TECHNICAL MEMORANDUM

2015 Soil Gas Investigation, Southeast Rockford Groundwater Contamination Superfund Site WA No. 175-TATA-05DK/Contract No. EP S5-06-01

PREPARED FOR: U.S. Environmental Protection Agency

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Introduction

This technical memorandum documents the activities associated with the 2015 soil gas investigation conducted at the Southeast Rockford Groundwater Contamination Superfund Site (the site). The purpose of this investigation was to continue the evaluation of site contaminants in soil gas to identify the potential for vapor intrusion impacts on residential and commercial properties within the investigation area.
The investigation was conducted for the U.S. Environmental Protection Agency (EPA) under Work Assignment No. 175-TATA-05DK, Contract No. EP S5-06-01.

The 2015 soil gas investigation was conducted based on the findings of the 2014 deep soil gas investigation completed by CH2M HILL, Inc. (CH2M), which identified contaminant concentrations exceeding EPA vapor intrusion screening levels (VISLs) in deep soil gas. Based on the 2014 investigation findings, it was concluded that additional evaluation of the potential for vapor intrusion at the site was necessary (CH2M 2015a).

As part of the 2015 soil gas investigation, permanent soil gas probes were installed at select locations within the investigation area. Two rounds of soil gas samples were collected from the newly installed probes. Additionally, two more rounds of soil gas samples were collected from select deep soil gas probes installed in 2014.

The following field documents are attached to this memorandum:

- Attachment 1—Photographic Log
- Attachment 2—Soil Boring Logs
- Attachment 3—Soil Gas Probe Construction Logs
- Attachment 4—Soil Gas Sampling Forms
- Attachment 5—Waste Characterization Results and Disposal Documentation
- Attachment 6—Data Quality Evaluation (2015)
- Attachment 7—Vapor Intrusion Screening Level Calculator (Version 3.4.6)
- Attachment 8—Soil Gas Analytical Results (2014 and 2015)

Site Description

The site is located in the City of Rockford, Winnebago County, Illinois, and consists of an approximately 7.5-square-mile area (Figures 1 and 2). The overall site is defined in the June 2002 Record of Decision as the area where groundwater contamination exceeds 10 parts per billion of total chlorinated volatile organic compounds (VOCs) (EPA 2002). Benzene, ethylbenzene, toluene, and xylenes are also identified in the Record of Decision as groundwater contaminants of concern. Much of the groundwater plume underlies an area of mixed residential and commercial properties extending from Sandy Hollow Road to North 23rd Avenue and from Alpine Road west to the Rock River (Figure 2). There are four primary source areas within the site: Area 4,

Area 7, Area 9/10, and Area 11. A description of each source area and a summary of investigations/remediation activities previously conducted in each source area are presented in the *Uniform Federal Policy Quality Assurance Project Plan* (UFP-QAPP) (CH2M 2014).

Previous Soil Gas Investigations

In 2014, a deep soil gas investigation was conducted by CH2M throughout the site. As part of the investigation, 48 permanent deep soil gas probes were installed within the groundwater plume extent as defined in *Statistical Analysis of Chemicals Concentrations in Groundwater and Mapping* (S.S. Papadopulos 2012). Two rounds of sampling were attempted at each soil gas probe. Forty of the 48 deep soil gas probes at the project site were sampled during at least one sampling event. Eight of the permanent soil gas probes could not be sampled in 2014, likely due to being installed within fine-grained soil or groundwater.

Soil gas samples were analyzed for site-specific VOCs identified in the QAPP-Addendum (CH2M 2014). Results were screened against EPA VISLs provided in the VISL calculator Version 3.3.1, May 2014 Regional Screening levels (RSLs) (EPA 2014) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of $1x10^{-5}$).

Of the probes sampled, 6 probes had detected concentrations of one or more site-specific VOCs (1,1-dichloroethane [1,1-DCA], tetrachloroethene [PCE], 1,1,1-trichloroethane [1,1,1-TCA], and/or trichloroethene [TCE]) that exceeded the May 2014 VISLs during one or more sampling rounds. Following the 2014 soil gas investigation, EPA concluded that additional evaluation of the potential for vapor intrusion at the site was necessary.

2015 Investigation Objectives

As summarized in the UFP-QAPP Addendum (CH2M 2015b), the 2015 soil gas investigation activities were conducted to meet the following objectives:

- An additional 2 rounds of sampling at 34 deep soil gas probes installed in 2014. Contaminant concentrations in these probes were below the EPA VISLs during the 2014 sampling events.
- Installation and sampling of permanent soil gas probes at shallower depths in the vicinity of 6 deep soil gas probes where VOCs exceeded VISLs to evaluate the upward migration of VOCs through the subsurface.
- Installation and sampling of permanent soil gas probes at shallower depths in the vicinity of deep soil gas probes that could not be sampled in 2014 due to the presence of fine-grained soil or groundwater at the probe-screened interval.
- Installation and sampling of permanent soil gas probes in the vicinity of soil gas probes SG-04, SG-28, and SG-40, and Source Area 4 to evaluate deep soil gas concentrations in areas of known soil gas VISL exceedances (SG-04, SG-28, and Source Area 4) and areas with high concentrations of VOCs in groundwater (SG-40).

Field Activities

Field investigation activities were conducted in accordance with the UFP-QAPP (CH2M 2014) and the UFP-QAPP addendum (CH2M 2015b). Deviations from the UFP-QAPP and UFP-QAPP addendum are presented in Table 1. A detailed discussion of the soil gas investigation activities is included in the following subsections. Photographs of the investigation activities are included in Attachment 1.

Field investigation activities were conducted on private properties and within the City of Rockford right-of-way. Access permits were obtained for drilling and sampling activities from private property owners and from the City of Rockford for sampling activities within the right-of-way. Signed access agreements could not be obtained at several properties where field investigation activities were proposed in the UFP-QAPP

addendum; therefore, soil gas sampling was performed on alternate properties where access was obtained. Access agreements were obtained for 23 properties. Field investigation activities were conducted on the dates shown in Table 2.

Utility Locating

Underground utilities were marked near each proposed soil gas probe and soil boring location by the Illinois one-call service and by Underground Detectives, a private utility-locating subcontractor. The utility-locating subcontractor used ground-penetrating radar, electromagnetics, and a magnetometer to verify and mark the presence of subsurface utilities or other potential subsurface objects that could be damaged by intrusive work. Sampling locations on each property were modified to provide safe clearance from identified utilities and other subsurface objects. Drilling activities were not performed within 10 feet of an overhead power line or within 5 feet of a marked underground utility.

Soil Borings

Soil borings were collected at 11 of the soil gas probe locations installed in September 2015. Soil borings were collected at select locations throughout the site to obtain additional lithology and depth-to-groundwater data. Several of the proposed soil boring locations in the UFP-QAPP addendum were moved from locations where property access was not granted and distributed across the site as needed. Since soil borings were used to obtain groundwater depth information for several probes in the area, some of the soil boring locations were also moved based on the installation schedule for probes at private commercial facilities. (A soil boring needed to be completed in the area before the probe was installed.)

Where possible, a soil core was collected at the soil boring locations by Mateco Drilling Company using direct-push technology 5-foot-long Geoprobe Macro-Core Samplers with disposable liners. At locations where the drill rig was not able to access the probe location due to narrow side yards or other obstructions, a hand auger was used to collect the soil boring. As a result, more soil borings were completed in September 2015 (11 locations) than proposed in the UFP-QAPP addendum (8 locations). Soil borings were advanced with the drill rig or hand auger until groundwater was encountered or until refusal was reached. Soil borings were characterized using the Unified Soil Classification System in accordance with ASTM International Standard Practice for Description and Identification of Soils (ASTM International D2488). Photographs were taken of the soil cores collected with the Geoprobe rig. Soil boring logs are included in Attachment 2.

In general, soils in the western portion of the site consisted of silty sand, sand, and gravely sand mixtures. Soils in the central and eastern portions of the site were finer grained, consisting of very dense silts and clays. Glacial till was noted in soil borings collected in the western and northwestern portions of the site. The depth to groundwater was variable across the site and dependent on the proximity of the soil boring to the Rock River, proximity to the aqueduct, as well as the site topography.

Soil Gas Probe Installation

In accordance with the UFP-QAPP addendum, 22 permanent soil gas probes were installed by Mateco in September 2015 using a Geoprobe drill rig and direct-push technology drilling methods or by hand auger (if the location was not accessible with a drill rig). Several soil gas probes were moved from the locations proposed in the UFP-QAPP addendum (CH2M 2015b) because property access was not granted. Additionally, per EPA direction, a soil gas probe was not installed on one of the 23 properties where access was obtained due to the soil type (glacial till) encountered at this location, as described in Table 1. The locations of the 22 installed soil gas probes are shown in Figure 3.

In accordance with the UFP-QAPP addendum, the permanent soil gas probes were installed within 5 feet of the primary structure on each property when possible. The soil gas probes were installed by hand auger or with a Geoprobe drill rig. At the locations where the drill rig was used, 2.25-inch-outer-diameter (OD) drilling rods were used to advance to the desired installation depth. For hand auger locations, a 2.5-inch-OD hand

auger was used for the probe installation. If needed, monitoring well filter sand (K&E Well Gravel), was used to fill the boring to the desired depth.

Several of the soil gas probes were installed at a different depth than proposed in the UFP-QAPP addendum based upon the depth to water and soil type encountered at each location. Probe depths were also modified where refusal was encountered at depth.

Once the desired installation depth was achieved, each soil gas probe was fully assembled by attaching an expendable implant anchor to a 21-inch or 6-inch-long, 0.5-inch-OD stainless-steel wire mesh screen vapor sampling implant to 0.25-inch-OD Teflon tubing long enough to extend to the ground surface. For locations installed with the drill rig, the fully assembled probe was placed inside the drilling rods. The rods were then retracted as filter sand was poured into the rods to surround the probe screen. For locations installed with a hand auger, the hand auger was removed from the borehole, and the fully assembled probe was placed within the boring and surrounded by filter sand.

Approximately 6 inches of filter sand was placed above the screen of each probe to prevent bentonite from clogging the screen. Approximately 1 foot of granular bentonite was then placed above the filter sand. The remainder of the borehole was filled with bentonite (granular or 3/8-inch chips) and hydrated in lifts to the ground surface. Each probe was completed with a 6⅝-inch-diameter, locking, traffic-rated flush-mount cover secured with cement. Installation information for each probe is summarized in Table 3, and construction logs for the probes installed in September 2015 are included in Attachment 3. Deviations from the methods of construction specified in the UFP-QAPP addendum are summarized in Table 1.

The final location of each soil gas probe was documented with a handheld Trimble global positioning system (GPS) unit. GPS coordinates for each soil gas probe location are included in Table 3.

Soil Gas Sampling

Prior to sampling, a helium-leak check was performed, and three dead volumes of soil gas were purged from each probe. One dead volume includes the volume of soil gas within the sand filter pack and sand backfill ($Volume = \pi * sand\ thickness * soil\ boring\ radius^2$), plus the volume of soil gas within the probe tubing ($Volume = \pi * tubing\ length * tubing\ radius^2$). Each volume of soil gas purged is screened with a helium detector and a photoionization detector. With the exception of one probe in September 2015, the soil gas probes passed the helium-leak checks prior to sampling. The probe that did not pass the helium-leak check in September 2015 had suspected methane interference based on photoionization detector and helium detector readings. The presence of methane gas in the subsurface has the potential to result in false readings on a helium detector. The sampling approach for this location was modified as described in Table 1, so that a sample could be collected.

Soil gas samples were collected from the soil gas probes installed throughout the site during three separate mobilizations as indicated in the following bulleted list. Table 4 summarizes which probes were sampled during each event. Soil gas sampling forms are included in Attachment 4.

- **Round 3 (August to September 2015)**—In August 2015, deep soil gas sampling was planned for 34 deep soil gas probes installed in 2014. The 34 probes were selected for sampling to confirm that contaminant concentrations in these probes remained below the EPA VISLs, as observed during the 2014 sampling events. Samples were successfully collected from 30 of the 34 deep soil gas probes during the Round 3 event. Four of the 34 soil gas probes could not be sampled due to the presence of water within the sample tubing (1 location) or because a vacuum in the probe was observed during the purging (3 locations). A vacuum (negative pressure) observed during purging indicates that there is an insufficient volume of soil gas present to sample the probe due to fine-grained soils or groundwater within the probe.

In September 2015, soil gas samples were collected from 21 of the 22 newly installed soil gas probes to meet the objectives as described above. One soil gas probe could not be sampled due to a vacuum in the probe during purging.

- **Round 4 (December 2015)**—In December 2015, soil gas sampling was planned for the same 56 soil gas probes planned for sampling in August and September 2015. Soil gas samples were successfully collected from 50 of 56 soil gas probes. Six of the 56 soil gas probes could not be sampled due to the presence of water within the sample tubing (2 locations) or because a vacuum in the probe was observed during the purging (4 locations).

Soil gas samples were collected from each permanent soil gas probe in 1-liter Summa canisters equipped with flow controllers set between 100 and 200 milliliters per minute. The soil gas samples were analyzed for site-specific VOCs (1,1,1-TCA, 1,1,2-trichloroethane, 1,1-DCA, 1,1-dichloroethene [1,1-DCE], 1,2-dichloroethane, cis-1,2-dichloroethene, benzene, ethylbenzene, methylene chloride, PCE, toluene, trans-1,2-dichloroethene, TCE, vinyl chloride, and xylenes).

Quality Assurance/Quality Control Samples

Quality assurance (QA)/quality control (QC) field duplicate samples were collected at a frequency of at least 10 percent during the 2015 sampling events, as required by the UFP-QAPP (CH2M 2014).

Field Equipment Decontamination

Disposable materials (core liners) were used for the collection of soil cores. Nondisposable equipment (drilling rods and hand auger) used during the soil gas investigation was decontaminated by washing with Alconox, followed by a water rinse prior to reuse. Individually certified Summa gas canisters and flow controllers were provided by the laboratory for soil gas sampling.

Investigation-derived Waste

Investigation-derived waste (IDW) generated during collection of the soil cores and installation of the soil gas probes included soil and decontamination water. Personal protective equipment and disposable sampling equipment (core liners) were also containerized for disposal. IDW was characterized and disposed of as nonhazardous waste in accordance with the UFP-QAPP. Waste characterization results and documentation of IDW disposal are included in Attachment 5.

Data Validation

In accordance with the UFP-QAPP (CH2M 2015), a Level III validation was performed on 100 percent of data, and a Level IV validation was performed on 10 percent of data. Validated analytical results are presented in Table 5. The data quality evaluation is included in Attachment 6.

Investigation Results

Volatile Organic Compound Sampling Results

Soil gas sampling results from 2014 to 2015 were evaluated to meet the specific objectives outlined in the UFP-QAPP addendum. Soil gas analytical results were screened against EPA VISLs provided in the VISL Calculator Version 3.4.6, November 2015 RSLs (EPA 2016) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of $1x10^{-5}$). Due to VISL updates since 2014, some 2014 sample results that exceeded the May 2014 VISLs in the *Deep Soil Gas Investigation Technical Memorandum* (CH2M 2015b) no longer exceed the updated VISLs. A copy of the current VISL calculator is included in Attachment 7. Results from the 2014 sampling events were rescreened against the updated VISLs and are presented with the 2015 analytical results in Attachment 8.

Of the soil gas probes sampled in 2014 and 2015, seven soil gas samples contained site-specific VOCs exceeding the updated VISLs during one or more sampling rounds. The following site-specific VOCs were

detected at concentrations exceeding VISLs in site samples: 1,1,1-TCA, 1,1-DCA, 1,1-DCE, PCE, TCE, and vinyl chloride. Soil gas probes with VOC detections exceeding VISLs are shown in Figure 4.

The spatial distribution of the seven soil gas probes with VOCs exceeding VISLs in 2014 and/or 2015 are described in the following subsections.

Vicinity of Source Area 7

Two (SG-45 and SG-66) of the seven soil gas probes with exceedances are located downgradient of Source Area 7 (Figure 4). TCE exceedances were observed in deep soil gas probe SG-45 during two rounds of sampling in 2014. In 2015, soil gas probe SG-71 was installed at a shallower depth near SG-45 to evaluate the migration of VOCs from deep soil gas upwards through the soil column. Concentrations of detected VOCs at shallower probe SG-71 were less than VISLs during both rounds of sampling in 2015.

Shallow soil gas probe SG-66 is located downgradient of Source Area 7 near the highest groundwater VOC concentrations observed at the site (greater than 10,000 micrograms per liter) (S.S. Papadopulos 2012). 1,1-DCA, 1,1-DCE, PCE, TCE, and vinyl chloride exceeded VISLs at SG-66 during one or more sampling events in 2015. The soil gas probe (SG-40) installed to the south-southeast of SG-66 was sampled once in April 2014, and concentrations of VOCs were less than VISLs. Sampling of SG-40 was attempted during three other events; however, a negative vacuum was observed during purging, or water was present in the sample tubing.

SG-66 is located in a wooded area, and the buildings closest to the probe are approximately 500 feet to the south. The depth to groundwater at SG-66 is approximately 7 feet below ground surface. Due to changes in topography in the area, the depth to groundwater near the closest buildings to the probe is approximately 25 to 30 feet below ground surface.

One soil gas probe (SG-72) was installed upgradient of Source Area 7, in the vicinity of soil gas probe SG-49, which was previously unable to be sampled, to further evaluate soil gas concentrations in this area. VOC concentrations at SG-72 were less than VISLs.

Downgradient of Source Area 4

Two (SG-25 and SG-26) of the seven soil gas probes with exceedances are located downgradient of Source Area 4. VOC exceedances were observed within these two deep soil probes during the 2014 sampling events. In 2015, six shallow soil gas probes (SG-53, SG-54, SG-55, SG-56, SG-58, and SG-59) were installed in this area to evaluate the upward migration of VOCs through the subsurface and the lateral extent of soil gas concentrations above VISLs. Concentrations of detected VOCs in soil gas samples collected from the new probes were less than VISLs during both rounds of sampling in 2015. The groundwater present in this area is approximately 10 feet below ground surface.

Central Portion of the Site

One of the seven soil gas probes with VISL exceedances (SG-28) is located in the central portion of the site and downgradient of a higher (greater than 500 micrograms per liter) total VOC concentration groundwater area (S.S. Papadopulos 2012). TCE was detected at concentrations exceeding VISLs in 2014 and, as a result, a soil gas probe (SG-57) was installed at a shallower depth near SG-28 to evaluate the upward migration of VOCs through the subsurface. Additionally, five shallow soil gas probes (SG-60, SG-61, SG-62, SG-63, and SG-65) were installed in the vicinity of SG-28 to evaluate the lateral extent of VOCs in this area. Concentrations of detected VOCs in soil gas samples collected from the five new probes were less than VISLs during both rounds of sampling in 2015. The sixth new probe, SG-62, could not be sampled in 2015 due to a negative purge vacuum in September 2015 and the presence of water within the probe in December 2015.

Two soil gas probes (SG-67 and SG-73) were installed downgradient of Source Area 9/10 and in the vicinity of a higher groundwater concentration area to further evaluate soil gas concentrations in this area. VOC concentrations at SG-72 were less than VISLs.

Soil gas probe SG-52 was installed in the vicinity of SG-08, which had a detected concentration of TCE exceeding the May 2014 VISLs. The detected concentrations of TCE at SG-08 were less than the updated VISLs. VOC concentrations at shallow soil gas probe SG-52 were less than the updated VISLs.

Western Portion of the Site

Two soil gas probes with VISL exceedances (SG-04 and SG-51) are located in the western portion of the site (Figure 4). TCE was detected at concentrations exceeding VISLs in SG-04 in 2014. As a result, a soil gas probe (SG-51) was installed at a shallower depth near SG-04 to evaluate the upward migration of VOCs through the subsurface. In 2015, TCE was detected at concentrations exceeding VISLs in SG-51, at similar concentrations to those detected in SG-04.

A soil gas probe (SG-64) was installed upgradient of SG-04/SG-51 to further evaluate soil gas concentrations in this area. Detected concentrations of VOCs at SG-64 in 2015 were less than VISLs.

Helium Results

The soil gas probe SG-61 did not pass the helium-leak check in September 2015, likely due to methane interference. The presence of methane gas in the subsurface has the potential to result in false readings on a helium detector. Based upon lower explosive limit concentrations measured in soil gas at this probe, methane interference was suspected. For this reason, the sample from probe SG-61 was also analyzed for helium to evaluate the integrity of the soil gas probe. A concentration of at least 10 percent helium was maintained in a shroud over the probe during sampling. Helium was not detected in SG-61 during September 2016, indicating that the helium detected during leak testing was due to methane interference. Helium analytical results are presented on Table 6.

Conclusions and Recommendations

Detected concentrations of one or more site-specific VOCs exceeded VISLs at seven of the soil gas probes sampled in 2014 and 2015 (SG-04, SG-25, SG-26, SG-28, SG-45, SG-51, and SG-66). Although deep soil gas probes SG-25, SG-26, SG-28, and SG-45 had VOC concentrations exceeding VISLs, the collocated shallow probes at these locations had VOC concentrations less than VISLs. This suggests that deep soil gas contamination is not migrating upwards through the soil column at concentrations of concern for the vapor intrusion pathway.

