.0044		mg/Kg-dry	1	2/16/2014
Trichloroethene	ND	0.0044		mg/Kg-dry	1	2/16/2014
Vinyl chloride	ND	0.0044		mg/Kg-dry	1	2/16/2014
Xylenes, Total	ND	0.013		mg/Kg-dry	1	2/16/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	13.3	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-002

Client Sample ID: SM-EX-210 (9)
Collection Date: 2/14/2014 10:00:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	0.94	0.94		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.0054		mg/Kg-dry	1	2/16/2014
Bromodichloromethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
Bromoform	ND	0.0054		mg/Kg-dry	1	2/16/2014
Bromomethane	ND	0.011		mg/Kg-dry	1	2/16/2014
2-Butanone	0.21	0.081		mg/Kg-dry	1	2/16/2014
Carbon disulfide	ND	0.054		mg/Kg-dry	1	2/16/2014
Carbon tetrachloride	ND	0.0054		mg/Kg-dry	1	2/16/2014
Chlorobenzene	ND	0.0054		mg/Kg-dry	1	2/16/2014
Chloroethane	ND	0.011		mg/Kg-dry	1	2/16/2014
Chloroform	ND	0.0054		mg/Kg-dry	1	2/16/2014
Chloromethane	ND	0.011		mg/Kg-dry	1	2/16/2014
Dibromochloromethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,2-Dichloroethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethene	ND	0.0054		mg/Kg-dry	1	2/16/2014
cis-1,2-Dichloroethene	ND	0.0054		mg/Kg-dry	1	2/16/2014
trans-1,2-Dichloroethene	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,2-Dichloropropane	ND	0.0054		mg/Kg-dry	1	2/16/2014
cis-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	2/16/2014
trans-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	2/16/2014
Ethylbenzene	ND	0.0054		mg/Kg-dry	1	2/16/2014
2-Hexanone	ND	0.022		mg/Kg-dry	1	2/16/2014
4-Methyl-2-pentanone	ND	0.022		mg/Kg-dry	1	2/16/2014
Methylene chloride	ND	0.011		mg/Kg-dry	1	2/16/2014
Methyl tert-butyl ether	ND	0.0054		mg/Kg-dry	1	2/16/2014
Styrene	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,1,2,2-Tetrachloroethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
Tetrachloroethene	0.83	0.23		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,1,1-Trichloroethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
1,1,2-Trichloroethane	ND	0.0054		mg/Kg-dry	1	2/16/2014
Trichloroethene	ND	0.0054		mg/Kg-dry	1	2/16/2014
Vinyl chloride	ND	0.0054		mg/Kg-dry	1	2/16/2014
Xylenes, Total	ND	0.016		mg/Kg-dry	1	2/16/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	15.9	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
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R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-003

Client Sample ID: SM-EX-211 (7)
Collection Date: 2/14/2014 10:25:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	1.7	0.94		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.23		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.23		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.23		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.47		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3.5		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2.3		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.23		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.23		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.47		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.23		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.47		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.23		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.094		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.094		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.23		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.94		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.94		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.47		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.23		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	3	0.23		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.23		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.7		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	18.1	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-004

Client Sample ID: SM-EX-211 (9)
Collection Date: 2/14/2014 10:25:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	1.5	0.96		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.24		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.24		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.24		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.48		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3.6		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2.4		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.24		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.24		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.48		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.24		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.48		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.24		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.096		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.096		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.24		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.96		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.96		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.48		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.24		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	3.6	0.24		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.24		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.72		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	13.3	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-005

Client Sample ID: SM-EX-212 (7)
Collection Date: 2/14/2014 12:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	1.9	0.87		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.22		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.22		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.22		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.43		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3.3		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2.2		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.22		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.22		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.43		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.22		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.43		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.22		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.22		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.22		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.22		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.22		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.22		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.22		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.087		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.087		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.22		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.87		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.87		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.43		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.22		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.22		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.22		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	8.8	0.22		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.22		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.22		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.22		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.22		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.22		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.65		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	15.7	0.2	*	wt%	1	2/15/2014

Qualifiers:
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J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
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R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-006

Client Sample ID: SM-EX-212 (9)
Collection Date: 2/14/2014 12:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	0.093	0.024		mg/Kg-dry	1	2/15/2014
Benzene	ND	0.006		mg/Kg-dry	1	2/15/2014
Bromodichloromethane	ND	0.006		mg/Kg-dry	1	2/15/2014
Bromoform	ND	0.006		mg/Kg-dry	1	2/15/2014
Bromomethane	ND	0.012		mg/Kg-dry	1	2/15/2014
2-Butanone	ND	0.089		mg/Kg-dry	1	2/15/2014
Carbon disulfide	ND	0.06		mg/Kg-dry	1	2/15/2014
Carbon tetrachloride	ND	0.006		mg/Kg-dry	1	2/15/2014
Chlorobenzene	ND	0.006		mg/Kg-dry	1	2/15/2014
Chloroethane	ND	0.012		mg/Kg-dry	1	2/15/2014
Chloroform	ND	0.006		mg/Kg-dry	1	2/15/2014
Chloromethane	ND	0.012		mg/Kg-dry	1	2/15/2014
Dibromochloromethane	ND	0.006		mg/Kg-dry	1	2/15/2014
1,1-Dichloroethane	ND	0.006		mg/Kg-dry	1	2/15/2014
1,2-Dichloroethane	ND	0.006		mg/Kg-dry	1	2/15/2014
1,1-Dichloroethene	ND	0.006		mg/Kg-dry	1	2/15/2014
cis-1,2-Dichloroethene	ND	0.006		mg/Kg-dry	1	2/15/2014
trans-1,2-Dichloroethene	ND	0.006		mg/Kg-dry	1	2/15/2014
1,2-Dichloropropane	ND	0.006		mg/Kg-dry	1	2/15/2014
cis-1,3-Dichloropropene	ND	0.0024		mg/Kg-dry	1	2/15/2014
trans-1,3-Dichloropropene	ND	0.0024		mg/Kg-dry	1	2/15/2014
Ethylbenzene	ND	0.006		mg/Kg-dry	1	2/15/2014
2-Hexanone	ND	0.024		mg/Kg-dry	1	2/15/2014
4-Methyl-2-pentanone	ND	0.024		mg/Kg-dry	1	2/15/2014
Methylene chloride	ND	0.012		mg/Kg-dry	1	2/15/2014
Methyl tert-butyl ether	ND	0.006		mg/Kg-dry	1	2/15/2014
Styrene	ND	0.006		mg/Kg-dry	1	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.006		mg/Kg-dry	1	2/15/2014
Tetrachloroethene	0.33	0.006		mg/Kg-dry	1	2/15/2014
Toluene	ND	0.006		mg/Kg-dry	1	2/15/2014
1,1,1-Trichloroethane	ND	0.006		mg/Kg-dry	1	2/15/2014
1,1,2-Trichloroethane	ND	0.006		mg/Kg-dry	1	2/15/2014
Trichloroethene	ND	0.006		mg/Kg-dry	1	2/15/2014
Vinyl chloride	ND	0.006		mg/Kg-dry	1	2/15/2014
Xylenes, Total	ND	0.018		mg/Kg-dry	1	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	6.4	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
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Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-007

Client Sample ID: SM-EX-213 (4)
Collection Date: 2/14/2014 11:00:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	ND	0.91		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.23		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.23		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.23		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.45		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3.4		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2.3		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.23		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.23		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.45		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.23		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.45		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.23		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.091		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.091		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.23		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.91		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.91		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.45		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.23		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	8.9	0.23		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.23		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.23		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.23		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.68		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	14.4	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-008

Client Sample ID: SM-EX-213 (6)
Collection Date: 2/14/2014 11:00:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	2.5	0.81		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.2		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.2		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.2		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.4		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.2		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.2		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.4		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.2		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.4		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.2		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.081		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.081		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.2		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.81		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.81		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.4		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.2		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	11	0.2		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.2		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.61		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	13.9	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-009

Client Sample ID: SM-EX-214 (9)
Collection Date: 2/14/2014 9:30:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	2.5	0.94		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.24		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.24		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.24		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.47		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3.5		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2.4		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.24		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.24		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.47		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.24		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.47		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.24		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.094		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.094		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.24		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.94		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.94		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.47		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.24		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	4.3	0.24		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.24		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.24		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.24		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.71		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	16.0	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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R - RPD outside accepted recovery limits
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H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-010

Client Sample ID: SM-EX-214 (13)
Collection Date: 2/14/2014 9:30:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	0.47	0.032		mg/Kg-dry	1	2/15/2014
Benzene	ND	0.008		mg/Kg-dry	1	2/15/2014
Bromodichloromethane	ND	0.008		mg/Kg-dry	1	2/15/2014
Bromoform	ND	0.008		mg/Kg-dry	1	2/15/2014
Bromomethane	ND	0.016		mg/Kg-dry	1	2/15/2014
2-Butanone	ND	0.12		mg/Kg-dry	1	2/15/2014
Carbon disulfide	ND	0.08		mg/Kg-dry	1	2/15/2014
Carbon tetrachloride	ND	0.008		mg/Kg-dry	1	2/15/2014
Chlorobenzene	ND	0.008		mg/Kg-dry	1	2/15/2014
Chloroethane	ND	0.016		mg/Kg-dry	1	2/15/2014
Chloroform	ND	0.008		mg/Kg-dry	1	2/15/2014
Chloromethane	ND	0.016		mg/Kg-dry	1	2/15/2014
Dibromochloromethane	ND	0.008		mg/Kg-dry	1	2/15/2014
1,1-Dichloroethane	ND	0.008		mg/Kg-dry	1	2/15/2014
1,2-Dichloroethane	ND	0.008		mg/Kg-dry	1	2/15/2014
1,1-Dichloroethene	ND	0.008		mg/Kg-dry	1	2/15/2014
cis-1,2-Dichloroethene	ND	0.008		mg/Kg-dry	1	2/15/2014
trans-1,2-Dichloroethene	ND	0.008		mg/Kg-dry	1	2/15/2014
1,2-Dichloropropane	ND	0.008		mg/Kg-dry	1	2/15/2014
cis-1,3-Dichloropropene	ND	0.0032		mg/Kg-dry	1	2/15/2014
trans-1,3-Dichloropropene	ND	0.0032		mg/Kg-dry	1	2/15/2014
Ethylbenzene	ND	0.008		mg/Kg-dry	1	2/15/2014
2-Hexanone	ND	0.032		mg/Kg-dry	1	2/15/2014
4-Methyl-2-pentanone	ND	0.032		mg/Kg-dry	1	2/15/2014
Methylene chloride	ND	0.016		mg/Kg-dry	1	2/15/2014
Methyl tert-butyl ether	ND	0.008		mg/Kg-dry	1	2/15/2014
Styrene	ND	0.008		mg/Kg-dry	1	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.008		mg/Kg-dry	1	2/15/2014
Tetrachloroethene	0.46	0.008		mg/Kg-dry	1	2/15/2014
Toluene	ND	0.008		mg/Kg-dry	1	2/15/2014
1,1,1-Trichloroethane	ND	0.008		mg/Kg-dry	1	2/15/2014
1,1,2-Trichloroethane	ND	0.008		mg/Kg-dry	1	2/15/2014
Trichloroethene	ND	0.008		mg/Kg-dry	1	2/15/2014
Vinyl chloride	ND	0.008		mg/Kg-dry	1	2/15/2014
Xylenes, Total	ND	0.024		mg/Kg-dry	1	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	5.7	0.2	*	wt%	1	2/15/2014

Qualifiers:
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J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
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R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-011

Client Sample ID: SM-EX-215 (8)
Collection Date: 2/14/2014 8:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	2.6	0.79		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.004		mg/Kg-dry	1	2/16/2014
Bromodichloromethane	ND	0.004		mg/Kg-dry	1	2/16/2014
Bromoform	0.047	0.004		mg/Kg-dry	1	2/16/2014
Bromomethane	ND	0.0079		mg/Kg-dry	1	2/16/2014
2-Butanone	0.2	0.059		mg/Kg-dry	1	2/16/2014
Carbon disulfide	ND	0.04		mg/Kg-dry	1	2/16/2014
Carbon tetrachloride	ND	0.004		mg/Kg-dry	1	2/16/2014
Chlorobenzene	ND	0.004		mg/Kg-dry	1	2/16/2014
Chloroethane	ND	0.0079		mg/Kg-dry	1	2/16/2014
Chloroform	ND	0.004		mg/Kg-dry	1	2/16/2014
Chloromethane	ND	0.0079		mg/Kg-dry	1	2/16/2014
Dibromochloromethane	ND	0.004		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethane	ND	0.004		mg/Kg-dry	1	2/16/2014
1,2-Dichloroethane	ND	0.004		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethene	ND	0.004		mg/Kg-dry	1	2/16/2014
cis-1,2-Dichloroethene	ND	0.004		mg/Kg-dry	1	2/16/2014
trans-1,2-Dichloroethene	ND	0.004		mg/Kg-dry	1	2/16/2014
1,2-Dichloropropane	ND	0.004		mg/Kg-dry	1	2/16/2014
cis-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	2/16/2014
trans-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	2/16/2014
Ethylbenzene	ND	0.004		mg/Kg-dry	1	2/16/2014
2-Hexanone	ND	0.016		mg/Kg-dry	1	2/16/2014
4-Methyl-2-pentanone	ND	0.016		mg/Kg-dry	1	2/16/2014
Methylene chloride	ND	0.0079		mg/Kg-dry	1	2/16/2014
Methyl tert-butyl ether	ND	0.004		mg/Kg-dry	1	2/16/2014
Styrene	ND	0.004		mg/Kg-dry	1	2/16/2014
1,1,2,2-Tetrachloroethane	ND	0.004		mg/Kg-dry	1	2/16/2014
Tetrachloroethene	0.34	0.2		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.004		mg/Kg-dry	1	2/16/2014
1,1,1-Trichloroethane	ND	0.004		mg/Kg-dry	1	2/16/2014
1,1,2-Trichloroethane	ND	0.004		mg/Kg-dry	1	2/16/2014
Trichloroethene	ND	0.004		mg/Kg-dry	1	2/16/2014
Vinyl chloride	ND	0.004		mg/Kg-dry	1	2/16/2014
Xylenes, Total	ND	0.012		mg/Kg-dry	1	2/16/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	14.1	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-012

Client Sample ID: SM-EX-215 (10)
Collection Date: 2/14/2014 8:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	2	0.71		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.0042		mg/Kg-dry	1	2/16/2014
Bromodichloromethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
Bromoform	0.025	0.0042		mg/Kg-dry	1	2/16/2014
Bromomethane	ND	0.0084		mg/Kg-dry	1	2/16/2014
2-Butanone	0.18	0.063		mg/Kg-dry	1	2/16/2014
Carbon disulfide	ND	0.042		mg/Kg-dry	1	2/16/2014
Carbon tetrachloride	ND	0.0042		mg/Kg-dry	1	2/16/2014
Chlorobenzene	ND	0.0042		mg/Kg-dry	1	2/16/2014
Chloroethane	ND	0.0084		mg/Kg-dry	1	2/16/2014
Chloroform	ND	0.0042		mg/Kg-dry	1	2/16/2014
Chloromethane	ND	0.0084		mg/Kg-dry	1	2/16/2014
Dibromochloromethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,2-Dichloroethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,1-Dichloroethene	ND	0.0042		mg/Kg-dry	1	2/16/2014
cis-1,2-Dichloroethene	ND	0.0042		mg/Kg-dry	1	2/16/2014
trans-1,2-Dichloroethene	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,2-Dichloropropane	ND	0.0042		mg/Kg-dry	1	2/16/2014
cis-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	2/16/2014
trans-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	2/16/2014
Ethylbenzene	ND	0.0042		mg/Kg-dry	1	2/16/2014
2-Hexanone	ND	0.017		mg/Kg-dry	1	2/16/2014
4-Methyl-2-pentanone	ND	0.017		mg/Kg-dry	1	2/16/2014
Methylene chloride	ND	0.0084		mg/Kg-dry	1	2/16/2014
Methyl tert-butyl ether	ND	0.0042		mg/Kg-dry	1	2/16/2014
Styrene	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,1,2,2-Tetrachloroethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
Tetrachloroethene	0.37	0.18		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,1,1-Trichloroethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
1,1,2-Trichloroethane	ND	0.0042		mg/Kg-dry	1	2/16/2014
Trichloroethene	ND	0.0042		mg/Kg-dry	1	2/16/2014
Vinyl chloride	ND	0.0042		mg/Kg-dry	1	2/16/2014
Xylenes, Total	ND	0.013		mg/Kg-dry	1	2/16/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	15.3	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: February 17, 2014
Date Printed: February 17, 2014

Client: V3 Companies of Illinois
Lab Order: 14020309
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020309-013

Client Sample ID: SM-EX-216 (4)
Collection Date: 2/14/2014 10:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/15/2014**		Analyst: **PS**
Acetone	1.3	0.8		mg/Kg-dry	50	2/15/2014
Benzene	ND	0.2		mg/Kg-dry	50	2/15/2014
Bromodichloromethane	ND	0.2		mg/Kg-dry	50	2/15/2014
Bromoform	ND	0.2		mg/Kg-dry	50	2/15/2014
Bromomethane	ND	0.4		mg/Kg-dry	50	2/15/2014
2-Butanone	ND	3		mg/Kg-dry	50	2/15/2014
Carbon disulfide	ND	2		mg/Kg-dry	50	2/15/2014
Carbon tetrachloride	ND	0.2		mg/Kg-dry	50	2/15/2014
Chlorobenzene	ND	0.2		mg/Kg-dry	50	2/15/2014
Chloroethane	ND	0.4		mg/Kg-dry	50	2/15/2014
Chloroform	ND	0.2		mg/Kg-dry	50	2/15/2014
Chloromethane	ND	0.4		mg/Kg-dry	50	2/15/2014
Dibromochloromethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,2-Dichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1-Dichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
cis-1,2-Dichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
trans-1,2-Dichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
1,2-Dichloropropane	ND	0.2		mg/Kg-dry	50	2/15/2014
cis-1,3-Dichloropropene	ND	0.08		mg/Kg-dry	50	2/15/2014
trans-1,3-Dichloropropene	ND	0.08		mg/Kg-dry	50	2/15/2014
Ethylbenzene	ND	0.2		mg/Kg-dry	50	2/15/2014
2-Hexanone	ND	0.8		mg/Kg-dry	50	2/15/2014
4-Methyl-2-pentanone	ND	0.8		mg/Kg-dry	50	2/15/2014
Methylene chloride	ND	0.4		mg/Kg-dry	50	2/15/2014
Methyl tert-butyl ether	ND	0.2		mg/Kg-dry	50	2/15/2014
Styrene	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1,2,2-Tetrachloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
Tetrachloroethene	4.4	0.2		mg/Kg-dry	50	2/15/2014
Toluene	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1,1-Trichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
1,1,2-Trichloroethane	ND	0.2		mg/Kg-dry	50	2/15/2014
Trichloroethene	ND	0.2		mg/Kg-dry	50	2/15/2014
Vinyl chloride	ND	0.2		mg/Kg-dry	50	2/15/2014
Xylenes, Total	ND	0.6		mg/Kg-dry	50	2/15/2014
Percent Moisture	**D2974**			Prep Date: **2/14/2014**		Analyst: **VA**
Percent Moisture	19.0	0.2	*	wt%	1	2/15/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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CHAIN OF CUSTODY RECORD

Nº: 846039 Page : 1 of 1

Company: VS Companies
Project Number: 07242 Client Tracking No.:
Project Name: Santori's Square
Project Location: Romeville, IL
Sampler(s): KTW
Report To: Craig McCormack Phone: 630-724-9200
Kristine Wright Fax: 630-724-9202
QC Level: 1 2 3 4 e-mail:

P.O. No.:
Quote No.:

Turn Around:
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	VOCs	Remarks	Lab No.:
SM-EX-210 (7)	2/14/14	1000	S				4	X		001
SM-EX-210 (9)		1000						X		002
SM-EX-211 (7)		1025						X		003
SM-EX-211 (9)		1025						X		004
SM-EX-212 (7)		1200						X		005
SM-EX-212 (9)		1200						X		006
SM-EX-213 (4)		1100						X		007
SM-EX-213 (6)		1100						X		008
SM-EX-214 (9)		920						X		009
SM-EX-214 (13)		920						X		010
SM-EX-215 (8)		845						X		011
SM-EX-215 (10)		845						X		012
SM-EX-216 (4)		1245						X		013

Relinquished by: (Signature)	Date/Time: 2/14/14 340	**Comments:** * 24-HOUR TURN SAMPLES HAVE BEEN TREATED W/ POTASSIUM PERMANGANATE
Received by: (Signature)	Date/Time: 2/14/14 340	
Relinquished by: (Signature)	Date/Time: 2/14/14 534	
Received by: (Signature)	Date/Time: 2/14/14 17:34	
Relinquished by: (Signature)	Date/Time:	
Received by: (Signature)	Date/Time:	

Preservation Code: A = None B = HNO_3 C = NaOH D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.: 14020309

Received on Ice: Yes ☒ No ☐

Temperature: 1.4 °C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 2/14/2014 5:34:00 PM

Work Order Number 14020309 | Received by: DO

Checklist completed by:  Signature 2/14/14 Date | Reviewed by: CG Initials 2/17/14 Date

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 1.4 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: Date contacted: Contacted by:

Response:

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February 18, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

RE: 07292, Spartan's Square, Romeoville, IL STAT Project No: 14020310

Dear Craig McCammack:

STAT Analysis received 3 samples for the referenced project on 2/14/2014 5:34:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Frank Capoccia
Project Manager

STAT Analysis Corporation

Date: February 18, 2014

Client: V3 Companies of Illinois
Project: 07292, Spartan's Square, Romeoville, IL
Lab Order: 14020310

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14020310-001A	SM-EX-217 (5)		2/14/2014 1:00:00 PM	2/14/2014
14020310-001B	SM-EX-217 (5)		2/14/2014 1:00:00 PM	2/14/2014
14020310-002A	SM-EX-218 (7)		2/14/2014 2:30:00 PM	2/14/2014
14020310-002B	SM-EX-218 (7)		2/14/2014 2:30:00 PM	2/14/2014
14020310-003A	SM-EX-219 (7)		2/14/2014 2:30:00 PM	2/14/2014
14020310-003B	SM-EX-219 (7)		2/14/2014 2:30:00 PM	2/14/2014

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Date Reported: February 18, 2014
Date Printed: February 18, 2014

Client: V3 Companies of Illinois
Lab Order: 14020310
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020310-001

Client Sample ID: SM-EX-217 (5)
Collection Date: 2/14/2014 1:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/17/2014**		Analyst: **PS**
Acetone	ND	4.8		mg/Kg-dry	50	2/18/2014
Benzene	ND	0.32		mg/Kg-dry	50	2/18/2014
Bromodichloromethane	ND	0.32		mg/Kg-dry	50	2/18/2014
Bromoform	ND	0.32		mg/Kg-dry	50	2/18/2014
Bromomethane	ND	0.64		mg/Kg-dry	50	2/18/2014
2-Butanone	ND	4.8		mg/Kg-dry	50	2/18/2014
Carbon disulfide	ND	3.2		mg/Kg-dry	50	2/18/2014
Carbon tetrachloride	ND	0.32		mg/Kg-dry	50	2/18/2014
Chlorobenzene	ND	0.32		mg/Kg-dry	50	2/18/2014
Chloroethane	ND	0.64		mg/Kg-dry	50	2/18/2014
Chloroform	ND	0.32		mg/Kg-dry	50	2/18/2014
Chloromethane	ND	0.64		mg/Kg-dry	50	2/18/2014
Dibromochloromethane	ND	0.32		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethane	ND	0.32		mg/Kg-dry	50	2/18/2014
1,2-Dichloroethane	ND	0.32		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethene	ND	0.32		mg/Kg-dry	50	2/18/2014
cis-1,2-Dichloroethene	ND	0.32		mg/Kg-dry	50	2/18/2014
trans-1,2-Dichloroethene	ND	0.32		mg/Kg-dry	50	2/18/2014
1,2-Dichloropropane	ND	0.32		mg/Kg-dry	50	2/18/2014
cis-1,3-Dichloropropene	ND	0.13		mg/Kg-dry	50	2/18/2014
trans-1,3-Dichloropropene	ND	0.13		mg/Kg-dry	50	2/18/2014
Ethylbenzene	ND	0.32		mg/Kg-dry	50	2/18/2014
2-Hexanone	ND	1.3		mg/Kg-dry	50	2/18/2014
4-Methyl-2-pentanone	ND	1.3		mg/Kg-dry	50	2/18/2014
Methylene chloride	ND	0.64		mg/Kg-dry	50	2/18/2014
Methyl tert-butyl ether	ND	0.32		mg/Kg-dry	50	2/18/2014
Styrene	ND	0.32		mg/Kg-dry	50	2/18/2014
1,1,2,2-Tetrachloroethane	ND	0.32		mg/Kg-dry	50	2/18/2014
Tetrachloroethene	67	3.2		mg/Kg-dry	500	2/18/2014
Toluene	ND	0.32		mg/Kg-dry	50	2/18/2014
1,1,1-Trichloroethane	ND	0.32		mg/Kg-dry	50	2/18/2014
1,1,2-Trichloroethane	ND	0.32		mg/Kg-dry	50	2/18/2014
Trichloroethene	ND	0.32		mg/Kg-dry	50	2/18/2014
Vinyl chloride	ND	0.32		mg/Kg-dry	50	2/18/2014
Xylenes, Total	ND	0.96		mg/Kg-dry	50	2/18/2014
Percent Moisture	**D2974**			Prep Date: **2/17/2014**		Analyst: **VA**
Percent Moisture	7.9	0.2	*	wt%	1	2/18/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 18, 2014
Date Printed: February 18, 2014

Client: V3 Companies of Illinois
Lab Order: 14020310
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020310-002

Client Sample ID: SM-EX-218 (7)
Collection Date: 2/14/2014 2:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/17/2014**		Analyst: **PS**
Acetone	ND	3.9		mg/Kg-dry	50	2/18/2014
Benzene	ND	0.26		mg/Kg-dry	50	2/18/2014
Bromodichloromethane	ND	0.26		mg/Kg-dry	50	2/18/2014
Bromoform	ND	0.26		mg/Kg-dry	50	2/18/2014
Bromomethane	ND	0.52		mg/Kg-dry	50	2/18/2014
2-Butanone	ND	3.9		mg/Kg-dry	50	2/18/2014
Carbon disulfide	ND	2.6		mg/Kg-dry	50	2/18/2014
Carbon tetrachloride	ND	0.26		mg/Kg-dry	50	2/18/2014
Chlorobenzene	ND	0.26		mg/Kg-dry	50	2/18/2014
Chloroethane	ND	0.52		mg/Kg-dry	50	2/18/2014
Chloroform	ND	0.26		mg/Kg-dry	50	2/18/2014
Chloromethane	ND	0.52		mg/Kg-dry	50	2/18/2014
Dibromochloromethane	ND	0.26		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethane	ND	0.26		mg/Kg-dry	50	2/18/2014
1,2-Dichloroethane	ND	0.26		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethene	ND	0.26		mg/Kg-dry	50	2/18/2014
cis-1,2-Dichloroethene	ND	0.26		mg/Kg-dry	50	2/18/2014
trans-1,2-Dichloroethene	ND	0.26		mg/Kg-dry	50	2/18/2014
1,2-Dichloropropane	ND	0.26		mg/Kg-dry	50	2/18/2014
cis-1,3-Dichloropropene	ND	0.1		mg/Kg-dry	50	2/18/2014
trans-1,3-Dichloropropene	ND	0.1		mg/Kg-dry	50	2/18/2014
Ethylbenzene	ND	0.26		mg/Kg-dry	50	2/18/2014
2-Hexanone	ND	1		mg/Kg-dry	50	2/18/2014
4-Methyl-2-pentanone	ND	1		mg/Kg-dry	50	2/18/2014
Methylene chloride	ND	0.52		mg/Kg-dry	50	2/18/2014
Methyl tert-butyl ether	ND	0.26		mg/Kg-dry	50	2/18/2014
Styrene	ND	0.26		mg/Kg-dry	50	2/18/2014
1,1,2,2-Tetrachloroethane	ND	0.26		mg/Kg-dry	50	2/18/2014
Tetrachloroethene	6.1	0.26		mg/Kg-dry	50	2/18/2014
Toluene	ND	0.26		mg/Kg-dry	50	2/18/2014
1,1,1-Trichloroethane	ND	0.26		mg/Kg-dry	50	2/18/2014
1,1,2-Trichloroethane	ND	0.26		mg/Kg-dry	50	2/18/2014
Trichloroethene	ND	0.26		mg/Kg-dry	50	2/18/2014
Vinyl chloride	ND	0.26		mg/Kg-dry	50	2/18/2014
Xylenes, Total	ND	0.79		mg/Kg-dry	50	2/18/2014
Percent Moisture	**D2974**			Prep Date: **2/17/2014**		Analyst: **VA**
Percent Moisture	8.5	0.2	*	wt%	1	2/18/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 18, 2014
Date Printed: February 18, 2014

Client: V3 Companies of Illinois
Lab Order: 14020310
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020310-003