However, additional evaluation of the potential for vapor intrusion near SG-04, SG-25, SG-51, and SG-66 are recommended based on VISL exceedances in shallow soil gas or other site characteristics.

The following additional investigation activities are recommended:

- Near SG-04 and SG-51: Installation and sampling of subslab soil gas probes in the office building near SG-51 should be performed to assess the potential vapor intrusion pathway. Indoor air and crawlspace (if present) samples should also be collected to assess the potential vapor intrusion pathway. It is recommended that subslab soil gas samples be submitted for analysis of VOCs with a rapid turnaround time, and the indoor air and crawlspace air samples held for analysis until subslab results are received. The purpose of this sampling is to evaluate VOC concentrations in subslab soil gas beneath the office building to determine if concentrations exceed EPA VISLs for commercial exposures.
- Near SG-25: Although shallow soil gas concentrations in the vicinity of SG-25 were less than VISLs in 2015, additional sampling is recommended at the property immediately downgradient of SG-25 due to the shallow groundwater in the area and the VOC exceedances observed in SG-25 during the April 2014 sampling event. Sampling of subslab soil gas is recommended at this residence. The purpose of this sampling is to evaluate VOC concentrations in subslab soil gas beneath the building to determine if concentrations exceed EPA VISLs for residential exposures. Indoor air and crawlspace (if present) samples are also recommended to assess the potential vapor intrusion pathway.

- Outdoor air sampling is also recommended to be collected concurrently with, and upwind from, properties selected for subslab soil gas, indoor air, and crawlspace air sampling. Outdoor air samples would be collected to provide information on background VOC concentrations in the area.
- A building survey will be conducted prior to subslab soil gas, indoor air, and crawlspace air sampling with in the office building at SG-04/SG-51 and the home near SG-25. A HAPSITE instrument would be used during the survey in order to identify potentially confounding indoor air sources, so that they can be removed prior to sampling. If feasible, such products may be temporarily removed, and the area vented during this time. The occupants will be instructed to refrain from such product use and activities for at least 24 hours prior to indoor air sampling, and during the 24-hour sampling duration.
- Near SG-66: Due to the VOC exceedances observed in shallow soil gas at SG-66, additional delineation and sampling is recommended in this area. Installation of temporary soil gas probes is proposed near SG-66 to delineate the nature and extent of the VISL exceedances in this area. It is recommended that soil gas from the temporary probes be analyzed with a HAPSITE instrument to obtain real-time data allowing for delineation of the VISL exceedances and selection of permanent soil gas probe locations. Samples from the permanent probes would be sent to a laboratory for analysis. HAPSITE and laboratory results will be compared to EPA VISLs for residential exposures.

References

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Tables

Table 1. Summary of Deviations from the UFP-QAPP and UFP-QAPP Addendum

Southeast Rockford Groundwater Contamination Site, Rockford, IL

Type of Deviation	Deviation from the UFP-QAPP
Moved Soil Gas Probe Locations	Multiple soil gas probes were moved from the properties proposed in the UFP-QAPP because property owners did not grant access to the original property. Soil gas probes were installed on alternate properties where access was obtained.
Moved Soil Boring Locations	Multiple soil boring locations proposed in the UFP-QAPP addendum were relocated to properties where access was granted and were distributed across the site to obtain groundwater depth information. The soil boring that was proposed at SG-66 was relocated to SG-64. The soil boring at SG-66 was to be collected to obtain groundwater depth information for several soil gas probes being installed in the area, including SG-64. Based on the timing of when each property granted access, the property with soil gas probe SG-64 was to be sampled before the property with soil gas probe SG-66. For that reason, the soil core and depth to water was instead obtained from SG-64.
Soil Boring Collection Method	Where possible, a soil core was collected at the soil boring locations using direct-push technology 5-foot-long Geoprobe Macro-Core Samplers with disposable liners. However at proposed soil gas probe locations SG-57, SG-65, SG-70, and SG-72, the drill rig was unable to access the probe locations due to narrow side yards or other obstructions. Instead, a hand auger was used to collect the soil borings at those locations. It was necessary to move the SG-64 probe location after the direct-push technology sampler had demobilized from the site; therefore, the soil boring collected at SG-64 was installed using a hand auger. The UFP-QAPP addendum specified that soil borings were to be advanced to the top of the water table. However, several soil borings were terminated before reaching the water table as a result of refusal with the Geoprobe rig or hand auger at depth.
Quantity of Soil Borings Completed	As several probes were installed with a hand auger due to drill rig inaccessibility, additional soil borings were logged at those locations. Overall, soil boring data was collected at 11 locations, versus the 8 locations specified in the UFP-QAPP addendum.
Properties with Access Agreements where Probes Could Not Be Installed	Per EPA direction, proposed soil gas probe SG-70 was not installed. SG-70 was proposed to be installed approximately 25 feet from SG-43 (screened from 9.25 to 11 feet below ground surface). SG-70 could not be sampled in the past due to a vacuum observed during purging. A soil boring was advanced with a hand auger at SG-70 to refusal at 10.5 feet below ground surface. Since glacial till was observed at SG-70 from the ground surface to the depth of the SG-43 screened interval, the decision was made not to install a probe at SG-70 because it would have been installed in glacial till and likely could not have been sampled.
Soil Gas Probe Construction	Probe SG-66 was installed using a 6-inch sampling implant instead of a 21-inch sampling implant as proposed in the UFP-QAPP addendum. To ensure that the probe's sand pack was installed at the required minimum of 5 feet below ground surface, a shorter screen was used at this location because groundwater was encountered approximately 7.5 feet below ground surface.

Table 1. Summary of Deviations from the UFP-QAPP and UFP-QAPP Addendum
Southeast Rockford Groundwater Contamination Site, Rockford, IL

Type of Deviation	Deviation from the UFP-QAPP
	Six 5/8-inch-diameter, locking, traffic-rated flush-mount covers were used on each of the 22 installed probes instead of the 4-inch-diameter flush-mount covers proposed in the UFP-QAPP addendum. A larger-diameter flush-mount cover was used to help prevent damage (kinking) of the Teflon tubing within the flush-mount vault. Due to the shallow depth at which several of the soil gas probes were installed, multiple locations had less than 6 inches of sand pack placed above the probe screen, so that the top of the sand pack was no shallower than 5 feet below ground surface. Multiple probes were installed at a different depth than proposed in the UFP-QAPP due to the soil type and depth to water observed during drilling activities. Multiple probes were also installed shallower than proposed due to refusal at depth with the Geoprobe rig or hand auger.
GPS Coordinates	GPS coordinates for SG-66 could not be collected due to poor satellite reception.
Rate of Sample Collection	During the 2015 sampling rounds, several of the flow controllers provided by the laboratory were set at flow rates higher or lower than specified in the UFP-QAPP addendum (100 milliliters per minute). This resulted in the samples being collected at slightly faster or slower than the specified 10-minute sample rate.
Additional Investigation Derived Waste Sample Analysis	Aqueous investigation-derived waste was sampled and analyzed for polychlorinated biphenyls, although it was not specified in the UFP-QAPP amendment.

EPA = U.S. Environmental Protection Agency
UFP-QAPP = Uniform Federal Policy Quality Assurance Project Plan

Table 2. 2015 Investigation Activities Dates

Southeast Rockford Groundwater Contamination Site, Rockford, IL

Date	Field Activities
August 10 through 13, 2015	Round 3 soil gas sampling. Collection of soil gas samples at 30 of 34 deep soil gas probes. Soil gas samples were collected from select deep soil gas probes installed in 2014. Samples could not be collected from four deep soil gas probes due to the presence of water in the sample tubing or because a vacuum in the probe was observed during purging.
September 8 through 23, 2015	• Utility locating • Collection of soil borings • Installation of soil gas probes • Collection of investigation derived waste samples • Continuation of the Round 3 soil gas sampling. Soil gas samples were collected from 21 of the 22 soil gas probes installed in September 2015. The single soil gas probe that could not be sampled was due to a vacuum in the probe during purging.
December 7 through 10, 2015	Round 4 soil gas sampling. Soil gas samples were collected from 50 of the 56 soil gas probes. The soil gas probes to be sampled included the 34 probes that were also sampled in August 2015 and the 22 probes installed in September 2015. Six of the 56 soil gas probes could not be sampled due to the presence of water within the sample tubing or because a vacuum in the probe was observed during purging.

Table 3. Soil Gas Probe Installation Summary

Southeast Rockford Groundwater Contamination Site Rockford, IL

Probe Location [a]	Northing [b]	Easting [b]	GPS Accuracy [c] (feet)	Screen Length (inches)	Bottom of Screened Interval (ft bgs)
Installed in January 2014					
SG-01	2029095.576	2591349.171	0.6	21	24.0
SG-02	2028268.361	2587421.143	1	21	20.5
SG-03	2027435.8	2586716.031	0.4	21	17.0
SG-04	2030078.729	2585405.916	0.3	21	27.0
SG-05	2030209.502	2587522.913	0.3	21	12.0
SG-06	2029435.243	2588089.618	0.3	21	24.0
SG-07	2029904.903	2588080.274	0.3	21	28.0
SG-08	2028970.337	2588541.366	0.8	21	30.0
SG-09	2029863.502	2589102.782	1.2	21	19.5
SG-10	2030446.217	2589559.185	0.3	21	24.0
SG-11	2029142.354	2589709.88	0.4	21	28.0
SG-12	2030512.3	2589911.708	0.3	21	26.0
SG-13	2029805.394	2590495.962	0.4	21	24.5
SG-14	2030616.314	2585967.357	0.3	21	30.0
SG-15	2030442.859	2590955.031	0.5	21	22.5
SG-16	2032479.954	2589776.508	0.7	21	30.0
SG-17	2030464.799	2591465.463	0.3	21	22.0
SG-18	2029632.222	2591271.702	0.5	21	26.5
SG-19	2030888.447	2591937.792	0.8	21	25.5
SG-20	2032359.124	2592079.982	0.3	21	30.0
SG-21	2032317.968	2592482.971	2.4	21	14.5
SG-22	2029118.492	2592694.281	0.6	21	16.0
SG-23	2029830.194	2593332.944	0.4	21	16.5
SG-24	2030481.057	2594483.994	0.4	21	19.5
SG-25	2030724.314	2594698.369	3.5	21	19.5
SG-26	2030531.675	2594778.609	2.1	21	20.0
SG-27	2029057.434	2594265.886	0.5	21	26.5
SG-28	2029460.451	2595016.749	1.6	21	30.0
SG-30	2030260.016	2596568.488	2	21	30.0
SG-31	2029893.724	2596225.063	6.6	21	30.0
SG-32	2028917.324	2596636.66	3.7	21	30.0
SG-33	2029653.482	2597031.006	4.8	21	30.0
SG-34	2029973.676	2597513.718	0.3	21	27.75
SG-35	2028844.5	2598175.309	0.4	21	30.0
SG-36	2029223.825	2597596.389	0.4	21	20.0
SG-37	2029454.48	2597229.844	4.9	21	30.0
SG-39	2029807.472	2592237.632	1.9	21	24.0
SG-40	2028521.814	2600478.373	0.3	21	30.0
SG-41	2030360.379	2600443.167	2.8	21	30.0
SG-42	2027528.722	2601942.455	1.3	21	30.0
SG-43	2030062.949	2601341.542	2.6	21	11.0
SG-44	2028513.131	2601237.713	0.3	21	21.0
SG-45	2027894.98	2601903.663	1.5	21	22.0
SG-46	2028567.993	2601999.784	0.4	21	24.0
SG-47	2029851.953	2602123.146	0.3	21	20.0
SG-48	2029556.932	2603233.432	2.4	21	10.0
SG-49	2028204.545	2603506.875	1.8	21	26.5
SG-50	2028295.089	2601626.099	0.3	21	14.0
Installed in September 2015					
SG-51	2030076.085	2585297.851	0.5	21	10.9
SG-52	2028888.192	2588493.977	0.4	21	10.8
SG-53	2030764.528	2594473.099	0.9	21	7.3
SG-54	2030858.145	2594617.575	0.5	21	7.2
SG-55	2030746.835	2594649.913	0.3	21	7.2
SG-56	2030462.101	2594762.559	0.2	21	7.3
SG-57	2029462.363	2594965.182	1.6	21	10.8
SG-58	2030176.461	2594940.862	0.4	21	15.1
SG-59	2030719.335	2595245.819	0.5	21	7.2
SG-60	2029130.211	2595562.833	0.6	21	15.8
SG-61	2030268.385	2596535.77	0.7	21	9.8
SG-62	2028802.894	2596345.645	0.3	21	15.8
SG-63	2029596.863	2597010.102	0.7	21	8.3
SG-64	2029881.009	2585842.629	0.2	21	10.0
SG-65	2028929.857	2597778.512	1.5	21	7.3

Table 3. Soil Gas Probe Installation Summary

Southeast Rockford Groundwater Contamination Site Rockford, IL

Probe Location [a]	Northing [b]	Easting [b]	GPS Accuracy [c] (feet)	Screen Length (inches)	Bottom of Screened Interval (ft bgs)
SG-66 [d]	2029108.747	2600266.739	NA [e]	6	5.8
SG-67	2030307.900	2590435.976	0.5	21	14.6
SG-68	2030112.619	2598895.451	0.1	21	14.8
SG-69	2030359.770	2600291.25	0.4	21	7.3
SG-71	2027794.507	2601833.721	0.9	21	11.0
SG-72	2028092.103	2603476.144	0.4	21	7.6
SG-73	2030710.807	2591156.428	0.5	21	14.8

ft bgs = feet below ground surface

[a] Deep soil gas probe SG-70 was not installed per direction of the U.S. Environmental Protection Agency

[b] Illinois State Plane West, US Feet.

[c] The horizontal precision estimate is calculated for a 68% confidence level, which means that 68% of time the actual position should be within the estimated distance of the measured position. For example, if a Global Navigation Satellite System (GNSS) position has an estimated accuracy of 1 meter, then there is a 68% probability that the true position is within 1 meter of that GNSS position.

[d] The coordinates for soil gas probe SG-66 are approximate. Actual coordinates could not be collected due to poor satellite reception.

Table 4. Soil Gas Sampling Summary

Southeast Rockford Groundwater Contamination Site Rockford, IL

	Round 1			Round 2	Round 3		Round 4
Probe Location[a]	**March 2014**	**April 2014**	**August 2014**	**October 2014**	**August 2015**	**September 2015**	**December 2015**
Installed in January 2014							
SG-01	--	X	--	X	X	--	X
SG-02	X	--	--	X	X	--	X
SG-03	X	--	--	X	X	--	X
SG-04	X	--	--	X	--	--	--
SG-05	X	--	--	X	X	--	X
SG-06	X	--	--	X	X	--	X
SG-07	X	--	--	X	X	--	X
SG-08	X	--	--	X	--	--	--
SG-09	--	X	--	X	X	--	X
SG-10	--	X	--	X	X	--	X
SG-11	X	--	--	X	X	--	X
SG-12	--	X	--	X	X	--	X
SG-13	--	X	--	X	X	--	X
SG-14	X	--	--	X	X	--	X
SG-15	--	X	--	X	X	--	X
SG-16	--	X	--	X	X	--	X
SG-17	--	X	--	X	NS	--	X
SG-18	--	X	--	X	X	--	X
SG-19	--	X	--	X	X	--	X
SG-20	--	X	--	X	X	--	X
SG-21	--	X	--	X	X	--	X
SG-22	--	X	--	X	X	--	X
SG-23	--	X	--	NS	NS	--	NS
SG-24	--	X	--	NS	NS	--	NS
SG-25	--	X	--	NS	--	--	--
SG-26	--	X	--	X	--	--	--
SG-27	--	X	--	X	X	--	X
SG-28	--	X	--	X	--	--	--
SG-30	--	NS	NS	--	--	--	--
SG-31	--	X	--	X	X	--	X

Table 4. Soil Gas Sampling Summary

Southeast Rockford Groundwater Contamination Site Rockford, IL

	Round 1			Round 2	Round 3		Round 4
Probe Location[a]	**March 2014**	**April 2014**	**August 2014**	**October 2014**	**August 2015**	**September 2015**	**December 2015**
SG-32	--	NS	NS	--	--	--	--
SG-33	--	NS	NS	--	--	--	--
SG-34	--	X	--	X	X	--	X
SG-35	--	NS	NS	--	--	--	--
SG-36	--	X	--	X	X	--	X
SG-37	--	NS	NS	--	--	--	--
SG-39	--	X	--	X	X	--	X
SG-40	--	X	--	NS	NS	--	NS
SG-41	--	NS	NS	--	--	--	--
SG-42	--	X	--	X	X	--	X
SG-43	--	NS	NS	--	--	--	--
SG-44	--	X	--	X	X	--	X
SG-45	--	X	--	X	--	--	--
SG-46	--	NS	X	X	X	--	NS
SG-47	--	X	--	X	X	--	X
SG-48	--	X	--	X	X	--	X
SG-49	--	NS	NS	--	--	--	--
SG-50	--	X	--	X	X	--	NS
Installed in September 2015							
SG-51	NA	NA	NA	NA	NA	X	X
SG-52	NA	NA	NA	NA	NA	X	X
SG-53	NA	NA	NA	NA	NA	X	X
SG-54	NA	NA	NA	NA	NA	X	X
SG-55	NA	NA	NA	NA	NA	X	X
SG-56	NA	NA	NA	NA	NA	X	X
SG-57	NA	NA	NA	NA	NA	X	X
SG-58	NA	NA	NA	NA	NA	X	X
SG-59	NA	NA	NA	NA	NA	X	X
SG-60	NA	NA	NA	NA	NA	X	X
SG-61	NA	NA	NA	NA	NA	X	X
SG-62	NA	NA	NA	NA	NA	NS	NS

Table 4. Soil Gas Sampling Summary

Southeast Rockford Groundwater Contamination Site Rockford, IL

	Round 1			Round 2	Round 3		Round 4
Probe Location[a]	**March 2014**	**April 2014**	**August 2014**	**October 2014**	**August 2015**	**September 2015**	**December 2015**
SG-63	NA	NA	NA	NA	NA	X	X
SG-64	NA	NA	NA	NA	NA	X	X
SG-65	NA	NA	NA	NA	NA	X	X
SG-66	NA	NA	NA	NA	NA	X	X
SG-67	NA	NA	NA	NA	NA	X	X
SG-68	NA	NA	NA	NA	NA	X	X
SG-69	NA	NA	NA	NA	NA	X	X
SG-71	NA	NA	NA	NA	NA	X	X
SG-72	NA	NA	NA	NA	NA	X	X
SG-73	NA	NA	NA	NA	NA	X	X

-- = Sampling was not attempted at this location.

NA = Not applicable. This location was not installed until September 2015

NS = This location was attempted to be sampled; however, a sample could not be collected due to the presence of groundwater within the sample tubing.

X = This location was sampled.