Client Sample ID: SM-EX-219 (7)
Collection Date: 2/14/2014 2:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/17/2014**		Analyst: **PS**
Acetone	ND	4.2		mg/Kg-dry	50	2/18/2014
Benzene	ND	0.28		mg/Kg-dry	50	2/18/2014
Bromodichloromethane	ND	0.28		mg/Kg-dry	50	2/18/2014
Bromoform	ND	0.28		mg/Kg-dry	50	2/18/2014
Bromomethane	ND	0.56		mg/Kg-dry	50	2/18/2014
2-Butanone	ND	4.2		mg/Kg-dry	50	2/18/2014
Carbon disulfide	ND	2.8		mg/Kg-dry	50	2/18/2014
Carbon tetrachloride	ND	0.28		mg/Kg-dry	50	2/18/2014
Chlorobenzene	ND	0.28		mg/Kg-dry	50	2/18/2014
Chloroethane	ND	0.56		mg/Kg-dry	50	2/18/2014
Chloroform	ND	0.28		mg/Kg-dry	50	2/18/2014
Chloromethane	ND	0.56		mg/Kg-dry	50	2/18/2014
Dibromochloromethane	ND	0.28		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethane	ND	0.28		mg/Kg-dry	50	2/18/2014
1,2-Dichloroethane	ND	0.28		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethene	ND	0.28		mg/Kg-dry	50	2/18/2014
cis-1,2-Dichloroethene	ND	0.28		mg/Kg-dry	50	2/18/2014
trans-1,2-Dichloroethene	ND	0.28		mg/Kg-dry	50	2/18/2014
1,2-Dichloropropane	ND	0.28		mg/Kg-dry	50	2/18/2014
cis-1,3-Dichloropropene	ND	0.11		mg/Kg-dry	50	2/18/2014
trans-1,3-Dichloropropene	ND	0.11		mg/Kg-dry	50	2/18/2014
Ethylbenzene	ND	0.28		mg/Kg-dry	50	2/18/2014
2-Hexanone	ND	1.1		mg/Kg-dry	50	2/18/2014
4-Methyl-2-pentanone	ND	1.1		mg/Kg-dry	50	2/18/2014
Methylene chloride	ND	0.56		mg/Kg-dry	50	2/18/2014
Methyl tert-butyl ether	ND	0.28		mg/Kg-dry	50	2/18/2014
Styrene	ND	0.28		mg/Kg-dry	50	2/18/2014
1,1,2,2-Tetrachloroethane	ND	0.28		mg/Kg-dry	50	2/18/2014
Tetrachloroethene	18	2.8		mg/Kg-dry	500	2/18/2014
Toluene	ND	0.28		mg/Kg-dry	50	2/18/2014
1,1,1-Trichloroethane	ND	0.28		mg/Kg-dry	50	2/18/2014
1,1,2-Trichloroethane	ND	0.28		mg/Kg-dry	50	2/18/2014
Trichloroethene	ND	0.28		mg/Kg-dry	50	2/18/2014
Vinyl chloride	ND	0.28		mg/Kg-dry	50	2/18/2014
Xylenes, Total	ND	0.84		mg/Kg-dry	50	2/18/2014
Percent Moisture	**D2974**			Prep Date: **2/17/2014**		Analyst: **VA**
Percent Moisture	8.0	0.2	*	wt%	1	2/18/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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e-mail address: STATinfo@STATAnalysis.com AIHA, NVLAP and NELAP accredited

CHAIN OF CUSTODY RECORD

Nº: 846038 **Page : 1 of 1**

Company: VS Companies
Project Number: 07242
Client Tracking No.:
Project Name: Spartan's Square
Project Location: Romeoville, IL
Sampler(s): KTW
Report To: Craig McCammack, Kristine Wright
Phone:
Fax:
e-mail:
QC Level: 1 ____ 2 ____ 3 ____ 4 ____

P.O. No.:
Quote No.:

Turn Around:
Results Needed:
/ / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	Remarks	Lab No.:
SM-EX-217(S)	2/14/14	1300	S						001
SM-EX-218(T)	↓	1420	↓						002
SM-EX-219(T)	↓	1420	↓					Filtered Field	003
~~SM-EX~~									

Relinquished by: (Signature)	Date/Time: 2/14/14 3[illegible]	
Received by: (Signature)	Date/Time: 2/14/14 340	
Relinquished by: (Signature)	Date/Time: 2/14/14 534	
Received by: (Signature)	Date/Time: 2/14/14 17-34	
Relinquished by: (Signature)	Date/Time:	
Received by: (Signature)	Date/Time:	

Comments:

Preservation Code: A = None B = HNO_3 C = NaOH
D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.:
1402031O

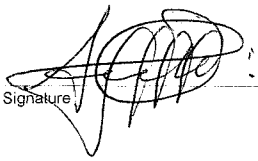
Received on Ice: Yes ☒ No ☐
Temperature: 1-4 °C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 2/14/2014 5:34:00 PM

Work Order Number 14020310 | Received by: DO

Checklist completed by:  2/14/14 (Signature / Date) | Reviewed by: CW 2/17/14 (Initials / Date)

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 1.4 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: | Date contacted: | Contacted by:

Response:

Tom Bauer

From: Kristine Wright [kwright@v3co.com]
Sent: Monday, February 17, 2014 2:09 PM
To: Tom Bauer
Cc: cmccammack@v3co.com
Subject: Need to Run Samples on Hold for 24-Hour Rush

Hi Tom

We have samples on hold for the Spartan's Square site in Romeoville, Illinois. Three samples were picked up on Friday and two samples were picked up just now at our office (Monday). We would like those samples (**SM-EX-217** through **SM-EX-221**) to be run for VOCs 24-Hour Rush.

Let me know if you have any questions, thanks

Kristine J. Wright
Environmental Scientist / GIS

V3 Companies
7325 Janes Ave., Woodridge, IL 60517
Direct: 630.729.6211 | Fax: 630.724.9202 | Cell: 815.263.3434
kwright@v3co.com | www.v3co.com

STAT Analysis Corporation
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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001;AIHA 101160; NVLAP LabCode 101202-

February 18, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

RE: 07292, Spartan's Square, Romeoville, IL STAT Project No: 14020331

Dear Craig McCammack:

STAT Analysis received 2 samples for the referenced project on 2/17/2014 4:22:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Frank Capoccia
Project Manager

STAT Analysis Corporation

Date: February 18, 2014

Client: V3 Companies of Illinois
Project: 07292, Spartan's Square, Romeoville, IL
Lab Order: 14020331

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14020331-001A	SM-EX-220(7)		2/14/2014 4:40:00 PM	2/17/2014
14020331-001B	SM-EX-220(7)		2/14/2014 4:40:00 PM	2/17/2014
14020331-002A	SM-EX-221(7)		2/14/2014 4:45:00 PM	2/17/2014
14020331-002B	SM-EX-221(7)		2/14/2014 4:45:00 PM	2/17/2014

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Date Reported: February 18, 2014
Date Printed: February 18, 2014

Client: V3 Companies of Illinois
Lab Order: 14020331
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020331-001

Client Sample ID: SM-EX-220(7)
Collection Date: 2/14/2014 4:40:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/17/2014**		Analyst: **PS**
Acetone	ND	3.4		mg/Kg-dry	50	2/18/2014
Benzene	ND	0.23		mg/Kg-dry	50	2/18/2014
Bromodichloromethane	ND	0.23		mg/Kg-dry	50	2/18/2014
Bromoform	ND	0.23		mg/Kg-dry	50	2/18/2014
Bromomethane	ND	0.46		mg/Kg-dry	50	2/18/2014
2-Butanone	ND	3.4		mg/Kg-dry	50	2/18/2014
Carbon disulfide	ND	2.3		mg/Kg-dry	50	2/18/2014
Carbon tetrachloride	ND	0.23		mg/Kg-dry	50	2/18/2014
Chlorobenzene	ND	0.23		mg/Kg-dry	50	2/18/2014
Chloroethane	ND	0.46		mg/Kg-dry	50	2/18/2014
Chloroform	ND	0.23		mg/Kg-dry	50	2/18/2014
Chloromethane	ND	0.46		mg/Kg-dry	50	2/18/2014
Dibromochloromethane	ND	0.23		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethane	ND	0.23		mg/Kg-dry	50	2/18/2014
1,2-Dichloroethane	ND	0.23		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/18/2014
cis-1,2-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/18/2014
trans-1,2-Dichloroethene	ND	0.23		mg/Kg-dry	50	2/18/2014
1,2-Dichloropropane	ND	0.23		mg/Kg-dry	50	2/18/2014
cis-1,3-Dichloropropene	ND	0.092		mg/Kg-dry	50	2/18/2014
trans-1,3-Dichloropropene	ND	0.092		mg/Kg-dry	50	2/18/2014
Ethylbenzene	ND	0.23		mg/Kg-dry	50	2/18/2014
2-Hexanone	ND	0.92		mg/Kg-dry	50	2/18/2014
4-Methyl-2-pentanone	ND	0.92		mg/Kg-dry	50	2/18/2014
Methylene chloride	ND	0.46		mg/Kg-dry	50	2/18/2014
Methyl tert-butyl ether	ND	0.23		mg/Kg-dry	50	2/18/2014
Styrene	ND	0.23		mg/Kg-dry	50	2/18/2014
1,1,2,2-Tetrachloroethane	ND	0.23		mg/Kg-dry	50	2/18/2014
Tetrachloroethene	7.7	0.23		mg/Kg-dry	50	2/18/2014
Toluene	ND	0.23		mg/Kg-dry	50	2/18/2014
1,1,1-Trichloroethane	ND	0.23		mg/Kg-dry	50	2/18/2014
1,1,2-Trichloroethane	ND	0.23		mg/Kg-dry	50	2/18/2014
Trichloroethene	ND	0.23		mg/Kg-dry	50	2/18/2014
Vinyl chloride	ND	0.23		mg/Kg-dry	50	2/18/2014
Xylenes, Total	ND	0.69		mg/Kg-dry	50	2/18/2014
Percent Moisture	**D2974**			Prep Date: **2/17/2014**		Analyst: **VA**
Percent Moisture	12.4	0.2	*	wt%	1	2/18/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: February 18, 2014
Date Printed: February 18, 2014

Client: V3 Companies of Illinois
Lab Order: 14020331
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14020331-002

Client Sample ID: SM-EX-221(7)
Collection Date: 2/14/2014 4:45:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **2/17/2014**		Analyst: **PS**
Acetone	ND	3.5		mg/Kg-dry	50	2/18/2014
Benzene	ND	0.24		mg/Kg-dry	50	2/18/2014
Bromodichloromethane	ND	0.24		mg/Kg-dry	50	2/18/2014
Bromoform	ND	0.24		mg/Kg-dry	50	2/18/2014
Bromomethane	ND	0.47		mg/Kg-dry	50	2/18/2014
2-Butanone	ND	3.5		mg/Kg-dry	50	2/18/2014
Carbon disulfide	ND	2.4		mg/Kg-dry	50	2/18/2014
Carbon tetrachloride	ND	0.24		mg/Kg-dry	50	2/18/2014
Chlorobenzene	ND	0.24		mg/Kg-dry	50	2/18/2014
Chloroethane	ND	0.47		mg/Kg-dry	50	2/18/2014
Chloroform	ND	0.24		mg/Kg-dry	50	2/18/2014
Chloromethane	ND	0.47		mg/Kg-dry	50	2/18/2014
Dibromochloromethane	ND	0.24		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethane	ND	0.24		mg/Kg-dry	50	2/18/2014
1,2-Dichloroethane	ND	0.24		mg/Kg-dry	50	2/18/2014
1,1-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/18/2014
cis-1,2-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/18/2014
trans-1,2-Dichloroethene	ND	0.24		mg/Kg-dry	50	2/18/2014
1,2-Dichloropropane	ND	0.24		mg/Kg-dry	50	2/18/2014
cis-1,3-Dichloropropene	ND	0.094		mg/Kg-dry	50	2/18/2014
trans-1,3-Dichloropropene	ND	0.094		mg/Kg-dry	50	2/18/2014
Ethylbenzene	ND	0.24		mg/Kg-dry	50	2/18/2014
2-Hexanone	ND	0.94		mg/Kg-dry	50	2/18/2014
4-Methyl-2-pentanone	ND	0.94		mg/Kg-dry	50	2/18/2014
Methylene chloride	ND	0.47		mg/Kg-dry	50	2/18/2014
Methyl tert-butyl ether	ND	0.24		mg/Kg-dry	50	2/18/2014
Styrene	ND	0.24		mg/Kg-dry	50	2/18/2014
1,1,2,2-Tetrachloroethane	ND	0.24		mg/Kg-dry	50	2/18/2014
Tetrachloroethene	8	0.24		mg/Kg-dry	50	2/18/2014
Toluene	ND	0.24		mg/Kg-dry	50	2/18/2014
1,1,1-Trichloroethane	ND	0.24		mg/Kg-dry	50	2/18/2014
1,1,2-Trichloroethane	ND	0.24		mg/Kg-dry	50	2/18/2014
Trichloroethene	ND	0.24		mg/Kg-dry	50	2/18/2014
Vinyl chloride	ND	0.24		mg/Kg-dry	50	2/18/2014
Xylenes, Total	ND	0.71		mg/Kg-dry	50	2/18/2014
Percent Moisture	**D2974**			Prep Date: **2/17/2014**		Analyst: **VA**
Percent Moisture	19.7	0.2	*	wt%	1	2/18/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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CHAIN OF CUSTODY RECORD

Nº: 846036 Page: 1 of 1

Company: VR Companies
Project Number: 07242
Project Name: Spartan's Square
Project Location: Romeoville, IL
Sampler(s): KJW
Report To: Craig McCammack
Kristine Wright
Phone:
Fax:
e-mail:
QC Level: 1 ____ 2 ____ 3 ____ 4 ____

P.O. No.:
Quote No.:

Turn Around:
Results Needed:
/ / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	Remarks	Lab No.:
SM-EX-220(7)	2/14/14	1640	S				4		001
SM-EX-221(7)	2/14/14	1645	S				4	Put on Hold	002

Relinquished by: (Signature) — Date/Time: 2/17/14 1325
Received by: (Signature) — Date/Time: 2-17-14 1350
Relinquished by: (Signature) — Date/Time: 2-17-14 1422
Received by: (Signature) — Date/Time: 2/17/14 1622
Relinquished by: (Signature) — Date/Time:
Received by: (Signature) — Date/Time:

Comments: Put samples on hold

Preservation Code: A = None B = HNO_3 C = NaOH D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.: 14020331

Received on Ice: Yes [X] No [ ]
Temperature: 5.6 °C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 2/17/2014 4:22:00 PM

Work Order Number 14020331 | Received by: VBY

Checklist completed by: VBY 2/17/14 (Signature / Date) | Reviewed by: FC 2/18/14 (Initials / Date)

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 5.6 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: | Date contacted: | Contacted by:

Response:

Tom Bauer

From: Kristine Wright [kwright@v3co.com]
Sent: Monday, February 17, 2014 2:09 PM
To: Tom Bauer
Cc: cmccammack@v3co.com
Subject: Need to Run Samples on Hold for 24-Hour Rush

Hi Tom

We have samples on hold for the Spartan's Square site in Romeoville, Illinois. Three samples were picked up on Friday and two samples were picked up just now at our office (Monday). We would like those samples (**SM-EX-217** through **SM-EX-221**) to be run for VOCs 24-Hour Rush.

Let me know if you have any questions, thanks

Kristine J. Wright
Environmental Scientist / GIS

V3 Companies
7325 Janes Ave., Woodridge, IL 60517
Direct: 630.729.6211 | Fax: 630.724.9202 | Cell: 815.263.3434
kwright@v3co.com | www.v3co.com

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May 15, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

Analytical Report for STAT Workorder: 14050348 Revision 0

RE: 07292, Spartan's Square, Romeoville, IL

Dear Craig McCammack:

STAT Analysis received 10 samples for the referenced project on 5/8/2014 5:50:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Thomas M. Bauer
General Manager

STAT Analysis Corporation

Date: May 15, 2014

Client: V3 Companies of Illinois
Project: 07292, Spartan's Square, Romeoville, IL
Lab Order: 14050348

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14050348-001A	SM-EX-301 (5)		5/8/2014 10:15:00 AM	5/8/2014
14050348-001B	SM-EX-301 (5)		5/8/2014 10:15:00 AM	5/8/2014
14050348-002A	SM-EX-302 (5)		5/8/2014 10:25:00 AM	5/8/2014
14050348-002B	SM-EX-302 (5)		5/8/2014 10:25:00 AM	5/8/2014
14050348-003A	SM-EX-303 (5)		5/8/2014 10:35:00 AM	5/8/2014
14050348-003B	SM-EX-303 (5)		5/8/2014 10:35:00 AM	5/8/2014
14050348-004A	SM-EX-304 (5)		5/8/2014 10:45:00 AM	5/8/2014
14050348-004B	SM-EX-304 (5)		5/8/2014 10:45:00 AM	5/8/2014
14050348-005A	SM-EX-305 (5)		5/8/2014 10:55:00 AM	5/8/2014
14050348-005B	SM-EX-305 (5)		5/8/2014 10:55:00 AM	5/8/2014
14050348-006A	SM-EX-306 (5)		5/8/2014 11:05:00 AM	5/8/2014
14050348-006B	SM-EX-306 (5)		5/8/2014 11:05:00 AM	5/8/2014
14050348-007A	SM-EX-307 (5)		5/8/2014 11:15:00 AM	5/8/2014
14050348-007B	SM-EX-307 (5)		5/8/2014 11:15:00 AM	5/8/2014
14050348-008A	SM-EX-308 (5)		5/8/2014 11:25:00 AM	5/8/2014
14050348-008B	SM-EX-308 (5)		5/8/2014 11:25:00 AM	5/8/2014
14050348-009A	SM-EX-309 (5)		5/8/2014 11:35:00 AM	5/8/2014
14050348-009B	SM-EX-309 (5)		5/8/2014 11:35:00 AM	5/8/2014
14050348-010A	SM-EX-310 (5)		5/8/2014 11:45:00 AM	5/8/2014
14050348-010B	SM-EX-310 (5)		5/8/2014 11:45:00 AM	5/8/2014

STAT Analysis Corporation

Date: *May 15, 2014*

CLIENT:	V3 Companies of Illinois
Project:	07292, Spartan's Square, Romeoville, IL
Lab Order:	14050348

CASE NARRATIVE

Sample SM-EX-306 (5) (l14050348) has Acetone reported with an "E" flag, exceeding the calibration curve range. The medium level dilution was below the reporting level. The detected value is reported.

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers:IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: May 15, 2014
Date Printed: May 15, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-001

Client Sample ID: SM-EX-301 (5)
Collection Date 5/8/2014 10:15:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	1.1	0.39		mg/Kg-dry	50	5/14/2014
Benzene	ND	0.0036		mg/Kg-dry	1	5/13/2014
Bromodichloromethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
Bromoform	ND	0.0036		mg/Kg-dry	1	5/13/2014
Bromomethane	ND	0.0071		mg/Kg-dry	1	5/13/2014
2-Butanone	0.32	0.054		mg/Kg-dry	1	5/13/2014
Carbon disulfide	ND	0.036		mg/Kg-dry	1	5/13/2014
Carbon tetrachloride	ND	0.0036		mg/Kg-dry	1	5/13/2014
Chlorobenzene	ND	0.0036		mg/Kg-dry	1	5/13/2014
Chloroethane	ND	0.0071		mg/Kg-dry	1	5/13/2014
Chloroform	ND	0.0036		mg/Kg-dry	1	5/13/2014
Chloromethane	ND	0.0071		mg/Kg-dry	1	5/13/2014
Dibromochloromethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1-Dichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,2-Dichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1-Dichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
cis-1,2-Dichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
trans-1,2-Dichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,2-Dichloropropane	ND	0.0036		mg/Kg-dry	1	5/13/2014
cis-1,3-Dichloropropene	ND	0.0014		mg/Kg-dry	1	5/13/2014
trans-1,3-Dichloropropene	ND	0.0014		mg/Kg-dry	1	5/13/2014
Ethylbenzene	ND	0.0036		mg/Kg-dry	1	5/13/2014
2-Hexanone	ND	0.014		mg/Kg-dry	1	5/13/2014
4-Methyl-2-pentanone	ND	0.014		mg/Kg-dry	1	5/13/2014
Methylene chloride	ND	0.0071		mg/Kg-dry	1	5/13/2014
Methyl tert-butyl ether	ND	0.0036		mg/Kg-dry	1	5/13/2014
Styrene	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1,2,2-Tetrachloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
Tetrachloroethene	5.1	0.20		mg/Kg-dry	50	5/14/2014
Toluene	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1,1-Trichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1,2-Trichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
Trichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
Vinyl chloride	ND	0.0036		mg/Kg-dry	1	5/13/2014
Xylenes, Total	ND	0.011		mg/Kg-dry	1	5/13/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	12.8	0.2	*	wt%	1	5/12/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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Date Reported: May 15, 2014
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ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-002

Client Sample ID: SM-EX-302 (5)
Collection Date 5/8/2014 10:25:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	1.1	0.31		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0036		mg/Kg-dry	1	5/13/2014
Bromodichloromethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
Bromoform	ND	0.0036		mg/Kg-dry	1	5/13/2014
Bromomethane	ND	0.0072		mg/Kg-dry	1	5/13/2014
2-Butanone	0.38	0.054		mg/Kg-dry	1	5/13/2014
Carbon disulfide	ND	0.036		mg/Kg-dry	1	5/13/2014
Carbon tetrachloride	ND	0.0036		mg/Kg-dry	1	5/13/2014
Chlorobenzene	ND	0.0036		mg/Kg-dry	1	5/13/2014
Chloroethane	ND	0.0072		mg/Kg-dry	1	5/13/2014
Chloroform	ND	0.0036		mg/Kg-dry	1	5/13/2014
Chloromethane	ND	0.0072		mg/Kg-dry	1	5/13/2014
Dibromochloromethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1-Dichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,2-Dichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1-Dichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
cis-1,2-Dichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
trans-1,2-Dichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,2-Dichloropropane	ND	0.0036		mg/Kg-dry	1	5/13/2014
cis-1,3-Dichloropropene	ND	0.0014		mg/Kg-dry	1	5/13/2014
trans-1,3-Dichloropropene	ND	0.0014		mg/Kg-dry	1	5/13/2014
Ethylbenzene	ND	0.0036		mg/Kg-dry	1	5/13/2014
2-Hexanone	0.016	0.014		mg/Kg-dry	1	5/13/2014
4-Methyl-2-pentanone	ND	0.014		mg/Kg-dry	1	5/13/2014
Methylene chloride	ND	0.0072		mg/Kg-dry	1	5/13/2014
Methyl tert-butyl ether	ND	0.0036		mg/Kg-dry	1	5/13/2014
Styrene	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1,2,2-Tetrachloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
Tetrachloroethene	1.5	0.15		mg/Kg-dry	50	5/15/2014
Toluene	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1,1-Trichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
1,1,2-Trichloroethane	ND	0.0036		mg/Kg-dry	1	5/13/2014
Trichloroethene	ND	0.0036		mg/Kg-dry	1	5/13/2014
Vinyl chloride	ND	0.0036		mg/Kg-dry	1	5/13/2014
Xylenes, Total	ND	0.011		mg/Kg-dry	1	5/13/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	15.4	0.2	*	wt%	1	5/12/2014

Qualifiers:
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Date Reported: May 15, 2014
Date Printed: May 15, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-003

Client Sample ID: SM-EX-303 (5)
Collection Date 5/8/2014 10:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	0.62	0.35		mg/Kg-dry	50	5/14/2014
Benzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
2-Butanone	0.19	0.061		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.041		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0041		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
2-Hexanone	ND	0.016		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.016		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0082		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0041		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	13	3.5		mg/Kg-dry	1000	5/14/2014
Toluene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Trichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0041		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.012		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	16.5	0.2	*	wt%	1	5/12/2014

Qualifiers:
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ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-004

Client Sample ID: SM-EX-304 (5)
Collection Date 5/8/2014 10:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	1.4	0.40		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
2-Butanone	0.32	0.062		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.041		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0041		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
2-Hexanone	ND	0.016		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.016		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0082		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0041		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	1.2	0.20		mg/Kg-dry	50	5/15/2014
Toluene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Trichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0041		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.012		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	12.8	0.2	*	wt%	1	5/12/2014

Qualifiers:
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ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-005

Client Sample ID: SM-EX-305 (5)
Collection Date 5/8/2014 10:55:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	0.69	0.44		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0044		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0044		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0089		mg/Kg-dry	1	5/14/2014
2-Butanone	0.23	0.066		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.044		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0044		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0044		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0089		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0044		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0089		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0044		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0044		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0044		mg/Kg-dry	1	5/14/2014
2-Hexanone	ND	0.018		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0089		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0044		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	89	4.4		mg/Kg-dry	1000	5/14/2014
Toluene	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0044		mg/Kg-dry	1	5/14/2014
Trichloroethene	0.0093	0.0044		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0044		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.013		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	15.2	0.2	*	wt%	1	5/12/2014

Qualifiers:
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B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
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E - Value above quantitation range
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ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-006

Client Sample ID: SM-EX-306 (5)
Collection Date 5/8/2014 11:05:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	0.93	0.35		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0043		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0043		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0086		mg/Kg-dry	1	5/14/2014
2-Butanone	0.89	0.065	E	mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.043		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0043		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0043		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0086		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0043		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0086		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0043		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0043		mg/Kg-dry	1	5/14/2014
2-Hexanone	0.061	0.017		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.017		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0086		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0043		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	32	3.5		mg/Kg-dry	1000	5/14/2014
Toluene	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
Trichloroethene	0.0075	0.0043		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0043		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.013		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	15.0	0.2	*	wt%	1	5/12/2014

Qualifiers:
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J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: May 15, 2014
Date Printed: May 15, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-007

Client Sample ID: SM-EX-307 (5)
Collection Date 5/8/2014 11:15:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	1.4	0.41		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0045		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0045		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0089		mg/Kg-dry	1	5/14/2014
2-Butanone	0.37	0.067		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.045		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0045		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0045		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0089		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0045		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0089		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0045		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0045		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0045		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0045		mg/Kg-dry	1	5/14/2014
2-Hexanone	ND	0.018		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0089		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0045		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	1.2	0.20		mg/Kg-dry	50	5/15/2014
Toluene	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0045		mg/Kg-dry	1	5/14/2014
Trichloroethene	ND	0.0045		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0045		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.013		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	12.5	0.2	*	wt%	1	5/12/2014

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Date Reported: May 15, 2014
Date Printed: May 15, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-008

Client Sample ID: SM-EX-308 (5)
Collection Date 5/8/2014 11:25:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	1.0	0.42		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0041		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
2-Butanone	0.38	0.061		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.041		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0041		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0082		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0041		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0016		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0041		mg/Kg-dry	1	5/14/2014
2-Hexanone	0.017	0.016		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.016		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0082		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0041		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	12	0.21		mg/Kg-dry	50	5/15/2014
Toluene	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0041		mg/Kg-dry	1	5/14/2014
Trichloroethene	ND	0.0041		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0041		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.012		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	14.0	0.2	*	wt%	1	5/12/2014

Qualifiers:
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Date Reported: May 15, 2014
Date Printed: May 15, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-009

Client Sample ID: SM-EX-309 (5)
Collection Date 5/8/2014 11:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	0.55	0.48		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0037		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0037		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0073		mg/Kg-dry	1	5/14/2014
2-Butanone	0.18	0.055		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.037		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0037		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0037		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0073		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0037		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0073		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0037		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0037		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0037		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0015		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0015		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0037		mg/Kg-dry	1	5/14/2014
2-Hexanone	ND	0.015		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.015		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0073		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0037		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	31	4.8		mg/Kg-dry	1000	5/14/2014
Toluene	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0037		mg/Kg-dry	1	5/14/2014
Trichloroethene	0.0074	0.0037		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0037		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.011		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	15.4	0.2	*	wt%	1	5/12/2014

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Date Printed: May 15, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14050348
Project: 07292, Spartan's Square, Romeoville, IL
Lab ID: 14050348-010

Client Sample ID: SM-EX-310 (5)
Collection Date 5/8/2014 11:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **5/9/2014**		Analyst: **PS**
Acetone	1.7	0.42		mg/Kg-dry	50	5/15/2014
Benzene	ND	0.0043		mg/Kg-dry	1	5/14/2014
Bromodichloromethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
Bromoform	ND	0.0043		mg/Kg-dry	1	5/14/2014
Bromomethane	ND	0.0087		mg/Kg-dry	1	5/14/2014
2-Butanone	0.37	0.065		mg/Kg-dry	1	5/14/2014
Carbon disulfide	ND	0.043		mg/Kg-dry	1	5/14/2014
Carbon tetrachloride	ND	0.0043		mg/Kg-dry	1	5/14/2014
Chlorobenzene	ND	0.0043		mg/Kg-dry	1	5/14/2014
Chloroethane	ND	0.0087		mg/Kg-dry	1	5/14/2014
Chloroform	ND	0.0043		mg/Kg-dry	1	5/14/2014
Chloromethane	ND	0.0087		mg/Kg-dry	1	5/14/2014
Dibromochloromethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,2-Dichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1-Dichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
cis-1,2-Dichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
trans-1,2-Dichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,2-Dichloropropane	ND	0.0043		mg/Kg-dry	1	5/14/2014
cis-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	5/14/2014
trans-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	5/14/2014
Ethylbenzene	ND	0.0043		mg/Kg-dry	1	5/14/2014
2-Hexanone	ND	0.017		mg/Kg-dry	1	5/14/2014
4-Methyl-2-pentanone	ND	0.017		mg/Kg-dry	1	5/14/2014
Methylene chloride	ND	0.0087		mg/Kg-dry	1	5/14/2014
Methyl tert-butyl ether	ND	0.0043		mg/Kg-dry	1	5/14/2014
Styrene	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1,2,2-Tetrachloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
Tetrachloroethene	1.4	0.21		mg/Kg-dry	50	5/15/2014
Toluene	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1,1-Trichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
1,1,2-Trichloroethane	ND	0.0043		mg/Kg-dry	1	5/14/2014
Trichloroethene	ND	0.0043		mg/Kg-dry	1	5/14/2014
Vinyl chloride	ND	0.0043		mg/Kg-dry	1	5/14/2014
Xylenes, Total	ND	0.013		mg/Kg-dry	1	5/14/2014
Percent Moisture	**D2974**			Prep Date: **5/9/2014**		Analyst: **RW**
Percent Moisture	15.3	0.2	*	wt%	1	5/12/2014