[a] Soil gas probes SG-29, SG-30, and SG-70 were not installed per direction of the U.S. Environmental Protection Agency.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-01		SG-02			SG-03		SG-05	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-01-0815 8/11/2015**	**SG-01-1215 12/9/2015**	**SG-02-0815 8/13/2015**	**SG-002-02 10/23/2014**	**SG-02-1215 12/10/2015**	**SG-03-0815 8/13/2015**	**SG-03-1215 12/10/2015**	**SG-05-0815 8/12/2015**	**SG-05-1215 12/9/2015**
1,1,1-Trichloroethane	170000	µg/m^3	1.6 UB	6.4 U	6.4 U	2 U	1.4 UB	1.3 J	1.4 UB	2.8 UB	6 U
1,1,2-Trichloroethane	7	µg/m^3	6 U	6.4 U	6.4 U	2 U	6.6 U	6.1 U	6.2 U	6.4 U	6 U
1,1-Dichloroethane	580	µg/m^3	0.97 U	4.7 U	4.8 U	1.5 U	4.9 U	4.5 U	4.6 U	4.7 U	4.4 U
1,1-Dichloroethene	7000	µg/m^3	2.3 U	4.6 U	4.7 U	1.4 U	4.8 U	4.4 U	4.5 U	4.6 U	4.4 U
1,2-Dichloroethane	36	µg/m^3	4.5 U	4.7 U	4.8 U	1.5 U	4.9 U	4.5 U	4.6 U	4.7 U	4.4 U
Benzene	120	µg/m^3	1 U	3.7 U	3.8 U	0.97 J	0.62 J	3.6 U	3.6 U	1 U	3.5 U
Cis-1,2-Dichloroethene	NA	µg/m^3	1.8 U	4.6 U	4.7 U	--	4.8 U	4.4 U	4.5 U	4.6 U	4.4 U
Ethylbenzene	370	µg/m^3	1.2 J	5.1 U	5.1 U	1.6 U	5.2 U	4.9 U	5 U	1.1 J	4.8 U
Methylene Chloride	21000	µg/m^3	38 U	41 U	41 U	3.5	42 U	39 U	40 U	40 U	38 U
Tetrachloroethene	1400	µg/m^3	13	10	4.3 J	3.9	3.9 J	2.2 J	7.8 U	16	9.2
Toluene	170000	µg/m^3	4.2 U	4.4 U	4.4 U	0.48 J	4.5 U	4.2 U	4.3 U	4.4 U	4.1 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.6 U	4.7 U	--	4.8 U	4.4 U	4.5 U	4.6 U	4.4 U
Trichloroethene	70	µg/m^3	4.2 UB	6.3 U	6.3 U	2 U	1.3 J	6 U	6.2 U	6.3 U	5.9 U
Vinyl Chloride	56	µg/m^3	2.8 U	3 U	3 U	0.93 U	3.1 U	2.9 U	2.9 U	3 U	2.8 U
Xylenes (Total)	3500	µg/m^3	4.8 U	10 U	5.1 U	1.6 U	10 U	4.9 U	9.9 U	5 U	9.6 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-06		SG-07		SG-09		SG-10		
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-06-0815 8/12/2015**	**SG-06-1215 12/9/2015**	**SG-07-0815 8/13/2015**	**SG-07-1215 12/9/2015**	**SG-09-0815 8/12/2015**	**SG-09-1215 12/10/2015**	**SG-10-0815 8/12/2015**	**SG-10-0815-FD 8/13/2015**	**SG-10-1215 12/10/2015**
1,1,1-Trichloroethane	170000	µg/m^3	6.7 U	6.4 U	1.1 U	6 U	6.8	7.4	6.2 U	6.1 U	6.4 U
1,1,2-Trichloroethane	7	µg/m^3	6.7 U	6.4 U	6.5 U	6 U	6.4 U	6.2 U	6.2 U	6.1 U	6.4 U
1,1-Dichloroethane	580	µg/m^3	5 U	4.8 U	4.8 U	4.4 U	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U
1,1-Dichloroethene	7000	µg/m^3	4.9 U	4.6 U	4.7 U	4.4 U	4.6 U	4.5 U	4.5 U	4.4 U	4.6 U
1,2-Dichloroethane	36	µg/m^3	5 U	4.8 U	4.8 U	4.4 U	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U
Benzene	120	µg/m^3	3.9 U	3.8 U	3.8 U	3.5 U	3.7 U	3.6 U	3.6 U	1.1 J	0.47 J
Cis-1,2-Dichloroethene	NA	µg/m^3	4.9 U	4.6 U	4.7 U	4.4 U	4.6 U	4.5 U	4.5 U	4.4 U	4.6 U
Ethylbenzene	370	µg/m^3	5.3 U	5.1 U	1.3 J	4.8 U	1.3 J	4.9 U	5 U	4.8 U	5 U
Methylene Chloride	21000	µg/m^3	43 U	41 U	41 U	38 U	41 U	39 U	40 U	39 U	40 U
Tetrachloroethene	1400	µg/m^3	1.5 J	8 U	9	5.3 J	6 J	4.6 J	2.7 J	3.1 J	7.9 U
Toluene	170000	µg/m^3	4.6 U	4.4 U	4.5 U	4.1 U	1.1 J	4.3 U	4.3 U	1.1 J	4.4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.9 U	4.6 U	4.7 U	4.4 U	4.6 U	4.5 U	4.5 U	4.4 U	4.6 U
Trichloroethene	70	µg/m^3	6.6 U	6.3 U	29	19	3.4 J	1.9 J	6.2 U	6 U	6.3 U
Vinyl Chloride	56	µg/m^3	3.1 U	3 U	3 U	2.8 U	3 U	2.9 U	2.9 U	2.8 U	3 U
Xylenes (Total)	3500	µg/m^3	2.6 J	10 U	3.6 J	9.6 U	5.1 U	9.8 U	5 U	4.8 U	10 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-11		SG-12			SG-13		SG-14	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-11-0815 8/13/2015**	**SG-11-1215 12/10/2015**	**SG-12-0815 8/13/2015**	**SG-12-1215 12/10/2015**	**SG-12-1215-FD 12/10/2015**	**SG-13-0815 8/12/2015**	**SG-13-1215 12/9/2015**	**SG-14-0815 8/12/2015**	**SG-14-1215 12/10/2015**
1,1,1-Trichloroethane	170000	µg/m^3	0.82 UB	1.6 UB	2.5 UB	1.9 UB	1.9 UB	6.4 U	5.2 J	2.4 UB	2.5 UB
1,1,2-Trichloroethane	7	µg/m^3	6.1 U	6.4 U	6 U	6.3 U	5.8 U	6.4 U	6 U	6.4 U	6.3 U
1,1-Dichloroethane	580	µg/m^3	4.5 U	4.8 U	4.4 U	4.6 U	4.3 U	4.7 U	0.72 J	4.7 U	4.7 U
1,1-Dichloroethene	7000	µg/m^3	4.4 U	4.7 U	4.4 U	4.6 U	4.2 U	4.6 U	4.4 U	4.6 U	4.6 U
1,2-Dichloroethane	36	µg/m^3	4.5 U	4.8 U	4.4 U	4.6 U	4.3 U	4.7 U	4.5 U	4.7 U	4.7 U
Benzene	120	µg/m^3	1 U	3.8 U	1.1 U	3.7 U	3.4 U	3.7 U	3.5 U	0.68 U	3.7 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.7 U	4.4 U	4.6 U	4.2 U	4.9	4.4 U	4.6 U	4.6 U
Ethylbenzene	370	µg/m^3	4.9 U	5.1 U	1.9 J	5 U	4.6 U	1.3 J	4.8 U	5 U	5 U
Methylene Chloride	21000	µg/m^3	39 U	41 U	38 U	40 U	37 U	40 U	38 U	40 U	40 U
Tetrachloroethene	1400	µg/m^3	36	39	4.6 J	7.8 U	7.2 U	4.2 J	3.9 J	20	20
Toluene	170000	µg/m^3	1.3 J	3.4 UB	4.1 U	4.3 U	4 U	4.4 U	4.2 U	4.4 U	4.4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.7 U	4.4 U	4.6 U	4.2 U	4.6 U	4.4 U	4.6 U	4.6 U
Trichloroethene	70	µg/m^3	1.5 UB	6.3 U	5.9 U	6.2 U	5.8 U	14	19	7.4	8
Vinyl Chloride	56	µg/m^3	2.9 U	3 U	2.8 U	2.9 U	2.7 U	3 U	2.8 U	3 U	3 U
Xylenes (Total)	3500	µg/m^3	4.9 U	10 U	4.8 U	10 U	9.3 U	5 U	9.6 U	5 U	10 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-15		SG-16		SG-17	SG-18		
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-15-0815 8/11/2015**	**SG-15-1215 12/9/2015**	**SG-16-0815 8/12/2015**	**SG-16-1215 12/8/2015**	**SG-17-1215 12/9/2015**	**SG-18-0815 8/11/2015**	**SG-18-0815-FD 8/11/2015**	**SG-18-1215 12/9/2015**
1,1,1-Trichloroethane	170000	$\mu g/m^3$	7.9	5.1 J	6.6 U	1.6 J	6.1 U	2.2 UB	1 UB	5.7 U
1,1,2-Trichloroethane	7	$\mu g/m^3$	6.5 U	6 U	6.6 U	2.8 J	6.1 U	6.7 U	6.6 U	5.7 U
1,1-Dichloroethane	580	$\mu g/m^3$	1.4 U	4.4 U	4.9 U	1.4 J	4.5 U	5 U	4.9 U	4.2 U
1,1-Dichloroethene	7000	$\mu g/m^3$	4.7 U	4.3 U	4.8 U	4.4 U	4.4 U	4.9 U	4.8 U	4.1 U
1,2-Dichloroethane	36	$\mu g/m^3$	4.8 U	4.4 U	4.9 U	1.8 J	4.5 U	5 U	4.9 U	4.2 U
Benzene	120	$\mu g/m^3$	0.87 U	3.5 U	3.9 U	1.9 UB	3.6 U	0.83 U	0.78 U	3.3 U
Cis-1,2-Dichloroethene	NA	$\mu g/m^3$	4.7 U	4.3 U	4.8 U	2.3 J	4.4 U	4.9 U	4.8 U	4.1 U
Ethylbenzene	370	$\mu g/m^3$	5.2 U	4.8 U	5.2 U	2 J	4.8 U	5.3 U	5.2 U	4.5 U
Methylene Chloride	21000	$\mu g/m^3$	41 U	38 U	42 U	39 U	39 U	43 U	42 U	4.4 J
Tetrachloroethene	1400	$\mu g/m^3$	28	36	8.2 U	4.9 J	21	2.8 J	2.2 J	2.4 J
Toluene	170000	$\mu g/m^3$	4.5 U	4.1 U	4.6 U	2.5 J	4.2 U	4.6 U	4.5 U	1 J
Trans-1,2-Dichloroethene	NA	$\mu g/m^3$	4.7 U	4.3 U	4.8 U	1.8 J	4.4 U	4.9 U	4.8 U	4.1 U
Trichloroethene	70	$\mu g/m^3$	2.7 UB	5.9 U	6.5 U	3.2 J	6 U	2.5 UB	1.3 UB	5.6 U
Vinyl Chloride	56	$\mu g/m^3$	3 U	2.8 U	3.1 U	2.9 U	2.8 U	3.1 U	3.1 U	2.6 U
Xylenes (Total)	3500	$\mu g/m^3$	5.2 U	9.5 U	5.2 U	9.7 U	9.7 U	5.3 U	5.2 U	9 U

NA = not applicable. Criterion is not available for this compound.

$\mu g/m^3$ = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-19		SG-20		SG-21		SG-22	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-19-0815 8/12/2015**	**SG-19-1215 12/9/2015**	**SG-20-0815 8/12/2015**	**SG-20-1215 12/8/2015**	**SG-21-0815 8/12/2015**	**SG-21-1215 12/8/2015**	**SG-22-0815 8/11/2015**	**SG-22-1215 12/8/2015**
1,1,1-Trichloroethane	170000	µg/m^3	3.7 UB	3 J	4.2 UB	4 J	0.89 UB	5.9 U	24	22
1,1,2-Trichloroethane	7	µg/m^3	6.2 U	6.1 U	6.5 U	6 U	6.5 U	5.9 U	6.5 U	6 U
1,1-Dichloroethane	580	µg/m^3	4.6 U	4.5 U	4.8 U	4.4 U	4.8 U	4.4 U	2 U	2.9 J
1,1-Dichloroethene	7000	µg/m^3	4.5 U	4.4 U	4.7 U	4.3 U	4.7 U	4.3 U	4.8 U	4.4 U
1,2-Dichloroethane	36	µg/m^3	4.6 U	4.5 U	4.8 U	4.4 U	4.8 U	4.4 U	4.8 U	4.4 U
Benzene	120	µg/m^3	3.6 U	3.6 U	0.78 U	3.5 U	3.8 U	0.38 UB	0.7 U	3.5 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.5 U	4.4 U	4.7 U	4.3 U	4.7 U	4.3 U	4.8 U	4.4 U
Ethylbenzene	370	µg/m^3	1.5 J	4.9 U	5.2 U	4.8 U	5.2 U	4.7 U	1.7 J	4.8 U
Methylene Chloride	21000	µg/m^3	40 U	39 U	41 U	38 U	41 U	38 U	42 U	38 U
Tetrachloroethene	1400	µg/m^3	19	23	4.6 J	3.6 J	9.8	11	19	12
Toluene	170000	µg/m^3	4.3 U	4.2 U	4.5 U	4.1 U	4.5 U	1.1 J	4.5 U	4.1 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.5 U	4.4 U	4.7 U	4.3 U	4.7 U	4.3 U	4.8 U	4.4 U
Trichloroethene	70	µg/m^3	2.2 UB	6 U	6.4 U	5.9 U	6.4 U	5.8 U	11	4.2 J
Vinyl Chloride	56	µg/m^3	2.9 U	2.9 U	3 U	2.8 U	3 U	2.8 U	3.1 U	2.8 U
Xylenes (Total)	3500	µg/m^3	5 U	9.7 U	5.2 U	9.5 U	5.2 U	9.4 U	5.2 U	9.6 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-27		SG-31				SG-34		SG-36	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-27-0815 8/11/2015**	**SG-27-1215 12/8/2015**	**SG-31-0815 8/10/2015**	**SG-31-0815-FD 8/10/2015**	**SG-31-1215 12/8/2015**	**SG-31-1215-FD 12/8/2015**	**SG-34-0815 8/10/2015**	**SG-34-1215 12/8/2015**	**SG-36-0815 8/10/2015**	**SG-36-1215 12/7/2015**
1,1,1-Trichloroethane	170000	µg/m^3	1.7 UB	1.4 J	230	210	260	250	380	410	33	34
1,1,2-Trichloroethane	7	µg/m^3	6.6 U	5.7 U	6.5 U	6.7 U	5.7 U	5.7 U	6.5 U	5.8 U	6.5 U	5.8 U
1,1-Dichloroethane	580	µg/m^3	4.9 U	4.2 U	1.6 U	5 U	4.2 U	4.2 U	6.1	3.7 J	4.8 U	4.3 U
1,1-Dichloroethene	7000	µg/m^3	4.8 U	4.2 U	4.7 U	4.9 U	4.1 U	4.2 U	4.7 U	4.2 U	4.7 U	4.2 U
1,2-Dichloroethane	36	µg/m^3	4.9 U	4.2 U	4.8 U	5 U	4.2 U	4.2 U	4.8 U	4.3 U	4.8 U	4.3 U
Benzene	120	µg/m^3	2 J	3.4 U	0.66 U	0.96 U	3.3 U	0.36 UB	3.8 U	0.45 UB	0.77 U	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.8 U	4.2 U	4.7 U	4.9 U	4.1 U	4.2 U	4.7 U	4.2 U	4.7 U	4.2 U
Ethylbenzene	370	µg/m^3	5.3	4.6 U	5.1 U	5.3 U	4.5 U	4.6 U	5.1 U	4.6 U	5.1 U	4.6 U
Methylene Chloride	21000	µg/m^3	42 U	36 U	41 U	43 U	36 U	36 U	41 U	37 U	41 U	37 U
Tetrachloroethene	1400	µg/m^3	17	1.8 J	4.4 J	5.9 J	3.9 J	4.3 J	12	10	17	21
Toluene	170000	µg/m^3	2.2 J	4 U	4.5 U	1.1 J	3.9 U	4 U	4.5 U	4 U	4.5 U	4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.8 U	4.2 U	4.7 U	4.9 U	4.1 U	4.2 U	1.6 U	4.2 U	4.7 U	4.2 U
Trichloroethene	70	µg/m^3	3.9 UB	5.6 U	8.8 UB	6.1 UB	7.3	6.3	17	15	2 UB	5.7 U
Vinyl Chloride	56	µg/m^3	3.1 U	2.7 U	3 U	3.1 U	2.6 U	2.7 U	3 U	2.7 U	3 U	2.7 U
Xylenes (Total)	3500	µg/m^3	5.2 U	9.1 U	5.1 U	5.3 U	9 U	9.1 U	5.1 U	9.2 U	5.1 U	9.2 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-39		SG-42		SG-44		SG-46	SG-47	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-39-0815 8/11/2015**	**SG-39-1215 12/9/2015**	**SG-42-0815 8/10/2015**	**SG-42-1215 12/7/2015**	**SG-44-0815 8/10/2015**	**SG-44-1215 12/7/2015**	**SG-46-0815 8/10/2015**	**SG-47-0815 8/10/2015**	**SG-47-1215 12/7/2015**
1,1,1-Trichloroethane	170000	µg/m^3	91	130	2.1 UB	1.5 J	370	270	13	12	12
1,1,2-Trichloroethane	7	µg/m^3	6.3 U	6.2 U	6.2 U	5.9 U	6.5 U	6 U	6.6 U	6.8 U	5.8 U
1,1-Dichloroethane	580	µg/m^3	11	10	4.6 U	4.4 U	4.8 U	4.5 U	4.9 U	5.1 U	4.3 U
1,1-Dichloroethene	7000	µg/m^3	5.8	4.5 U	4.5 U	4.3 U	4.7 U	4.4 U	4.8 U	2.9 U	4.2 U
1,2-Dichloroethane	36	µg/m^3	4.6 U	4.6 U	4.6 U	4.4 U	4.8 U	4.5 U	4.9 U	5.1 U	4.3 U
Benzene	120	µg/m^3	3.7 U	3.6 U	2.3 J	3.4 U	1.2 U	3.5 U	1.9 J	6	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.6 U	1.3 J	1.5 U	4.3 U	1.4 U	4.4 U	2.3 U	5 U	4.2 U
Ethylbenzene	370	µg/m^3	5 U	5 U	2.6 J	4.7 U	1.8 J	4.8 U	5.1 J	2.8 J	4.6 U
Methylene Chloride	21000	µg/m^3	40 U	40 U	40 U	37 U	41 U	38 U	42 U	2.6 U	37 U
Tetrachloroethene	1400	µg/m^3	20	23	9.2	7.3 U	38	25	14	7.4 J	7.2 U
Toluene	170000	µg/m^3	4.3 U	4.3 U	2.4 J	4 U	1.3 J	4.2 U	1.9 J	1.7 J	4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.6 U	4.5 U	4.5 U	4.3 U	4.7 U	4.4 U	4.8 U	5 U	4.2 U
Trichloroethene	70	µg/m^3	14	22	3.1 UB	5.8 U	5.7 UB	2.2 J	3.5 UB	3 UB	5.7 U
Vinyl Chloride	56	µg/m^3	2.9 U	2.9 U	2.9 U	2.7 U	3 U	2.8 U	3.1 U	3.2 U	2.7 U
Xylenes (Total)	3500	µg/m^3	5 U	9.9 U	5 U	9.3 U	5.2 U	9.6 U	5.2 U	2.8 J	9.2 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-48	SG-50	SG-051			SG-052	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-48-1215 12/7/2015**	**SG-50-0815 8/10/2015**	**SG-51-0915 9/21/2015**	**SG-51-1215 12/10/2015**	**SG-51-1215-FD 12/10/2015**	**SG-52-0915 9/21/2015**	**SG-52-1215 12/9/2015**
1,1,1-Trichloroethane	170000	µg/m^3	5.7 U	6.8 U	280	260	250	4 J	1.9 J
1,1,2-Trichloroethane	7	µg/m^3	5.7 U	6.8 U	6.5 U	6.2 U	6.6 U	6.5 U	5.9 U
1,1-Dichloroethane	580	µg/m^3	4.2 U	5 U	90	120	120	4.8 U	4.4 U
1,1-Dichloroethene	7000	µg/m^3	4.1 U	4.9 U	230	320	310	4.7 U	4.3 U
1,2-Dichloroethane	36	µg/m^3	4.2 U	5 U	4.8 U	4.6 U	4.9 U	4.8 U	4.4 U
Benzene	120	µg/m^3	3.3 U	1.7 U	1 UB	3.6 U	0.62 J	3.8 U	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.1 U	1.7 U	26	29	28	4.7 U	4.3 U
Ethylbenzene	370	µg/m^3	4.5 U	2.4 J	1.8 J	4.9 U	5.3 U	5.2 U	1.2 J
Methylene Chloride	21000	µg/m^3	36 U	43 U	41 U	40 U	42 U	41 U	38 U
Tetrachloroethene	1400	µg/m^3	7.1 U	8.1 J	260	120	120	6.8 J	1.6 J
Toluene	170000	µg/m^3	3.9 U	1.2 J	5.2	4.3 U	4.6 U	0.7 J	1.3 J
Trans-1,2-Dichloroethene	NA	µg/m^3	4.1 U	4.9 U	3.1 J	3.4 J	3.7 J	4.7 U	4.3 U
Trichloroethene	70	µg/m^3	5.6 U	1.9 UB	330	260	260	6.4 U	5.8 U
Vinyl Chloride	56	µg/m^3	2.7 U	3.2 U	3 U	2.9 U	3.1 U	3 U	2.8 U
Xylenes (Total)	3500	µg/m^3	9.1 U	5.2 J	10 U	9.9 U	10 U	10 U	9.4 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

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Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-053			SG-054		SG-055		SG-056	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-53-0915 9/22/2015**	**SG-53-1215 12/8/2015**	**SG-53-1215-FD 12/8/2015**	**SG-54-0915 9/22/2015**	**SG-54-1215 12/8/2015**	**SG-55-0915 9/22/2015**	**SG-55-1215 12/8/2015**	**SG-56-0915 9/22/2015**	**SG-56-1215 12/8/2015**
1,1,1-Trichloroethane	170000	µg/m^3	110	71	68	380	420	7,200	5,200	540	510
1,1,2-Trichloroethane	7	µg/m^3	6.4 U	5.9 U	6.3 U	6.4 U	5.7 U	24 U	20 U	6.1 U	5.8 U
1,1-Dichloroethane	580	µg/m^3	4.7 U	4.4 U	4.7 U	4.7 U	4.2 U	18 J	8.4 J	4.5 U	4.3 U
1,1-Dichloroethene	7000	µg/m^3	4.6 U	4.3 U	4.6 U	4.6 U	4.2 U	13 J	10 J	4.4 U	4.2 U
1,2-Dichloroethane	36	µg/m^3	4.7 U	4.4 U	4.7 U	4.7 U	4.2 U	18 U	14 U	4.5 U	4.3 U
Benzene	120	µg/m^3	3.7 U	3.4 U	0.56 UB	3.7 U	0.49 UB	14 U	11 U	3.6 U	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.6 U	4.3 U	4.6 U	4.6 U	4.2 U	18 U	14 U	4.4 U	4.2 U
Ethylbenzene	370	µg/m^3	5 U	4.7 U	5 U	5 U	4.6 U	19 U	16 U	4.9 U	4.6 U
Methylene Chloride	21000	µg/m^3	40 U	38 U	2.2 J	40 U	36 U	160 U	120 U	6.4 J	37 U
Tetrachloroethene	1400	µg/m^3	11	4.2 J	3.8 J	26	12	31	11 J	1.2 J	7.1 J
Toluene	170000	µg/m^3	1.6 J	4.1 U	4.4 U	4.4 U	4 U	6 J	14 U	0.95 J	1.2 J
Trans-1,2-Dichloroethene	NA	µg/m^3	4.6 U	4.3 U	4.6 U	4.6 U	4.2 U	18 U	14 U	4.4 U	4.2 U
Trichloroethene	70	µg/m^3	6.3 U	5.8 U	6.2 U	6.3 U	5.6 U	13 J	9.1 J	6 U	5.7 U
Vinyl Chloride	56	µg/m^3	3 U	2.8 U	3 U	3 U	2.7 U	11 U	9.2 U	2.9 U	2.7 U
Xylenes (Total)	3500	µg/m^3	10 U	9.4 U	10 U	10 U	9.1 U	39 U	31 U	9.7 U	9.2 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-057		SG-058		SG-059		SG-060	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-57-0915 9/22/2015**	**SG-57-1215 12/10/2015**	**SG-58-0915 9/22/2015**	**SG-58-1215 12/8/2015**	**SG-59-0915 9/22/2015**	**SG-59-1215 12/8/2015**	**SG-60-0915 9/23/2015**	**SG-60-1215 12/9/2015**
1,1,1-Trichloroethane	170000	µg/m^3	4.7 J	3 UB	6.6 U	1.2 J	6.6 U	3 J	6 U	6.1 U
1,1,2-Trichloroethane	7	µg/m^3	6 U	6.2 U	6.6 U	5.7 U	6.6 U	5.9 U	6 U	6.1 U
1,1-Dichloroethane	580	µg/m^3	4.4 U	4.6 U	4.9 U	4.2 U	4.9 U	4.4 U	4.4 U	4.5 U
1,1-Dichloroethene	7000	µg/m^3	4.4 U	4.5 U	4.8 U	4.1 U	4.8 U	4.3 U	4.4 U	4.4 U
1,2-Dichloroethane	36	µg/m^3	4.4 U	4.6 U	4.9 U	4.2 U	4.9 U	4.4 U	4.4 U	4.5 U
Benzene	120	µg/m^3	0.57 UB	0.41 J	3.9 U	0.56 UB	3.9 U	0.5 UB	0.43 UB	3.6 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.5 U	4.8 U	4.1 U	4.8 U	4.3 U	4.4 U	4.4 U
Ethylbenzene	370	µg/m^3	4.8 U	5 U	2.2 J	4.5 U	5.2 U	1.6 J	4.8 U	4.9 U
Methylene Chloride	21000	µg/m^3	38 U	40 U	42 U	36 U	42 U	2.5 J	38 U	39 U
Tetrachloroethene	1400	µg/m^3	23	14	6.8 J	7.1 U	1.5 J	7.3 U	5.3 J	1.7 J
Toluene	170000	µg/m^3	4.1 U	4.3 U	4.2 J	3.9 U	1.2 J	4 U	1.8 J	4.2 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.5 U	4.8 U	4.1 U	4.8 U	4.3 U	4.4 U	4.4 U
Trichloroethene	70	µg/m^3	5.9 U	6.2 U	6.5 U	5.6 U	6.5 U	5.8 U	5.9 U	6 U
Vinyl Chloride	56	µg/m^3	2.8 U	2.9 U	3.1 U	2.7 U	3.1 U	2.7 U	2.8 U	2.9 U
Xylenes (Total)	3500	µg/m^3	9.6 U	9.9 U	10 U	9.1 U	10 U	9.3 U	9.6 U	9.7 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-061		SG-063			SG-064	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-61-0915 9/23/2015**	**SG-61-1215 12/8/2015**	**SG-63-0915 9/23/2015**	**SG-63-0915-FD 9/23/2015**	**SG-63-1215 12/8/2015**	**SG-64-0915 9/23/2015**	**SG-64-1215 12/8/2015**
1,1,1-Trichloroethane	170000	µg/m^3	6.5 U	10 U	6.2 U	6.4 U	0.92 J	110	77
1,1,2-Trichloroethane	7	µg/m^3	6.5 U	10 U	6.2 U	6.4 U	5.9 U	6.6 U	5.7 U
1,1-Dichloroethane	580	µg/m^3	4.8 U	7.8 U	4.6 U	4.7 U	4.4 U	4.9 U	4.2 U
1,1-Dichloroethene	7000	µg/m^3	4.7 U	7.7 U	4.5 U	4.6 U	4.3 U	4.8 U	4.1 U
1,2-Dichloroethane	36	µg/m^3	4.8 U	7.8 U	4.6 U	4.7 U	4.4 U	4.9 U	4.2 U
Benzene	120	µg/m^3	53	1.1 UB	2.4 UB	2 UB	3.5 U	1.2 UB	0.41 UB
Cis-1,2-Dichloroethene	NA	µg/m^3	4.7 U	7.7 U	4.5 U	4.6 U	4.3 U	4.8 U	4.1 U
Ethylbenzene	370	µg/m^3	73	8.4 U	10	11	4.7 U	5.2 U	4.5 U
Methylene Chloride	21000	µg/m^3	3.4 J	4 J	40 U	40 U	38 U	42 U	36 U
Tetrachloroethene	1400	µg/m^3	260	13 U	37	39	7.4 U	490	290
Toluene	170000	µg/m^3	400	6.4 J	16	16	4.1 U	1.9 J	3.9 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.7 U	7.7 U	4.5 U	4.6 U	4.3 U	4.8 U	4.1 U
Trichloroethene	70	µg/m^3	6.4 U	10 U	6.2 U	2.1 J	5.8 U	7.8	4.9 J
Vinyl Chloride	56	µg/m^3	3 U	4.9 U	2.9 U	3 U	2.8 U	3.1 U	2.7 U
Xylenes (Total)	3500	µg/m^3	260	17 U	43	43	9.5 U	10 U	9.1 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-065			SG-066		SG-067		SG-068	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-65-0915 9/21/2015**	**SG-65-1215 12/7/2015**	**SG-65-1215-FD 12/7/2015**	**SG-66-0915 9/21/2015**	**SG-66-1215 12/9/2015**	**SG-67-0915 9/22/2015**	**SG-67-1215 12/9/2015**	**SG-68-0915 9/22/2015**	**SG-68-1215 12/10/2015**
1,1,1-Trichloroethane	170000	µg/m^3	10	1.4 J	1.4 J	110,000	35,000	360	390	210	180
1,1,2-Trichloroethane	7	µg/m^3	6.5 U	5.9 U	6.3 U	220 U	120 U	6.6 U	6.2 U	6.9 U	6.5 U
1,1-Dichloroethane	580	µg/m^3	4.8 U	4.4 U	4.7 U	25,000	6,000	1.5 J	1.4 J	1.6 J	2.4 J
1,1-Dichloroethene	7000	µg/m^3	4.7 U	4.3 U	4.6 U	15,000	1,500	4.8 U	5.6	5 U	4.8 U
1,2-Dichloroethane	36	µg/m^3	4.8 U	4.4 U	4.7 U	160 U	88 U	4.9 U	4.6 U	5.1 U	4.8 U
Benzene	120	µg/m^3	2.6 UB	3.4 U	3.7 U	130 U	70 U	3.9 U	3.6 U	1.8 UB	3.8 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.7 U	4.3 U	4.6 U	9,200	1,900	4.8 U	4.5 U	5 U	4.8 U
Ethylbenzene	370	µg/m^3	4.6 J	4.7 U	5 U	170 U	95 U	5.2 U	4.9 U	1.1 J	5.2 U
Methylene Chloride	21000	µg/m^3	41 U	38 U	40 U	140 U	760 U	42 U	39 U	44 U	42 U
Tetrachloroethene	1400	µg/m^3	58	5.9 J	6.3 J	8,600	4,000	38	33	30	19
Toluene	170000	µg/m^3	22	4.1 U	4.4 U	31 J	82 U	4.6 U	4.3 U	5.5	4.5 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.7 U	4.3 U	4.6 U	1,600	410	4.8 U	4.5 U	5 U	4.8 U
Trichloroethene	70	µg/m^3	6.4 U	5.8 U	6.2 U	4,000	1,500	6.5 U	2.5 J	3.6 J	2.6 J
Vinyl Chloride	56	µg/m^3	3 U	2.8 U	3 U	180	56 U	3.1 U	2.9 U	3.2 U	3.1 U
Xylenes (Total)	3500	µg/m^3	12	9.4 U	10 U	700 U	190 U	10 U	9.8 U	11 U	10 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 5. Soil Gas Probe Sampling Results - August to December 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

			SG-069		SG-071			SG-072			SG-073	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-69-0915 9/21/2015**	**SG-69-1215 12/7/2015**	**SG-71-0915 9/21/2015**	**SG-71-0915-FD 9/21/2015**	**SG-71-1215 12/7/2015**	**SG-72-0915 9/21/2015**	**SG-72-1215 12/7/2015**	**SG-72-1215-FD 12/7/2015**	**SG-73-0915 9/22/2015**	**SG-73-1215 12/9/2015**
1,1,1-Trichloroethane	170000	µg/m^3	6 U	5.9 U	2.4 J	6 U	6	6.6 U	5.9 U	5.7 U	6.9 U	5.8 U
1,1,2-Trichloroethane	7	µg/m^3	6 U	5.9 U	6 U	6 U	5.8 U	6.6 U	5.9 U	5.7 U	6.9 U	5.8 U
1,1-Dichloroethane	580	µg/m^3	4.4 U	4.4 U	4.4 U	4.4 U	4.3 U	4.9 U	4.4 U	4.2 U	5.1 U	4.3 U
1,1-Dichloroethene	7000	µg/m^3	4.4 U	4.3 U	4.4 U	4.4 U	4.2 U	4.8 U	4.3 U	4.2 U	5 U	4.2 U
1,2-Dichloroethane	36	µg/m^3	4.4 U	4.4 U	4.4 U	4.4 U	4.3 U	4.9 U	4.4 U	4.2 U	5.1 U	4.3 U
Benzene	120	µg/m^3	2.7 UB	3.4 U	3.5 U	3.5 U	3.4 U	1.3 UB	3.4 U	3.4 U	4 U	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.3 U	4.4 U	4.4 U	4.2 U	4.8 U	4.3 U	4.2 U	5 U	4.2 U
Ethylbenzene	370	µg/m^3	4.1 J	4.7 U	1.8 J	1.8 J	4.6 U	1.7 J	4.7 U	4.6 U	5.5 U	4.6 U
Methylene Chloride	21000	µg/m^3	38 U	38 U	38 U	38 U	37 U	42 U	3.9 J	36 U	44 U	37 U
Tetrachloroethene	1400	µg/m^3	140	8.5	3.8 J	4.6 J	7.2 U	7.3 J	7.3 U	7.1 U	5.6 J	1.7 J
Toluene	170000	µg/m^3	21	4.1 U	8.4	8.2	4 U	8.4	4 U	4 U	4.7 U	4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.3 U	4.4 U	4.4 U	4.2 U	4.8 U	4.3 U	4.2 U	5 U	4.2 U
Trichloroethene	70	µg/m^3	5.9 U	5.8 U	5.9 U	5.9 U	5.7 U	6.5 U	5.8 U	5.6 U	6.8 U	5.7 U
Vinyl Chloride	56	µg/m^3	2.8 U	2.8 U	2.8 U	2.8 U	2.7 U	3.1 U	2.7 U	2.7 U	3.2 U	2.7 U
Xylenes (Total)	3500	µg/m^3	20	9.4 U	9.6 U	9.6 U	9.2 U	10 U	9.3 U	9.1 U	11 U	9.2 U

NA = not applicable. Criterion is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

UB = Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

Table 6. Helium Sampling Results

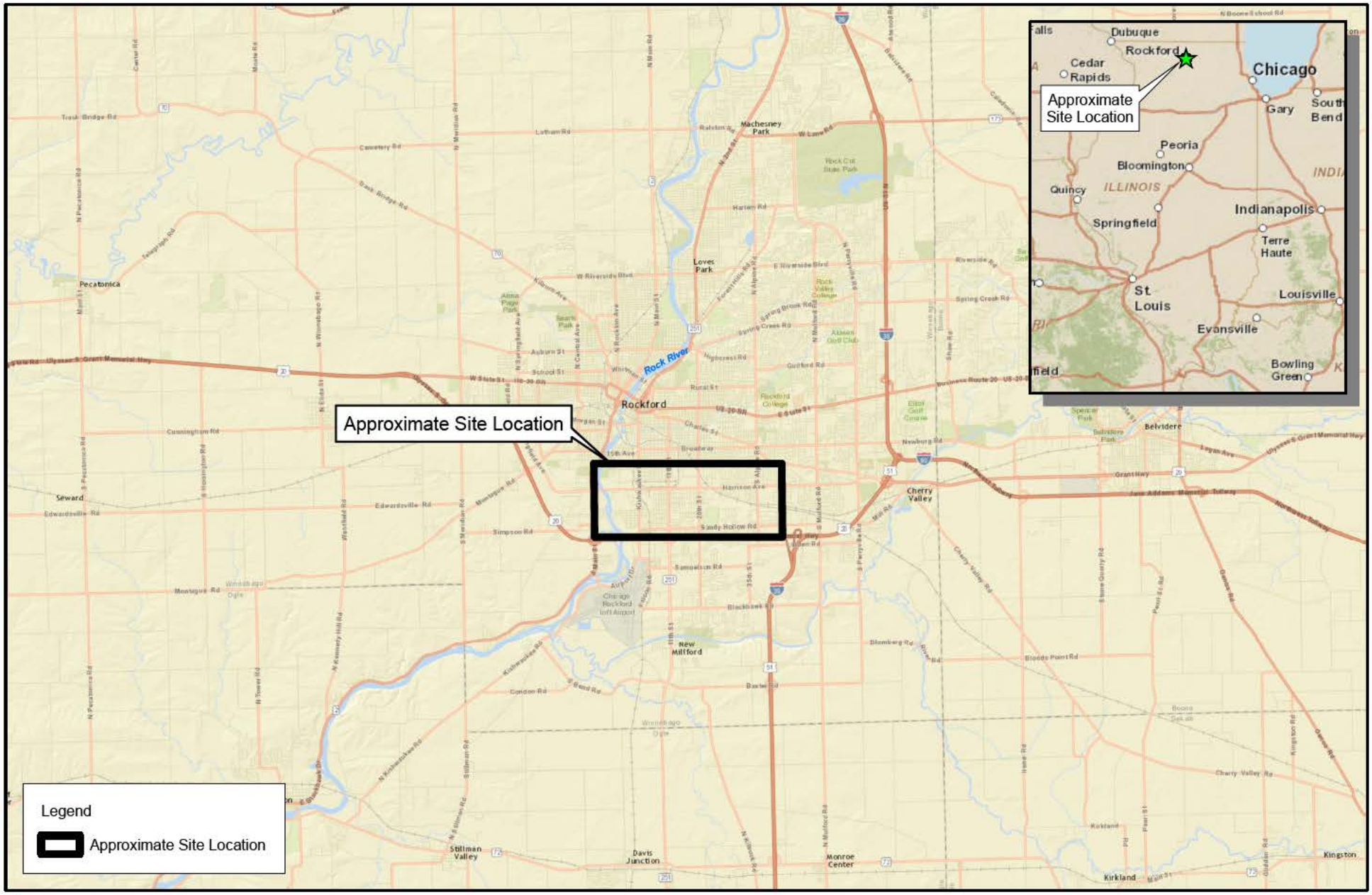
Southeast Rockford Groundwater Contamination Site Rockford, IL

Compound	Units	SER-SG-61-0915 9/23/2015
Helium	Percent	0.12 U

Note: A helium sample was collected at SG-61 during September 2016 because it failed the helium-leak test, and methane interference was suspected.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

Figures

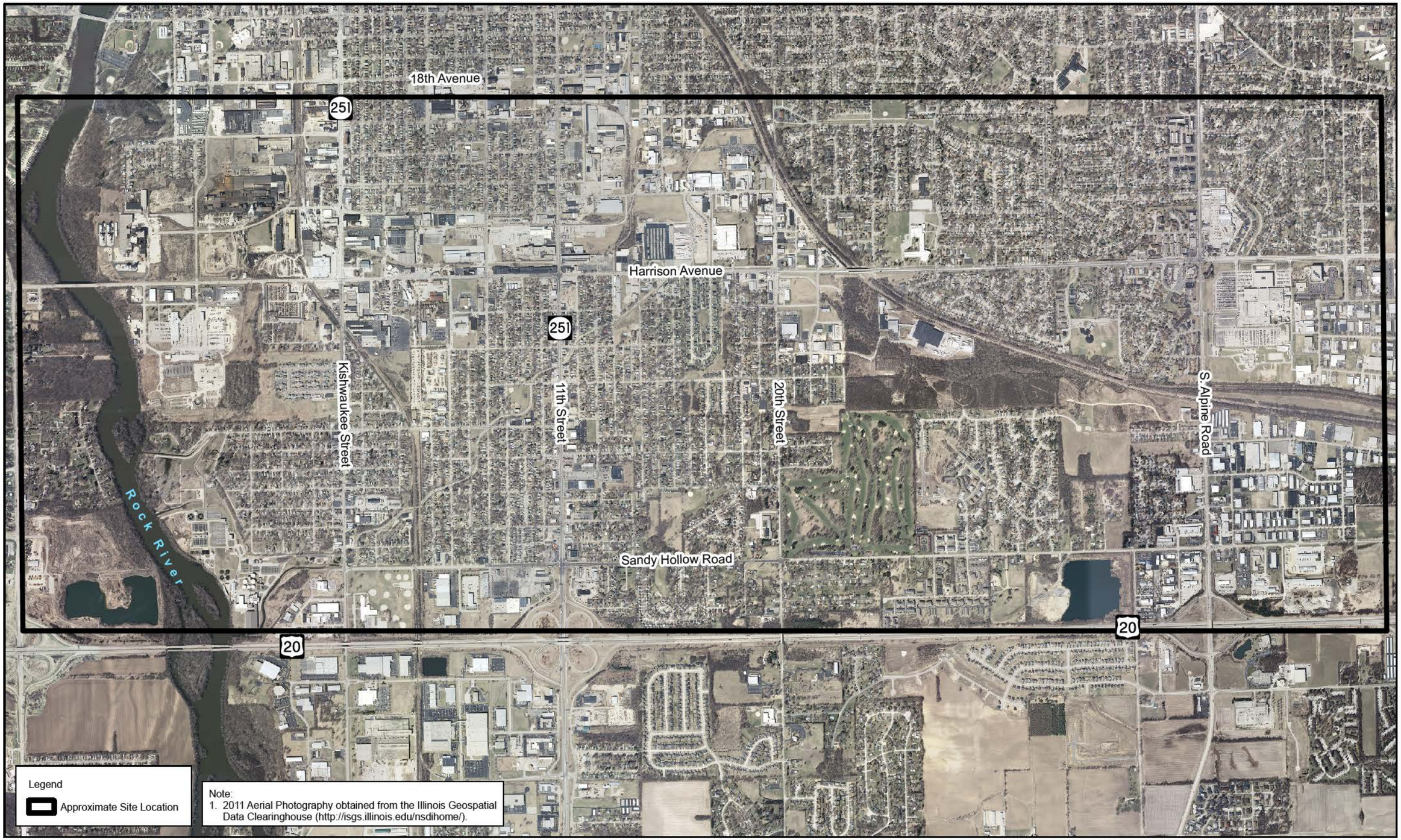


0 3.5 7
Miles

Figure 1
Site Map
Southeast Rockford Groundwater Contamination Superfund Site
Rockford, IL