Qualifiers:
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E - Value above quantitation range
H - Holding time exceeded

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e-mail address: STATinfo@STATAnalysis.com AIHA, NVLAP and NELAP accredited

CHAIN OF CUSTODY RECORD

Nº: 854375 **Page : 1 of 1**

Company: VB Companies
Project Number: 07292 Client Tracking No.:
Project Name: Spartan's Square
Project Location: Romeoville, IL
Sampler(s): KTW
Report To: Craig McCammack Phone: 630-724-9200
Kristine Wright Fax: 630-724-9202
QC Level: 1 2 3 4 e-mail:

P.O. No.:
Quote No.:

Turn Around:
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	VOCs	Remarks	Lab No.:
SM-EX-301 (5)	5/8/14	1025	S				4	X		001
SM-EX-302 (5)		1030						X		002
SM-EX-303 (5)		1035						X		003
SM-EX-304 (5)		1045						X		004
SM-EX-305 (5)		1055						X		005
SM-EX-306 (5)		1105						X		006
SM-EX-307 (5)		1115						X		007
SM-EX-308 (5)		1125						X		008
SM-EX-309 (5)		1135						X		009
SM-EX-310 (5)	↓	1145	↓				↓	X		010

Relinquished by: (Signature)	Beth Jedlicka UMN	Date/Time: 05/08/14
Received by: (Signature)		Date/Time: 5/8/14 1540
Relinquished by: (Signature)	UMN	Date/Time: 5/8/14 1750
Received by: (Signature)		Date/Time: 5/8/14 1750
Relinquished by: (Signature)		Date/Time:
Received by: (Signature)		Date/Time:

Comments: *Samples have been treated w/potassium permanganate

Laboratory Work Order No.: 14050348

Received on Ice: Yes ☒ No ☐

Temperature: 3.1 °C

Preservation Code: A = None B = HNO_3 C = NaOH
D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 5/8/2014 5:50:00 PM

Work Order Number 14050348 | Received by: DO

Checklist completed by: Signature 5/8/14 Date | Reviewed by: Initials 5/9/14 Date

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 3.1 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: | Date contacted: | Contacted by:

Response:

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June 23, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

Analytical Report for STAT Workorder: 14060829 Revision 0

RE: Romeoville

Dear Craig McCammack:

STAT Analysis received 3 samples for the referenced project on 6/19/2014 6:00:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Craig Chawla
Project Manager

STAT Analysis Corporation

Date: June 23, 2014

Client: V3 Companies of Illinois
Project: Romeoville
Lab Order: 14060829

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14060829-001A	SM-EX-311 (5)		6/19/2014 12:15:00 PM	6/19/2014
14060829-001B	SM-EX-311 (5)		6/19/2014 12:15:00 PM	6/19/2014
14060829-002A	SM-EX-312 (5)		6/19/2014 12:30:00 PM	6/19/2014
14060829-002B	SM-EX-312 (5)		6/19/2014 12:30:00 PM	6/19/2014
14060829-003A	SM-EX-313 (5)		6/19/2014 12:45:00 PM	6/19/2014
14060829-003B	SM-EX-313 (5)		6/19/2014 12:45:00 PM	6/19/2014

STAT Analysis Corporation
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Accreditation Numbers:IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

Date Reported: June 23, 2014
Date Printed: June 23, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14060829
Project: Romeoville
Lab ID: 14060829-001

Client Sample ID: SM-EX-311 (5)
Collection Date: 6/19/2014 12:15:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/19/2014**		Analyst: **ERP**
Acetone	ND	0.089		mg/Kg-dry	1	6/20/2014
Benzene	ND	0.0060		mg/Kg-dry	1	6/20/2014
Bromodichloromethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
Bromoform	ND	0.0060		mg/Kg-dry	1	6/20/2014
Bromomethane	ND	0.012		mg/Kg-dry	1	6/20/2014
2-Butanone	ND	0.089		mg/Kg-dry	1	6/20/2014
Carbon disulfide	ND	0.060		mg/Kg-dry	1	6/20/2014
Carbon tetrachloride	ND	0.0060		mg/Kg-dry	1	6/20/2014
Chlorobenzene	ND	0.0060		mg/Kg-dry	1	6/20/2014
Chloroethane	ND	0.012		mg/Kg-dry	1	6/20/2014
Chloroform	ND	0.0060		mg/Kg-dry	1	6/20/2014
Chloromethane	ND	0.012		mg/Kg-dry	1	6/20/2014
Dibromochloromethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1-Dichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,2-Dichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1-Dichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
cis-1,2-Dichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
trans-1,2-Dichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,2-Dichloropropane	ND	0.0060		mg/Kg-dry	1	6/20/2014
cis-1,3-Dichloropropene	ND	0.0023		mg/Kg-dry	1	6/20/2014
trans-1,3-Dichloropropene	ND	0.0023		mg/Kg-dry	1	6/20/2014
Ethylbenzene	ND	0.0060		mg/Kg-dry	1	6/20/2014
2-Hexanone	ND	0.023		mg/Kg-dry	1	6/20/2014
4-Methyl-2-pentanone	ND	0.023		mg/Kg-dry	1	6/20/2014
Methylene chloride	ND	0.012		mg/Kg-dry	1	6/20/2014
Methyl tert-butyl ether	ND	0.0060		mg/Kg-dry	1	6/20/2014
Styrene	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1,2,2-Tetrachloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
Tetrachloroethene	7.8	5.2		mg/Kg-dry	1000	6/20/2014
Toluene	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1,1-Trichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1,2-Trichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
Trichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
Vinyl chloride	ND	0.0060		mg/Kg-dry	1	6/20/2014
Xylenes, Total	ND	0.018		mg/Kg-dry	1	6/20/2014
Percent Moisture	**D2974**			Prep Date: **6/20/2014**		Analyst: **RW**
Percent Moisture	6.0	0.2	*	wt%	1	6/20/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
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H - Holding time exceeded

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Date Reported: June 23, 2014
Date Printed: June 23, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14060829
Project: Romeoville
Lab ID: 14060829-002

Client Sample ID: SM-EX-312 (5)
Collection Date: 6/19/2014 12:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/19/2014**		Analyst: **ERP**
Acetone	0.12	0.090		mg/Kg-dry	1	6/20/2014
Benzene	ND	0.0060		mg/Kg-dry	1	6/20/2014
Bromodichloromethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
Bromoform	ND	0.0060		mg/Kg-dry	1	6/20/2014
Bromomethane	ND	0.012		mg/Kg-dry	1	6/20/2014
2-Butanone	ND	0.090		mg/Kg-dry	1	6/20/2014
Carbon disulfide	ND	0.060		mg/Kg-dry	1	6/20/2014
Carbon tetrachloride	ND	0.0060		mg/Kg-dry	1	6/20/2014
Chlorobenzene	ND	0.0060		mg/Kg-dry	1	6/20/2014
Chloroethane	ND	0.012		mg/Kg-dry	1	6/20/2014
Chloroform	ND	0.0060		mg/Kg-dry	1	6/20/2014
Chloromethane	ND	0.012		mg/Kg-dry	1	6/20/2014
Dibromochloromethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1-Dichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,2-Dichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1-Dichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
cis-1,2-Dichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
trans-1,2-Dichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,2-Dichloropropane	ND	0.0060		mg/Kg-dry	1	6/20/2014
cis-1,3-Dichloropropene	ND	0.0024		mg/Kg-dry	1	6/20/2014
trans-1,3-Dichloropropene	ND	0.0024		mg/Kg-dry	1	6/20/2014
Ethylbenzene	ND	0.0060		mg/Kg-dry	1	6/20/2014
2-Hexanone	ND	0.024		mg/Kg-dry	1	6/20/2014
4-Methyl-2-pentanone	ND	0.024		mg/Kg-dry	1	6/20/2014
Methylene chloride	ND	0.012		mg/Kg-dry	1	6/20/2014
Methyl tert-butyl ether	ND	0.0060		mg/Kg-dry	1	6/20/2014
Styrene	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1,2,2-Tetrachloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
Tetrachloroethene	13	4.8		mg/Kg-dry	1000	6/20/2014
Toluene	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1,1-Trichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
1,1,2-Trichloroethane	ND	0.0060		mg/Kg-dry	1	6/20/2014
Trichloroethene	ND	0.0060		mg/Kg-dry	1	6/20/2014
Vinyl chloride	ND	0.0060		mg/Kg-dry	1	6/20/2014
Xylenes, Total	ND	0.018		mg/Kg-dry	1	6/20/2014
Percent Moisture	**D2974**			Prep Date: **6/20/2014**		Analyst: **RW**
Percent Moisture	5.6	0.2	*	wt%	1	6/20/2014

Qualifiers:
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R - RPD outside accepted recovery limits
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Date Reported: June 23, 2014
Date Printed: June 23, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Lab Order: 14060829
Project: Romeoville
Lab ID: 14060829-003

Client Sample ID: SM-EX-313 (5)
Collection Date: 6/19/2014 12:45:00 PM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/19/2014**		Analyst: **ERP**
Acetone	0.096	0.074		mg/Kg-dry	1	6/20/2014
Benzene	ND	0.0049		mg/Kg-dry	1	6/20/2014
Bromodichloromethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
Bromoform	ND	0.0049		mg/Kg-dry	1	6/20/2014
Bromomethane	ND	0.0098		mg/Kg-dry	1	6/20/2014
2-Butanone	ND	0.074		mg/Kg-dry	1	6/20/2014
Carbon disulfide	ND	0.049		mg/Kg-dry	1	6/20/2014
Carbon tetrachloride	ND	0.0049		mg/Kg-dry	1	6/20/2014
Chlorobenzene	ND	0.0049		mg/Kg-dry	1	6/20/2014
Chloroethane	ND	0.0098		mg/Kg-dry	1	6/20/2014
Chloroform	ND	0.0049		mg/Kg-dry	1	6/20/2014
Chloromethane	ND	0.0098		mg/Kg-dry	1	6/20/2014
Dibromochloromethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,1-Dichloroethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,2-Dichloroethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,1-Dichloroethene	ND	0.0049		mg/Kg-dry	1	6/20/2014
cis-1,2-Dichloroethene	ND	0.0049		mg/Kg-dry	1	6/20/2014
trans-1,2-Dichloroethene	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,2-Dichloropropane	ND	0.0049		mg/Kg-dry	1	6/20/2014
cis-1,3-Dichloropropene	ND	0.0019		mg/Kg-dry	1	6/20/2014
trans-1,3-Dichloropropene	ND	0.0019		mg/Kg-dry	1	6/20/2014
Ethylbenzene	ND	0.0049		mg/Kg-dry	1	6/20/2014
2-Hexanone	ND	0.019		mg/Kg-dry	1	6/20/2014
4-Methyl-2-pentanone	ND	0.019		mg/Kg-dry	1	6/20/2014
Methylene chloride	ND	0.0098		mg/Kg-dry	1	6/20/2014
Methyl tert-butyl ether	ND	0.0049		mg/Kg-dry	1	6/20/2014
Styrene	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,1,2,2-Tetrachloroethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
Tetrachloroethene	25	5.7		mg/Kg-dry	1000	6/20/2014
Toluene	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,1,1-Trichloroethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
1,1,2-Trichloroethane	ND	0.0049		mg/Kg-dry	1	6/20/2014
Trichloroethene	ND	0.0049		mg/Kg-dry	1	6/20/2014
Vinyl chloride	ND	0.0049		mg/Kg-dry	1	6/20/2014
Xylenes, Total	ND	0.015		mg/Kg-dry	1	6/20/2014
Percent Moisture	**D2974**			Prep Date: **6/20/2014**		Analyst: **RW**
Percent Moisture	6.6	0.2	*	wt%	1	6/20/2014

Qualifiers:
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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e-mail address: STATinfo@STATAnalysis.com AIHA, NVLAP and NELAP accredited

CHAIN OF CUSTODY RECORD

Nº: 853875 **Page :** 1 of 1

Company: V3Companies
Project Number: Client Tracking No.:
Project Name:
Project Location: Romeoville
Sampler(s): KJW
Report To: Kristine Wright Phone: 630-724-9200
Craig McCammack Fax: 630-724-9202
QC Level: 1 2 3 4 e-mail: KWright@V3Co.com

P.O. No.:
Quote No.:

Turn Around:
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp	Grab	Preserv.	No. of Containers	VOCs	Remarks	Lab No.:
SM-EX-311(S)	6/19/14	1215	S				4	X		001
SM-EX-312(S)	↓	1230	↓				↓	X		002
SM-EX-313(S)	↓	1245	↓				↓	X		003

Relinquished by: (Signature) Date/Time: 6/19/14 2215
Received by: (Signature) Date/Time: 6-19-14 2215
Relinquished by: (Signature) Date/Time: 6-19-14 2215
Received by: (Signature) Date/Time: 6/19/14 1820
Relinquished by: (Signature) Date/Time:
Received by: (Signature) Date/Time:

Comments: 24-Hour TURN

Laboratory Work Order No.: 1406829

Received on Ice: Yes [X] No [ ]

Temperature: 4.7 °C

Preservation Code: A = None B = HNO_3 C = NaOH
D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 6/19/2014 6:00:00 PM

Work Order Number 14060829 | Received by: DO

Checklist completed by: Signature 6/19/14 Date | Reviewed by: Initials 06/23/2014 Date

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 4.7 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: Date contacted: Contacted by:

Response:

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July 25, 2014

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

Analytical Report for STAT Work Order: 14070724 Revision 0

RE: 07292 W. 2011.HAZ, Former Spartans Square S.S

Dear Craig McCammack:

STAT Analysis received 1 sample for the referenced project on 7/18/2014 5:45:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Craig Chawla
Project Manager

STAT Analysis Corporation

Date: July 25, 2014

Client: V3 Companies of Illinois
Project: 07292 W. 2011.HAZ, Former Spartans Square S.S
Work Order: 14070724 Revision 0

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
14070724-001A	SM-WC-01		7/17/2014 4:00:00 PM	7/18/2014

CLIENT: V3 Companies of Illinois
Project: 07292 W. 2011.HAZ, Former Spartans Square S.S
Work Order: 14070724 Revision 0

CASE NARRATIVE

The following three parameters apply to sample number SM-WC-01 (14070724-001):
Reactivity with Water: None
Odor: None
Physical Description: Brown soil with rocks

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Report Date: July 25, 2014
Print Date: July 25, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Client Sample ID: SM-WC-01
Work Order: 14070724 Revision 0
Tag Number:
Project: 07292 W. 2011.HAZ, Former Spartans Square S.S
Collection Date: 7/17/2014 4:00:00 PM
Lab ID: 14070724-001A
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **7/22/2014**		Analyst: **GVC**
Aroclor 1016	ND	0.080		mg/Kg	1	7/23/2014
Aroclor 1221	ND	0.080		mg/Kg	1	7/23/2014
Aroclor 1232	ND	0.080		mg/Kg	1	7/23/2014
Aroclor 1242	ND	0.080		mg/Kg	1	7/23/2014
Aroclor 1248	ND	0.080		mg/Kg	1	7/23/2014
Aroclor 1254	ND	0.080		mg/Kg	1	7/23/2014
Aroclor 1260	ND	0.080		mg/Kg	1	7/23/2014
TCLP Mercury	**SW1311/7470A**			Prep Date: **7/22/2014**		Analyst: **LB**
Mercury	ND	0.00020		mg/L	1	7/22/2014
TCLP Metals by ICP/MS	**SW1311/6020 (SW3005A)**			Prep Date: **7/22/2014**		Analyst: **JG**
Arsenic	ND	0.010		mg/L	5	7/23/2014
Barium	ND	0.050		mg/L	5	7/23/2014
Cadmium	ND	0.0050		mg/L	5	7/23/2014
Chromium	ND	0.010		mg/L	5	7/23/2014
Copper	ND	0.10		mg/L	5	7/23/2014
Lead	ND	0.0050		mg/L	5	7/23/2014
Nickel	0.024	0.010		mg/L	5	7/23/2014
Selenium	ND	0.010		mg/L	5	7/23/2014
Silver	ND	0.010		mg/L	5	7/23/2014
Zinc	ND	0.050		mg/L	5	7/23/2014
TCLP Semivolatile Organic Compounds	**SW1311/8270C (SW3510C)**			Prep Date: **7/22/2014**		Analyst: **DM**
1,4-Dichlorobenzene	ND	0.010		mg/L	1	7/23/2014
2,4-Dinitrotoluene	ND	0.010		mg/L	1	7/23/2014
Hexachlorobenzene	ND	0.010		mg/L	1	7/23/2014
Hexachlorobutadiene	ND	0.010		mg/L	1	7/23/2014
Hexachloroethane	ND	0.010		mg/L	1	7/23/2014
Nitrobenzene	ND	0.010		mg/L	1	7/23/2014
2-methylphenol	ND	0.010		mg/L	1	7/23/2014
3- & 4-Methylphenol	ND	0.010		mg/L	1	7/23/2014
Pentachlorophenol	ND	0.050		mg/L	1	7/23/2014
Pyridine	ND	0.010		mg/L	1	7/23/2014
2,4,5-Trichlorophenol	ND	0.010		mg/L	1	7/23/2014
2,4,6-Trichlorophenol	ND	0.010		mg/L	1	7/23/2014
TCLP Volatile Organic Compounds by GC/MS	**SW1311/8260B (SW5030B)**			Prep Date: **7/21/2014**		Analyst: **ERP**
Benzene	ND	0.050		mg/L	10	7/24/2014
2-Butanone	ND	0.20		mg/L	10	7/24/2014

Qualifiers:
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Report Date: July 25, 2014
Print Date: July 25, 2014

ANALYTICAL RESULTS

Client: V3 Companies of Illinois
Client Sample ID: SM-WC-01
Work Order: 14070724 Revision 0
Tag Number:
Project: 07292 W. 2011.HAZ, Former Spartans Square S.S
Collection Date: 7/17/2014 4:00:00 PM
Lab ID: 14070724-001A
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
TCLP Volatile Organic Compounds by GC/MS	**SW1311/8260B (SW5030B)**			Prep Date: **7/21/2014**		Analyst: **ERP**
Carbon tetrachloride	ND	0.050		mg/L	10	7/24/2014
Chlorobenzene	ND	0.050		mg/L	10	7/24/2014
Chloroform	ND	0.050		mg/L	10	7/24/2014
1,2-Dichloroethane	ND	0.050		mg/L	10	7/24/2014
1,1-Dichloroethene	ND	0.050		mg/L	10	7/24/2014
Tetrachloroethene	0.17	0.050		mg/L	10	7/24/2014
Trichloroethene	ND	0.050		mg/L	10	7/24/2014
Vinyl chloride	ND	0.050		mg/L	10	7/24/2014
Ash Content	**E160.4**			Prep Date: **7/21/2014**		Analyst: **RW**
Ash Content	98.7	0.01	*	wt%	1	7/22/2014
Cyanide, Total	**SW9012A**			Prep Date: **7/21/2014**		Analyst: **YZ**
Cyanide	ND	0.25		mg/Kg	1	7/21/2014
Flash Point (Open-Cup)	**SW1010(M)**			Prep Date: **7/21/2014**		Analyst: **RW**
Flashpoint	No flash up to 212		*	°F	1	7/21/2014
Paint Filter	**SW9095A**			Prep Date: **7/21/2014**		Analyst: **RW**
Paint Filter	Pass			Pass/Fail	1	7/21/2014
pH (1:10, 25 °C)	**SW9045C**			Prep Date: **7/21/2014**		Analyst: **RW**
pH	9.2			pH Units	1	7/21/2014
Phenolics	**SW9066 (SW9065)**			Prep Date: **7/24/2014**		Analyst: **YZ**
Phenolics, Total Recoverable	0.38	0.25		mg/Kg	1	7/24/2014
Solids, Total	**D2974**			Prep Date: **7/21/2014**		Analyst: **RW**
Total Solid	86.1	0.20	*	wt%	1	7/22/2014
Sulfide, Reactive	**SW7.3.4.2**			Prep Date: **7/22/2014**		Analyst: **YZ**
Reactive Sulfide	ND	10		mg/Kg	1	7/22/2014

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

STAT Analysis Corporation
2242 W. Harrison Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STATinfo@STATAnalysis.com

CHAIN OF CUSTODY RECORD **N°:** _____ **Page :** 1 of 1

Company: V3 COMPANIES
Project Number: 07292CV2011.HAZ Client Tracking No.:
Project Name: FORMER SULTANS SQUARE SS.
Project Location: ROMEOVILLE, IL
Sampler(s): C. McCAMMACK
Report To: C. McCAMMACK Phone: 630-724-9200
R. BERTHIAUME Fax:
QC Level: 1 ___ 2 ___ 3 ___ 4 ___ e-mail: SEE BELOW

P.O. No.: 07292CV2011.HAZ
Quote No.:

Turn Around: STANDARD
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	WATER ANALYSIS 1,2,4 DCA	Remarks	Lab No.:
SM-WC-01	7/17/14	4:00pm	S		X		3	X		001

Relinquished by: (Signature) Date/Time: 7/18/14 8:00 A.M.
Received by: (Signature) Date/Time: 7.18.14.3
Relinquished by: (Signature) Date/Time: 7.18.14.5
Received by: (Signature) Date/Time: 7/18/14 17
Relinquished by: (Signature) Date/Time:
Received by: (Signature) Date/Time:

Comments: EMAIL RESULTS TO: CMCCAMMACK@V3CO.COM RBERTHIAUME@V3CO.COM

Preservation Code: A = None B = HNO_3 C = NaOH D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.: 1407072

Received on Ice: Yes [X] No [ ]
Temperature: 5-3°C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 7/18/2014 5:45:00 PM

Work Order Number 14070724 | Received by: DO

Checklist completed by: _____ 7/18/14 | Reviewed by: _____ 07/25/14

Signature / Date | Initials / Date

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 5.3 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments: _____

Client / Person contacted: _____ Date contacted: _____ Contacted by: _____

Response: _____

APPENDIX C

UCL DOCUMENTATION

Sample	PCE	D_PCE	Depth
SM-GP-07 (10-12)	14.6	1	10-12 ft
SM-GP-104 X104	9	1	10-11 ft
SM-GP-107 X107B	3.3	1	7-9 ft
SM-GP-114 X114B	2.2	1	8-9 ft
SM-EX-201 (8)	4	1	8 ft
SM-EX-202 (6.5)	0.03	1	6.5 ft
SM-EX-203 (7)	0.031	1	7 ft
SM-EX-204 (7)	0.079	1	7 ft
SM-EX-205 (7)	0.042	1	7 ft
SM-EX-206 (7)	0.21	1	7 ft
SM-EX-209 (7)	13	1	7 ft
SM-EX-210 (7)	0.57	1	7 ft
SM-EX-210 (9)	0.83	1	9 ft
SM-EX-211 (7)	3	1	7 ft
SM-EX-211 (9)	3.6	1	9 ft
SM-EX-214 (9)	4.3	1	9 ft
SM-EX-215 (8)	0.34	1	8 ft
SM-EX-215 (10)	0.37	1	10 ft
SM-EX-220(7)	7.7	1	7 ft
SM-EX-221(7)	8	1	7 ft
SM-EX-301 (5)	5.1	1	5 ft
SM-EX-302 (5)	1.5	1	5 ft
SM-EX-303 (5)	13	1	5 ft
SM-EX-304 (5)	1.2	1	5 ft
SM-EX-307 (5)	1.2	1	5 ft
SM-EX-308 (5)	12	1	5 ft
SM-EX-310 (5)	1.4	1	5 ft
SM-EX-311 (5)	7.8	1	5 ft
SM-EX-312 (5)	13	1	5 ft
SM-EX-313 (5)	25	1	5 ft

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	8/18/2014 7:52:07 PM
From File	PCE trmt area 3-11 ft ProUCL5 input-rvd.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PCE, Final Treatment Area Data

General Statistics

Total Number of Observations	30	Number of Distinct Observations	27
		Number of Missing Observations	0
Minimum	0.03	Mean	5.213
Maximum	25	Median	3.15
SD	6.004	Std. Error of Mean	1.096
Coefficient of Variation	1.152	Skewness	1.542

Normal GOF Test

Shapiro Wilk Test Statistic	0.814	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.927	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.194	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.162	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	7.076	95% Adjusted-CLT UCL (Chen-1995)	7.346
		95% Modified-t UCL (Johnson-1978)	7.127

Gamma GOF Test

A-D Test Statistic	0.298	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.802	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.106	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.168	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.579	k star (bias corrected MLE)	0.543
Theta hat (MLE)	9.011	Theta star (bias corrected MLE)	9.603
nu hat (MLE)	34.71	nu star (bias corrected)	32.57
MLE Mean (bias corrected)	5.213	MLE Sd (bias corrected)	7.076
		Approximate Chi Square Value (0.05)	20.53
Adjusted Level of Significance	0.041	Adjusted Chi Square Value	19.98

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	8.273	95% Adjusted Gamma UCL (use when n<50)	8.501

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.906	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.927	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.139	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.162	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-3.507	Mean of logged Data	0.577
Maximum of Logged Data	3.219	SD of logged Data	1.936

Assuming Lognormal Distribution

95% H-UCL	46.1	90% Chebyshev (MVUE) UCL	24.02
95% Chebyshev (MVUE) UCL	30.4	97.5% Chebyshev (MVUE) UCL	39.26
99% Chebyshev (MVUE) UCL	56.65		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	7.017	95% Jackknife UCL	7.076
95% Standard Bootstrap UCL	7.041	95% Bootstrap-t UCL	7.354
95% Hall's Bootstrap UCL	7.584	95% Percentile Bootstrap UCL	6.998
95% BCA Bootstrap UCL	7.377		
90% Chebyshev(Mean, Sd) UCL	8.502	95% Chebyshev(Mean, Sd) UCL	9.992
97.5% Chebyshev(Mean, Sd) UCL	12.06	99% Chebyshev(Mean, Sd) UCL	16.12

Suggested UCL to Use

95% Adjusted Gamma UCL	8.501

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Sample	PCE	D_PCE	Depth
SM-GP-03 (6-7)	0.0485	1	6-7 ft
SM-GP-05 (2-4)	0.0492	1	2-4 ft
SM-GP-07 (10-12)	14.6	1	10-12 ft
SM-GP-101 X101	0.0018	0	10-12 ft
SM-GP-103 X103	0.12	1	10-11 ft
SM-GP-105 X105B	0.0087	1	10-11 ft
SM-GP-06 X106	0.054	1	10-11 ft
SM-GP-107 X107B	3.3	1	7-9 ft
SM-GP-110 X110B	0.16	1	10-11 ft
SM-GP-111 X111B	0.19	1	8-9 ft
SM-GP-112 X112B	0.017	1	8-9 ft
SM-GP-113 X113A	0.018	1	5-6 ft
SM-GP-113 X113B	0.0066	1	7-8 ft
SM-GP-114 X114B	2.2	1	8-9 ft
SM-GP-115 X115	0.16	1	7.5-8.5 ft
SM-GP-116 X116	0.13	1	7.5-8.5 ft
SM-GP-117 X117	6.3	1	10-11 ft
SM-GP-118 X118B	0.0043	1	9-10 ft
SM-EX-201 (8)	4	1	8 ft
SM-EX-202 (6.5)	0.03	1	6.5 ft
SM-EX-203 (7)	0.031	1	7 ft
SM-EX-204 (7)	0.079	1	7 ft
SM-EX-205 (7)	0.042	1	7 ft
SM-EX-206 (7)	0.21	1	7 ft
SM-EX-209 (7)	13	1	7 ft
SM-EX-210 (7)	0.57	1	7 ft
SM-EX-210 (9)	0.83	1	9 ft
SM-EX-211 (7)	3	1	7 ft
SM-EX-211 (9)	3.6	1	9 ft
SM-EX-214 (9)	4.3	1	9 ft
SM-EX-215 (8)	0.34	1	8 ft
SM-EX-215 (10)	0.37	1	10 ft
SM-EX-220(7)	7.7	1	7 ft
SM-EX-221(7)	8	1	7 ft
SM-EX-301 (5)	5.1	1	5 ft
SM-EX-302 (5)	1.5	1	5 ft
SM-EX-303 (5)	13	1	5 ft
SM-EX-304 (5)	1.2	1	5 ft
SM-EX-307 (5)	1.2	1	5 ft
SM-EX-308 (5)	12	1	5 ft
SM-EX-310 (5)	1.4	1	5 ft
SM-EX-311 (5)	7.8	1	5 ft
SM-EX-312 (5)	13	1	5 ft
SM-EX-313 (5)	25	1	5 ft