ch2m

MKE \\LAKEFRONT\PROJ\EPA\476243SOUTHEASTROCKFORD\MAPFILES\QAPP\FIGURE 01 - SITE MAP.MXD JHANSEN1 2/5/2016 5:10:10 PM

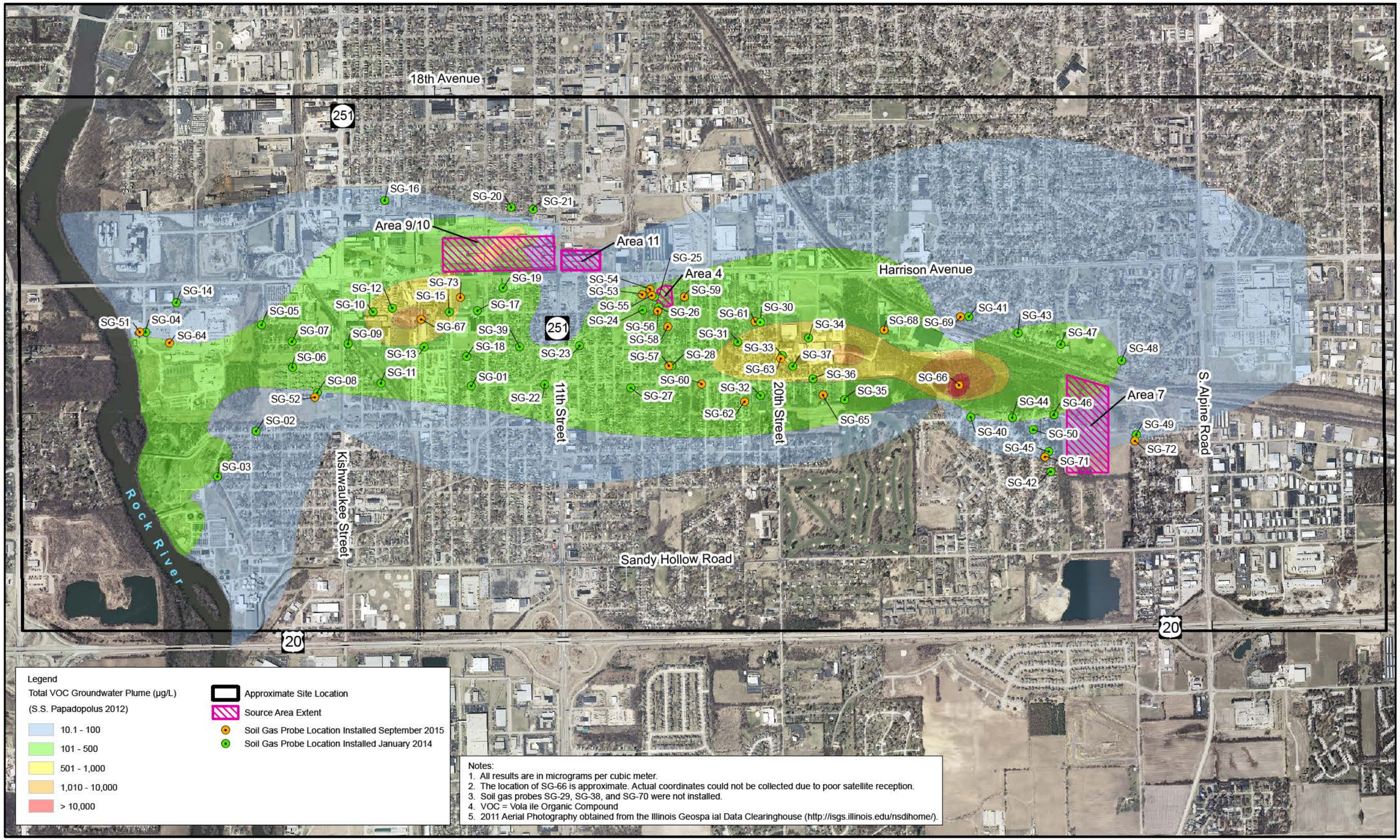


0 1,600 3,200
Feet

Figure 2
Site Area
Southeast Rockford Groundwater Contamination Superfund Site
Rockford, IL

ch2m

MKE:\\LAKEFRONT\PROJ\EPA\478243\SOUTHEAST ROCKFORD\MAPFILES\QAPP\FIGURE 02 - SITE AREA.MXD JHANSEN1 2/5/2016 5:08:16 PM



N

0 1,600 3,200

Feet

Figure 3

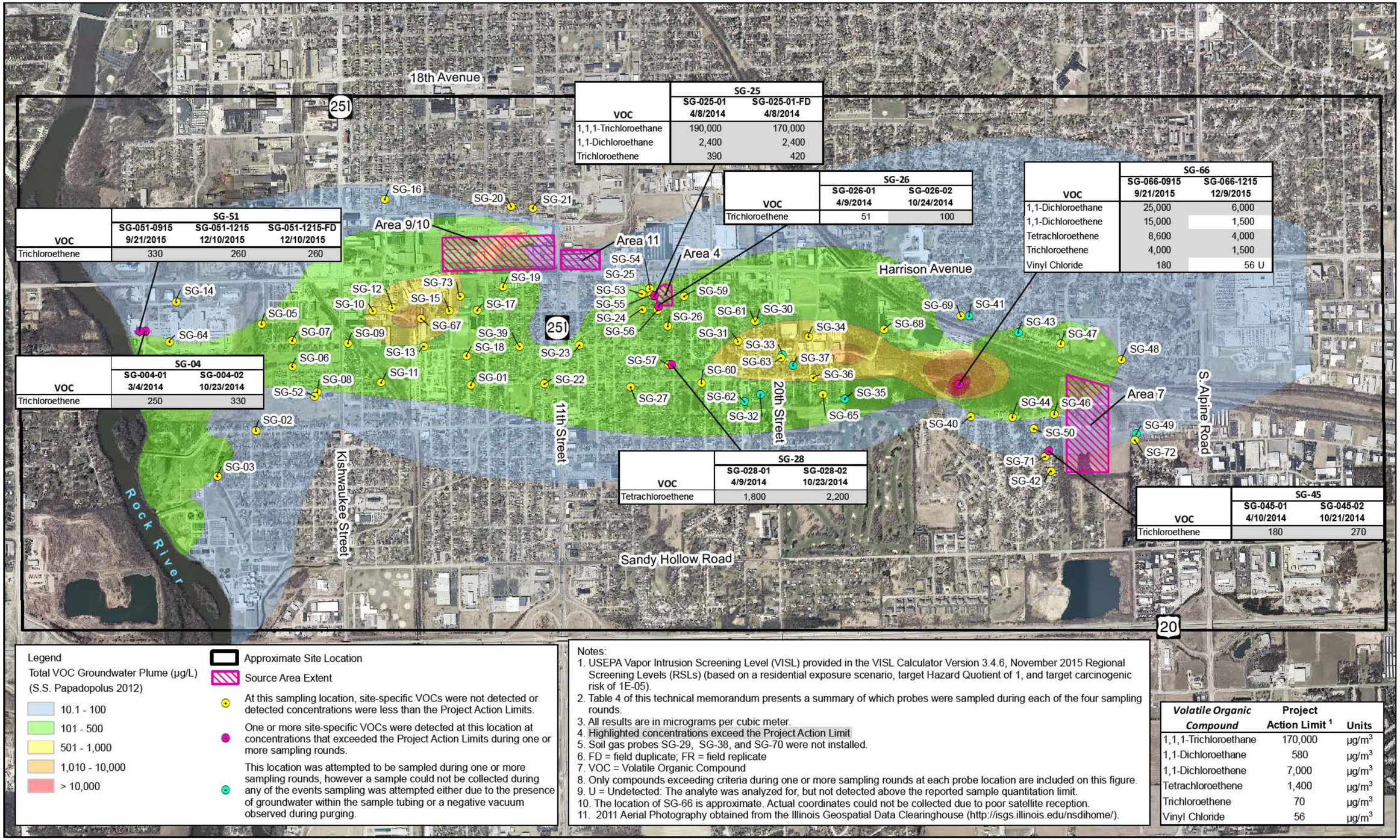
Soil Gas Sample Locations

Southeast Rockford Groundwater Contamination Superfund Site

Rockford, IL

ch2m

MKE \\LAKEFRONT\PROJ\EPA\476243SOUTHEASTROCKFORD\MAPF LES\2016\SOILGASTECHMEMO_2015RESULTS\FIGURE 03 - SO L GAS SAMPLE LOCATIONS.MXD JHANSEN1 2/11/2016 12 31:50 PM



VOC	SG-51		
	SG-051-0915 9/21/2015	SG-051-1215 12/10/2015	SG-051-1215-FD 12/10/2015
Trichloroethene	330	260	260

VOC	SG-04	
	SG-004-01 3/4/2014	SG-004-02 10/23/2014
Trichloroethene	250	330

VOC	SG-25	
	SG-025-01 4/8/2014	SG-025-01-FD 4/8/2014
1,1,1-Trichloroethane	190,000	170,000
1,1-Dichloroethane	2,400	2,400
Trichloroethene	390	420

VOC	SG-26	
	SG-026-01 4/9/2014	SG-026-02 10/24/2014
Trichloroethene	51	100

VOC	SG-66	
	SG-066-0915 9/21/2015	SG-066-1215 12/9/2015
1,1-Dichloroethane	25,000	6,000
1,1-Dichloroethene	15,000	1,500
Tetrachloroethene	8,600	4,000
Trichloroethene	4,000	1,500
Vinyl Chloride	180	56 U

VOC	SG-28	
	SG-028-01 4/9/2014	SG-028-02 10/23/2014
Tetrachloroethene	1,800	2,200

VOC	SG-45	
	SG-045-01 4/10/2014	SG-045-02 10/21/2014
Trichloroethene	180	270

Legend

Total VOC Groundwater Plume (µg/L)
(S.S. Papadopolus 2012)

- 10.1 - 100
- 101 - 500
- 501 - 1,000
- 1,010 - 10,000
- > 10,000

- Approximate Site Location
- Source Area Extent
- At this sampling location, site-specific VOCs were not detected or detected concentrations were less than the Project Action Limits.
- One or more site-specific VOCs were detected at this location at concentrations that exceeded the Project Action Limits during one or more sampling rounds.
- This location was attempted to be sampled during one or more sampling rounds, however a sample could not be collected during any of the events sampling was attempted either due to the presence of groundwater within the sample tubing or a negative vacuum observed during purging.

Notes:
1. USEPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target Hazard Quotient of 1, and target carcinogenic risk of 1E-05).
2. Table 4 of this technical memorandum presents a summary of which probes were sampled during each of the four sampling rounds.
3. All results are in micrograms per cubic meter.
4. Highlighted concentrations exceed the Project Action Limit
5. Soil gas probes SG-29, SG-38, and SG-70 were not installed.
6. FD = field duplicate; FR = field replicate
7. VOC = Volatile Organic Compound
8. Only compounds exceeding criteria during one or more sampling rounds at each probe location are included on this figure.
9. U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.
10. The location of SG-66 is approximate. Actual coordinates could not be collected due to poor satellite reception.
11. 2011 Aerial Photography obtained from the Illinois Geospatial Data Clearinghouse (http://isgs.illinois.edu/nsdihome/).

Volatile Organic Compound	Project Action Limit [1]	Units
1,1,1-Trichloroethane	170,000	µg/m^3
1,1-Dichloroethane	580	µg/m^3
1,1-Dichloroethene	7,000	µg/m^3
Tetrachloroethene	1,400	µg/m^3
Trichloroethene	70	µg/m^3
Vinyl Chloride	56	µg/m^3

N

0 1,600 3,200
Feet

Figure 4
Site-Specific VOC Sampling Results
Southeast Rockford Groundwater Contamination Superfund Site
Rockford, IL

ch2m

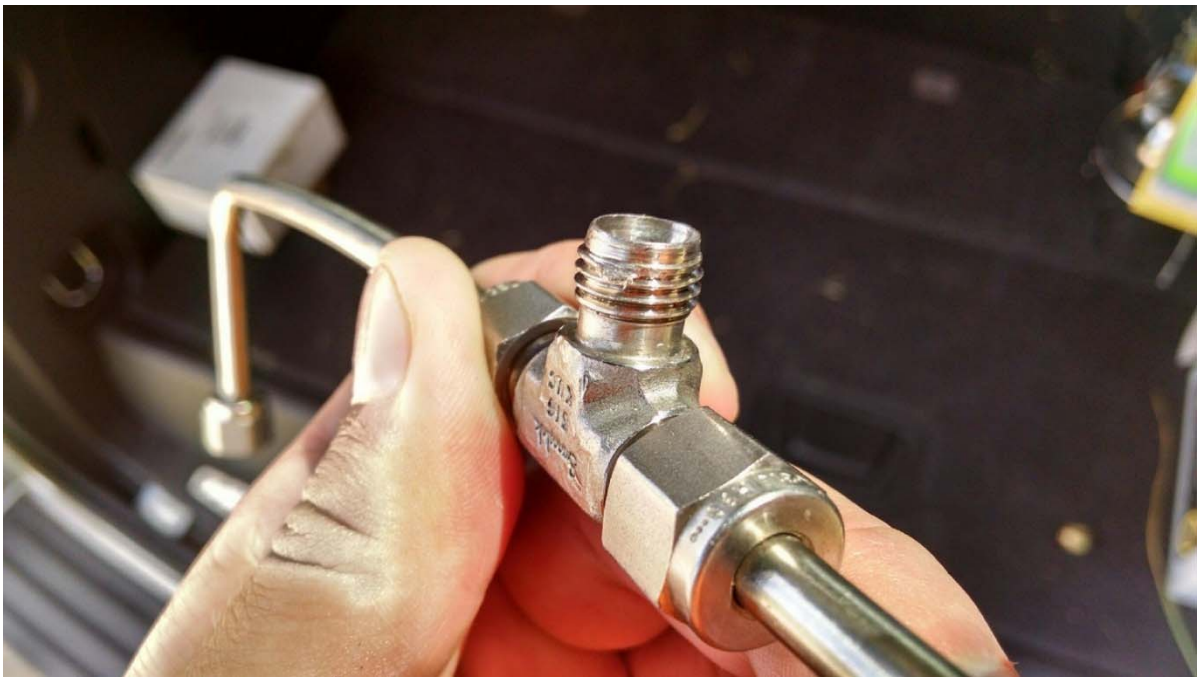
MKE \\LAKEFRONT\PROJ\EPA\476243SOUTHEASTROCKFORD\MAPFILES\2016\SOILGASTECHMEMO_2015RESULTS\FIGURE 04 - SITE SPECIFIC VOC SAMPLING RESULTS.MXD JHANSEN1 2/17/2016 10 54:39 AM

Attachment 1
Photographic Log

ATTACHMENT 1

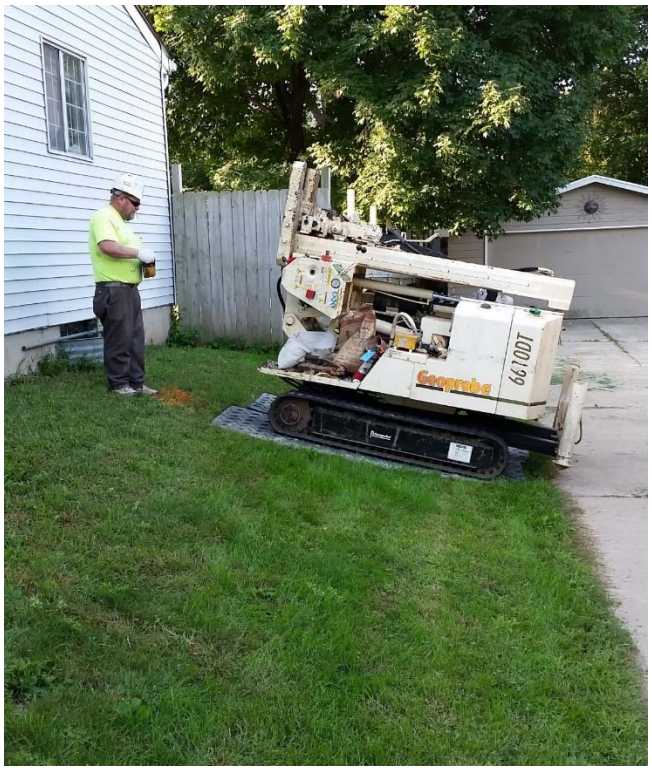
Photographic Log

Photograph 001: Setup for soil gas probe sampling within right-of-way.



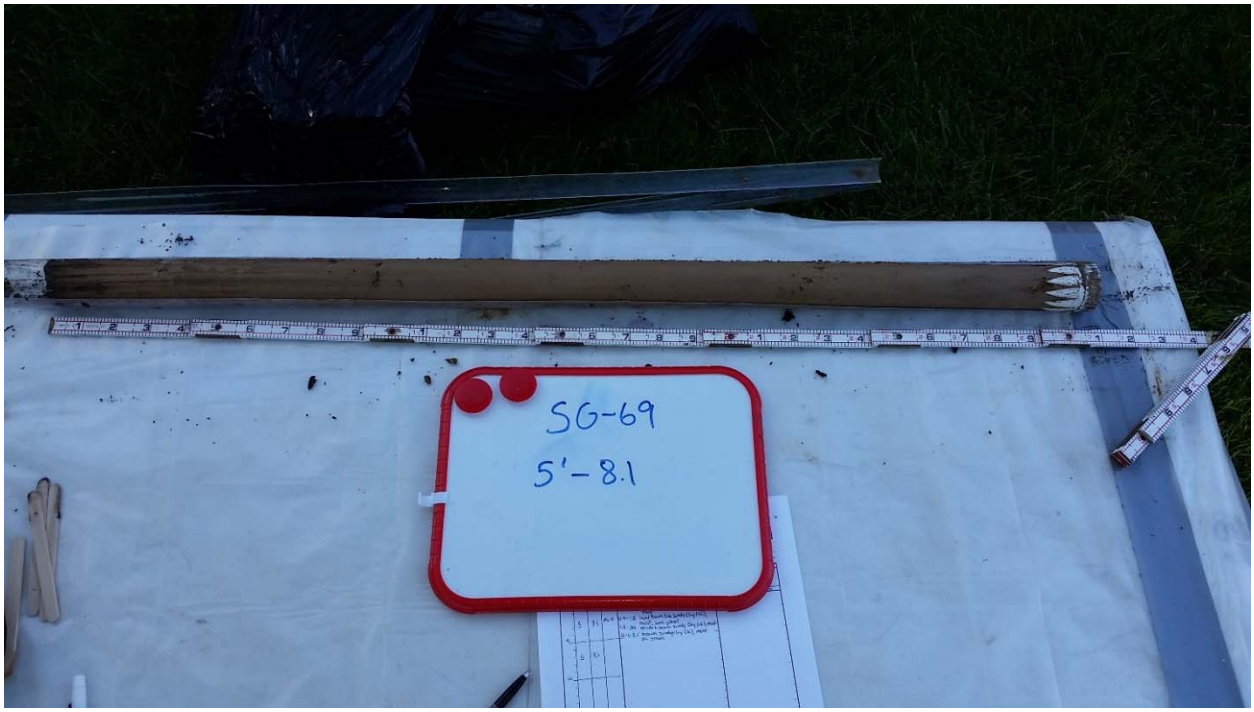
Photograph 002: T-valve used for sampling with field duplicates.

Photograph 003: Conducting the private utility locate at soil gas probe location SG-60. The geophysical equipment included in the photograph is ground-penetrating radar equipment.



Photograph 004: Positioning the drill rig at soil gas probe location SG-69. Matting used to prevent damage to lawns when accessing each location.

Photograph 005: Drilling the soil boring at soil gas probe location SG-63.



Photograph 006: Soil core collected from 5.0 to 10.0 feet below ground surface at soil gas probe location SG-69.

Photograph 007: Soil cores collected from soil gas probe location SG-63.

Photograph 008: Soil Gas Probe Screen (21-inch-long) prior to attaching to 0.25-inch-outer-diameter Teflon-lined tubing.

Photograph 009: Installing the soil gas probe at location SG-70.

Photograph 010: Completed soil gas probe installation at location SG-58, awaiting completion with concrete pad.

Photograph 011: Completing the concrete pad at soil gas probe location SG-61.

Photograph 012: Completed soil gas probe at location SG-54.

Photograph 013: IDW containment at the City Yard.

Photograph 014: Soil gas probe SG-09 was found to be damaged during the December 2015 sampling. The concrete pad has been removed from the flush mount and pieces can be seen nearby (circled in red). Recent demolition of the adjacent building and associated grading is the likely cause of the damage

Photograph 015: The concrete pad surface completion at soil gas probe SG-20 was found to be in poor condition during the December 2015 sampling event.

Photograph 016: Soil gas probe SG-51 was found to be damaged during the December 2015 sampling. Per the property owner, the surface completion (well vault and concrete pad) was inadvertently ripped out of the ground by a plow during snow removal. The concrete pad and surface completion is loosely placed over the probe.

Attachment 2
Soil Boring Logs

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-54 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD Geoprobe 6610DT DPT OR ENTAT ON

WATER LEVELS ▼ 10 0 START 9/15/15 11 05 END 9/15/15 11 30 LOGGER T Oxley

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-0 2' Sandy TOPSO L - damp dark brown	P D 0 0ppm
					0 2'-0 9' WELL GRADED GRAVEL - damp light brown some sand	
		4.4	MC 1		0 9'-4 4' F NE SANDY CLAY - moist very dark brown occasional gravel and debris some cinders chunk of pipe trace glass and brick fragments (F LL)	
					4 4'-5 0' No Recovery	
5	5 0				5 0'-6 0' F NE SANDY CLAY - moist very dark brown occasional gravel and debris (F LL)	P D 0 0ppm
		3.7	MC 2		6 0'-8 7' F NE SANDY CLAY - moist very dark brown low to medium plasticity	
					8 7'-10 0' No Recovery	
10	10 0				10 0'-12 8' POORLY GRADED MED UM SAND - wet brown some iron-oxide staining/banding	P D 0 0ppm ▼
		2.8	MC 3		12 8'-15 0' No Recovery	Hole collapsed at 13 5' bgs
15	15 0				End of Boring at 15 0' bgs Saturated Conditions Encountered at 10 0' bgs	
20						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-57 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD 2 5" O D Hand Auger OR ENTAT ON

WATER LEVELS N/A START 9/16/15 11 20 END 9/16/15 12 11 LOGGER C Nickel

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-3 6' Silty Sand TOPSO L - dry medium dense dark brown	
						P D 0 0ppm
						P D 0 0ppm
					3 6'-5 0' POORLY GRADED F NE SAND - dry medium dense reddish brown trace silt	
						P D 0 0ppm
5					5 0'-12 9' POORLY GRADED F NE SAND - moist medium dense light brown density increases with depth	P D 0 0ppm
		12.9	HC 1			P D 0 0ppm
						P D 0 0ppm
10						
	12 9					
					End of Boring at 12 9' bgs Saturated Conditions not Encountered	
15						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-58 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD Geoprobe 6610DT DPT OR ENTAT ON

WATER LEVELS ▼ N/A START 9/15/15 08 15 END 9/15/15 09 40 LOGGER T Oxley

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0	2.6	MC 1		0 0'-0 8' Silty Sand TOPSO L - moist dark brown 0 8'-1 1' DEBR S - reddish brown crushed brick 1 1'-1 9' CLAYEY MED UM SAND - moist dark brown 1 9'-2 6' POORLY GRADED MED UM SAND - moist brown 2 6'-5 0' No Recovery	P D 0 0ppm
5	5 0	3.1	MC 2		5 0'-8 1' POORLY GRADED MED UM SAND - moist brown fine grained gradual lightening in color at 7 3' 8 1'-10 0' No Recovery	P D 0 0ppm
10	10 0	4.2	MC 3		10 0'-11 6' POORLY GRADED F NE SAND - damp light brown 11 6'-14 2' F NE S LTY SAND - moist light brown 14 2'-15 0' No Recovery	P D 0 0ppm
15	15 0	3.4	MC 4		15 0'-17 3' F NE S LTY SAND - moist light brown 17 3'-18 4' POORLY GRADED MED UM SAND - moist light brown 18 4'-20 0' No Recovery	P D 0 0ppm
20	20 0	3.6	MC 5		20 0'-20 9' S LTY F NE SAND - moist light brown 20 9'-21 4' POORLY GRADED MED UM SAND - moist light brown 21 4'-22 0' SAA reddish brown 22 0'-23 6' SAA light brown 23 6'-25 0' No Recovery	P D 0 0ppm
25	25 0	3.2	MC 6		25 0'-28 2' POORLY GRADED MED UM SAND - moist light brown 28 2'-30 0' No Recovery	P D 0 0ppm Hole collapsed at 28 5' bgs
30	30 0				End of Boring at 30 0' bgs Saturated Conditions not Observed SAA Same As Above	
35						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-60 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD Geoprobe 6610DT DPT OR ENTAT ON

WATER LEVELS ▼ N/A START 9/16/15 09 30 END 9/16/15 10 05 LOGGER T Oxley

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-1 3' Sandy Clay TOPSO L - moist dark brown	P D 0 0ppm
					1 3'-2 0' S LTY CLAY - moist soft dark brown white sandy layer at 1 5' bgs	
		3.4	MC 1		2 0'-3 0' F NE SANDY CLAY - moist stiff dark brown	
					3 0'-3 4' CLAYEY MED UM SAND - moist dense brown	Hard drilling at 3 0' bgs
					3 4'-5 0' No Recovery	
5	5 0					
					5 0'-6 3' F NE SANDY CLAY - moist dark brown	P D 0 0ppm
					6 3'-8 0' POORLY GRADED MED UM SAND - moist rust brown occasional gravel	
		3.0	MC 2			
					8 0'-10 0' No Recovery	
10	10 0					
					10 0'-10 4' POORLY GRADED MED UM SAND - moist rust brown	P D 0 0ppm
					10 4'-13 4' POORLY GRADED F NE SAND - moist light brown some gravel at bottom	
		3.4	MC 3			
					13 4'-15 0' No Recovery	
15	15 0					
					15 0'-15 9' POORLY GRADED F NE SAND - moist light brown	P D 0 0ppm
					15 9'-16 2' POORLY GRADED MED UM SAND - moist brown	
		2.8	MC 4		16 2'-17 8' POORLY GRADED MED UM SAND - moist light brown with fine to coarse gravel	
	17 8					
					End of Boring at 17 8' bgs (refusal) Saturated Conditions not Encountered	
20						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-63 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD Geoprobe 6620DT DPT OR ENTAT ON

WATER LEVELS ▼ N/A START 9/15/15 13 20 END 9/15/15 14 20 LOGGER C Nickel

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-2 4' S LT with SAND - dry medium dark brown contains organics (roots)	P D 0 0ppm P D 0 0ppm
		4.0	MC 1		2 4'-3 0' S LT - dry medium reddish brown contains organics (roots)	P D 0 0ppm
					3 0'-4 0' S LT - dry medium to stiff brown trace gravel and coarse sand	P D 0 0ppm
					4 0'-5 0' No Recovery	
5	5 0					
		5.0	MC 2		5 0'-19 0' S LT - dry medium to stiff brown trace gravel and coarse sand some iron staining consistency increasing with depth	P D 0 0ppm P D 0 0ppm P D 0 0ppm P D 0 0ppm
					Limestone cobble from 9 0'-9 4'	P D 0 0ppm
10	10 0					
		5.0	MC 3			
	14 0					Hole collapsed at 14 0' bgs after 3rd push (10 0'-15 0')
15	15 0					
		5.0	MC 4			
	19 0				Cobble from 18 6'-18 9'	
20					End of Boring at 19 0' bgs (refusal) Saturated Conditions not Encountered	
25						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-64 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford llinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR CH2M Hill

DR LL NG EQU PMENT AND METHOD 2 5" O D Hand Auger OR ENTAT ON

WATER LEVELS ▼ N/A START 9/21/15 13 56 END 9/21/15 14 38 LOGGER T Oxley

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-0 8' Sandy Clay TOPSO L - moist dark brown	
					0 8'-3 0' POORLY GRADED MED UM SAND with GRAVEL - moist brown	
					3 0'-9 0' POORLY GRADED MED UM SAND - moist brown	Hit obstruction (cobble?) at 3 0' bgs made hole bigger and continued
5		10.2	HC 1			
					9 0'-10 2' WELL GRADED SAND - moist dense light brown trace gravel	
10	10 2					Hard augering on gravel and cobbles
					End of Boring at 10 2' bgs (refusal) Saturated Conditions not Encountered	
15						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-65 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD 2 5" O D Hand Auger OR ENTAT ON

WATER LEVELS ▼ N/A START 9/16/15 10 00 END 9/16/15 10 30 LOGGER C Nickel

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-0 8' TOPSO L	
					0 8'-7 4' S LTY F NE SAND - moist medium dense light brown trace gravel increasing silt content with depth	
						P D 0 0ppm
						P D 0 0ppm
		7.4	HC 1			
						P D 0 0ppm
5						P D 0 0ppm
						P D 0 0ppm
	7 4					
					End of Boring at 7 4' bgs (refusal) Saturated Conditions not Encountered	
10						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-68 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD Geoprobe 6620DT DPT OR ENTAT ON

WATER LEVELS ▼ 25 START 9/15/15 09 11 END 9/15/15 10 30 LOGGER C Nickel

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0	2.5	MC 1		0 0'-0 2' TOPSO L 0 2'-0 3' GRAVEL 0 3'-1 1' POORLY GRADED F NE SAND with S LT - dry medium dense reddish brown trace gravel 1 1'-1 9' GRAVELLY LEAN CLAY - dry stiff reddish brown 1 9'-2 5' S LTY SAND with GRAVEL - dry dense reddish brown 2 5'-5 0' No Recovery	P D 0 0ppm P D 0 0ppm P D 0 0ppm P D 0 0ppm
5	5 0	2.0	MC 2		5 0'-6 0' LEAN CLAY - moist medium dark brown some sand and gravel 6 0'-7 0' Gravelly F NE SAND - moist medium dense light brown 7 0'-10 0' No Recovery	P D 0 0ppm P D 0 0ppm P D 0 0ppm
10	10 0	4.0	MC 3		10 0'-11 3' Gravelly F NE SAND - moist medium dense light brown 11 3'-14 0' POORLY GRADED F NE SAND - moist medium dense light brown trace gravel 14 0'-15 0' No Recovery	P D 0 0ppm P D 0 0ppm P D 0 0ppm P D 0 0ppm P D 0 0ppm
15	15 0	3.5	MC 4		15 0'-16 8' Gravelly F NE SAND - dry dense light brown 16 8'-17 3 SAA moist 17 3'-18 5' Sandy GRAVEL - dry dense light brown 18 5'-19 0' No Recovery	P D 0 0ppm P D 0 0ppm P D 0 0ppm
20	19 0	3.9	MC 5		19 0'-21 2' Sandy GRAVEL - moist dense light reddish brown 21 2'-22 0' POORLY GRADED F NE SAND with GRAVEL - moist medium dense light reddish brown reddish brown staining 22 0'-22 9' SAA light brown 22 9'-24 0' No Recovery	P D 0 0ppm P D 0 0ppm
25	24 0	3.3	MC 6		24 0'-24 8' WELL GRADED SAND - wet medium dense reddish brown 24 8'-25 2' Sandy GRAVEL - wet dense light reddish brown 25 2'-25 6' WELL GRADED SAND - wet medium dense reddish brown 25 6'-28 3' Sandy GRAVEL - wet dense light reddish brown 28 3'-29 0' No Recovery	P D 0 0ppm ▼ Hole collapsed at 25 0' bgs P D 0 0ppm P D 0 0ppm
30	29 0				End of Boring at 29 0' bgs Saturated Conditions Encountered at 25 0' bgs	
35					SAA Same As Above	

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-69 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford Ilinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD Geoprobe 6610DT DPT OR ENTAT ON

WATER LEVELS ▼ 11 5 START 9/16/15 08 10 END 9/16/15 08 40 LOGGER T Oxley

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-0 9' Sandy Clay TOPSO L - moist very dark brown	P D 0 0ppm
					0 9'-1 8' F NE SANDY CLAY - moist light brown some gravel	
					1 8'-2 4' SAA very dark brown	
		3.1	MC 1		2 4'-3 1' SAA brown	
					3 1'-5 0' No Recovery	
5	5 0				5 0'-8 1' F NE SANDY CLAY - moist stiff brown some gravel	P D 0 0ppm Hard drilling at 6 0' bgs
		3.1	MC 2		8 1'-10 0' No Recovery	
10	10 0				10 0'-14 0' F NE SANDY CLAY - moist stiff brown some gravel	▼ Hole collapsed at 11 6' bgs
		4.5	MC 3		14 0'-14 5' POORLY GRADED MED UM SAND - wet dense light brown	Hard drilling at 14 0' bgs
	14 5				End of Boring at 14 5' bgs (refusal) Saturated Conditions Encountered at 14 0' bgs Static Water Levels Measured at 11 5' bgs (after drilling)	
15						
					SAA Same As Above	
20						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-70 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford llinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD 2 5" O D Hand Auger OR ENTAT ON

WATER LEVELS N/A START 9/17/15 09 45 END 9/17/15 10 55 LOGGER C Nickel

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-0 5' Sandy Silt TOPSO L - moist medium dense dark brown	
					0 5'-4 9' F NE SANDY CLAY - moist stiff light brown sand content increasing with depth	
5		10.5	HC 1		4 9'-5 4' CLAYEY F NE SAND - wet stiff dark brown	
					5 4'-6 5' LEAN CLAY - moist medium dark brown	
					6 5'-10 5' SANDY CLAY (GLAC AL T LL) - moist medium with gravel	
10	10 5					Soil Gas Probe not installed at this location per the direction of the USEPA
					End of Boring at 10 5' bgs (refusal) Saturated Conditions not Encountered	
15						

PROJECT NUMBER:	BORING NUMBER:
476243.ET.01	SG-72 SHEET 1 OF 1

SOIL BORING LOG

PROJECT SE Rockford Groundwater Contamination Superfund Site PROJECT LOCAT ON Rockford llinois

ELEVAT ON Not Measured DR LL NG CONTRACTOR Mateco

DR LL NG EQU PMENT AND METHOD 2 5" O D Hand Auger OR ENTAT ON

WATER LEVELS ▼ N/A START 9/16/15 08 05 END 9/16/15 08 47 LOGGER C Nickel

DEP H BELOW EX S NG GRADE (t)	N ERVAL (t)	RECOVERY (t)	# YPE	SYMBOL C LOG	SO L DESCR PT ON SO L NAME USCS GROUP SYMBOL COLOR MO STURE CONTENT RELAT VE DENS TY OR CONS STENCY SO L STRUCTURE M NERALOGY	COMMENTS DEPTH OF CAS NG DR LL NG RATE DR LL NG FLU D LOSS TESTS AND NSTRUMENTAT ON
	0 0				0 0'-0 8' TOPSO L	
					0 8'-3 2' F NE SANDY CLAY - moist medium reddish brown	P D 0 0ppm P D 0 0ppm
		7.8	HC 1		3 2'-7 8' S LTY SAND - moist medium dense tan trace gravel silt content decreasing with depth	P D 0 0ppm P D 0 0ppm
5						
	7 8				End of Boring at 7 8' bgs (refusal) Saturated Conditions not Encountered	
10						

Attachment 3
Soil Gas Probe Construction Logs

PROJECT NUMBER	PROBE NUMBER	SG-51
476243.ET.01	SHEET 1 OF 1	DATE: 9/14/2015

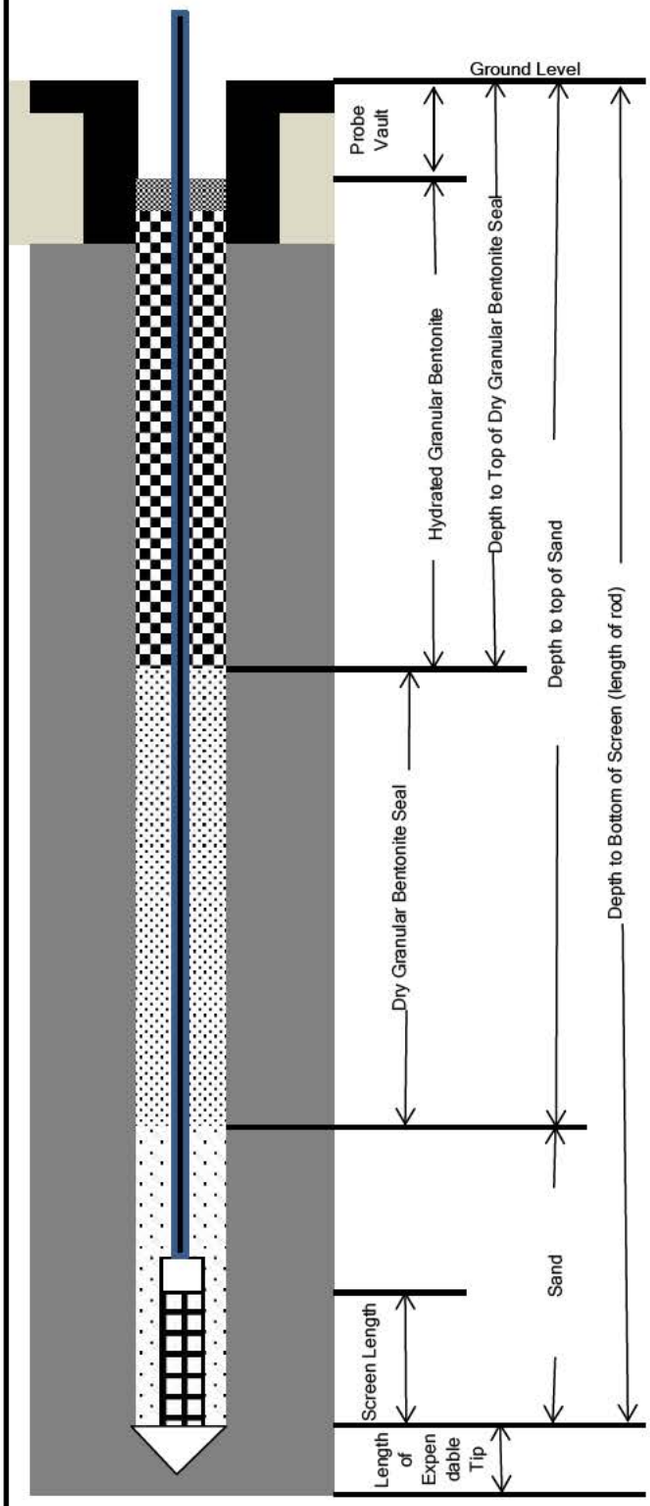
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/14/2015 15:32 END: 9/14/2015 16:22 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	10.88
(2)Depth to Top of Sand (ft. bgs)	8.58
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	7.08
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.5
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	6.58
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	Not Applicable

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad

PROJECT NUMBER	PROBE NUMBER	SG-52
476243.ET.01	SHEET 1 OF 1	DATE: 9/14/2015

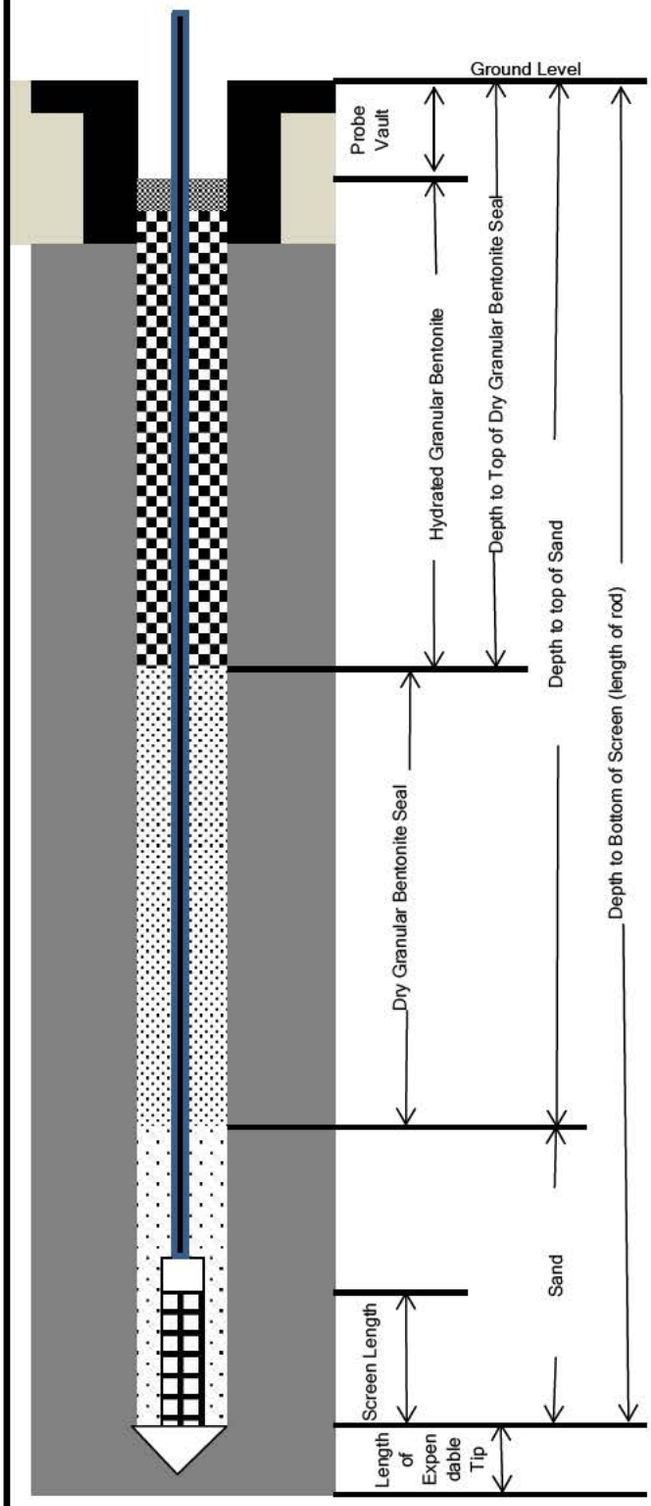
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6620DT 2.25 inch outer diameter rods

START : 9/14/2015 15:41 END: 9/14/2015 17:09 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	10.8
(2)Depth to Top of Sand (ft. bgs)	8.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	6.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	2.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	6.0
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	Not Applicable

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad

PROJECT NUMBER	PROBE NUMBER	SG-53
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