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	8/18/2014 7:53:54 PM
From File	PCE trmt area 3-11 ft ProUCL5 input-rvd_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PCE, All Final Data After Treatment

General Statistics

Total Number of Observations	44	Number of Distinct Observations	40
		Number of Missing Observations	0
Minimum	0.0018	Mean	3.515
Maximum	25	Median	0.7
SD	5.447	Std. Error of Mean	0.821
Coefficient of Variation	1.55	Skewness	2.078

Normal GOF Test

Shapiro Wilk Test Statistic	0.699	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.134	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	4.896	95% Adjusted-CLT UCL (Chen-1995)	5.141
		95% Modified-t UCL (Johnson-1978)	4.939

Gamma GOF Test

A-D Test Statistic	0.776	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.851	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.138	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.144	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.343	k star (bias corrected MLE)	0.335
Theta hat (MLE)	10.24	Theta star (bias corrected MLE)	10.49
nu hat (MLE)	30.22	nu star (bias corrected)	29.5
MLE Mean (bias corrected)	3.515	MLE Sd (bias corrected)	6.072
		Approximate Chi Square Value (0.05)	18.1
Adjusted Level of Significance	0.0445	Adjusted Chi Square Value	17.79

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	5.729	95% Adjusted Gamma UCL (use when n<50)	5.827

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.944	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.12	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.134	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-6.32	Mean of logged Data	-0.707
Maximum of Logged Data	3.219	SD of logged Data	2.598

Assuming Lognormal Distribution

95% H-UCL	87.85	90% Chebyshev (MVUE) UCL	30.26
95% Chebyshev (MVUE) UCL	39.04	97.5% Chebyshev (MVUE) UCL	51.22
99% Chebyshev (MVUE) UCL	75.16		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	4.866	95% Jackknife UCL	4.896
95% Standard Bootstrap UCL	4.813	95% Bootstrap-t UCL	5.282
95% Hall's Bootstrap UCL	5.299	95% Percentile Bootstrap UCL	4.904
95% BCA Bootstrap UCL	5.034		
90% Chebyshev(Mean, Sd) UCL	5.979	95% Chebyshev(Mean, Sd) UCL	7.095
97.5% Chebyshev(Mean, Sd) UCL	8.644	99% Chebyshev(Mean, Sd) UCL	11.69

Suggested UCL to Use

95% Adjusted Gamma UCL	**5.827**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Sample	PCE	D_PCE	Depth
SM-EX-202 (6.5)	0.03	1	6.5 ft
SM-EX-203 (7)	0.031	1	7 ft
SM-EX-204 (7)	0.079	1	7 ft
SM-EX-205 (7)	0.042	1	7 ft
SM-EX-206 (7)	0.21	1	7 ft
SM-EX-209 (7)	13	1	7 ft
SM-EX-210 (7)	0.57	1	7 ft
SM-EX-211 (7)	3	1	7 ft
SM-EX-220(7)	7.7	1	7 ft
SM-EX-221(7)	8	1	7 ft
SM-EX-301 (5)	5.1	1	5 ft
SM-EX-302 (5)	1.5	1	5 ft
SM-EX-303 (5)	13	1	5 ft
SM-EX-304 (5)	1.2	1	5 ft
SM-EX-307 (5)	1.2	1	5 ft
SM-EX-308 (5)	12	1	5 ft
SM-EX-310 (5)	1.4	1	5 ft
SM-EX-311 (5)	7.8	1	5 ft
SM-EX-312 (5)	13	1	5 ft
SM-EX-313 (5)	25	1	5 ft

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	8/18/2014 7:55:58 PM
From File	PCE trmt area 3-11 ft ProUCL5 input-rvd_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PCE, 5-7 ft interval in treatment area

General Statistics

Total Number of Observations	20	Number of Distinct Observations	17
		Number of Missing Observations	0
Minimum	0.03	Mean	5.693
Maximum	25	Median	2.25
SD	6.706	Std. Error of Mean	1.499
Coefficient of Variation	1.178	Skewness	1.411

Normal GOF Test

Shapiro Wilk Test Statistic	0.809	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.905	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.198	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	8.286	95% Adjusted-CLT UCL (Chen-1995)	8.665
		95% Modified-t UCL (Johnson-1978)	8.365

Gamma GOF Test

A-D Test Statistic	0.489	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.805	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.156	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.205	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.487	k star (bias corrected MLE)	0.447
Theta hat (MLE)	11.69	Theta star (bias corrected MLE)	12.73
nu hat (MLE)	19.48	nu star (bias corrected)	17.89
MLE Mean (bias corrected)	5.693	MLE Sd (bias corrected)	8.512
		Approximate Chi Square Value (0.05)	9.314
Adjusted Level of Significance	0.038	Adjusted Chi Square Value	8.826

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	10.94	95% Adjusted Gamma UCL (use when n<50)	11.54

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.885	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.167	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.198	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-3.507	Mean of logged Data	0.43
Maximum of Logged Data	3.219	SD of logged Data	2.214

Assuming Lognormal Distribution

95% H-UCL	193.2	90% Chebyshev (MVUE) UCL	36.36
95% Chebyshev (MVUE) UCL	47.02	97.5% Chebyshev (MVUE) UCL	61.82
99% Chebyshev (MVUE) UCL	90.88		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	8.159	95% Jackknife UCL	8.286
95% Standard Bootstrap UCL	8.051	95% Bootstrap-t UCL	9.116
95% Hall's Bootstrap UCL	9.121	95% Percentile Bootstrap UCL	8.107
95% BCA Bootstrap UCL	8.648		
90% Chebyshev(Mean, Sd) UCL	10.19	95% Chebyshev(Mean, Sd) UCL	12.23
97.5% Chebyshev(Mean, Sd) UCL	15.06	99% Chebyshev(Mean, Sd) UCL	20.61

Suggested UCL to Use

95% Adjusted Gamma UCL	11.54

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

APPENDIX D

TIER 2 DOCUMENTATION

Supporting Information for Tier 2 RO Determination
Romeoville – Spartan Square RBCA MODEL

COC chemical and physical properties
The COCs' chemical and physical properties that influence migration and exposure pathways are TACO default, unless otherwise stated.

Soil physical properties
Average of the TACO Default Values for Gravel.

Fraction Organic Carbon (f_{oc})
A site-specific value for organic carbon content (f_{oc}) of 0.81% for the native soil sample SM-GP-101 (10-12 ft) was used in the simulations.

Horizontal Gradient (i)
Site-specific data were obtained from field investigations. The gradient was determined by the groundwater elevation at the well subtracted from the groundwater elevation at a downgradient well, divided by the distance from one well to the other.

Hydraulic Conductivity (K)
A site-specific hydraulic conductivity test on well SM-MW-04 was performed. The resulting K value calculated is 1.786×10^{-4} cm/s.

Source Width - Horizontal (Sw)
To determine the source width (Sw) for each well or boring, the following guidelines and hierarchy were used as applicable:

1. For each REC, measure Sw for each boring and/or well modeled.
2. Use actual groundwater data points (wells) as available to define Sw
3. Use actual soil data as available to define Sw
4. Use simulations from up gradient sources to define Sw
5. Check calculated groundwater contours (width perpendicular to flow to define Sw)
6. Divide Sw into "cells" where soil borings or wells are near one another
7. The widest Sw for a group of compounds from a single boring or well will govern what is used.
8. If guiding groundwater or soil data is absent on one side of a well or boring, the distance measured on the opposite side will be mirrored to the other side to complete the source width (Sw).
9. Once an Sw has been determined, if actual downgradient data is available, the downgradient data will be used for a model calibration. In this case, Sw may be modified as part of model calibration.
10. As necessary, an Sw value is measured separately for organics and inorganics at each modeled boring or well.

Source Width - Parallel (W)
Set equal to Sw

Source Concentration (Csource)
The COC concentrations from soil / groundwater sampling were used as source concentrations in the simulations.

Compliance Point (X)
The compliance point for each respective simulation was measured from the well/boring to the property boundary in the direction of groundwater flow.

TABLE D.2 TIER 2 SOIL MODELING INPUT/OUTPUT SUMMARY

SOIL DATA-For Soil to Groundwater Route										
Boring Name:	SM-EX-201(8)	SM-EX-204(7)	SM-EX-206(7)	SM-EX-209(7)	SM-EX-210(9)	SM-EX-211(9)	SM-EX-214(9)	SM-EX-215(10)	SM-EX-220(7)	SM-EX-221(7)
Chemical Consitituant:	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)
Receptor	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry
Site-Specific Parameters										
Source length parallel to GW flow [feet]	8	7	27	6	8	6	9	5	4	4
Source width perpendicular to GW flow [feet]	8	7	27	6	8	6	9	5	4	4
Fractional Organic Carbon (FOC) [%]	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hydraulic Gradient	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
Hydraulic Conductivity - shallow [cm/s]	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04
Distance to Receptor [feet]	106	137	114	108	132	126	122	111	93	94
Constituant concentration [mg/kg]	4	0.079	0.21	13	0.83	3.6	4.3	0.37	7.7	8
TACO Plus! Results										
Calculated maximum allowable soil concentration (mg/kg) at borehole to meet Tier 1 groundwater RO at Receptor	13.4	43.1	2.37	24.1	29.5	41.7	10.7	37.1	31	31
Meets modeled Soil Migration to GW Class I RO? / Distance to Compliance?	Y, 72.1 ft	Y, <1 ft	Y, 47 ft	Y, 89.6 ft	Y, 37.5 ft	Y, 57.3 ft	Y, 86 ft	Y, 11.2 ft	Y, 57.6 ft	Y, 58.4 ft

Notes:
Soil Type = Gravel

How Sw cells were calculated for each:

SM-EX-201 = 1/2 distance between SM-EX-201 and SM-EX-215 and 1/2 distance between SM-EX-201 and SM-GP-107
SM-EX-204 = 1/2 distance between SM-EX-204 and SM-EX-210 and 1/2 distance between SM-EX-204 and SM-EX-205
SM-EX-206 = 1/2 distance between SM-EX-206 and SM-EX-211 and 1/2 distance between SM-EX-206 and SM-MW-03
SM-EX-209 = 1/2 distance between SM-EX-209 and SM-EX-210 and 1/2 distance between SM-EX-209 and SM-EX-215
SM-EX-210 = 1/2 distance between SM-EX-210 and SM-EX-203 and 1/2 distance between SM-EX-210 and SM-EX-204
SM-EX-211 = 1/2 distance between SM-EX-211 and SM-EX-204 and 1/2 distance between SM-EX-211 and SM-EX-206
SM-EX-214 = 1/2 distance between SM-EX-214 and SM-EX-205 and 1/2 distance between SM-EX-214 and SM-EX-202
SM-EX-215 = 1/2 distance between SM-EX-215 and SM-EX-202 and 1/2 distance between SM-EX-215 and SM-EX-201
SM-EX-220 = 1/2 distance between SM-EX-220 and SM-EX-206 and 1/2 distance between SM-EX-220 and SM-EX-221
SM-EX-221 = 1/2 distance between SM-EX-221 and SM-EX-212 and 1/2 distance between SM-EX-221 and SM-EX-220
SM-EX-301 = 1/2 distance between SM-EX-301 and SM-EX-311 and 1/2 distance between SM-EX-301 and SM-EX-217
SM-EX-302 = 1/2 distance between SM-EX-302 and SM-GP-106 and 1/2 distance between SM-EX-302 and SM-EX-217
SM-EX-303 = 1/2 distance between SM-EX-303 and SM-EX-302 and 1/2 distance between SM-EX-303 and SM-EX-304
SM-EX-304 = 1/2 distance between SM-EX-304 and SM-EX-302 and 1/2 distance between SM-EX-304 and SM-GP-117
SM-EX-307 = 1/2 distance between SM-EX-307 and SM-EX-219 and 1/2 distance between SM-EX-307 and SM-EX-212
SM-EX-308 = 1/2 distance between SM-EX-308 and SM-EX-312 and 1/2 distance between SM-EX-308 and SM-EX-212
SM-EX-310 = 1/2 distance between SM-EX-310 and SM-EX-206 and 1/2 distance between SM-EX-310 and SM-EX-216
SM-EX-311 = 1/2 distance between SM-EX-311 and SM-EX-301 and 1/2 distance between SM-EX-311 and SM-EX-213
SM-EX-312 = 1/2 distance between SM-EX-312 and SM-EX-208 and 1/2 distance between SM-EX-312 and SM-EX-308
SM-EX-313 = 1/2 distance between SM-EX-313 and SM-EX-219 and 1/2 distance between SM-EX-313 and SM-EX-301

SOIL DATA-For Soil to Groundwater Route

Boring Name:	SM-EX-301(5)	SM-EX-302(5)	SM-EX-303(5)	SM-EX-304(5)	SM-EX-307(5)	SM-EX-308(5)	SM-EX-310(5)	SM-EX-311(5)	SM-EX-312(5)	SM-EX-313(5)
Chemical Consitituant:	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)	tetrachloroethylene (PCE)
Receptor	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry	property bndry
Site-Specific Parameters										
Source length parallel to GW flow [feet]	6	18	4	4	6	7	4	5	6	4
Source width perpendicular to GW flow [feet]	6	18	4	4	6	7	4	5	6	4
Fractional Organic Carbon (FOC) [%]	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hydraulic Gradient	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
Hydraulic Conductivity - shallow [cm/s]	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04	1.79E-04
Distance to Receptor [feet]	100	88	78	68	77	97	118	100	91	80
Constituant concentration [mg/kg]	5.1	1.5	13	1.2	1.2	12	1.4	7.8	13	25
TACO Plus! Results										
Calculated maximum allowable soil concentration (mg/kg) at borehole to meet Tier 1 groundwater RO at Receptor	18.6	1.86	17.9	12	8.15	12.7	69.8	26	13.6	19.3
Meets modeled Soil Migration to GW Class I RO? / Distance to Compliance?	Y, 65.4 ft	Y, 82 ft	Y, 69.9 ft	Y, 21.9 ft	Y, 34.8 ft	Y, 95.4 ft	Y, 24.4 ft	Y, 67.6 ft	Y, 89.7 ft	**N, 86.9 ft**

Notes:
Soil Type = Gravel

How Sw cells were calculated for each:
SM-EX-201 = 1/2 distance between SM-EX-201
SM-EX-204 = 1/2 distance between SM-EX-204
SM-EX-206 = 1/2 distance between SM-EX-206
SM-EX-209 = 1/2 distance between SM-EX-209
SM-EX-210 = 1/2 distance between SM-EX-210
SM-EX-211 = 1/2 distance between SM-EX-211
SM-EX-214 = 1/2 distance between SM-EX-214
SM-EX-215 = 1/2 distance between SM-EX-215
SM-EX-220 = 1/2 distance between SM-EX-220
SM-EX-221 = 1/2 distance between SM-EX-221
SM-EX-301 = 1/2 distance between SM-EX-301
SM-EX-302 = 1/2 distance between SM-EX-302
SM-EX-303 = 1/2 distance between SM-EX-303
SM-EX-304 = 1/2 distance between SM-EX-304
SM-EX-307 = 1/2 distance between SM-EX-307
SM-EX-308 = 1/2 distance between SM-EX-308
SM-EX-310 = 1/2 distance between SM-EX-310
SM-EX-311 = 1/2 distance between SM-EX-311
SM-EX-312 = 1/2 distance between SM-EX-312
SM-EX-313 = 1/2 distance between SM-EX-313

LEGEND

▲ Soil Sample

Soil Modeling Simulation

Approximate Groundwater Flow Direction

1"=50'

50 0 50 100

SCALE FEET

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DATE: 08/28/14	CHECKED BY: CAM
SCALE: 1"=50'	PROJECT MANAGER: CAM

TIER 2 SIMULATION MAP

SPARTANS' SQUARE

ROMEOVILLE ILLINOIS

DRAWING NO. D

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RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-201(8)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.347E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	5.485E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	4.072E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	9.116E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	323
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	108
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	16.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.485E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33 lbs	
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	7.76E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-201(8)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	244	2.4	m	8	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.63E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,230.7	32.3	m	106	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	21.84					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	7.28					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.09					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	243.8	2.4	m	8	ft	
S(w) Beta for error function					0.103					
S(d) Beta for error function					0.438					
erf(S(w) Beta) value, Appendix C, Table G:					0.1161973					
erf(S(d) Beta) value, Appendix C, Table G:					0.4641209					
For Sgw calc's:										
Csoil (at source)	4	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.63E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-204(7)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							4.315E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	1.579E+00
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.660E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	3.166E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	418
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	139
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	20.9
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	9.154E-06

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33 lbs	
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	6.79E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-204(7)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	213	2.1	m	7	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	2.89E-03					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	4,175.6	41.8	m	137	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	28.22					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	9.41					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.41					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	213.3	2.1	m	7	ft	
S(w) Beta for error function					0.070					
S(d) Beta for error function					0.339					
erf(S(w) Beta) value, Appendix C, Table G:					0.0788179					
erf(S(d) Beta) value, Appendix C, Table G:					0.3680458					
For Sgw calc's:										
Csoil (at source)	0.079	mg/kg								
Cgw (at source) = Csoil*LF(sw)	2.89E-03	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-206(7)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							2.365E+00
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	2.159E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	9.127E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	2.316E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	347
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	116
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	17.4
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.440E-04

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	2.62E-06		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-206(7)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	823	8.2	m	27	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.92E-02					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,474.6	34.7	m	114	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	23.48					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	7.83					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.17					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	822.9	8.2	m	27	ft	
S(w) Beta for error function					0.324					
S(d) Beta for error function					0.407					
erf(S(w) Beta) value, Appendix C, Table G:					0.3535093					
erf(S(d) Beta) value, Appendix C, Table G:					0.4351239					
For Sgw calc's:										
Csoil (at source)	0.21	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.92E-02	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-209(7)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							2.414E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	7.786E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.226E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	6.422E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	329
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	110
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	16.5
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	2.693E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	5.82E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-209(7)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	183	1.8	m	6	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	4.19E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,291.7	32.9	m	108	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	22.25					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	7.42					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.11					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	182.9	1.8	m	6	ft	
S(w) Beta for error function					0.076					
S(d) Beta for error function					0.430					
erf(S(w) Beta) value, Appendix C, Table G:					0.0856734					
erf(S(d) Beta) value, Appendix C, Table G:					0.4565423					
For Sgw calc's:										
Csoil (at source)	13	mg/kg								
Cgw (at source) = Csoil*LF(sw)	4.19E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-210(9)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							2.952E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	1.202E+00
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	4.072E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	4.160E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	402
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	134
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	20.1
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.406E-04

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	7.76E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-210(9)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	244	2.4	m	8	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	3.38E-02					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	4,023.2	40.2	m	132	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	27.19					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	9.06					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.36					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	243.8	2.4	m	8	ft	
S(w) Beta for error function					0.083					
S(d) Beta for error function					0.352					
erf(S(w) Beta) value, Appendix C, Table G:					0.0934277					
erf(S(d) Beta) value, Appendix C, Table G:					0.3808964					
For Sgw calc's:										
Csoil (at source)	0.83	mg/kg								
Cgw (at source) = Csoil*LF(sw)	3.38E-02	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-211(9)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							4.177E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	1.347E+00
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.226E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	3.711E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	384
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	128
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	19.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.309E-04

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	5.82E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-211(9)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	183	1.8	m	6	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.16E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,840.3	38.4	m	126	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	25.96					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	8.65					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.30					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	182.9	1.8	m	6	ft	
S(w) Beta for error function					0.065					
S(d) Beta for error function					0.368					
erf(S(w) Beta) value, Appendix C, Table G:					0.0734719					
erf(S(d) Beta) value, Appendix C, Table G:					0.3974895					
For Sgw calc's:										
Csoil (at source)	3.6	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.16E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-214(9)	Chemical	Trichloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.076E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	2.729E+00
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.536E-01
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.777E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	372
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	124
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	18.6
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	0.81
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							4.850E-02
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.938E-02

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.0059	Trichloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.007	Trichloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	1.29E-06		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	NA	Trichloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	2.86E-03	Trichloroethylene	

Calculations		Sample	SM-EX-214(9)	Chemical	Trichloroethylene				
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	274	2.7	m	9	ft
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225				
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200				
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	4.10E-01	Trichloroethylene			
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08				
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14				
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.90E-02	Trichloroethylene			
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	9.10E-06	Trichloroethylene			
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default			
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100				
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO			
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	4.85E-02				
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.09E+00				
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,718.4	37.2	m	122	ft
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec
Hydraulic gradient (cm/cm):				*i*	0.0240				
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr		
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	25.13				
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	8.38				
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.26				
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30				
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200				
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00042	Trichloroethylene			
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel			
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel			
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	100	Trichloroethylene			
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081				
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100				
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel			
Water Density (g/cm3):				*p(w)*	1.00				
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default	
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	274.3	2.7	m	9	ft
S(w) Beta for error function					0.101				
S(d) Beta for error function					0.380				
erf(S(w) Beta) value, Appendix C, Table G:					0.113596				
erf(S(d) Beta) value, Appendix C, Table G:					0.4093324				
For Sgw calc's:									
Csoil (at source)	4.3	mg/kg							
Cgw (at source) = Csoil*LF(sw)	1.09E+00	mg/L							
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1380.38				
Solubility in Water [mg/L]				*S*	1.50E+03	Trichloroethylene			

Calculations		Sample	SM-EX-215(10)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							3.712E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	1.027E+00
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.766E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	4.870E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	338
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	113
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	16.9
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.984E-05

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	4.85E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-215(10)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	152	1.5	m	5	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.02E-02					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,383.1	33.8	m	111	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	22.87					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	7.62					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.14					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	152.4	1.5	m	5	ft	
S(w) Beta for error function					0.062					
S(d) Beta for error function					0.418					
erf(S(w) Beta) value, Appendix C, Table G:					0.0695108					
erf(S(d) Beta) value, Appendix C, Table G:					0.4455943					
For Sgw calc's:										
Csoil (at source)	0.37	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.02E-02	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-220(7)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							3.106E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	7.078E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.279E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	7.065E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	283
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	94
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	14.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.240E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	3.88E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-220(7)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	122	1.2	m	4	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.75E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,834.5	28.3	m	93	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	19.16					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	6.39					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.96					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	121.9	1.2	m	4	ft	
S(w) Beta for error function					0.059					
S(d) Beta for error function					0.499					
erf(S(w) Beta) value, Appendix C, Table G:					0.066379					
erf(S(d) Beta) value, Appendix C, Table G:					0.5195577					
For Sgw calc's:										
Csoil (at source)	7.7	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.75E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-221(7)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							3.106E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	7.078E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.279E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	7.065E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	283
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	94
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	14.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.288E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33 lbs	
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	3.88E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-221(7)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	122	1.2	m	4	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.82E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,834.5	28.3	m	93	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	19.16					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	6.39					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.96					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	121.9	1.2	m	4	ft	
S(w) Beta for error function					0.059					
S(d) Beta for error function					0.499					
erf(S(w) Beta) value, Appendix C, Table G:					0.066379					
erf(S(d) Beta) value, Appendix C, Table G:					0.5195577					
For Sgw calc's:										
Csoil (at source)	8	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.82E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-301(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.859E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	5.997E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.226E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	8.337E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	305
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	102
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	15.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.372E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendix C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	5.82E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-301(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	183	1.8	m	6	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.65E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,047.9	30.5	m	100	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	20.60					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	6.87					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.03					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	182.9	1.8	m	6	ft	
S(w) Beta for error function					0.082					
S(d) Beta for error function					0.464					
erf(S(w) Beta) value, Appendix C, Table G:					0.0924976					
erf(S(d) Beta) value, Appendix C, Table G:					0.4883046					
For Sgw calc's:										
Csoil (at source)	5.1	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.65E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-302(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.867E+00
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	1.351E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	7.236E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	3.702E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	268
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	89
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	13.4
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.018E-03

Assumptions:			
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06	
Adult Body Weight (kg); Appendix C, Table D:	*BW*	70.00	154.33 lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70	
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0	
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160	
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5	
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20	
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	1.75E-06	
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0	
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene

Calculations		Sample	SM-EX-302(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	549	5.5	m	18	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	1.09E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,682.1	26.8	m	88	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	18.13					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	6.04					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.91					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	548.6	5.5	m	18	ft	
S(w) Beta for error function					0.280					
S(d) Beta for error function					0.527					
erf(S(w) Beta) value, Appendix C, Table G:					0.3079692					
erf(S(d) Beta) value, Appendix C, Table G:					0.5441404					
For Sgw calc's:										
Csoil (at source)	1.5	mg/kg								
Cgw (at source) = Csoil*LF(sw)	1.09E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-303(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.796E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	4.092E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.279E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.222E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	238
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	79
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	11.9
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	3.620E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	3.88E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-303(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	122	1.2	m	4	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	2.96E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,377.3	23.8	m	78	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	16.07					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	5.36					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.80					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	121.9	1.2	m	4	ft	
S(w) Beta for error function					0.070					
S(d) Beta for error function					0.595					
erf(S(w) Beta) value, Appendix C, Table G:					0.0791057					
erf(S(d) Beta) value, Appendix C, Table G:					0.5998101					
For Sgw calc's:										
Csoil (at source)	13	mg/kg								
Cgw (at source) = Csoil*LF(sw)	2.96E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-304(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.206E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	2.749E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.279E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.819E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	207
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	69
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	10.4
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.974E-04

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	3.88E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-304(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	122	1.2	m	4	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	2.73E-02					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,072.5	20.7	m	68	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	14.01					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	4.67					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.70					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	121.9	1.2	m	4	ft	
S(w) Beta for error function					0.081					
S(d) Beta for error function					0.682					
erf(S(w) Beta) value, Appendix C, Table G:					0.0906919					
erf(S(d) Beta) value, Appendix C, Table G:					0.6654552					
For Sgw calc's:										
Csoil (at source)	1.2	mg/kg								
Cgw (at source) = Csoil*LF(sw)	2.73E-02	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-307(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							8.154E+00
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	2.630E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.226E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.901E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	235
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	78
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	11.7
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	7.358E-04

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	5.82E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-307(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	183	1.8	m	6	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	3.87E-02					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,346.8	23.5	m	77	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	15.86					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	5.29					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.79					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	182.9	1.8	m	6	ft	
S(w) Beta for error function					0.107					
S(d) Beta for error function					0.603					
erf(S(w) Beta) value, Appendix C, Table G:					0.1199418					
erf(S(d) Beta) value, Appendix C, Table G:					0.6059012					
For Sgw calc's:										
Csoil (at source)	1.2	mg/kg								
Cgw (at source) = Csoil*LF(sw)	3.87E-02	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-308(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.271E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	4.651E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.660E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.075E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	296
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	99
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	14.8
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.722E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	6.79E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-308(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	213	2.1	m	7	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	4.39E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,956.4	29.6	m	97	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	19.98					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	6.66					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.00					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	213.3	2.1	m	7	ft	
S(w) Beta for error function					0.099					
S(d) Beta for error function					0.478					
erf(S(w) Beta) value, Appendix C, Table G:					0.11114					
erf(S(d) Beta) value, Appendix C, Table G:					0.5012735					
For Sgw calc's:										
Csoil (at source)	12	mg/kg								
Cgw (at source) = Csoil*LF(sw)	4.39E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-310(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							6.987E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	1.592E+00
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.279E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	3.140E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	360
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	120
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	18.0
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.002E-04

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendix C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	3.88E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-310(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	122	1.2	m	4	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	3.19E-02					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	3,596.5	36.0	m	118	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	24.31					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	8.10					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	1.22					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	121.9	1.2	m	4	ft	
S(w) Beta for error function					0.046					
S(d) Beta for error function					0.393					
erf(S(w) Beta) value, Appendix C, Table G:					0.0523386					
erf(S(d) Beta) value, Appendix C, Table G:					0.4218587					
For Sgw calc's:										
Csoil (at source)	1.4	mg/kg								
Cgw (at source) = Csoil*LF(sw)	3.19E-02	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-311(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							2.600E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	7.192E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.766E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	6.952E-03
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	305
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	102
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	15.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	1.500E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	4.85E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations	Sample	SM-EX-311(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):			*W*	152	1.5	m	5	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:			*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:			*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:			*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:			*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:			*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:			*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:			*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:			*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:			*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:			*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)			*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):			C(*source*)	2.16E-01					
Distance along centerline of plume in direction of groundwater flow (cm):			*X*	3,047.9	30.5	m	100	ft	
Aquifer hydraulic conductivity (cm/d):			*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):			*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):			*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):			*D(x)*	20.60					
Horizontal Dispersion of Solute in Aquifer (m2/yr):			*D(y)*	6.87					
Vertical Dispersion of Solute in Aquifer (m2/yr):			*D(z)*	1.03					
Infiltration Rate (cm/yr); Appendix C, Table D:			*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:			*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:			*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):			*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:			*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:			*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:			*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:			*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:			*p(s)*	2.00	gravel				
Water Density (g/cm3):			*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):			*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):			*S(w)*	152.4	1.5	m	5	ft	
S(w) Beta for error function				0.068					
S(d) Beta for error function				0.464					
erf(S(w) Beta) value, Appendix C, Table G:				0.0771343					
erf(S(d) Beta) value, Appendix C, Table G:				0.4883046					
For Sgw calc's:									
Csoil (at source)	7.8	mg/kg							
Cgw (at source) = Csoil*LF(sw)	2.16E-01	mg/L							
Equation for Derivation of the Soil Saturation Limit [mg/kg]		Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]			*S*	2.00E+02	Tetrachloroethylene				