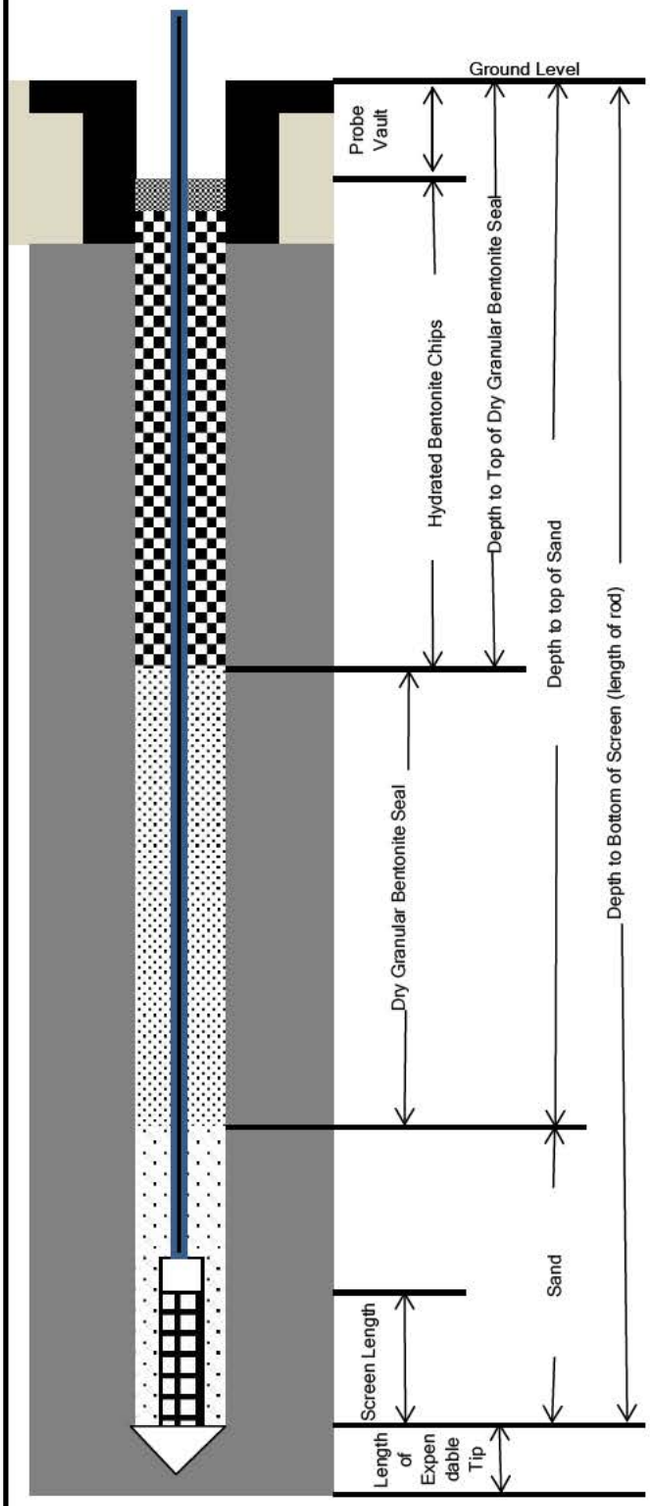
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6620DT 2.25 inch outer diameter rods

START : 9/15/2015 16:00 END: 9/15/2015 17:08 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	7.3
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	3.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	2.0
(3-4) Length of Hydrated Bentonite Seal (ft.)	2.5
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	Not Applicable

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Bentonite Chips:	Pure Wyoming Bentonite Well Plug, 3/8" chips.
Surface Completion:	Flush mount with concrete pad

PROJECT NUMBER	PROBE NUMBER	SG-54
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

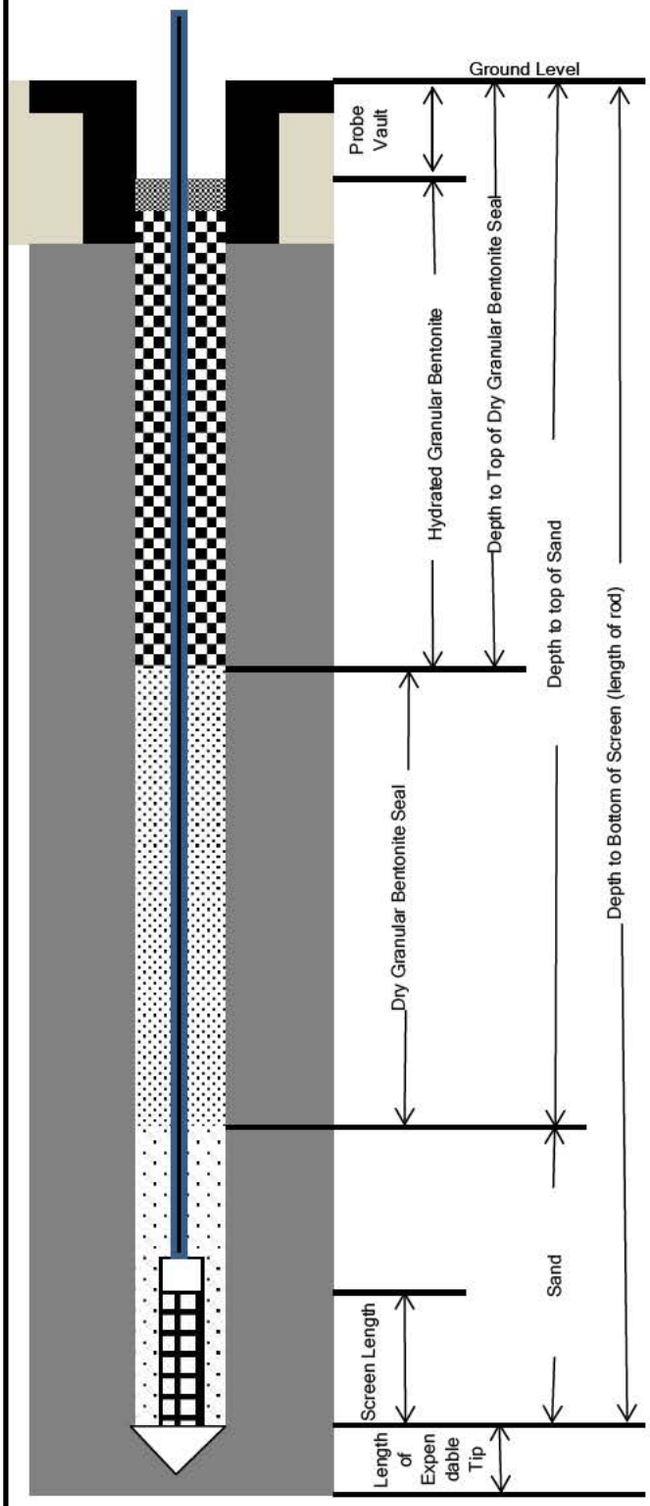
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/15/2015 11:50 END: 9/15/2015 12:10 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	7.2
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	4.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.2
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	3.5
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	7.4 to 13.5

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Soil boring advanced to 15' below ground surface, it collapsed to 13.5' below ground surface. Saturated at a depth of 10 feet below ground surface.

PROJECT NUMBER	PROBE NUMBER	SG-55
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

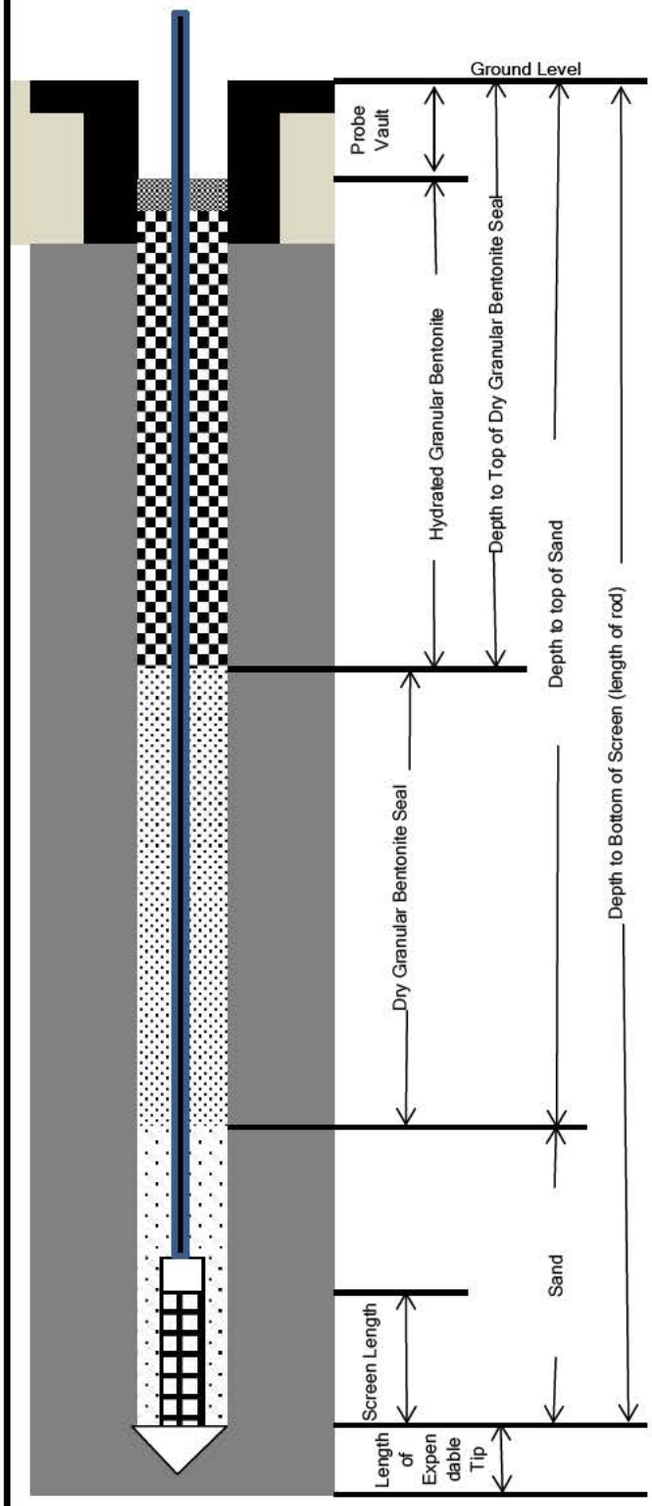
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/15/2015 14:50 END: 9/15/2015 15:15 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	7.2
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	4.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.2
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	3.5
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	7.4 to 10.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 10 feet below ground surface with drilling rods to determine probe was being placed above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-56
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

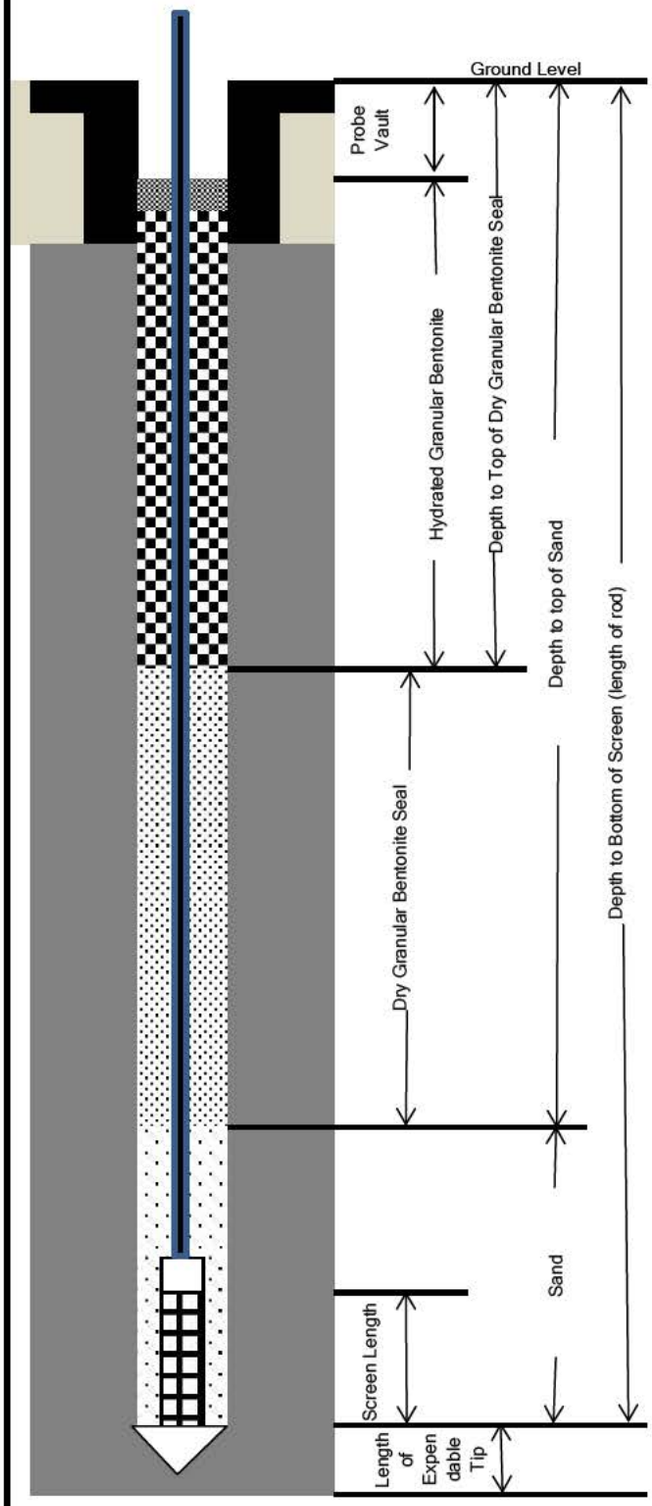
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/15/2015 15:45 END: 9/15/2015 16:15 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	7.3
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	3.9
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.1
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	3.4
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	7.5 to 10.4

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 10.4 feet below ground surface with drilling rods to determine probe was being placed above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-57
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

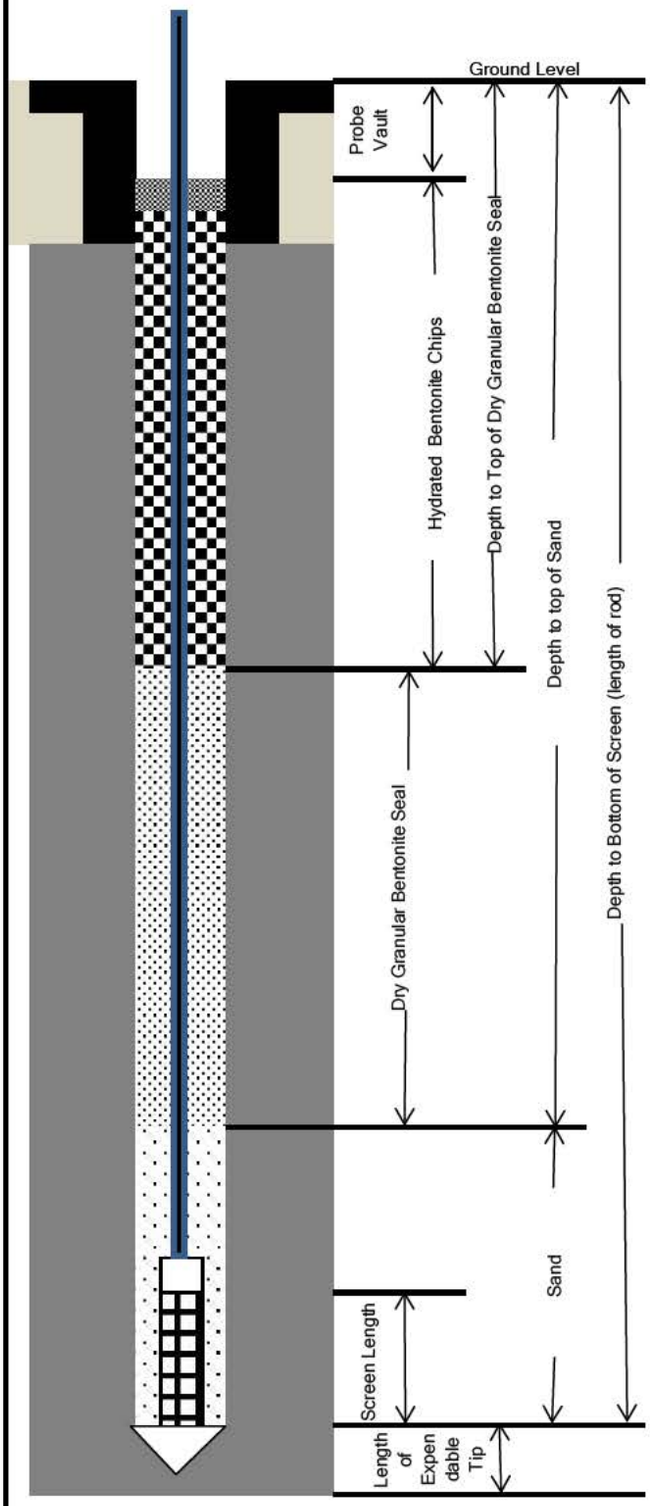
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : 2.5" O.D. Hand Auger

START : 9/16/2015 12:11 END: 9/16/2015 12:55 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.5
(1) Depth to Bottom of Screen (ft. bgs)	10.8
(2)Depth to Top of Sand (ft. bgs)	8.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	6.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	2.0
(3-4) Length of Hydrated Bentonite Seal (ft.)	6.0
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	11.0 to 12.9

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Bentonite Chips:	Pure Wyoming Bentonite Well Plug, 3/8" chips.
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 12.9 feet below ground surface with hand auger to determine probe was being placed above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-58
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

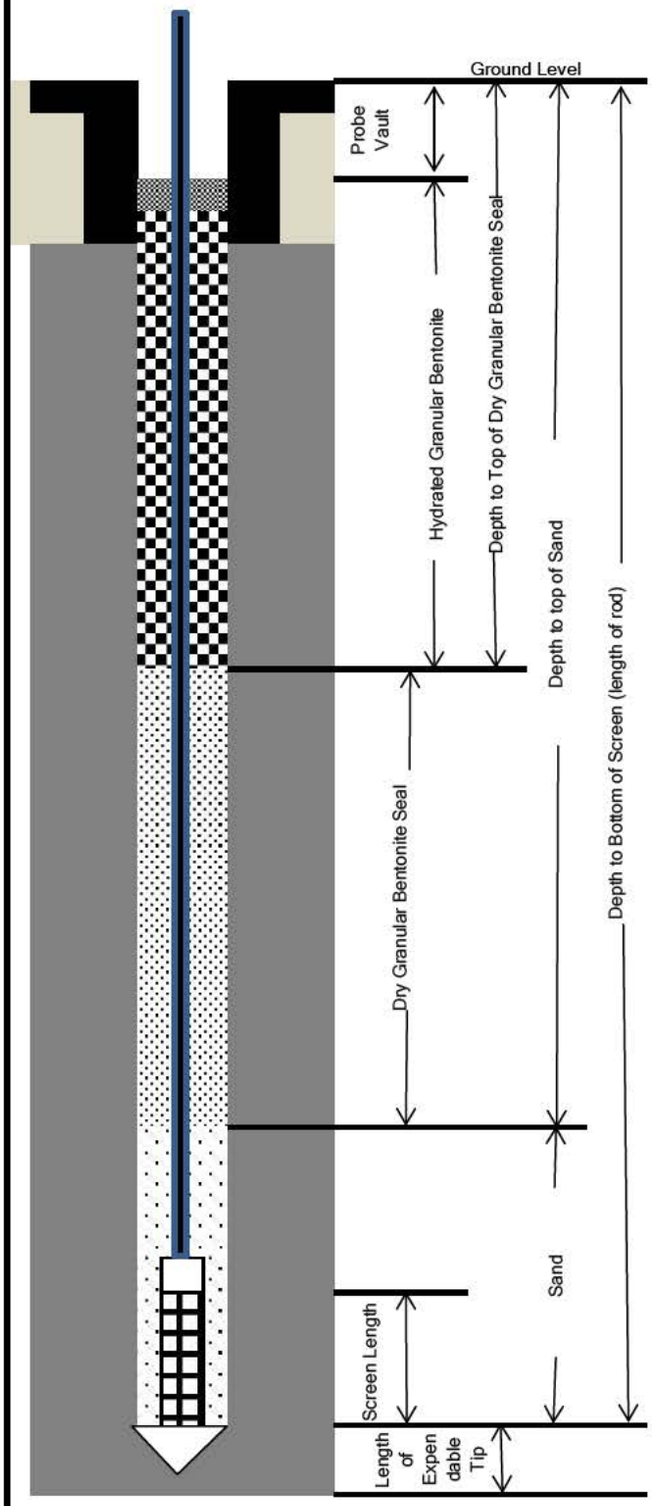
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/15/2015 9:45 END: 9/15/2015 10:15 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	15.1
(2)Depth to Top of Sand (ft. bgs)	13.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	12.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.1
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	11.5
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	15.3 to 28.5

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Soil boring advanced to 30' below ground surface, it collapsed to 28 5' below ground surface. Saturated conditions not encountered. Installed probe at proposed depth.