Calculations		Sample	SM-EX-312(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.366E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	4.406E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	3.226E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.135E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	277
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	92
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	13.9
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	4.759E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	5.82E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-312(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	183	1.8	m	6	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particlulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	4.19E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,773.5	27.7	m	91	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	18.75					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	6.25					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.94					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	182.9	1.8	m	6	ft	
S(w) Beta for error function					0.090					
S(d) Beta for error function					0.510					
erf(S(w) Beta) value, Appendix C, Table G:					0.1015984					
erf(S(d) Beta) value, Appendix C, Table G:					0.5291513					
For Sgw calc's:										
Csoil (at source)	13	mg/kg								
Cgw (at source) = Csoil*LF(sw)	4.19E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

RBCA Equations
Industrial-Commercial - soil migration to groundwater ingestion route

Calculations		Sample	SM-EX-313(5)	Chemical	Tetrachloroethylene				
Equations for the migration	**Eq. R12**	Remediation Objective (mg/kg):							1.938E+01
to Groundwater Portion	**Eq. R13**	Groundwater at the Source (mg/l):						*GW(source)*	4.416E-01
of the Groundwater	**Eq. R14**	Leaching Factor (mg/l(water))/mg/kg(soil)):						*LF(sw)*	2.279E-02
Ingestion Exposure	**Eq. R15**	Steady-State Attenuation along Centerline of Dissolved Plume:						*C(x)/C(source)*	1.132E-02
Route.	**Eq. R16**	Longitudinal Dispersivity (cm):						*alpha(x)*	244
	Eq. R17	Transverse Dispersivity (cm):						*alpha(y)*	81
	Eq. R18	Vertical Dispersivity (cm):						*alpha(z)*	12.2
	Eq. R19	Specific Discharge (cm/d):						*U*	1.48
	Eq. R20	Soil-Water Sorption Coefficient:						*k(s)*	5.11
	Eq. R21	Volumetric Air Content in Vadose Zone Soils (cm3(air))/cm3(soil)):						*theta(as)*	0.050
	Eq. R22	Volumetric Water Content in Vadose Zone Soils (cm3(water))/cm3(soil)):						*theta(ws)*	0.200
	Eq. R23	Total Soil Porosity (cm3/cm3(soil)):						*theta(T)*	0.250
	Eq. R24	Groundwater Darcy Velocity (cm/yr):						*U(gw)*	135.2
Equations for the Groundwater		Remediation Objective for Contaminants (mg/l):							5.000E-03
Ingestion Exposure Route.	**Eq. R26**	Dissolved hydrocarbon concentration along centerline (mg/l):						*C(x)*	6.450E-03

Assumptions:				
Target Cancer Risk; Appendix C, Table D:	*TR*	1.00E-06		
Adult Body Weight (kg); Appendic C, Table D:	*BW*	70.00	154.33	lbs
Averaging Time for Carcinogens (yr); Appendix C, Table D:	*AT(c)*	70		
Exposure Frequency (d/yr), Appendix C, Table D:	*EF*	250	for industrial/commercial	
Exposure Duration (yr); Appendix C, Table D:	*ED*	25	for industrial/commercial	
Oral Slope Factor [1/(mg/kg-d)]:	*SF(o)*	0.54	Tetrachloroethylene	
Soil Ingestion Rate (mg/d); Appendic C; Table D:	*IR(soil)*	50	for industrial/commercial	
Oral Relative Absorption Factor; Appendix C; Table D	*RAF(o)*	1.0		
Skin Surface Area (cm2/d); Appendix C, Table D:	*SA*	3,160		
Soil to Skin Adherance Factor (mg/cm2); Appendix C, Table D:	*M*	0.5		
Dermal Relative Absorption Factor; Appendix C, Table D:	*RAF(d)*	0.5	based on chemical group	
Inhalation Cancer Slope Factor [1/(mg/kg-d)]:	*SF(i)*	0.02065	Tetrachloroethylene	
Daily Outdoor Inhalation Rate (m3/day); Appendix C, Table D:	*IR(air)*	20		
Daily Water Ingestion Rate (L/day); Appendix C, Table D:	*IR(w)*	1	for industrial/commercial	
Vol. Factor for Surficial Soils (kg/m3); use lesser value of R03 or R04:	*VF(ss)*	3.88E-07		
Target Hazard Quotient; Appendix C; Table D:	*THQ*	1.0		
Averaging Time for Noncarcinogens (yr); Appendix C, Table D:	*AT(n)*	25	for industrial/commercial	
Oral Reference Dose (mg/kg-d):	*RfD(o)*	1.00E-02	Tetrachloroethylene	
Inhalation Reference Dose (mg/kg-d):	*RfD(i)*	7.71E-02	Tetrachloroethylene	

Calculations		Sample	SM-EX-313(5)	Chemical	Tetrachloroethylene					
Width of Source Area Parallel to Groundwater Flow (cm):				*W*	122	1.2	m	4	ft	
Average Wind Speed Above Ground Surface (cm/s); Appendix C, Table D:				*U(air)*	225					
Ambient Air Mixing Zone Height (cm); Appendix C, Table D:				*&(air)*	200					
Henry's Law Constant [cm3(water)/cm3(air)]; Appendix C, Table E:				*H'*	7.38E-01	Tetrachloroethylene				
Averaging Time for Vapor Flux (s); Appendix C, Table D:				*tau*	9.46E+08					
Particulate Emission Rate (g/cm2-s); Appendic C; Table D:				*P(e)*	6.90E-14					
Diffusion Coeficient in Air (cm2/s); Appendix C; Table E:				*D(air)*	7.20E-02	Tetrachloroethylene				
Diffusion Coeficient in Water (cm2/s); Appendix C; Table E:				*D(water)*	8.20E-06	Tetrachloroethylene				
Lower Depth of Surficial Soil Zone (cm); Appendix C, Table D:				*d*	100	default				
Depth to Subsurface Soil Sources (cm); Appendix C, Table D:				*L(s)*	100					
Groundwater Obj. at the Compliance Point (mg/l); Appendix B, Table E:				*GW(comp)*	0.0050	Tier 1 Class I RO				
Groundwater Obj. at the Compliance Point (mg/l); **Eq. R25**: (Carcinogenic)				*GW(comp)*	5.30E-04					
Concentration of contaminant in groundwater at source (mg/l):				C(*source*)	5.70E-01					
Distance along centerline of plume in direction of groundwater flow (cm):				*X*	2,438.3	24.4	m	80	ft	
Aquifer hydraulic conductivity (cm/d):				*K*	15.43	56	m/yr	1.786E-04	cm/sec	
Hydraulic gradient (cm/cm):				*i*	0.0240					
Aquifer Longitudinal Seepage Velocity (m/yr):				*V(x)*	6.76	22.18	ft/yr			
Longitudinal Dispersion of Solute in Aquifer (m2/yr):				*D(x)*	16.48					
Horizontal Dispersion of Solute in Aquifer (m2/yr):				*D(y)*	5.49					
Vertical Dispersion of Solute in Aquifer (m2/yr):				*D(z)*	0.82					
Infiltration Rate (cm/yr); Appendix C, Table D:				*I*	30					
Groundwater Mixing Zone Thickness (cm); Appendix C, Table D:				*&(gw)*	200					
First Order Degradation Constant (1/day); Appendix C, Table E:				*lambda*	0.00096	Tetrachloroethylene				
Volumetric Water Content in Vadose Zone Soils (cm3(water)/cm3(soil)):				*theta(ws)*	0.20000	gravel				
Total Soil Porosity [cm3/cm3(soil)]:				*theta(T)*	0.250	gravel				
Org. Carbon Partition Coef. (cm3/g or L/kg); Appendix C, Tables E or I:				*K(oc)*	631	Tetrachloroethylene				
Org. Carbon Content of Soil (g/g); Appendix C, Table F:				*f(oc)*	0.0081					
Average Soil Moisture Content (g(water)/g(soil)); Appendix C, Table F:				*w*	0.100					
Soil Bulk Density (g/cm3); Appendix C, Table F:				*p(s)*	2.00	gravel				
Water Density (g/cm3):				*p(w)*	1.00					
Source Width Perpendicular to Groundwater Flow in Vertical Plane (cm):				*S(d)*	200.0	2.0	m	default		
Source Width Perpendicular to Groundwater Flow in Horizontal Plane (cm):				*S(w)*	121.9	1.2	m	4	ft	
S(w) Beta for error function					0.068					
S(d) Beta for error function					0.580					
erf(S(w) Beta) value, Appendix C, Table G:					0.0771343					
erf(S(d) Beta) value, Appendix C, Table G:					0.5879264					
For Sgw calc's:										
Csoil (at source)	25	mg/kg								
Cgw (at source) = Csoil*LF(sw)	5.70E-01	mg/L								
Equation for Derivation of the Soil Saturation Limit [mg/kg]			Eq. S29	*Csat*	1045.91					
Solubility in Water [mg/L]				*S*	2.00E+02	Tetrachloroethylene				

APPENDIX E

IMPORT SOILS

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001;AIHA 101160; NVLAP LabCode 101202-

July 02, 2013

V3 Companies of Illinois
7325 Janes Avenue
Woodridge, IL 60517
Telephone: (312) 924-3545
Fax: (630) 724-9202

RE: 07292CU2011.HAZ, Spartan's Square STAT Project No 13060472

Dear Craig McCammack:

STAT Analysis received 12 samples for the referenced project on 6/13/2013 3:31:00 PM. The analytical results are presented in the following report.

This report is revised to reflect additional analysis requested after the initial report was issued.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAC standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Craig Chawla
Project Manager

Client: V3 Companies of Illinois
Project: 07292CU2011.HAZ, Spartan's Square
Lab Order: 13060472

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
13060472-001A	SS-EX-01 (2')		6/13/2013 9:46:00 AM	6/13/2013
13060472-001B	SS-EX-01 (2')		6/13/2013 9:46:00 AM	6/13/2013
13060472-002A	SS-EX-02 (4')		6/13/2013 10:06:00 AM	6/13/2013
13060472-002B	SS-EX-02 (4')		6/13/2013 10:06:00 AM	6/13/2013
13060472-003A	SS-EX-03 (6')		6/13/2013 10:33:00 AM	6/13/2013
13060472-003B	SS-EX-03 (6')		6/13/2013 10:33:00 AM	6/13/2013
13060472-004A	SS-EX-04 (8')		6/13/2013 10:50:00 AM	6/13/2013
13060472-004B	SS-EX-04 (8')		6/13/2013 10:50:00 AM	6/13/2013
13060472-005A	SS-EX-05 (8')		6/13/2013 9:35:00 AM	6/13/2013
13060472-005B	SS-EX-05 (8')		6/13/2013 9:35:00 AM	6/13/2013
13060472-006A	SS-EX-06 (2')		6/13/2013 9:13:00 AM	6/13/2013
13060472-006B	SS-EX-06 (2')		6/13/2013 9:13:00 AM	6/13/2013
13060472-007A	SS-EX-07 (4')		6/13/2013 8:57:00 AM	6/13/2013
13060472-007B	SS-EX-07 (4')		6/13/2013 8:57:00 AM	6/13/2013
13060472-008A	SS-EX-08 (6')		6/13/2013 8:45:00 AM	6/13/2013
13060472-008B	SS-EX-08 (6')		6/13/2013 8:45:00 AM	6/13/2013
13060472-009A	SS-EX-09 (6')		6/13/2013 7:43:00 AM	6/13/2013
13060472-009B	SS-EX-09 (6')		6/13/2013 7:43:00 AM	6/13/2013
13060472-010A	SS-EX-10 (8')		6/13/2013 7:58:00 AM	6/13/2013
13060472-010B	SS-EX-10 (8')		6/13/2013 7:58:00 AM	6/13/2013
13060472-011A	SS-EX-11 (2')		6/13/2013 8:18:00 AM	6/13/2013
13060472-011B	SS-EX-11 (2')		6/13/2013 8:18:00 AM	6/13/2013
13060472-012A	SS-EX-12 (4')		6/13/2013 8:31:00 AM	6/13/2013
13060472-012B	SS-EX-12 (4')		6/13/2013 8:31:00 AM	6/13/2013

STAT Analysis Corporation

Date: *July 02, 2013*

CLIENT:	V3 Companies of Illinois
Project:	07292CU2011.HAZ, Spartan's Square
Lab Order:	13060472

CASE NARRATIVE

The VOC soil Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) analyzed 06/18/2013 had recovery of Bromomethane outside of control limits (62%/64% (LCS/LCSD) recovery, QC limits 70-130%).

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-001

Client Sample ID: SS-EX-01 (2')
Collection Date: 6/13/2013 9:46:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.088		mg/Kg-dry	1	6/18/2013
Pesticides	**SW8081 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0018		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.018		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0018		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.036		mg/Kg-dry	1	6/18/2013
Mercury	**SW7471A**			Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	0.028	0.021		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	8600	210		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.1		mg/Kg-dry	10	6/19/2013
Arsenic	14	1		mg/Kg-dry	10	6/19/2013
Barium	32	1		mg/Kg-dry	10	6/19/2013

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-001

Client Sample ID: SS-EX-01 (2')
Collection Date: 6/13/2013 9:46:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	ND	0.51		mg/Kg-dry	10	6/19/2013
Cadmium	ND	0.51		mg/Kg-dry	10	6/19/2013
Chromium	11	1		mg/Kg-dry	10	6/19/2013
Cobalt	7.8	1		mg/Kg-dry	10	6/19/2013
Copper	18	2.6		mg/Kg-dry	10	6/19/2013
Iron	44000	310		mg/Kg-dry	100	6/19/2013
Lead	19	0.51		mg/Kg-dry	10	6/19/2013
Manganese	390	1		mg/Kg-dry	10	6/19/2013
Nickel	21	1		mg/Kg-dry	10	6/19/2013
Selenium	ND	1		mg/Kg-dry	10	6/19/2013
Silver	ND	1		mg/Kg-dry	10	6/19/2013
Thallium	ND	1		mg/Kg-dry	10	6/19/2013
Vanadium	18	1		mg/Kg-dry	10	6/19/2013
Zinc	64	5.1		mg/Kg-dry	10	6/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.037		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.37		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.37		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	0.93		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	0.93		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.37		mg/Kg-dry	1	6/19/2013
2-Chloronaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-001

Client Sample ID: SS-EX-01 (2')
Collection Date: 6/13/2013 9:46:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Chrysene	ND	0.037		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.037		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.19		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.37		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	0.93		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.037		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.037		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.037		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.19		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.037		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.37		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.037		mg/Kg-dry	1	6/19/2013
N-Nitrosodi-n-propylamine	ND	0.037		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.19		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.037		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-001

Client Sample ID: SS-EX-01 (2')
Collection Date: 6/13/2013 9:46:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2, 2'-oxybis(1-Chloropropane)	ND	0.19		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.075		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.75		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.066		mg/Kg-dry	1	6/18/2013
Benzene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Bromodichloromethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
Bromoform	ND	0.0044		mg/Kg-dry	1	6/18/2013
Bromomethane	ND	0.0089		mg/Kg-dry	1	6/18/2013
2-Butanone	ND	0.066		mg/Kg-dry	1	6/18/2013
Carbon disulfide	ND	0.044		mg/Kg-dry	1	6/18/2013
Carbon tetrachloride	ND	0.0044		mg/Kg-dry	1	6/18/2013
Chlorobenzene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Chloroethane	ND	0.0089		mg/Kg-dry	1	6/18/2013
Chloroform	ND	0.0044		mg/Kg-dry	1	6/18/2013
Chloromethane	ND	0.0089		mg/Kg-dry	1	6/18/2013
Dibromochloromethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1-Dichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,2-Dichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1-Dichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
cis-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
trans-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,2-Dichloropropane	ND	0.0044		mg/Kg-dry	1	6/18/2013
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	6/18/2013
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	6/18/2013
Ethylbenzene	ND	0.0044		mg/Kg-dry	1	6/18/2013
2-Hexanone	ND	0.018		mg/Kg-dry	1	6/18/2013
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	6/18/2013
Methylene chloride	ND	0.0089		mg/Kg-dry	1	6/18/2013
Methyl tert-butyl ether	ND	0.0044		mg/Kg-dry	1	6/18/2013
Styrene	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1,2,2-Tetrachloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013

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Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-001

Client Sample ID: SS-EX-01 (2')
Collection Date: 6/13/2013 9:46:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Tetrachloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Toluene	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1,1-Trichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1,2-Trichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
Trichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Vinyl chloride	ND	0.0044		mg/Kg-dry	1	6/18/2013
Xylenes, Total	ND	0.014		mg/Kg-dry	1	6/18/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/18/2013**		Analyst: **YZ**
Cyanide	ND	0.28		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	8.1			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	11.2	0.2	*	wt%	1	6/19/2013

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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-002

Client Sample ID: SS-EX-02 (4')
Collection Date: 6/13/2013 10:06:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.088		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.088		mg/Kg-dry	1	6/18/2013
Pesticides	**SW8081 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0018		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.018		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0018		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.036		mg/Kg-dry	1	6/18/2013
Mercury	**SW7471A**			Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	ND	0.02		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	6300	210		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.1		mg/Kg-dry	10	6/19/2013
Arsenic	5.9	1.1		mg/Kg-dry	10	6/19/2013
Barium	39	1.1		mg/Kg-dry	10	6/19/2013

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Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-002

Client Sample ID: SS-EX-02 (4')
Collection Date: 6/13/2013 10:06:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	ND	0.53		mg/Kg-dry	10	6/19/2013
Cadmium	ND	0.53		mg/Kg-dry	10	6/19/2013
Chromium	12	1.1		mg/Kg-dry	10	6/19/2013
Cobalt	6.4	1.1		mg/Kg-dry	10	6/19/2013
Copper	19	2.7		mg/Kg-dry	10	6/19/2013
Iron	28000	320		mg/Kg-dry	100	6/19/2013
Lead	100	0.53		mg/Kg-dry	10	6/19/2013
Manganese	380	1.1		mg/Kg-dry	10	6/19/2013
Nickel	20	1.1		mg/Kg-dry	10	6/19/2013
Selenium	ND	1.1		mg/Kg-dry	10	6/19/2013
Silver	ND	1.1		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.1		mg/Kg-dry	10	6/19/2013
Vanadium	17	1.1		mg/Kg-dry	10	6/19/2013
Zinc	67	5.3		mg/Kg-dry	10	6/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.036		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.036		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.36		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.036		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.036		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.36		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.036		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.036		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.036		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.036		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	0.91		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	0.91		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.36		mg/Kg-dry	1	6/19/2013
2-Chloronaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013

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Lab ID: 13060472-002

Client Sample ID: SS-EX-02 (4')
Collection Date: 6/13/2013 10:06:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Chrysene	ND	0.036		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.036		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.19		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.36		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	0.91		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.036		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.036		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.036		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.036		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.19		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.036		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.036		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.36		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.036		mg/Kg-dry	1	6/19/2013
N-Nitrosodi-n-propylamine	ND	0.036		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.19		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.036		mg/Kg-dry	1	6/19/2013

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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-002

Client Sample ID: SS-EX-02 (4')
Collection Date: 6/13/2013 10:06:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2, 2'-oxybis(1-Chloropropane)	ND	0.19		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.073		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.036		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.036		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.73		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.066		mg/Kg-dry	1	6/18/2013
Benzene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Bromodichloromethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
Bromoform	ND	0.0044		mg/Kg-dry	1	6/18/2013
Bromomethane	ND	0.0088		mg/Kg-dry	1	6/18/2013
2-Butanone	ND	0.066		mg/Kg-dry	1	6/18/2013
Carbon disulfide	ND	0.044		mg/Kg-dry	1	6/18/2013
Carbon tetrachloride	ND	0.0044		mg/Kg-dry	1	6/18/2013
Chlorobenzene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Chloroethane	ND	0.0088		mg/Kg-dry	1	6/18/2013
Chloroform	ND	0.0044		mg/Kg-dry	1	6/18/2013
Chloromethane	ND	0.0088		mg/Kg-dry	1	6/18/2013
Dibromochloromethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1-Dichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,2-Dichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1-Dichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
cis-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
trans-1,2-Dichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,2-Dichloropropane	ND	0.0044		mg/Kg-dry	1	6/18/2013
cis-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	6/18/2013
trans-1,3-Dichloropropene	ND	0.0018		mg/Kg-dry	1	6/18/2013
Ethylbenzene	ND	0.0044		mg/Kg-dry	1	6/18/2013
2-Hexanone	ND	0.018		mg/Kg-dry	1	6/18/2013
4-Methyl-2-pentanone	ND	0.018		mg/Kg-dry	1	6/18/2013
Methylene chloride	ND	0.0088		mg/Kg-dry	1	6/18/2013
Methyl tert-butyl ether	ND	0.0044		mg/Kg-dry	1	6/18/2013
Styrene	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1,2,2-Tetrachloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013

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Date Reported: July 02, 2013
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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-002

Client Sample ID: SS-EX-02 (4')
Collection Date: 6/13/2013 10:06:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Tetrachloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Toluene	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1,1-Trichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
1,1,2-Trichloroethane	ND	0.0044		mg/Kg-dry	1	6/18/2013
Trichloroethene	ND	0.0044		mg/Kg-dry	1	6/18/2013
Vinyl chloride	ND	0.0044		mg/Kg-dry	1	6/18/2013
Xylenes, Total	ND	0.013		mg/Kg-dry	1	6/18/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/18/2013**		Analyst: **YZ**
Cyanide	ND	0.28		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	8.0			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	10.0	0.2	*	wt%	1	6/19/2013

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Date Reported: July 02, 2013
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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-003

Client Sample ID: SS-EX-03 (6')
Collection Date: 6/13/2013 10:33:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs		**SW8082 (SW3550B)**		Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.092		mg/Kg-dry	1	6/18/2013
Pesticides		**SW8081 (SW3550B)**		Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0018		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.018		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0018		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.038		mg/Kg-dry	1	6/18/2013
Mercury		**SW7471A**		Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	0.026	0.022		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS		**SW6020 (SW3050B)**		Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	5400	220		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.2		mg/Kg-dry	10	6/19/2013
Arsenic	4.1	1.1		mg/Kg-dry	10	6/19/2013
Barium	28	1.1		mg/Kg-dry	10	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-003

Client Sample ID: SS-EX-03 (6')
Collection Date: 6/13/2013 10:33:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	ND	0.54		mg/Kg-dry	10	6/19/2013
Cadmium	ND	0.54		mg/Kg-dry	10	6/19/2013
Chromium	11	1.1		mg/Kg-dry	10	6/19/2013
Cobalt	5.1	1.1		mg/Kg-dry	10	6/19/2013
Copper	19	2.7		mg/Kg-dry	10	6/19/2013
Iron	18000	320		mg/Kg-dry	100	6/19/2013
Lead	21	0.54		mg/Kg-dry	10	6/19/2013
Manganese	560	1.1		mg/Kg-dry	10	6/19/2013
Nickel	17	1.1		mg/Kg-dry	10	6/19/2013
Selenium	ND	1.1		mg/Kg-dry	10	6/19/2013
Silver	ND	1.1		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.1		mg/Kg-dry	10	6/19/2013
Vanadium	17	1.1		mg/Kg-dry	10	6/19/2013
Zinc	56	5.4		mg/Kg-dry	10	6/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.038		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.38		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.38		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	0.95		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	0.95		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.38		mg/Kg-dry	1	6/19/2013
2-Chloronaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-003

Client Sample ID: SS-EX-03 (6')
Collection Date: 6/13/2013 10:33:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Chrysene	ND	0.038		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.038		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.19		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.38		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	0.95		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.038		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.038		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.038		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.19		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.038		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.38		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.038		mg/Kg-dry	1	6/19/2013
N-Nitrosodi-n-propylamine	ND	0.038		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.19		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.038		mg/Kg-dry	1	6/19/2013

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Lab ID: 13060472-003

Client Sample ID: SS-EX-03 (6')
Collection Date: 6/13/2013 10:33:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2, 2'-oxybis(1-Chloropropane)	ND	0.19		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.076		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.76		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.063		mg/Kg-dry	1	6/18/2013
Benzene	ND	0.0041		mg/Kg-dry	1	6/18/2013
Bromodichloromethane	ND	0.0041		mg/Kg-dry	1	6/18/2013
Bromoform	ND	0.0041		mg/Kg-dry	1	6/18/2013
Bromomethane	ND	0.0084		mg/Kg-dry	1	6/18/2013
2-Butanone	ND	0.063		mg/Kg-dry	1	6/18/2013
Carbon disulfide	ND	0.041		mg/Kg-dry	1	6/18/2013
Carbon tetrachloride	ND	0.0041		mg/Kg-dry	1	6/18/2013
Chlorobenzene	ND	0.0041		mg/Kg-dry	1	6/18/2013
Chloroethane	ND	0.0084		mg/Kg-dry	1	6/18/2013
Chloroform	ND	0.0041		mg/Kg-dry	1	6/18/2013
Chloromethane	ND	0.0084		mg/Kg-dry	1	6/18/2013
Dibromochloromethane	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,1-Dichloroethane	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,2-Dichloroethane	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,1-Dichloroethene	ND	0.0041		mg/Kg-dry	1	6/18/2013
cis-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	6/18/2013
trans-1,2-Dichloroethene	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,2-Dichloropropane	ND	0.0041		mg/Kg-dry	1	6/18/2013
cis-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	6/18/2013
trans-1,3-Dichloropropene	ND	0.0017		mg/Kg-dry	1	6/18/2013
Ethylbenzene	ND	0.0041		mg/Kg-dry	1	6/18/2013
2-Hexanone	ND	0.017		mg/Kg-dry	1	6/18/2013
4-Methyl-2-pentanone	ND	0.017		mg/Kg-dry	1	6/18/2013
Methylene chloride	ND	0.0084		mg/Kg-dry	1	6/18/2013
Methyl tert-butyl ether	ND	0.0041		mg/Kg-dry	1	6/18/2013
Styrene	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,1,2,2-Tetrachloroethane	ND	0.0041		mg/Kg-dry	1	6/18/2013

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STAT Analysis Corporation
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Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-003

Client Sample ID: SS-EX-03 (6')
Collection Date: 6/13/2013 10:33:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Tetrachloroethene	ND	0.0041		mg/Kg-dry	1	6/18/2013
Toluene	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,1,1-Trichloroethane	ND	0.0041		mg/Kg-dry	1	6/18/2013
1,1,2-Trichloroethane	ND	0.0041		mg/Kg-dry	1	6/18/2013
Trichloroethene	ND	0.0041		mg/Kg-dry	1	6/18/2013
Vinyl chloride	ND	0.0041		mg/Kg-dry	1	6/18/2013
Xylenes, Total	ND	0.013		mg/Kg-dry	1	6/18/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/18/2013**		Analyst: **YZ**
Cyanide	ND	0.29		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	7.8			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	13.1	0.2	*	wt%	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-004

Client Sample ID: SS-EX-04 (8')
Collection Date: 6/13/2013 10:50:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.097		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.097		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.097		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.097		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.097		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.097		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.097		mg/Kg-dry	1	6/18/2013
Pesticides	**SW8081 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0019		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0019		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0019		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0019		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0019		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0019		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0019		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.019		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0019		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0019		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0019		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0019		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0019		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0019		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0019		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0019		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0019		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0019		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0019		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0019		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0019		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.04		mg/Kg-dry	1	6/18/2013
Mercury	**SW7471A**			Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	ND	0.02		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	4500	240		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.4		mg/Kg-dry	10	6/19/2013
Arsenic	11	1.2		mg/Kg-dry	10	6/19/2013
Barium	23	1.2		mg/Kg-dry	10	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-004

Client Sample ID: SS-EX-04 (8')
Collection Date: 6/13/2013 10:50:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	ND	0.6		mg/Kg-dry	10	6/19/2013
Cadmium	0.64	0.6		mg/Kg-dry	10	6/19/2013
Chromium	10	1.2		mg/Kg-dry	10	6/19/2013
Cobalt	10	1.2		mg/Kg-dry	10	6/19/2013
Copper	32	3		mg/Kg-dry	10	6/19/2013
Iron	22000	360		mg/Kg-dry	100	6/19/2013
Lead	24	0.6		mg/Kg-dry	10	6/19/2013
Manganese	600	1.2		mg/Kg-dry	10	6/19/2013
Nickel	25	1.2		mg/Kg-dry	10	6/19/2013
Selenium	2.1	1.2		mg/Kg-dry	10	6/19/2013
Silver	ND	1.2		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.2		mg/Kg-dry	10	6/19/2013
Vanadium	16	1.2		mg/Kg-dry	10	6/19/2013
Zinc	110	6		mg/Kg-dry	10	6/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.041		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.041		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.41		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.041		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.041		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.41		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.041		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.041		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.041		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.041		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	1		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.21		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.21		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.21		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	1		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.21		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.21		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.21		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.21		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.41		mg/Kg-dry	1	6/19/2013
2-Chloronaphthalene	ND	0.21		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.21		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.21		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-004

Client Sample ID: SS-EX-04 (8')
Collection Date: 6/13/2013 10:50:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Chrysene	ND	0.041		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.041		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.21		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.21		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.21		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.21		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.21		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.21		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.21		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.21		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.21		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.41		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	1		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.041		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.041		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.21		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.21		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.041		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.041		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.21		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.21		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.21		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.21		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.041		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.21		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.21		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.21		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.21		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.041		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.21		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.21		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.21		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.21		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.41		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.041		mg/Kg-dry	1	6/19/2013
N-Nitrosodi-n-propylamine	ND	0.041		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.21		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.041		mg/Kg-dry	1	6/19/2013

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Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-004

Client Sample ID: SS-EX-04 (8')
Collection Date: 6/13/2013 10:50:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2, 2'-oxybis(1-Chloropropane)	ND	0.21		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.082		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.041		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.21		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.041		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.82		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.21		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.21		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.21		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.075		mg/Kg-dry	1	6/19/2013
Benzene	ND	0.005		mg/Kg-dry	1	6/19/2013
Bromodichloromethane	ND	0.005		mg/Kg-dry	1	6/19/2013
Bromoform	ND	0.005		mg/Kg-dry	1	6/19/2013
Bromomethane	ND	0.01		mg/Kg-dry	1	6/19/2013
2-Butanone	ND	0.075		mg/Kg-dry	1	6/19/2013
Carbon disulfide	ND	0.05		mg/Kg-dry	1	6/19/2013
Carbon tetrachloride	ND	0.005		mg/Kg-dry	1	6/19/2013
Chlorobenzene	ND	0.005		mg/Kg-dry	1	6/19/2013
Chloroethane	ND	0.01		mg/Kg-dry	1	6/19/2013
Chloroform	ND	0.005		mg/Kg-dry	1	6/19/2013
Chloromethane	ND	0.01		mg/Kg-dry	1	6/19/2013
Dibromochloromethane	ND	0.005		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethane	ND	0.005		mg/Kg-dry	1	6/19/2013
1,2-Dichloroethane	ND	0.005		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethene	ND	0.005		mg/Kg-dry	1	6/19/2013
cis-1,2-Dichloroethene	ND	0.005		mg/Kg-dry	1	6/19/2013
trans-1,2-Dichloroethene	ND	0.005		mg/Kg-dry	1	6/19/2013
1,2-Dichloropropane	ND	0.005		mg/Kg-dry	1	6/19/2013
cis-1,3-Dichloropropene	ND	0.002		mg/Kg-dry	1	6/19/2013
trans-1,3-Dichloropropene	ND	0.002		mg/Kg-dry	1	6/19/2013
Ethylbenzene	ND	0.005		mg/Kg-dry	1	6/19/2013
2-Hexanone	ND	0.02		mg/Kg-dry	1	6/19/2013
4-Methyl-2-pentanone	ND	0.02		mg/Kg-dry	1	6/19/2013
Methylene chloride	ND	0.01		mg/Kg-dry	1	6/19/2013
Methyl tert-butyl ether	ND	0.005		mg/Kg-dry	1	6/19/2013
Styrene	ND	0.005		mg/Kg-dry	1	6/19/2013
1,1,2,2-Tetrachloroethane	ND	0.005		mg/Kg-dry	1	6/19/2013

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Lab ID: 13060472-004

Client Sample ID: SS-EX-04 (8')
Collection Date: 6/13/2013 10:50:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Tetrachloroethene	ND	0.005		mg/Kg-dry	1	6/19/2013
Toluene	ND	0.005		mg/Kg-dry	1	6/19/2013
1,1,1-Trichloroethane	ND	0.005		mg/Kg-dry	1	6/19/2013
1,1,2-Trichloroethane	ND	0.005		mg/Kg-dry	1	6/19/2013
Trichloroethene	ND	0.005		mg/Kg-dry	1	6/19/2013
Vinyl chloride	ND	0.005		mg/Kg-dry	1	6/19/2013
Xylenes, Total	ND	0.015		mg/Kg-dry	1	6/19/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/18/2013**		Analyst: **YZ**
Cyanide	ND	0.31		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	8.0			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	18.8	0.2	*	wt%	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-005

Client Sample ID: SS-EX-05 (8')
Collection Date: 6/13/2013 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.09		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.09		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.09		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.09		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.09		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.09		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.09		mg/Kg-dry	1	6/18/2013
Pesticides	**SW8081 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0018		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.018		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0018		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.037		mg/Kg-dry	1	6/18/2013
Mercury	**SW7471A**			Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	ND	0.019		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	10000	210		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.1		mg/Kg-dry	10	6/19/2013
Arsenic	7.1	1.1		mg/Kg-dry	10	6/19/2013
Barium	40	1.1		mg/Kg-dry	10	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-005

Client Sample ID: SS-EX-05 (8')
Collection Date: 6/13/2013 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	ND	0.54		mg/Kg-dry	10	6/19/2013
Cadmium	ND	0.54		mg/Kg-dry	10	6/19/2013
Chromium	16	1.1		mg/Kg-dry	10	6/19/2013
Cobalt	11	1.1		mg/Kg-dry	10	6/19/2013
Copper	20	2.7		mg/Kg-dry	10	6/19/2013
Iron	27000	320		mg/Kg-dry	100	6/19/2013
Lead	15	0.54		mg/Kg-dry	10	6/19/2013
Manganese	620	1.1		mg/Kg-dry	10	6/19/2013
Nickel	28	1.1		mg/Kg-dry	10	6/19/2013
Selenium	ND	1.1		mg/Kg-dry	10	6/19/2013
Silver	ND	1.1		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.1		mg/Kg-dry	10	6/19/2013
Vanadium	19	1.1		mg/Kg-dry	10	6/19/2013
Zinc	51	5.4		mg/Kg-dry	10	6/19/2013
SPLP Metals by ICP/MS	**SW1312/6020 (SW3005A)**			Prep Date: **6/28/2013**		Analyst: **JG**
Iron	0.43	0.1		mg/L	2	6/29/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.037		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.38		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.37		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	0.94		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	0.94		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.37		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-005

Client Sample ID: SS-EX-05 (8')
Collection Date: 6/13/2013 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2-Chloronaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.19		mg/Kg-dry	1	6/19/2013
Chrysene	ND	0.037		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.037		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.19		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.37		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	0.94		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.037		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.037		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.19		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.037		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.037		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.19		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.19		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.037		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.19		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.37		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.037		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-005

Client Sample ID: SS-EX-05 (8')
Collection Date: 6/13/2013 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
N-Nitrosodi-n-propylamine	ND	0.037		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.19		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.037		mg/Kg-dry	1	6/19/2013
2, 2'-oxybis(1-Chloropropane)	ND	0.19		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.076		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.037		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.76		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.19		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.08		mg/Kg-dry	1	6/19/2013
Benzene	ND	0.0054		mg/Kg-dry	1	6/19/2013
Bromodichloromethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
Bromoform	ND	0.0054		mg/Kg-dry	1	6/19/2013
Bromomethane	ND	0.011		mg/Kg-dry	1	6/19/2013
2-Butanone	ND	0.08		mg/Kg-dry	1	6/19/2013
Carbon disulfide	ND	0.054		mg/Kg-dry	1	6/19/2013
Carbon tetrachloride	ND	0.0054		mg/Kg-dry	1	6/19/2013
Chlorobenzene	ND	0.0054		mg/Kg-dry	1	6/19/2013
Chloroethane	ND	0.011		mg/Kg-dry	1	6/19/2013
Chloroform	ND	0.0054		mg/Kg-dry	1	6/19/2013
Chloromethane	ND	0.011		mg/Kg-dry	1	6/19/2013
Dibromochloromethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,2-Dichloroethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethene	ND	0.0054		mg/Kg-dry	1	6/19/2013
cis-1,2-Dichloroethene	ND	0.0054		mg/Kg-dry	1	6/19/2013
trans-1,2-Dichloroethene	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,2-Dichloropropane	ND	0.0054		mg/Kg-dry	1	6/19/2013
cis-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	6/19/2013
trans-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	6/19/2013
Ethylbenzene	ND	0.0054		mg/Kg-dry	1	6/19/2013
2-Hexanone	ND	0.022		mg/Kg-dry	1	6/19/2013
4-Methyl-2-pentanone	ND	0.022		mg/Kg-dry	1	6/19/2013
Methylene chloride	ND	0.011		mg/Kg-dry	1	6/19/2013

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Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-005

Client Sample ID: SS-EX-05 (8')
Collection Date: 6/13/2013 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Methyl tert-butyl ether	ND	0.0054		mg/Kg-dry	1	6/19/2013
Styrene	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,1,2,2-Tetrachloroethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
Tetrachloroethene	ND	0.0054		mg/Kg-dry	1	6/19/2013
Toluene	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,1,1-Trichloroethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
1,1,2-Trichloroethane	ND	0.0054		mg/Kg-dry	1	6/19/2013
Trichloroethene	ND	0.0054		mg/Kg-dry	1	6/19/2013
Vinyl chloride	ND	0.0054		mg/Kg-dry	1	6/19/2013
Xylenes, Total	ND	0.016		mg/Kg-dry	1	6/19/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/18/2013**		Analyst: **YZ**
Cyanide	ND	0.29		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	7.8			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	12.6	0.2	*	wt%	1	6/19/2013

Qualifiers:

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Date Reported: July 02, 2013
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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-006

Client Sample ID: SS-EX-06 (2')
Collection Date: 6/13/2013 9:13:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs		**SW8082 (SW3550B)**		Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.092		mg/Kg-dry	1	6/18/2013
Pesticides		**SW8081 (SW3550B)**		Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0018		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.018		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0018		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.038		mg/Kg-dry	1	6/18/2013
Mercury		**SW7471A**		Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	0.028	0.022		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS		**SW6020 (SW3050B)**		Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	17000	220		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.2		mg/Kg-dry	10	6/19/2013
Arsenic	15	1.1		mg/Kg-dry	10	6/19/2013
Barium	160	1.1		mg/Kg-dry	10	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-006

Client Sample ID: SS-EX-06 (2')
Collection Date: 6/13/2013 9:13:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	0.63	0.55		mg/Kg-dry	10	6/19/2013
Cadmium	0.56	0.55		mg/Kg-dry	10	6/19/2013
Chromium	20	1.1		mg/Kg-dry	10	6/19/2013
Cobalt	10	1.1		mg/Kg-dry	10	6/19/2013
Copper	22	2.8		mg/Kg-dry	10	6/19/2013
Iron	33000	330		mg/Kg-dry	100	6/19/2013
Lead	23	0.55		mg/Kg-dry	10	6/19/2013
Manganese	570	1.1		mg/Kg-dry	10	6/19/2013
Nickel	24	1.1		mg/Kg-dry	10	6/19/2013
Selenium	ND	1.1		mg/Kg-dry	10	6/19/2013
Silver	ND	1.1		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.1		mg/Kg-dry	10	6/19/2013
Vanadium	35	1.1		mg/Kg-dry	10	6/19/2013
Zinc	68	5.5		mg/Kg-dry	10	6/19/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.038		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.39		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.38		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	0.96		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.2		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.2		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.2		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	0.96		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.2		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.38		mg/Kg-dry	1	6/19/2013
2-Chloronaphthalene	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.2		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-006

Client Sample ID: SS-EX-06 (2')
Collection Date: 6/13/2013 9:13:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Chrysene	ND	0.038		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.038		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.2		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.38		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	0.96		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.038		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.038		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.038		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.038		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.2		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.2		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.2		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.038		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.38		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.038		mg/Kg-dry	1	6/19/2013
N-Nitrosodi-n-propylamine	ND	0.038		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.2		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.038		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-006

Client Sample ID: SS-EX-06 (2')
Collection Date: 6/13/2013 9:13:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2, 2'-oxybis(1-Chloropropane)	ND	0.2		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.078		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.038		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.78		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.078		mg/Kg-dry	1	6/19/2013
Benzene	ND	0.0051		mg/Kg-dry	1	6/19/2013
Bromodichloromethane	ND	0.0051		mg/Kg-dry	1	6/19/2013
Bromoform	ND	0.0051		mg/Kg-dry	1	6/19/2013
Bromomethane	ND	0.01		mg/Kg-dry	1	6/19/2013
2-Butanone	ND	0.078		mg/Kg-dry	1	6/19/2013
Carbon disulfide	ND	0.051		mg/Kg-dry	1	6/19/2013
Carbon tetrachloride	ND	0.0051		mg/Kg-dry	1	6/19/2013
Chlorobenzene	ND	0.0051		mg/Kg-dry	1	6/19/2013
Chloroethane	ND	0.01		mg/Kg-dry	1	6/19/2013
Chloroform	ND	0.0051		mg/Kg-dry	1	6/19/2013
Chloromethane	ND	0.01		mg/Kg-dry	1	6/19/2013
Dibromochloromethane	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethane	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,2-Dichloroethane	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethene	ND	0.0051		mg/Kg-dry	1	6/19/2013
cis-1,2-Dichloroethene	ND	0.0051		mg/Kg-dry	1	6/19/2013
trans-1,2-Dichloroethene	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,2-Dichloropropane	ND	0.0051		mg/Kg-dry	1	6/19/2013
cis-1,3-Dichloropropene	ND	0.0021		mg/Kg-dry	1	6/19/2013
trans-1,3-Dichloropropene	ND	0.0021		mg/Kg-dry	1	6/19/2013
Ethylbenzene	ND	0.0051		mg/Kg-dry	1	6/19/2013
2-Hexanone	ND	0.021		mg/Kg-dry	1	6/19/2013
4-Methyl-2-pentanone	ND	0.021		mg/Kg-dry	1	6/19/2013
Methylene chloride	ND	0.01		mg/Kg-dry	1	6/19/2013
Methyl tert-butyl ether	ND	0.0051		mg/Kg-dry	1	6/19/2013
Styrene	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,1,2,2-Tetrachloroethane	ND	0.0051		mg/Kg-dry	1	6/19/2013

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Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-006

Client Sample ID: SS-EX-06 (2')
Collection Date: 6/13/2013 9:13:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Tetrachloroethene	ND	0.0051		mg/Kg-dry	1	6/19/2013
Toluene	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,1,1-Trichloroethane	ND	0.0051		mg/Kg-dry	1	6/19/2013
1,1,2-Trichloroethane	ND	0.0051		mg/Kg-dry	1	6/19/2013
Trichloroethene	ND	0.0051		mg/Kg-dry	1	6/19/2013
Vinyl chloride	ND	0.0051		mg/Kg-dry	1	6/19/2013
Xylenes, Total	ND	0.015		mg/Kg-dry	1	6/19/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/19/2013**		Analyst: **YZ**
Cyanide	ND	0.29		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	7.8			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	14.1	0.2	*	wt%	1	6/19/2013

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Date Reported: July 02, 2013
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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-007

Client Sample ID: SS-EX-07 (4')
Collection Date: 6/13/2013 8:57:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.1		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.1		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.1		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.1		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.1		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.1		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.1		mg/Kg-dry	1	6/18/2013
Pesticides	**SW8081 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.002		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.002		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.002		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.002		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.002		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.002		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.002		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.02		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.002		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.002		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.002		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.002		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.002		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.002		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.002		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.002		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.002		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.002		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.002		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.002		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.002		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.042		mg/Kg-dry	1	6/18/2013
Mercury	**SW7471A**			Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	0.033	0.022		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	18000	250		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.5		mg/Kg-dry	10	6/19/2013
Arsenic	8.4	1.3		mg/Kg-dry	10	6/19/2013
Barium	190	1.3		mg/Kg-dry	10	6/19/2013

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Lab ID: 13060472-007

Client Sample ID: SS-EX-07 (4')
Collection Date: 6/13/2013 8:57:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	0.75	0.63		mg/Kg-dry	10	6/19/2013
Cadmium	0.77	0.63		mg/Kg-dry	10	6/19/2013
Chromium	23	1.3		mg/Kg-dry	10	6/19/2013
Cobalt	11	1.3		mg/Kg-dry	10	6/19/2013
Copper	26	3.1		mg/Kg-dry	10	6/19/2013
Iron	28000	380		mg/Kg-dry	100	6/19/2013
Lead	30	0.63		mg/Kg-dry	10	6/19/2013
Manganese	500	1.3		mg/Kg-dry	10	6/19/2013
Nickel	24	1.3		mg/Kg-dry	10	6/19/2013
Selenium	ND	1.3		mg/Kg-dry	10	6/19/2013
Silver	ND	1.3		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.3		mg/Kg-dry	10	6/19/2013
Vanadium	35	1.3		mg/Kg-dry	10	6/19/2013
Zinc	88	6.3		mg/Kg-dry	10	6/19/2013
SPLP Metals by ICP/MS	**SW1312/6020 (SW3005A)**			Prep Date: **6/28/2013**		Analyst: **JG**
Aluminum	2.8	0.04		mg/L	2	6/29/2013
Chromium	ND	0.004		mg/L	2	6/29/2013
Cobalt	ND	0.004		mg/L	2	6/29/2013
Iron	2.7	0.1		mg/L	2	6/29/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.042		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.042		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.42		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.042		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.042		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.42		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.042		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.042		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.042		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.042		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	1.1		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.22		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.22		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.22		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	1.1		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.22		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.22		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-007

Client Sample ID: SS-EX-07 (4')
Collection Date: 6/13/2013 8:57:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Carbazole	ND	0.22		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.22		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.42		mg/Kg-dry	1	6/19/2013
2-Chloronaphthalene	ND	0.22		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.22		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.22		mg/Kg-dry	1	6/19/2013
Chrysene	ND	0.042		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.042		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.22		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.22		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.22		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.22		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.22		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.22		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.22		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.22		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.22		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.42		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	1.1		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.042		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.042		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.22		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.22		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.042		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.042		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.22		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.22		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.22		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.22		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.042		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.22		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.22		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.22		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.22		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.042		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.22		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.22		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.22		mg/Kg-dry	1	6/19/2013

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Date Reported: July 02, 2013
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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-007

Client Sample ID: SS-EX-07 (4')
Collection Date: 6/13/2013 8:57:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2-Nitrophenol	ND	0.22		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.42		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.042		mg/Kg-dry	1	6/19/2013
N-Nitrosodi-n-propylamine	ND	0.042		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.22		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.042		mg/Kg-dry	1	6/19/2013
2, 2'-oxybis(1-Chloropropane)	ND	0.22		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.085		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.042		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.22		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.042		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.85		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.22		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.22		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.22		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	0.084	0.083		mg/Kg-dry	1	6/19/2013
Benzene	ND	0.0056		mg/Kg-dry	1	6/19/2013
Bromodichloromethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
Bromoform	ND	0.0056		mg/Kg-dry	1	6/19/2013
Bromomethane	ND	0.011		mg/Kg-dry	1	6/19/2013
2-Butanone	ND	0.083		mg/Kg-dry	1	6/19/2013
Carbon disulfide	ND	0.056		mg/Kg-dry	1	6/19/2013
Carbon tetrachloride	ND	0.0056		mg/Kg-dry	1	6/19/2013
Chlorobenzene	ND	0.0056		mg/Kg-dry	1	6/19/2013
Chloroethane	ND	0.011		mg/Kg-dry	1	6/19/2013
Chloroform	ND	0.0056		mg/Kg-dry	1	6/19/2013
Chloromethane	ND	0.011		mg/Kg-dry	1	6/19/2013
Dibromochloromethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,2-Dichloroethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethene	ND	0.0056		mg/Kg-dry	1	6/19/2013
cis-1,2-Dichloroethene	ND	0.0056		mg/Kg-dry	1	6/19/2013
trans-1,2-Dichloroethene	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,2-Dichloropropane	ND	0.0056		mg/Kg-dry	1	6/19/2013
cis-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	6/19/2013
trans-1,3-Dichloropropene	ND	0.0022		mg/Kg-dry	1	6/19/2013
Ethylbenzene	ND	0.0056		mg/Kg-dry	1	6/19/2013

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Lab ID: 13060472-007

Client Sample ID: SS-EX-07 (4')
Collection Date: 6/13/2013 8:57:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
2-Hexanone	ND	0.022		mg/Kg-dry	1	6/19/2013
4-Methyl-2-pentanone	ND	0.022		mg/Kg-dry	1	6/19/2013
Methylene chloride	ND	0.011		mg/Kg-dry	1	6/19/2013
Methyl tert-butyl ether	ND	0.0056		mg/Kg-dry	1	6/19/2013
Styrene	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,1,2,2-Tetrachloroethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
Tetrachloroethene	ND	0.0056		mg/Kg-dry	1	6/19/2013
Toluene	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,1,1-Trichloroethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
1,1,2-Trichloroethane	ND	0.0056		mg/Kg-dry	1	6/19/2013
Trichloroethene	ND	0.0056		mg/Kg-dry	1	6/19/2013
Vinyl chloride	ND	0.0056		mg/Kg-dry	1	6/19/2013
Xylenes, Total	ND	0.017		mg/Kg-dry	1	6/19/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/19/2013**		Analyst: **YZ**
Cyanide	ND	0.32		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	7.7			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	22.1	0.2	*	wt%	1	6/19/2013

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Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-008

Client Sample ID: SS-EX-08 (6')
Collection Date: 6/13/2013 8:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs	**SW8082 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
Aroclor 1016	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1221	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1232	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1242	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1248	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1254	ND	0.092		mg/Kg-dry	1	6/18/2013
Aroclor 1260	ND	0.092		mg/Kg-dry	1	6/18/2013
Pesticides	**SW8081 (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **GVC**
4,4´-DDD	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDE	ND	0.0018		mg/Kg-dry	1	6/18/2013
4,4´-DDT	ND	0.0018		mg/Kg-dry	1	6/18/2013
Aldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
alpha-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
beta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Chlordane	ND	0.018		mg/Kg-dry	1	6/18/2013
delta-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
Dieldrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan I	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan II	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endosulfan sulfate	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin aldehyde	ND	0.0018		mg/Kg-dry	1	6/18/2013
Endrin ketone	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-BHC	ND	0.0018		mg/Kg-dry	1	6/18/2013
gamma-Chlordane	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Heptachlor epoxide	ND	0.0018		mg/Kg-dry	1	6/18/2013
Methoxychlor	ND	0.0018		mg/Kg-dry	1	6/18/2013
Toxaphene	ND	0.038		mg/Kg-dry	1	6/18/2013
Mercury	**SW7471A**			Prep Date: **6/14/2013**		Analyst: **LB**
Mercury	0.02	0.018		mg/Kg-dry	1	6/14/2013
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Aluminum	9800	220		mg/Kg-dry	100	6/19/2013
Antimony	ND	2.2		mg/Kg-dry	10	6/19/2013
Arsenic	8	1.1		mg/Kg-dry	10	6/19/2013
Barium	65	1.1		mg/Kg-dry	10	6/19/2013

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Lab ID: 13060472-008

Client Sample ID: SS-EX-08 (6')
Collection Date: 6/13/2013 8:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Metals by ICP/MS	**SW6020 (SW3050B)**			Prep Date: **6/19/2013**		Analyst: **JG**
Beryllium	ND	0.56		mg/Kg-dry	10	6/19/2013
Cadmium	ND	0.56		mg/Kg-dry	10	6/19/2013
Chromium	14	1.1		mg/Kg-dry	10	6/19/2013
Cobalt	7.2	1.1		mg/Kg-dry	10	6/19/2013
Copper	14	2.8		mg/Kg-dry	10	6/19/2013
Iron	23000	340		mg/Kg-dry	100	6/19/2013
Lead	15	0.56		mg/Kg-dry	10	6/19/2013
Manganese	560	1.1		mg/Kg-dry	10	6/19/2013
Nickel	18	1.1		mg/Kg-dry	10	6/19/2013
Selenium	ND	1.1		mg/Kg-dry	10	6/19/2013
Silver	ND	1.1		mg/Kg-dry	10	6/19/2013
Thallium	ND	1.1		mg/Kg-dry	10	6/19/2013
Vanadium	21	1.1		mg/Kg-dry	10	6/19/2013
Zinc	50	5.6		mg/Kg-dry	10	6/19/2013
SPLP Metals by ICP/MS	**SW1312/6020 (SW3005A)**			Prep Date: **6/28/2013**		Analyst: **JG**
Iron	4	0.1		mg/L	2	6/29/2013
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
Acenaphthene	ND	0.039		mg/Kg-dry	1	6/19/2013
Acenaphthylene	ND	0.039		mg/Kg-dry	1	6/19/2013
Aniline	ND	0.39		mg/Kg-dry	1	6/19/2013
Anthracene	ND	0.039		mg/Kg-dry	1	6/19/2013
Benz(a)anthracene	ND	0.039		mg/Kg-dry	1	6/19/2013
Benzidine	ND	0.39		mg/Kg-dry	1	6/19/2013
Benzo(a)pyrene	ND	0.039		mg/Kg-dry	1	6/19/2013
Benzo(b)fluoranthene	ND	0.039		mg/Kg-dry	1	6/19/2013
Benzo(g,h,i)perylene	ND	0.039		mg/Kg-dry	1	6/19/2013
Benzo(k)fluoranthene	ND	0.039		mg/Kg-dry	1	6/19/2013
Benzoic acid	ND	0.97		mg/Kg-dry	1	6/19/2013
Benzyl alcohol	ND	0.2		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethoxy)methane	ND	0.2		mg/Kg-dry	1	6/19/2013
Bis(2-chloroethyl)ether	ND	0.2		mg/Kg-dry	1	6/19/2013
Bis(2-ethylhexyl)phthalate	ND	0.97		mg/Kg-dry	1	6/19/2013
4-Bromophenyl phenyl ether	ND	0.2		mg/Kg-dry	1	6/19/2013
Butyl benzyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
Carbazole	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Chloroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Chloro-3-methylphenol	ND	0.39		mg/Kg-dry	1	6/19/2013

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Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
2-Chloronaphthalene	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Chlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Chlorophenyl phenyl ether	ND	0.2		mg/Kg-dry	1	6/19/2013
Chrysene	ND	0.039		mg/Kg-dry	1	6/19/2013
Dibenz(a,h)anthracene	ND	0.039		mg/Kg-dry	1	6/19/2013
Dibenzofuran	ND	0.2		mg/Kg-dry	1	6/19/2013
1,2-Dichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
1,3-Dichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
1,4-Dichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
3,3´-Dichlorobenzidine	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4-Dichlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Diethyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4-Dimethylphenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Dimethyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg-dry	1	6/19/2013
2,4-Dinitrophenol	ND	0.97		mg/Kg-dry	1	6/19/2013
2,4-Dinitrotoluene	ND	0.039		mg/Kg-dry	1	6/19/2013
2,6-Dinitrotoluene	ND	0.039		mg/Kg-dry	1	6/19/2013
Di-n-butyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
Di-n-octyl phthalate	ND	0.2		mg/Kg-dry	1	6/19/2013
Fluoranthene	ND	0.039		mg/Kg-dry	1	6/19/2013
Fluorene	ND	0.039		mg/Kg-dry	1	6/19/2013
Hexachlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
Hexachlorobutadiene	ND	0.2		mg/Kg-dry	1	6/19/2013
Hexachlorocyclopentadiene	ND	0.2		mg/Kg-dry	1	6/19/2013
Hexachloroethane	ND	0.2		mg/Kg-dry	1	6/19/2013
Indeno(1,2,3-cd)pyrene	ND	0.039		mg/Kg-dry	1	6/19/2013
Isophorone	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Methylnaphthalene	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Methylphenol	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Methylphenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Naphthalene	ND	0.039		mg/Kg-dry	1	6/19/2013
2-Nitroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
3-Nitroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Nitroaniline	ND	0.2		mg/Kg-dry	1	6/19/2013
2-Nitrophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
4-Nitrophenol	ND	0.39		mg/Kg-dry	1	6/19/2013
Nitrobenzene	ND	0.039		mg/Kg-dry	1	6/19/2013

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

STAT Analysis Corporation
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Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-008

Client Sample ID: SS-EX-08 (6')
Collection Date: 6/13/2013 8:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	**SW8270C (SW3550B)**			Prep Date: **6/18/2013**		Analyst: **DM**
N-Nitrosodi-n-propylamine	ND	0.039		mg/Kg-dry	1	6/19/2013
N-Nitrosodimethylamine	ND	0.2		mg/Kg-dry	1	6/19/2013
N-Nitrosodiphenylamine	ND	0.039		mg/Kg-dry	1	6/19/2013
2, 2'-oxybis(1-Chloropropane)	ND	0.2		mg/Kg-dry	1	6/19/2013
Pentachlorophenol	ND	0.078		mg/Kg-dry	1	6/19/2013
Phenanthrene	ND	0.039		mg/Kg-dry	1	6/19/2013
Phenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Pyrene	ND	0.039		mg/Kg-dry	1	6/19/2013
Pyridine	ND	0.78		mg/Kg-dry	1	6/19/2013
1,2,4-Trichlorobenzene	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4,5-Trichlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
2,4,6-Trichlorophenol	ND	0.2		mg/Kg-dry	1	6/19/2013
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Acetone	ND	0.079		mg/Kg-dry	1	6/19/2013
Benzene	ND	0.0053		mg/Kg-dry	1	6/19/2013
Bromodichloromethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
Bromoform	ND	0.0053		mg/Kg-dry	1	6/19/2013
Bromomethane	ND	0.011		mg/Kg-dry	1	6/19/2013
2-Butanone	ND	0.079		mg/Kg-dry	1	6/19/2013
Carbon disulfide	ND	0.053		mg/Kg-dry	1	6/19/2013
Carbon tetrachloride	ND	0.0053		mg/Kg-dry	1	6/19/2013
Chlorobenzene	ND	0.0053		mg/Kg-dry	1	6/19/2013
Chloroethane	ND	0.011		mg/Kg-dry	1	6/19/2013
Chloroform	ND	0.0053		mg/Kg-dry	1	6/19/2013
Chloromethane	ND	0.011		mg/Kg-dry	1	6/19/2013
Dibromochloromethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,2-Dichloroethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,1-Dichloroethene	ND	0.0053		mg/Kg-dry	1	6/19/2013
cis-1,2-Dichloroethene	ND	0.0053		mg/Kg-dry	1	6/19/2013
trans-1,2-Dichloroethene	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,2-Dichloropropane	ND	0.0053		mg/Kg-dry	1	6/19/2013
cis-1,3-Dichloropropene	ND	0.0021		mg/Kg-dry	1	6/19/2013
trans-1,3-Dichloropropene	ND	0.0021		mg/Kg-dry	1	6/19/2013
Ethylbenzene	ND	0.0053		mg/Kg-dry	1	6/19/2013
2-Hexanone	ND	0.021		mg/Kg-dry	1	6/19/2013
4-Methyl-2-pentanone	ND	0.021		mg/Kg-dry	1	6/19/2013
Methylene chloride	ND	0.011		mg/Kg-dry	1	6/19/2013

Qualifiers:
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B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
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Date Reported: July 02, 2013
Date Printed: July 02, 2013

Client: V3 Companies of Illinois
Lab Order: 13060472
Project: 07292CU2011.HAZ, Spartan's Square
Lab ID: 13060472-008

Client Sample ID: SS-EX-08 (6')
Collection Date: 6/13/2013 8:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	**SW5035/8260B**			Prep Date: **6/14/2013**		Analyst: **ERP**
Methyl tert-butyl ether	ND	0.0053		mg/Kg-dry	1	6/19/2013
Styrene	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,1,2,2-Tetrachloroethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
Tetrachloroethene	ND	0.0053		mg/Kg-dry	1	6/19/2013
Toluene	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,1,1-Trichloroethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
1,1,2-Trichloroethane	ND	0.0053		mg/Kg-dry	1	6/19/2013
Trichloroethene	ND	0.0053		mg/Kg-dry	1	6/19/2013
Vinyl chloride	ND	0.0053		mg/Kg-dry	1	6/19/2013
Xylenes, Total	ND	0.015		mg/Kg-dry	1	6/19/2013
Cyanide, Total	**SW9012A**			Prep Date: **6/19/2013**		Analyst: **YZ**
Cyanide	ND	0.29		mg/Kg-dry	1	6/19/2013
pH (25 °C)	**SW9045C**			Prep Date: **6/17/2013**		Analyst: **RW**
pH	7.8			pH Units	1	6/17/2013
Percent Moisture	**D2974**			Prep Date: **6/18/2013**		Analyst: **RW**
Percent Moisture	15.2	0.2	*	wt%	1	6/19/2013

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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E - Value above quantitation range
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CHAIN OF CUSTODY RECORD

Nº: 850357 Page: 1 of 1

Company: V3 Companies
Project Number: 07292CU2011.HAZ Client Tracking No.:
Project Name: Spartan's Square
Project Location: Romeoville, IL
Sampler(s): Michael Dirkse
Report To: Craig McCammack Phone: 630-729-6554
Fax: 630-724-9202
QC Level: 1 2 3 4 e-mail: cmccammack@V3co.com

P.O. No.: 07292CU2011.HAZ
Quote No.:

Turn Around: Standard
Results Needed: / / am/pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	VOC	SVOC	PCBs/Pesticides	TAL metals X + CN + pH X	HOLD	Remarks	Lab No.:
SS-EX-01(2')	6/13/13	9:46 A	Soil		X	Sodium Bisulfate	4	X	X	X	X			001
SS-EX-02(4')	6/13/13	10:06AM				F + Methanol		X	X	X	X			002
SS-EX-03(6')		10:33AM				F		X	X	X	X			003
SS-EX-04(8')		10:50AM						X	X	X	X			004
SS-EX-05(8')		9:35AM						X	X	X	X			005
SS-EX-06(2')		9:13 AM						X	X	X	X			006
SS-EX-07(4')		8:57AM						X	X	X	X			007
SS-EX-08(6')		8:45AM						X	X	X	X			008
SS-EX-09(6')		7:43AM						~~X~~	~~X~~	~~X~~	X			009
SS-EX-10(8')		7:58AM						~~X~~	~~X~~	~~X~~	X			010
SS-EX-11(2')		8:18 AM						~~X~~	~~X~~	~~X~~	X			011
SS-EX-12(4')		8:31 AM						~~X~~	~~X~~	~~X~~	X	MD		012

Relinquished by: (Signature) Michael Dirkse	Date/Time: 6/13/13 1:30pm	Comments: * Do not report Calcium Magnesium, Potassium, ~~Mg~~ MD and Sodium
Received by: (Signature)	Date/Time: 6/13/13 2:00pm	
Relinquished by: (Signature)	Date/Time: 6/13/13 3:31	
Received by: (Signature)	Date/Time: 6/13/13 5:31	
Relinquished by: (Signature)	Date/Time:	
Received by: (Signature)	Date/Time:	

Preservation Code: A = None B = HNO_3 C = NaOH
D = H_2SO_4 E = HCl F = 5035/EnCore G = Other

Laboratory Work Order No.: 13C0472

Received on Ice: Yes [X] No [ ]
Temperature: 1.8 °C

STAT Analysis Corporation

Sample Receipt Checklist

Client Name V3 | Date and Time Received: 6/13/2013 3:31:00 PM

Work Order Number 13060472 | Received by: MAM

Checklist completed by: _____ 6/13/13 (Signature / Date) | Reviewed by: FC 6/17/13 (Initials / Date)

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 1.8 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☐	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by:
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted?

Any No response must be detailed in the comments section below.

Comments:

Client / Person contacted: _____ Date contacted: _____ Contacted by: _____

Response:

Craig Chawla

From: Michael Dirkse [mdirkse@v3co.com]
Sent: Thursday, June 27, 2013 3:49 PM
To: Tom Bauer; Craig Chawla
Cc: Craig McCammack
Subject: Spartan's Square - Additional Analysis

Tom and Craig

We would like to analyze the following samples using the SPLP method:

- SS-EX-05 (8')
  - SPLP Iron
- SS-EX-07 (4')
  - SPLP Aluminum
  - SPLP Chromium
  - SPLP Cobalt
  - SPLP Iron
- SS-EX-08 (6')
  - SPLP Iron

V3 project #: 07292CU2011.HAZ (Spartan's Square)
STAT Project No.: 13060472

We would like a 72-hour turnaround time for these samples. Would it be possible to get the results by Tues. afternoon (July 2)?

Thanks!

Michael Dirkse, E.I.T.
Engineer I

V3 Companies
7325 Janes Avenue | Woodridge, IL 60517
Direct: 630.729.6208 | Phone: 630.724.9200 | Fax: 630.724.9202 | Cell: 630.930.3619
mdirkse@v3co.com | www.v3co.com

APPENDIX E: TABLE 1 - SOIL ANALYTICAL RESULTS (VOCs)
TEST PIT SAMPLES FOR CLEAN FILL
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Residential				V3 Soil Samples							
	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013
					SS-EX-01 (2')	SS-EX-02 (4')	SS-EX-03 (6')	SS-EX-04 (8')	SS-EX-05 (8')	SS-EX-06 (2')	SS-EX-07 (4')	SS-EX-08 (6')
					2 Feet	4 Feet	6 Feet	8 Feet	8 Feet	2 Feet	4 Feet	6 Feet
Chemical Name	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**ADL (mg/kg)**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Volatile Organic Compounds (Method - 5035/8260B)												
Acetone	70,000b	100,000d	25b	*	< 0.066	< 0.066	< 0.063	< 0.075	< 0.08	< 0.078	0.084	< 0.079
Benzene	12e	0.8e	0.03	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Bromodichloromethane (Dichlorobromomethane)	10e	3,000d	0.6	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Bromoform	81e	53e	0.8	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Bromomethane (methylene bromide) [NT]	---c	28b,x	---c	**	< 0.0089	< 0.0088	< 0.0084	< 0.01	< 0.011	< 0.01	< 0.011	< 0.011
2-Butanone (MEK) [NT]	47,000b	25,000d,x	17b	NA	< 0.066	< 0.066	< 0.063	< 0.075	< 0.08	< 0.078	< 0.083	< 0.079
Carbon disulfide	7,800b	720d, x	32b	*	< 0.044	< 0.044	< 0.041	< 0.05	< 0.054	< 0.051	< 0.056	< 0.053
Carbon tetrachloride	5e	0.3e	0.07	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Chlorobenzene (Monochlorobenzene)	1,600b	130b, x	1	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Chloroethane [NT]	---c	1,500d,x	---c	**	< 0.0089	< 0.0088	< 0.0084	< 0.01	< 0.011	< 0.01	< 0.011	< 0.011
Chloroform	100e	0.3e	0.6	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Chloromethane [NT]	---c	110a	---c	**	< 0.0089	< 0.0088	< 0.0084	< 0.01	< 0.011	< 0.01	< 0.011	< 0.011
Chlorodibromomethane (Dibromochloromethane)	1,600b	1,300b	0.4	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,1-Dichloroethane	7,800b	1,300b, x	23b	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,2-Dichloroethane (Ethylene dichloride)	7e	0.4e	0.02	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,1-Dichloroethene (1,1-Dichloroethylene)	3,900b	290b, x	0.06	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene)	780b	1,200d	0.4	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	1,600b	3,100d	0.7	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,2-Dichloropropane	9e	15b, x	0.03	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
cis-1,3-Dichloropropene (1)	6.4e	1.1e, x	0.004e	0.005	< 0.0018	< 0.0018	< 0.0017	< 0.002	< 0.0022	< 0.0021	< 0.0022	< 0.0021
trans-1,3-Dichloropropene (1)	6.4e	1.1e, x	0.004e	0.005	< 0.0018	< 0.0018	< 0.0017	< 0.002	< 0.0022	< 0.0021	< 0.0022	< 0.0021
Ethylbenzene	7,800b	400d, x	13	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
2-Hexanone [NT]	390b	450b,x	0.16b	**	< 0.018	< 0.018	< 0.017	< 0.02	< 0.022	< 0.021	< 0.022	< 0.021
4-Methyl-2-pentanone (MIBK) [NT]	6,300b	3,100d,x	2.5b	NA	< 0.018	< 0.018	< 0.017	< 0.02	< 0.022	< 0.021	< 0.022	< 0.021
Methylene chloride (Dichloromethane)	85e	13e	0.02e	*	< 0.0089	< 0.0088	< 0.0084	< 0.01	< 0.011	< 0.01	< 0.011	< 0.011
MTBE (methyl tertiary-butyl ether)	780b	8,800d, x	0.32	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Styrene	16,000b	1,500d, x	4	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,1,2,2-Tetrachloroethane [NT]	3.2e	0.62e,x	0.0035e	**	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Tetrachloroethene (Perchloroethylene)	12e	11e	0.06	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Toluene	16,000b	650d, x	12	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,1,1-Trichloroethane	---c	1,200d	2	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
1,1,2-Trichloroethane	310b	1,800d	0.02	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Trichloroethene (Trichloroethylene)	58e	5e	0.06	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Vinyl Chloride	0.46e	0.28e	0.01	*	< 0.0044	< 0.0044	< 0.0041	< 0.005	< 0.0054	< 0.0051	< 0.0056	< 0.0053
Xylenes (total)	16,000b	320d, x	150	*	< 0.014	< 0.013	< 0.013	< 0.015	< 0.016	< 0.015	< 0.017	< 0.015

Part 742 Notes
* indicates that the ADL is less than or equal to the specified remediation objective.
** indicates that the value is not listed in TACO, Section 742, Table A or B.

V3 Table Notes:

0.1	Indicates lab detection limit is greater than remediation objective
(1)	(1) indicates value is for (1,3-Dichloropropylene, cis+trans)
[NT]	[NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, revised 10/30/2012.
	Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html
	See attached for soil remediation objective notations

Prepared by/Date MDD 6/24/13
Checked by/Date RKB 07/05/13

APPENDIX E: TABLE 2 - SOIL ANALYTICAL RESULTS (SVOCs)
TEST PIT SAMPLES FOR CLEAN FILL
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Residential					V3 Soil Samples							
	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values	Concentrations of PAHs in Background Soils [/a]		6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013
						SS-EX-01 (2')	SS-EX-02 (4')	SS-EX-03 (6')	SS-EX-04 (8')	SS-EX-05 (8')	SS-EX-06 (2')	SS-EX-07 (4')	SS-EX-08 (6')
						2 Feet	4 Feet	6 Feet	8 Feet	8 Feet	2 Feet	4 Feet	6 Feet
Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Within MSA (mg/kg)	ADL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Semivolatiles (Method - SW8270C) Base Neutral/Acid Compounds (Includes Polynuclear Aromatics)													
Acenaphthene	4,700b	-----c	570b	0.13	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Acenaphthylene [NT]	2,300b	-----c	85b	0.07	**	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Aniline [NT]	110(b)	83(a,i)	0.064 b	**	**	< 0.37	< 0.36	< 0.38	< 0.41	< 0.38	< 0.39	< 0.42	< 0.39
Anthracene	23,000b	-----c	12,000b	0.4	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Benzidine [NT]	0.003e	0.009e	2E-6e	**	**	< 0.37	< 0.36	< 0.38	< 0.41	< 0.37	< 0.38	< 0.42	< 0.39
Benzo(*a*)anthracene	0.9e, w	-----c	2	1.8	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Benzo(*a*) pyrene	0.09e,w	-----c	8	2.1	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Benzo(*b*)fluoranthene	0.9e, w	-----c	5	2.1	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Benzo(*g,h,i*)perylene [NT]	2,300b	-----c	27,000b	1.7	**	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Benzo(*k*) fluoranthene	9e	-----c	49	1.7	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Benzoic Acid	310,000b	-----c	400i,b	**	*	< 0.93	< 0.91	< 0.95	< 1	< 0.94	< 0.96	< 1.1	< 0.97
Benzyl alcohol [NT]	7,800b	-----c	3b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
bis (2-Chloroethoxy)methane	**	**	**	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
bis (2-Chloroethyl)ether	0.6e	0.2e	0.0004e	**	0.66	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
bis (2-Ethylhexyl)phthalate	46e	31,000d	3,600	**	*	< 0.93	< 0.91	< 0.95	< 1	< 0.94	< 0.96	< 1.1	< 0.97
4-Bromophenyl-phenylether	**	**	**	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Butyl benzyl phthalate	16,000b	930d	930d	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Carbazole	32e	---c	0.6e	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4-Chloroaniline	310b	---c	0.7b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4-Chloro-3-methylphenol	**	**	**	**	**	< 0.37	< 0.36	< 0.38	< 0.41	< 0.37	< 0.38	< 0.42	< 0.39
2-Chloronaphthalene [NT]	6,300b	-----c	49b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2-Chlorophenol	390b	53,000d	4i,b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4-Chlorophenyl-phenylether	**	**	**	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Chrysene	88e	---c	160	2.7	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Dibenzo(a,*h*)anthracene	0.09e,w	---c	2	0.42	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Dibenzofuran [NT]	78b	---c	3b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
1,2-Dichlorobenzene (*o*-Dichlorobenzene)	7,000b	560d, x	17	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
1,3-Dichlorobenzene	**	**	**	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
1,4-Dichlorobenzene (*p*-Dichlorobenzene)	---c	11,000b, x	2	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
3,3'-Dichlorobenzidine	1e	---c	0.007e	**	1.3	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2,4-Dichlorophenol	230b	---c	1i,b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Diethyl phthalate	63,000b	2,000d	470b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2,4-Dimethylphenol	1600b	---c	9b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Dimethylphthalate [NT]	-----c	-----c	-----c	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4,6-Dinitro-2-methylphenol [NT]	6.3b	---c	pH-based	**	**	< 0.37	< 0.36	< 0.38	< 0.41	< 0.37	< 0.38	< 0.42	< 0.39
2,4-Dinitrophenol	160b	---c	0.2b,f	**	3.3	< 0.93	< 0.91	< 0.95	< 1	< 0.94	< 0.96	< 1.1	< 0.97
2,4-Dinitrotoluene	0.9e	---c	0.0008e	**	0.25	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
2,6-Dinitrotoluene	0.9e	---c	0.0007e	**	0.26	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Di-n-butylphthalate	7,800b	2,300d	2,300d	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Di-n-octylphthalate	1,600b	10,000d	10,000d	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Fluoranthene	3,100b	---c	4,300b	4.1	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039

APPENDIX E: TABLE 2 - SOIL ANALYTICAL RESULTS (SVOCs)
TEST PIT SAMPLES FOR CLEAN FILL
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Residential					V3 Soil Samples							
	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values	Concentrations of PAHs in Background Soils [/a]		6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013
						SS-EX-01 (2')	SS-EX-02 (4')	SS-EX-03 (6')	SS-EX-04 (8')	SS-EX-05 (8')	SS-EX-06 (2')	SS-EX-07 (4')	SS-EX-08 (6')
						2 Feet	4 Feet	6 Feet	8 Feet	8 Feet	2 Feet	4 Feet	6 Feet
Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Within MSA (mg/kg)	ADL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Semivolatiles (Method - SW8270C) Base Neutral/Acid Compounds (Includes Polynuclear Aromatics)													
Fluorene	3,100b	---c	560b	0.18	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Hexachlorobenzene	0.4e	1e	2	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Hexachlorobutadiene [NT]	78b	-----c	2.2b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Hexachlorocyclopentadiene	550b	10b, x	400	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Hexachloroethane	78b	---c	0.5b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Indeno(1,2,3-c,*d*)pyrene	0.9e, w	---c	14	1.6	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Isophorone	15,600b	4,600d	8b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2-Methylnaphthalene [NT]	310b	-----c	1.9b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2-Methylphenol (o-cresol)	3,900b	-----c	15b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4-Methylphenol (p-cresol) [NT]	7,800b	100,000b,x	0.2b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Naphthalene	1,600b	170b, x	12b	0.2	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
2-Nitroaniline [NT]	1,200b	18b,x	0.7b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
3-Nitroaniline [NT]	-----c	-----c	-----c	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4-Nitroanilne [NT]	310b	1,500b,x	0.14b	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2-Nitrophenol	**	**	**	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
4-Nitrophenol	**	**	**	**	**	< 0.37	< 0.36	< 0.38	< 0.41	< 0.37	< 0.38	< 0.42	< 0.39
Nitrobenzene	39b	92b, x	0.1b	**	0.26	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
N-Nitroso-di-n-propylamine	0.09e	---c	0.00005e	**	0.0018	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
N-Nitrosodimethylamine [NT]	0.013e	0.012e,x	7E-06e	**	**	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
N-Nitrosodiphenylamine	130e	---c	1e	**	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Pentachlorophenol	3e,j	---c	0.03i,f	**	*	< 0.075	< 0.073	< 0.076	< 0.082	< 0.076	< 0.078	< 0.085	< 0.078
Phenanthrene [NT]	2,300b	---c	210b	2.5	**	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Phenol	23,000b	---c	100b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
Pyrene	2,300b	---c	4,200b	3	*	< 0.037	< 0.036	< 0.038	< 0.041	< 0.037	< 0.038	< 0.042	< 0.039
Pyridine [NT]	78b	---c	pH-based	**	*	< 0.75	< 0.73	< 0.76	< 0.82	< 0.76	< 0.78	< 0.85	< 0.78
1,2,4-Trichlorobenzene	780b	3200b, x	5	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2,4,5-Trichlorophenol	7,800b	-----c	270i,b	**	*	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2
2,4,6-Trichlorophenol	58e	200e	0.2i,e,f	**	0.66	< 0.19	< 0.19	< 0.19	< 0.21	< 0.19	< 0.2	< 0.22	< 0.2

Part 742 Notes

* * indicates that the ADL is less than or equal to the specified remediation objective.

** ** indicates that the value is not listed in TACO, Section 742, Table A or B.

V3 Table Notes:

0.1 Indicates lab detection limit is greater than remediation objective

--- Indicates chemical not analyzed or not sampled

[NT] [NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, updated 10/30/2012. Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html See attached for notations

/a Title 35 of the Illinois Administrative Code, Part 742, Appendix A, Table H

Prepared by/Date MDD 6/25/13

Checked by/Date RKB 7/05/13

APPENDIX E: TABLE 3 - SOIL ANALYTICAL RESULTS (PCBs)
TEST PIT SAMPLES FOR CLEAN FILL
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Residential				V3 Soil Samples							
	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013
					SS-EX-01 (2')	SS-EX-02 (4')	SS-EX-03 (6')	SS-EX-04 (8')	SS-EX-05 (8')	SS-EX-06 (2')	SS-EX-07 (4')	SS-EX-08 (6')
					2 Feet	4 Feet	6 Feet	8 Feet	8 Feet	2 Feet	4 Feet	6 Feet
Chemical Name	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**ADL (mg/kg)**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PCBs (Method - SW8082)												
Aroclor 1016 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092
Aroclor 1221 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092
Aroclor 1232 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092
Aroclor 1242 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092
Aroclor 1248 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092
Aroclor 1254 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092
Aroclor 1260 (Using value for PCBs)[n]	1 h	--c,h	--h	*	< 0.088	< 0.088	< 0.092	< 0.097	< 0.09	< 0.092	< 0.1	< 0.092

Part 742 Notes

* indicates that the ADL is less than or equal to the specified remediation objective.

V3 Table Notes:

See attached for notations

Prepared by/Date MDD 6/25/13
Checked by/Date RKB 7/05/13

APPENDIX E: TABLE 4 - SOIL ANALYTICAL RESULTS (Pesticides)
TEST PIT SAMPLES FOR CLEAN FILL
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Residential				V3 Soil Samples							
	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013
					SS-EX-01 (2')	SS-EX-02 (4')	SS-EX-03 (6')	SS-EX-04 (8')	SS-EX-05 (8')	SS-EX-06 (2')	SS-EX-07 (4')	SS-EX-08 (6')
					2 Feet	4 Feet	6 Feet	8 Feet	8 Feet	2 Feet	4 Feet	6 Feet
Chemical Name	**Ingestion (mg/kg)**	**Inhalation (mg/kg)**	**Class I (mg/kg)**	**ADL (mg/kg)**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Pesticides (Method - SW8081)												
Aldrin	0.04e	3e	0.5e	0.94	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Chlordane	1.8e	72e, x	10	*	< 0.018	< 0.018	< 0.018	< 0.019	< 0.018	< 0.018	< 0.02	< 0.018
gamma-Chlordane	**	**	**	**	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
alpha-Chlordane	**	**	**	**	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
DDD	3e	---c	16e	*	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
DDE	2e	---c	54e	*	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
DDT	2e	---g, x	32e	*	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Dieldrin[n]	0.04e	1e	0.004e	0.603	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Endosulfan I	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Endosulfan II	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Endosulfan sulfate	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Endrin	23b	---c	1	*	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Endrin aldehyde	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Endrin ketone	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Heptachlor	0.1e	0.1e	23	0.871	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Heptachlor epoxide	0.07e	5e	0.7	1.005	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Alpha-HCH (*alpha*-BHC)	0.1e	0.8e	0.0005e	0.0074	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
beta-BHC	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
delta-BHC	---	---	---	---	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Gamma-HCH (Lindane or Gamma-BHC)[n]	0.5e	----c, x	0.009	*	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Methoxychlor[p]	390b	---c	160	*	< 0.0018	< 0.0018	< 0.0018	< 0.0019	< 0.0018	< 0.0018	< 0.002	< 0.0018
Toxaphene[n]	0.6e	89e	31	*	< 0.036	< 0.036	< 0.038	< 0.04	< 0.037	< 0.038	< 0.042	< 0.038

Part 742 Notes
* indicates that the ADL is less than or equal to the specified remediation objective.
** indicates that the value is not listed in TACO, Section 742, Table A or B.
NA means Not Available; no PQL or EQL available in USEPA analytical methods.

V3 Table Notes:
0.11 Indicates lab detection limit is greater than remediation objective
--- Indicates chemical not analyzed or not sampled, or no TACO remedial objectives available
See attached for notations

Prepared by/Date MDD 6/25/13
Checked by/Date RKB 7/05/13

APPENDIX E: TABLE 5 - SOIL ANALYTICAL RESULTS (INORGANICS)
TEST PIT SAMPLES FOR CLEAN FILL
SPARTANS' SQUARE SHOPPING CENTER
ROMEOVILLE, ILLINOIS

	Residential			[A'] Counties Within Metropolitan Statistical Areas[B'] (For Inorganic Chem. in Background Soils) (mg/kg)	Soil Component of the Groundwater Ingestion Exposure Route Values ([C'])		V3 Soil Samples							
	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		[C'] pH 7.25-7.74 for Groundwater Ingestion Class I Groundwater (mg/kg)	[C'] pH 7.75 - 8.24 for Groundwater Ingestion Class I Groundwater (mg/kg)	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013	6/13/2013
							SS-EX-01 (2')	SS-EX-02 (4')	SS-EX-03 (6')	SS-EX-04 (8')	SS-EX-05 (8')	SS-EX-06 (2')	SS-EX-07 (4')	SS-EX-08 (6')
	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/L)				2 Feet	4 Feet	6 Feet	8 Feet	8 Feet	2 Feet	4 Feet	6 Feet
Chemical Name							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
INORGANICS (Method - SW6020)														
Metals (Totals)														
Aluminum [NT]	78,000b	1,000,000b,x		9,500	N/A	N/A	8,600	6,300	5,400	4,500	10,000	17,000	18,000	9,800
Antimony	31b	-----c		4	5.0	5	< 2.1	< 2.1	< 2.2	< 2.4	< 2.1	< 2.2	< 2.5	< 2.2
Arsenic[l,n]	13t	750e		13	30	31	14	5.9	4.1	11	7.1	15	8.4	8
Barium	5,500b	690,000b		110	1,800	2,100	32	39	28	23	40	160	190	65
Beryllium	160b	1,300e		0.59	1000	8,000	< 0.51	< 0.53	< 0.54	< 0.6	< 0.54	0.63	0.75	< 0.56
Cadmium[l,n]	78b,r	1,800e		0.6	59	430	< 0.51	< 0.53	< 0.54	0.64	< 0.54	0.56	0.77	< 0.56
Chromium, total	230b	270e		16.2	N/A	N/A	11	12	11	10	16	20	23	14
Chromium, ion, hexavalent	230b	270e		-	32	28	---	---	---	---	---	---	---	---
Cobalt	4,700b	-----c		8.9	N/A	N/A	7.8	6.4	5.1	10	11	10	11	7.2
Copper[n]	2,900b	-----c		19.6	330,000	330,000	18	19	19	32	20	22	26	14
Cyanide (amenable)	1,600b	-----c		0.51	40	40	< 0.28	< 0.28	< 0.29	< 0.31	< 0.29	< 0.29	< 0.32	< 0.29
Iron	-----c	-----c		15,900	N/A	N/A	44,000	28,000	18,000	22,000	27,000	33,000	28,000	23,000
Lead	400k	-----c		36	107	107	19	100	21	24	15	23	30	15
Manganese	1,600b, v	69,000b, x		636	N/A	N/A	390	380	560	600	620	570	500	560
Mercury[l,n,s] (Method SW7471A)	23b	10b, x		0.06	6.4	8.0	0.028	< 0.02	0.026	< 0.02	< 0.019	0.028	0.033	0.02
Nickel[l]	1,600b	13,000e		18	700	3,800	21	20	17	25	28	24	24	18
Selenium[l,n]	390b	-----c		0.48	3.3	2.4	< 1	< 1.1	< 1.1	2.1	< 1.1	< 1.1	< 1.3	< 1.1
Silver	390b	-----c		0.55	39	110	< 1	< 1.1	< 1.1	< 1.2	< 1.1	< 1.1	< 1.3	< 1.1
Thallium	6.3b,u	-----c		0.32	3.4	3.8	< 1	< 1.1	< 1.1	< 1.2	< 1.1	< 1.1	< 1.3	< 1.1
Vanadium	550b	-----c		25.2	980	980	18	17	17	16	19	35	35	21
Zinc[l]	23,000b	-----c		95	16,000	53,000	64	67	56	110	51	68	88	50
SPLP Metals by ICP/MS (Method - SW1312/6020 (SW3005A))			**Class I (mg/L)**				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SPLP Aluminum [NT]			3.5								---		2.8	---
SPLP Chromium			0.1m								---		< 0.004	---
SPLP Cobalt			1.0m								---		< 0.004	---
SPLP Iron			5.0m								0.43		2.7	4
OTHER PARAMETERS							pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units
pH@ 25°C (1:10)							8.1	8.0	7.8	8.0	7.8	7.8	7.7	7.8

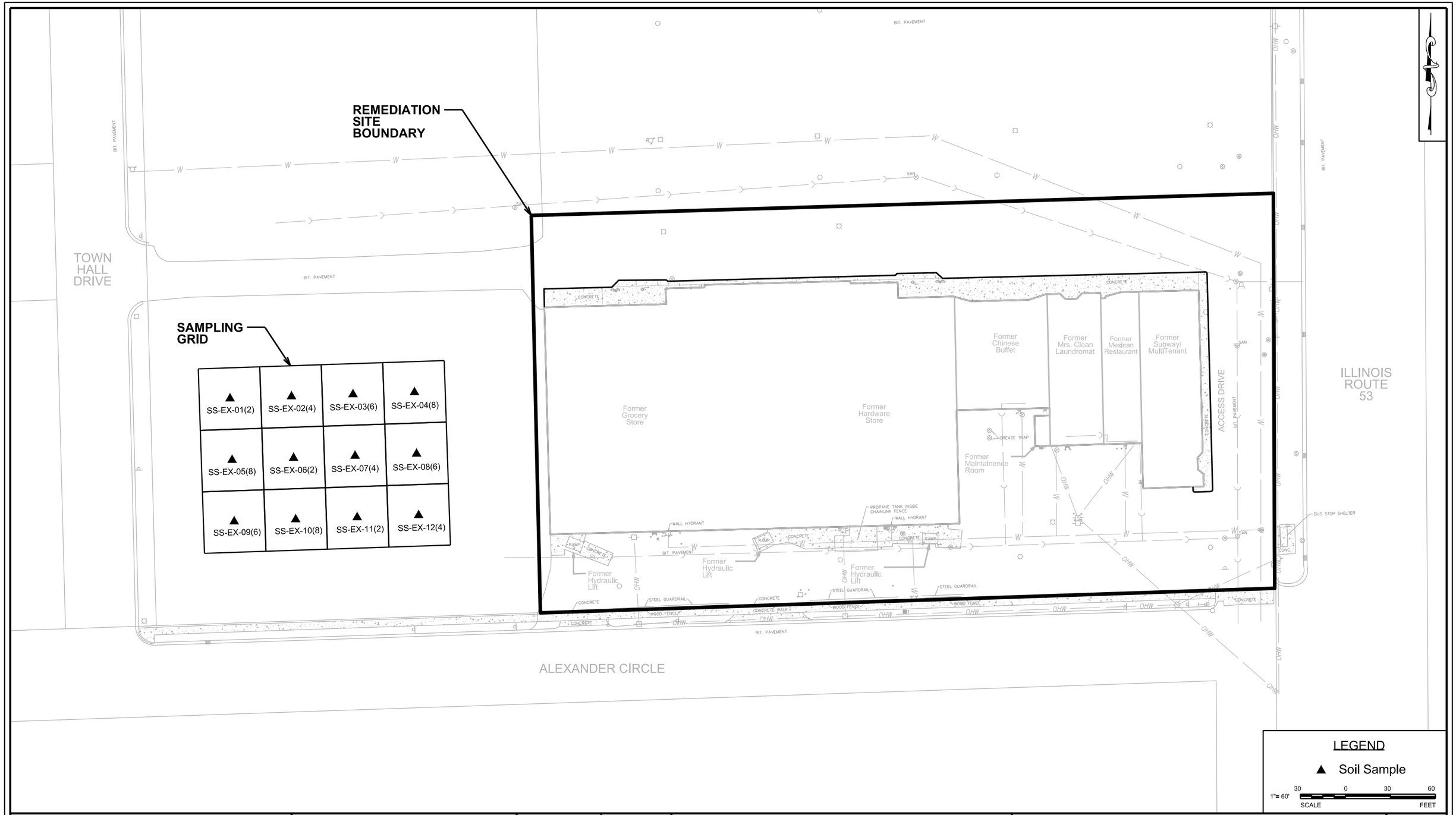
Part 742 Notes

* * indicates that the ADL is less than or equal to the specified remediation objective.
** **indicates that the value is not listed in TACO, Section 742, Table A or B.
N/A N/A means Not Applicable
---a No data available for this pH range

Prepared by/Date MDD 6/25/13
Checked by/Date RKB 7/05/13

V3 Table Notes:

0.11 Indicates exceedance of Tier 1 remediation objective
0.11 Indicates constituent detected above applicable background concentration.
--- Indicates chemical not analyzed or not sampled
[NT] [NT] indicates Non-TACO Chemical, some values are provisional objectives and are subject to change. Non-TACO Chemical Remediation Objectives are prepared by the IEPA Toxicity Assessment Unit, updated 10/30/2012. Non-TACO values from http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-tier-1-tables.html
A' Section 742, Appendix A, Table G: Concentrations of Inorganic Chemicals in Background Soils
B' Counties within Metropolitan Statistical Areas: Boone, Champaign, Clinton, Cook, DuPage, Grundy, Henry, Jersey, Kane, Kankakee, Kendall, Lake, Macon, Madison, McHenry, McLean, Mendard, Monroe, Peoria, Rock Island, Sangamon, St. Clair, Tazewelll, Will, Winnebago and Woodford.
C' Section 742, Appendix B, Table C: pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class I Groundwater)
See attached for notations



LEGEND

▲ Soil Sample

1"= 60' SCALE 30 0 30 60 FEET

V3 Companies
7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

Visio, Vertere, Virtute The Vision to Transform with Excellence

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NO.: 07292CU2011.HAZ	DESIGNED BY: KJW
FILE NAME: FIGimport_soil	DRAWN BY: KJW
DATE: 08/15/14	CHECKED BY: CAM
SCALE: SCALE	PROJECT MANAGER: CAM

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

IMPORT SOIL SAMPLING GRID

DRAWING NO. 1

07292CU2011.HAZ - IMPORT SOIL SAMPLING GRID

E:\2007\07292\Drawings\Mstn\RACR\FIGimport_soil07292.dgn 8/28/2014 1:38:49 PM

APPENDIX F

LEGAL DESCRIPTION

LEGAL DESCRIPTION

THAT PART OF BLOCK 2 OF THE PARKDALE SHOPPING CENTER, A SUBDIVISION OF PARTS OF THE NORTH 1/2 OF THE NORTHWEST 1/4 OF SECTION 34, AND THE SOUTH 1/2 OF THE SOUTHWEST 1/4 OF SECTION 27, TOWNSHIP 37 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DUPAGE TOWNSHIP, WILL COUNTY, ILLINOIS, ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 21, 1959, IN PLAT BOOK 31, ON PAGES 103 AND 104, AS DOCUMENT NUMBER 884281 DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEASTERLY CORNER OF SAID BLOCK 2, WHICH IS THE INTERSECTION OF THE NORTHERLY LINE OF ALEXANDER CIRCLE AND THE WESTERLY LINE OF ILLINOIS ROUTE 53 (FORMERLY U.S. HIGHWAY 66A); THENCE SOUTH 89 DEGREES 33 MINUTES 17 SECONDS WEST ALONG THE NORTHERLY LINE OF ALEXANDER CIRCLE, 489.00 FEET; THENCE NORTH 00 DEGREES 10 MINUTES 15 SECONDS WEST, 265.00 FEET; THENCE NORTH 89 DEGREES 47 MINUTES 51 SECONDS EAST, 495.00 FEET TO SAID WESTERLY LINE OF ILLINOIS ROUTE 53; THENCE SOUTH 01 DEGREES 08 MINUTES 15 SECONDS WEST ALONG SAID LINE, 263.00 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS: 129,866 SQ. FT. OR 2.9813 ACRES.

APPENDIX G

NOTIFICATION

***DRAFT* NOTICE**

Date, 2014

Dear OWNER

The *Village of Romeoville* has performed an environmental response action at the former Spartans' Square Shopping Center site, northwest corner of IL Rte. 53 and Alexander Circle, Romeoville, IL. The response action was performed because of historical industrial operations that resulted in soil and groundwater impacts. The response action consisted of chemical treatment of soil to reduce concentrations.

To protect human health, Illinois regulations require the *Village of Romeoville* to either clean up groundwater contamination or demonstrate that the groundwater in the area of the release will not be used as potable water. (Groundwater is the water beneath the ground stored in the pores of soil and rock; some communities and homeowners pump this water out of wells to supply potable water. Potable means fit for human consumption including drinking, bathing, preparing food, washing dishes and so forth.)

The *Village of Romeoville*, located at 1050 W. Romeo Rd., Romeoville, IL has a limited ordinance that strictly prohibits the human and domestic consumption of the groundwater beneath your property. Under Illinois regulations, a local ordinance that effectively prohibits the installation and use of potable water supply wells may be used as an institutional control to allow contamination above the groundwater ingestion remediation objectives to remain in the groundwater (35 Illinois Administrative Code 742.1015). (An institutional control is a legal mechanism for imposing a restriction on land use). The Illinois Environmental Protection Agency (Illinois EPA) has determined that the limited ordinance adopted by The *Village of Romeoville* meets the regulatory requirements for use as an institutional control. The *Village of Romeoville* has requested and has been granted approval from the Illinois EPA to use the groundwater ordinance as an institutional control.

Your property at *ADDRESS*, *Romeoville*, *IL*, is included in the area affected by the ordinance. This means that you cannot install or use a private potable water well on your property. Based on the remediation objectives established in reliance on this ordinance, groundwater beneath your property may not be suitable for human or domestic consumption. Illinois regulations require that you be notified of these facts.

The ordinance is identified as *Romeoville Ordinance Number 06-392*. If you wish to obtain a copy of the ordinance, please contact the *Village of Romeoville* at 1050 W. Romeo Rd., Romeoville, IL, 60446, *815- 886-7200*. To learn more about Spartans' Square Shopping Center, please contact the *Village of Romeoville* or *V3 Companies* at 7325 Janes Avenue, Woodridge, IL, *630-724-9200* or the Illinois EPA, Bureau of Land project manager, Todd Gross, Illinois EPA, Bureau of Land, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276, *(217) 782-6761*. You may also obtain a copy of the complete Illinois EPA file on Spartans' Square Shopping Center. To do so, you will need to submit a written request with your signature to the Freedom of Information Act (FOIA) Officer, Illinois EPA, Bureau of Land, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276. When requesting a copy of the file, please reference the file heading shown below:

1970905180—Will County
Romeoville/ Spartans' Square Shopping Center
NWC ILLINOIS ROUTE 53 & ALEXANDER CIRCLE

FOIA requests may also be requested through the Illinois EPA's Web page www.epa.state.il.us/foia

Sincerely,
Village of Romeoville

LEGEND

Ⓜ Monitoring Well

Groundwater Modeling Simulation

Approximate Groundwater Flow Direction

1"=50'

50 0 50 100

SCALE FEET

V3 Companies
7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

Visio, Vertere, Virtute..."The Vision to Transform with Excellence"

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NO.: 07292CU2011	DESIGNED BY: RKB
FILE NAME: FigG_Notification	DRAWN BY: RKB
DATE: 08/28/14	CHECKED BY: CAM
SCALE: 1"=50'	PROJECT MANAGER: CAM

NOTIFICATION MAP

FORMER SPARTANS' SQUARE

ROMEOVILLE ILLINOIS

DRAWING NO. G

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FigG_notification07292.dgn 8/28/2014 4:57:12 PM

APPENDIX H

GW ORDINANCE

Run Date :7/2/2009

DLC Assignment Form

Assignment ID :6826
Subject :Romeoville/Equilon Enterprises (Shell Station #137164)
Subject Type :Ordinance Review
DLC In Date :7/2/2009
DLC File No. :
Correspondence No. :R09070203

DLC Completed Date. :

Assigned Staff:
Wight, Mark Attorney

Project Details:
Status Issued Date: 7/2/2009 Due Date: 8/3/2009
Please review ordinance 06-392 for Romeoville

Comments:

VILLAGE OF ROMEOVILLE
CERTIFICATION

STATE OF ILLINOIS)
) SS.
COUNTY OF WILL)

I, Candice Roberts, Alternate Deputy Village Clerk of the Village of Romeoville, Will County, Illinois, do hereby certify that the foregoing is a true and correct copy of Section 50.60, 50.61, 50.62, and 50.99 of the Romeoville Code of Ordinances. I, the undersigned, hereby certify that I am the duly qualified Alternate Deputy Village Clerk of the Village of Romeoville, Will County, Illinois (the Village).

Witness my hand and official seal of said Village the 24th day of June, 2009

Candice Roberts
Alternate Deputy Village Clerk

SEAL

property owner shall be deemed to have impliedly consented to the foregoing limitation of liability. All such repair and replacement shall be the responsibility of the property owner. Furthermore, in the event that any damage is caused to public infrastructure during the installation of the sprinkling system, it shall be the responsibility of the contractor or homeowner to immediately report the damage to the Department of Public Works. All necessary repairs will be completed in accordance with village regulations and at the expense of the contractor or homeowner. Prior to the installation of any lawn sprinkler system within the parkway portion of any village right-of-way, the property owner shall upon installation of a sprinkler system within village right-of-way, shall, at the discretion of the village and in such form as the village may require from time to time, enter into an appropriate license agreement with the village and/or record a covenant running with the land against the site of the proposed lawn sprinkler system to memorialize the foregoing requirements and the other conditions of this subchapter. A copy of the recorded document must be submitted with the application as a condition of the issuance of the permit.
(Ord. 06-0486, passed 12-6-06)

§ 50.54 WATER RESTRICTIONS.

All lawn sprinkler systems shall adhere to the water conservation regulations outlined in § 50.41.
(Ord. 06-0486, passed 12-6-06)

§ 50.55 BOOSTER PUMP USE.

The following additional requirements shall apply to the use of any booster pump in connection with a lawn sprinkler system:

(A) Where a booster pump has been installed on the service line to or within any premises, such pump shall be equipped with a low pressure cut-off device designed to shut off the booster pump when the pressure in the service line on the suction side of the pump drops to 20 pounds per square inch or less.

(B) The manufacturer, type and size of the pump used for installation shall be provided on the permit application.

(C) It shall be the duty of the property owner to maintain the low pressure cut-off device in proper working order and to certify to the Public Works Department, at least once a year, that the device is operable.
(Ord. 06-0486, passed 12-6-06)

GENERAL PROVISIONS

§ 50.60 USE OF GROUNDWATER AS A POTABLE WATER SUPPLY.

Except as to uses or methods that were in existence prior to the effective date of this section, the use or attempt to use as a potable water supply groundwater from any location within the corporate limits of the village which location is within the area described and depicted in Exhibit B, attached to Ordinance No. 06-392, passed April 5, 2006, hereto by the installation or drilling of wells or any other method is hereby prohibited, and the foregoing prohibition shall expressly include and apply to the village.
(Ord. 06-392, passed 4-5-06) Penalty, see § 50.99

§ 50.61 AUTHORIZATION.

To facilitate the enforcement and further the intention of the prohibition set forth in § 50.60, the Village President is hereby authorized and directed to execute a tiered approach to corrective action agreement in substantially the form attached to Ordinance No. 06-392, passed April 5, 2006 as Exhibit C.
(Ord. 06-392, passed 4-5-06)

§ 50.62 DEFINITIONS.

As used in §§ 50.60 and 50.61:

"PERSON" shall include any individual, partnership, copartnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their legal representative, agents or assigns.

"POTABLE WATER" is any water used for human or domestic consumption, including but not limited to water used for drinking, bathing, swimming, washing dishes or preparing foods.
(Ord. 06-392, passed 4-5-06)

§ 50.99 PENALTY.

(A) Any person, firm, or corporation that violates any of the provisions of this title or chapter, unless otherwise specified, shall be fined not less than $50 nor more than $750 for each offense.

(B) In addition to any other penalties, fines or sentences that may be imposed pursuant to law, any person convicted of a violation of § 50.60 shall be subject to a fine of not less than $100 nor more than $750 for each offense.
(Ord. 414, passed 7-17-74; Am. Ord. 2410-96, passed 3-20-96; Am. Ord. 06-392, passed 4-5-06)

ORDINANCE NO.06-392 DATE April 5, 2006

AN ORDINANCE RESTRICTING THE USE OF GROUNDWATER AND AUTHORIZING THE EXECUTION OF A TIERED APPROACH TO CORRECTIVE ACTION AGREEMENT

WHEREAS, certain properties within the Village of Romeoville, including the property legally described in Exhibit A hereto have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use of the property described in Exhibit A, concentrations of certain chemical constituents in the groundwater beneath the Village may exceed Class I groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier I residential remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the Village desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of properties that are the source of said chemical constituents.

NOW THEREFORE BE IT ORDAINED BY THE PRESIDENT AND BOARD OF TRUSTEES FOR THE VILLAGE OF ROMEOVILLE, WILL COUNTY, ILLINOIS; THAT :

SECTION 1: RECITALS. The foregoing recitals are hereby incorporated into this Ordinance as if fully set forth herein.

SECTION 2: USE OF GROUNDWATER AS A POTABLE WATER SUPPLY PROHIBITED. Except as to uses or methods that were in existence prior to the effective date of this ordinance, the use or attempt to use as a potable water supply ground water from any location within the corporate limits of the Village of Romeoville which location is within the area described and depicted in Exhibit B hereto by the installation or drilling of wells or any other method is hereby prohibited, and the foregoing prohibition shall expressly include and apply to the Village of Romeoville.

SECTION 3: AUTHORIZATION. To facilitate the enforcement and further the intention of the prohibition set forth above in Section 2, the Village President is hereby authorized and directed to execute a Tiered Approach to Corrective Action Agreement in substantially the form attached hereto as Exhibit C.

SECTION 4: PENALTY. In addition to any other penalties, fines or sentences

that may be imposed pursuant to law, any person convicted of a violation of the provisions of Section 2 above shall be subject to a fine of not less than $100.00 nor more than $750.00 for each offense.

SECTION 5: DEFINITIONS. As used herein, "person" shall include any individual, partnership, copartnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their legal representative, agents or assigns. As used herein, "potable water" is any water used for human or domestic consumption, including but not limited to water used for drinking, bathing, swimming, washing dishes or preparing foods.

SECTION 6: SEVERABILITY. That the various provisions of this Ordinance are to be considered severable and if any part or portion of this Ordinance shall be held invalid by any Court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions of this Ordinance.

SECTION 7: CONFLICTS. All prior Ordinances and Resolutions, or parts thereof in conflict or inconsistent with this Ordinance are hereby expressly repealed only to the extent of such conflict or inconsistency.

SECTION 8: REPEALER. All Ordinances or parts of Ordinances in conflict with any of the provisions of this Ordinance shall be, and the same are hereby repealed.

SECTION 9: EFFECTIVE DATE. This Ordinance shall be in full force and effect from and after its passage, approval and publication in pamphlet form as provided by law

PASSED this 5th day of April, 2006 with 4 members voting aye, 0 members voting nay, the President N/A voting, with 1 members abstaining or passing and said vote being:

Linda S. Palmiter	ABSENT	Dr. Edward McCartan	AYE
Dennis Veselsky	AYE	Andy Goitia	AYE
John Noak	AYE		

Raymond E. Holloway

RAYMOND HOLLOWAY, Village Clerk

APPROVED THIS 5TH DAY OF APRIL, 2006.

FRED DEWALD, Village President

ATTEST:
Village Clerk

Exhibit A—Legal Description of Site

Lot 3 in Block 3 in Parkdale Shopping Center, Village of Romeoville, Illinois, a subdivision of part of the North ½ of the NW ¼ of Section 34, and part of the South ½ pf the SW ¼ of Section 27, all in Township 37 North, Range 10 East of the Third Principal Meridian, according to the plat thereof recorded August 21, 1959 as Doc. No. 884281 in Will County, Illinois

PIN 12-02-34-102-003-0000

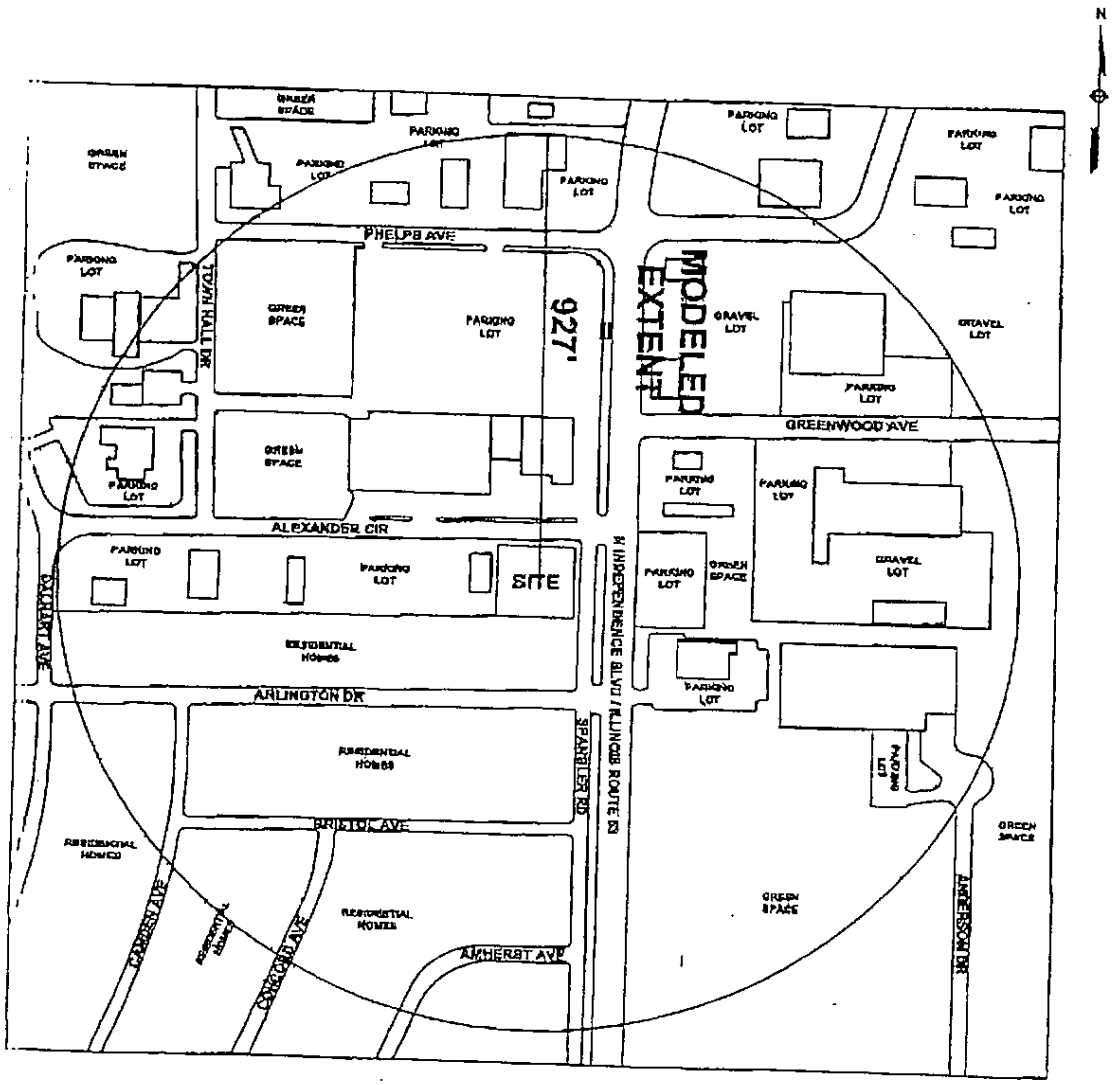
Common Address: One Alexander Circle, Romeoville, IL 60446

Exhibit B—Legal Description and Depiction of Area from Which Groundwater Use is Prohibited

That area depicted below which is located within 927 feet if the following described real estate in the Village of Romeoville, DuPage Township, Will County, Illinois, to wit:

Lot 3 in Block 3 in Parkdale Shopping Center, Village of Romeoville, Illinois, a subdivision of part of the North ½ of the NW ¼ of Sec. 34, and part of the South ½ of the SW ¼ of Sec. 27, all in Township 377 North, Range 10 East of the Third Principal Meridian, according to the plat thereof recorded August 21, 1959 as Doc. No. 884281 in Will County, Illinois.

Address: One Alexander Circle, Romeoville, IL
PIN 12-02-34-102-003-0000



Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • Box 19276 • Springfield • Illinois • 62794-9276

Site Remediation Program Form (DRM-2)
(To be Submitted with all Plans and Reports)

You may complete this form online, save a copy, print, sign and mail it to the address above.

I. Site Identification:

Site Name: Spartan Square Shopping Center

Street Address: NWC ILLINOIS ROUTE 53 & ALEXANDER CIRCLE P.O. Box:

City: Romeoville State: IL Zip Code: 60446 Phone:

Illinois Inventory ID Number: 1970905180 IEMA Incident Number:

II. Remediation Applicant:

Applicant's Name: Dawn Caldwell

Company: Village of Romeoville

Street Address: 1050 W. Romeo Road P.O. Box:

City: Romeoville State: IL Zip Code: 60446 Phone: (815) 886-0279

Email Address: dcaldwell@romeoville.org

I hereby request that the Illinois EPA review and evaluate the attached project documents in accordance with the terms and conditions of the Environmental Protection Act (415 ILCS 5), implementing regulations, and the review and evaluation services agreement.

Remediation Applicant's Signature: Dawn Caldwell Date: 9-4-14

III. Contact Person for Remediation Applicant:

Contact's Name: Dawn Caldwell

Company: Village of Romeoville

Street Address: 1050 W. Romeo Road P.O. Box:

City: Romeoville State: IL Zip Code: 60446 Phone: (815) 886-0279

Email Address: dcaldwell@romeoville.org

Contact Person for Consultant:

Contact's Name: Craig McCammack

Company: V3 Companies

Street Address: 7325 Janes Avenue P.O. Box:

City: Woodridge State: IL Zip Code: 60517 Phone: 630-729-6554

Email Address: cmccammack@v3co.com

IV. Review & Evaluation Licensed Professional Engineer or Geologist ("RELPEG"), if applicable:

RELPEG's Name: Lawrence Eastep

Company: Andrews Engineering

Street Address: 3300 Ginger Creek Drive P.O. Box:

City: Springfield State: IL Zip Code: 62711 Phone: 217-787-2334

Email Address: leastep@andrews-eng.com

V. Project Documents Being Submitted:

Document Title: Remedial Action Completion Report
Date of Preparation of Plan or Report: August 2014
Prepared by: V3 Companies
Prepared For: Village of Romeoville

Type of Document Submitted:

- [ ] Site Investigation Report - Comprehensive
- [ ] Site Investigation Report - Focused
- [ ] Remediation Objectives Report - Tier 1 or 2
- [ ] Remediation Objectives Report - Tier 3
- [ ] Remedial Action Plan
- [x] Remedial Action Completion Report
- [ ] Sampling Plan
- [ ] Health and Safety Plan
- [ ] Community Relations Plan
- [ ] Risk Assessment
- [ ] Containment Fate & Transport Modeling
- [ ] Other: _____

Document Title: _____
Date of Preparation of Plan or Report: _____
Prepared by: _____
Prepared For: _____

Type of Document Submitted:

- [ ] Site Investigation Report - Comprehensive
- [ ] Site Investigation Report - Focused
- [ ] Remediation Objectives Report - Tier 1 or 2
- [ ] Remediation Objectives Report - Tier 3
- [ ] Remedial Action Plan
- [ ] Remedial Action Completion Report
- [ ] Sampling Plan
- [ ] Health and Safety Plan
- [ ] Community Relations Plan
- [ ] Risk Assessment
- [ ] Containment Fate & Transport Modeling
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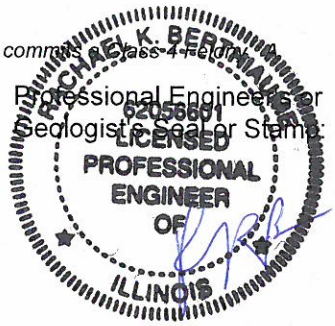
- [ ] Containment Fate & Transport Modeling
- [ ] Other: _____

VI. Professional Engineer's or Geologist's Seal or Stamp:

I attest that all site investigations or remedial activities that are subject of this plan(s) or report(s) were performed under my direction, and this document and all attachments were prepared under my direction or reviewed by e, and to the best of my knowledge and belief, the work described in the plan and report has been designed or completed in accordance with the Illinois Environmental Protection Act (415 ILCS 5), 35 Ill. Adm. Code 740, and generally accepted engineering practices or principles of professional geology, and the information presented is accurate and complete.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Professional Engineer's or Geologist's Seal or Stamp:



Engineer's or Geologist's Name: Rachael K. Berthiaume

Company: V3 Companies

Registration Number: 062-056601 Phone: 630-729-6562

License Expiration Date: 11/30/15

Signature: _____ Date: 8/28/14

Note: The authority of a Licensed Professional Geologist to certify documents submitted to the Illinois Environmental Protection Agency for review and evaluation pursuant to Title XVII of the Environmental Protection Act is limited to Site Investigation Reports (415 ILCS 58.7(f), as amended by P. A. 92-0735, effective July 25, 2002. A Licensed Professional Geologist cannot certify Remediation Objectives Reports, Remedial Action Plans or Remedial Action Completion Reports.

All information submitted is available to the public except when specifically designated by the Remediation Applicant to be treated confidentially as a trade secret or secret process in accordance with the Illinois Compiled Statutes, Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines. The Illinois EPA is authorized to require this information under Sections 415 ILCS 5/58 - 58.12 of the Environmental Protection Act and regulations proumulgated thereunder. Disclosure of this information is required as a condition of participation in the Site Remediation Program. Failure to do so may prevent this form from being processed and could result in your plan(s) or report(s) being rejected. This form has been approved by the Forms Management Center.