PROJECT NUMBER	PROBE NUMBER	SG-59
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

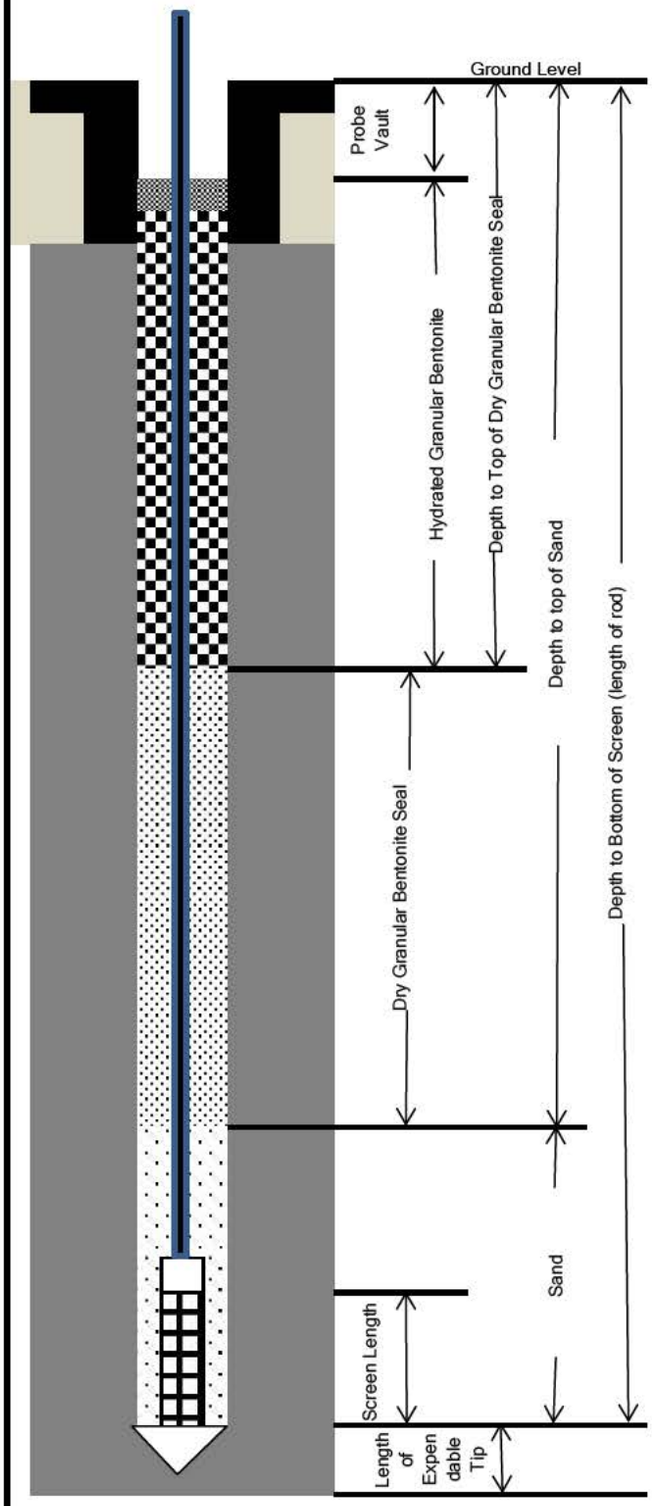
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/15/2015 16:35 END: 9/15/2015 17:00 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	7.2
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	3.8
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.2
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.2
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	3.3
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	7.4 to 10.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 10 feet below ground surface with drilling rods to determine probe was being placed above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-60
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

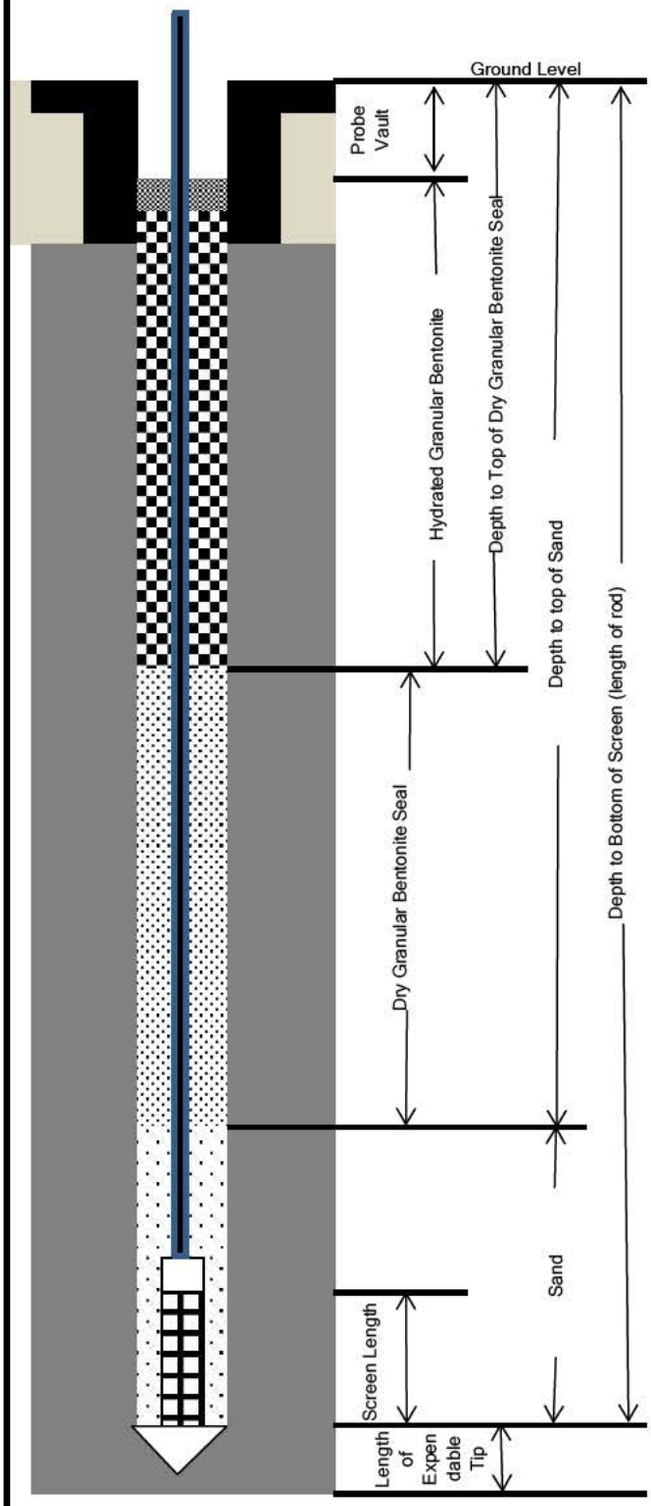
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/16/2015 10:10 END: 9/16/2015 10:35 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	15.8
(2)Depth to Top of Sand (ft. bgs)	13.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	12.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	12.0
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	16.0 to 17.8

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 17.8 feet below ground surface. Saturated conditions not encountered. Installed probe approximately 2 feet above refusal.

PROJECT NUMBER	PROBE NUMBER	SG-61
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

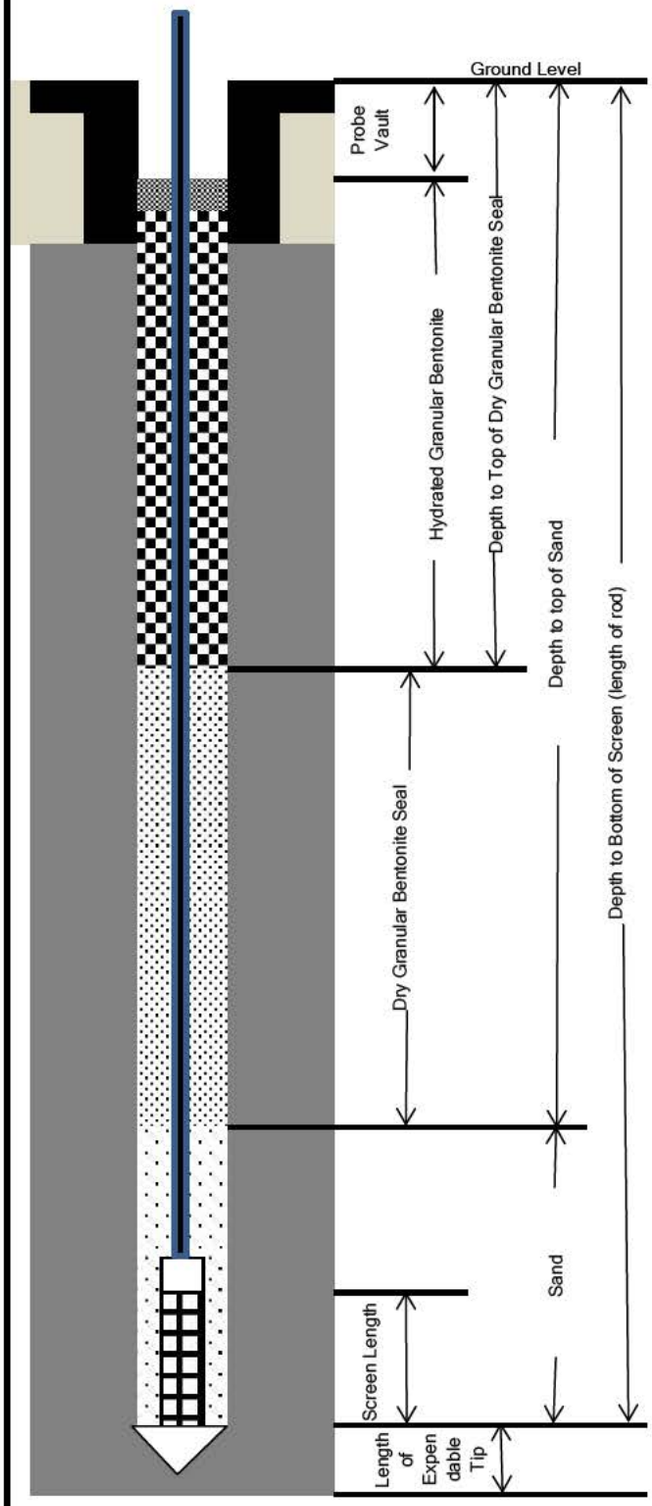
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/16/2015 14:30 END: 9/16/2015 15:15 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	9.8
(2)Depth to Top of Sand (ft. bgs)	7.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	6.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	6.0
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	10.0 to 12.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 12.0 feet below ground surface. Installed probe approximately 2 feet above refusal.

PROJECT NUMBER	PROBE NUMBER	SG-62
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

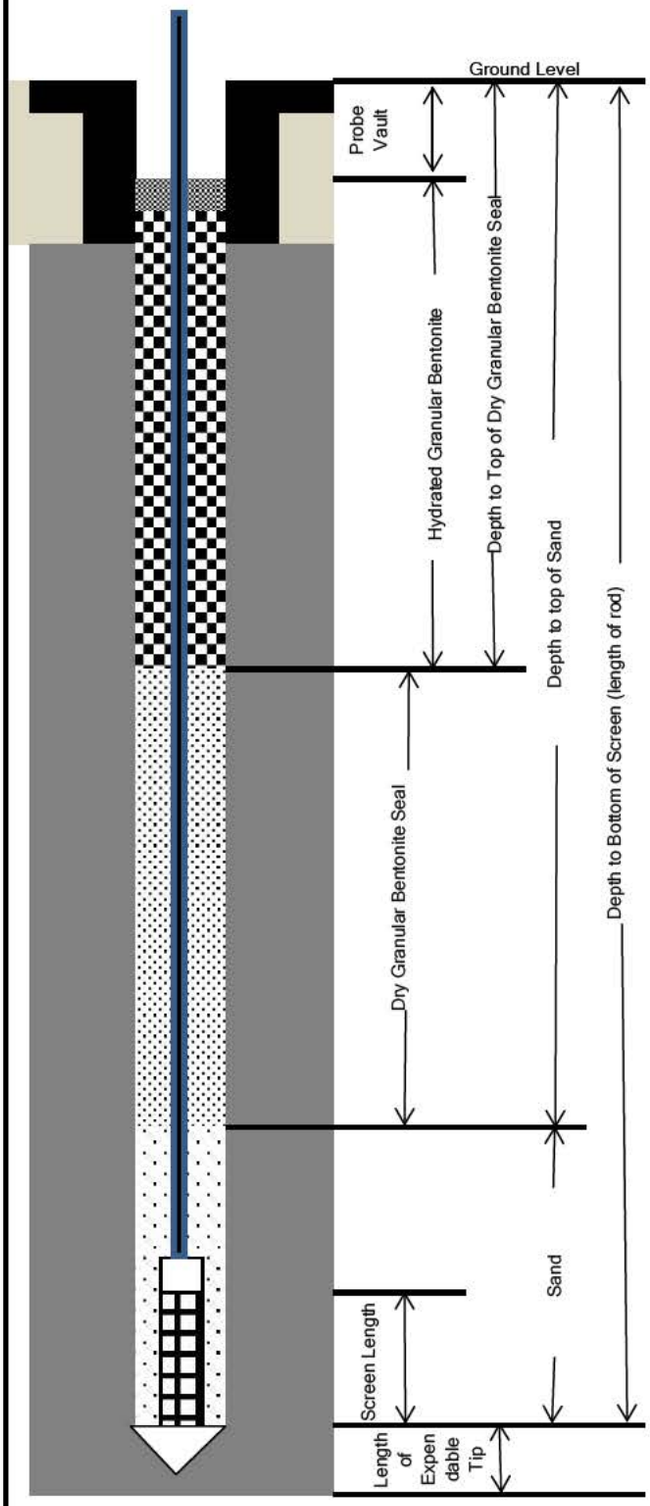
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/16/2015 11:00 END: 9/16/2015 11:40 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	15.8
(2)Depth to Top of Sand (ft. bgs)	13.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	12.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	12.0
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	16.0 to 16.9

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 16.9 feet below ground surface with drilling rods. Backfilled to 15.8' for probe install.

PROJECT NUMBER	PROBE NUMBER	SG-63
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

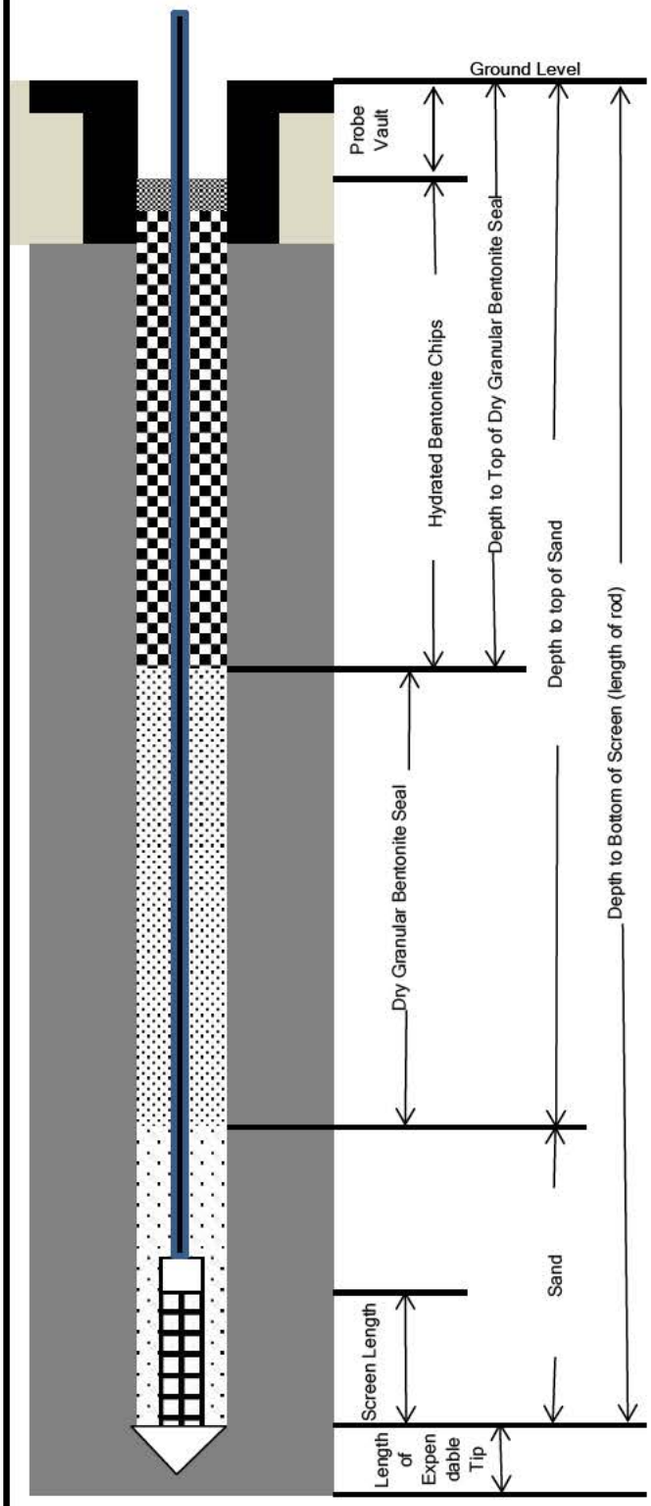
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6620DT 2.25 inch outer diameter rods

START : 9/15/2015 14:20 END: 9/15/2015 15:00 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	8.3
(2)Depth to Top of Sand (ft. bgs)	6.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	4.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	2.0
(3-4) Length of Hydrated Bentonite Seal (ft.)	3.5
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	8.5 to 19.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Bentonite Chips:	Pure Wyoming Bentonite Well Plug, 3/8" chips.
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 19.0 feet below ground surface. Saturated conditions not encountered. Installed probe shallower than anticipated due to dense soil encountered.

PROJECT NUMBER	PROBE NUMBER	SG-64
476243.ET.01	SHEET 1 OF 1	DATE: 9/21/2015

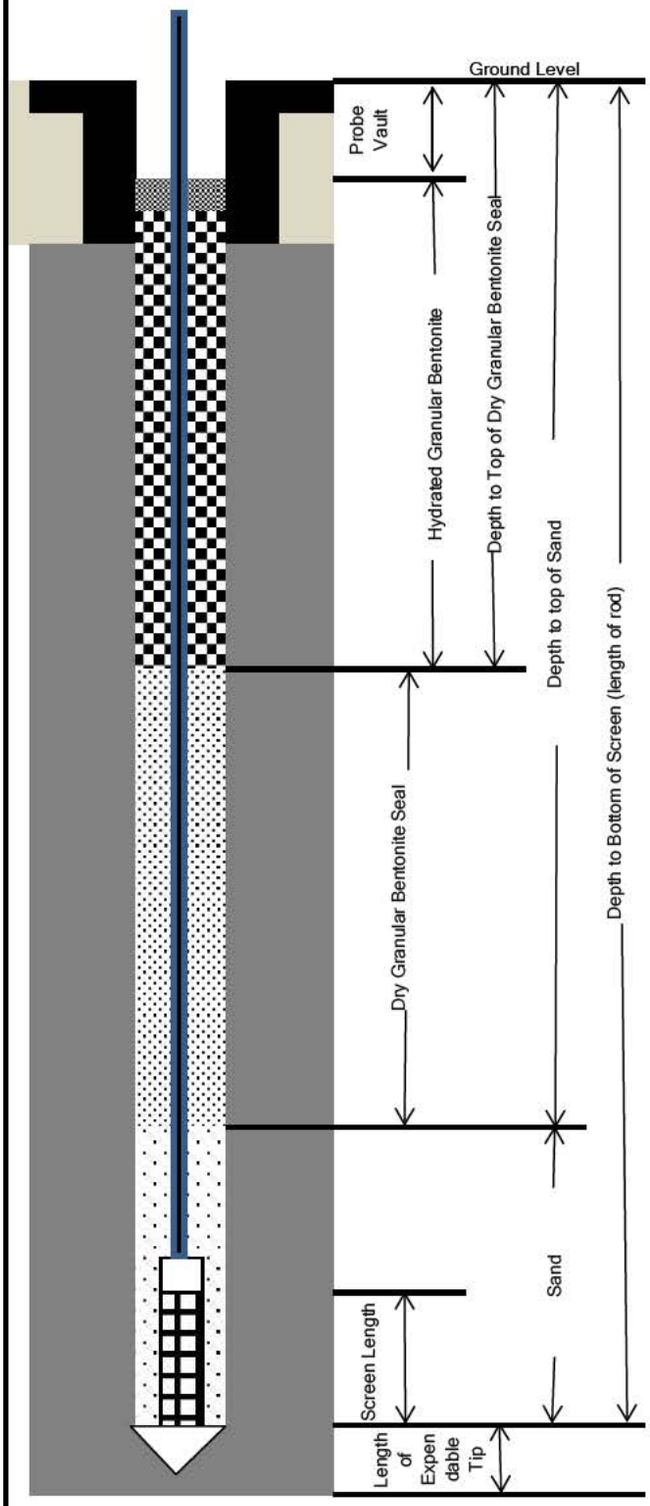
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Not Applicable. Installed by CH2M

DRILLING METHOD AND EQUIPMENT USED : 2.5" O.D. Hand Auger

START : 9/21/2015 14:40 END: 9/21/2015 15:15 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.5
(1) Depth to Bottom of Screen (ft. bgs)	10.0
(2)Depth to Top of Sand (ft. bgs)	7.65
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	6.65
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.35
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	6.15
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	Not Applicable

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 10.2 feet below ground surface.

PROJECT NUMBER	PROBE NUMBER	SG-65
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

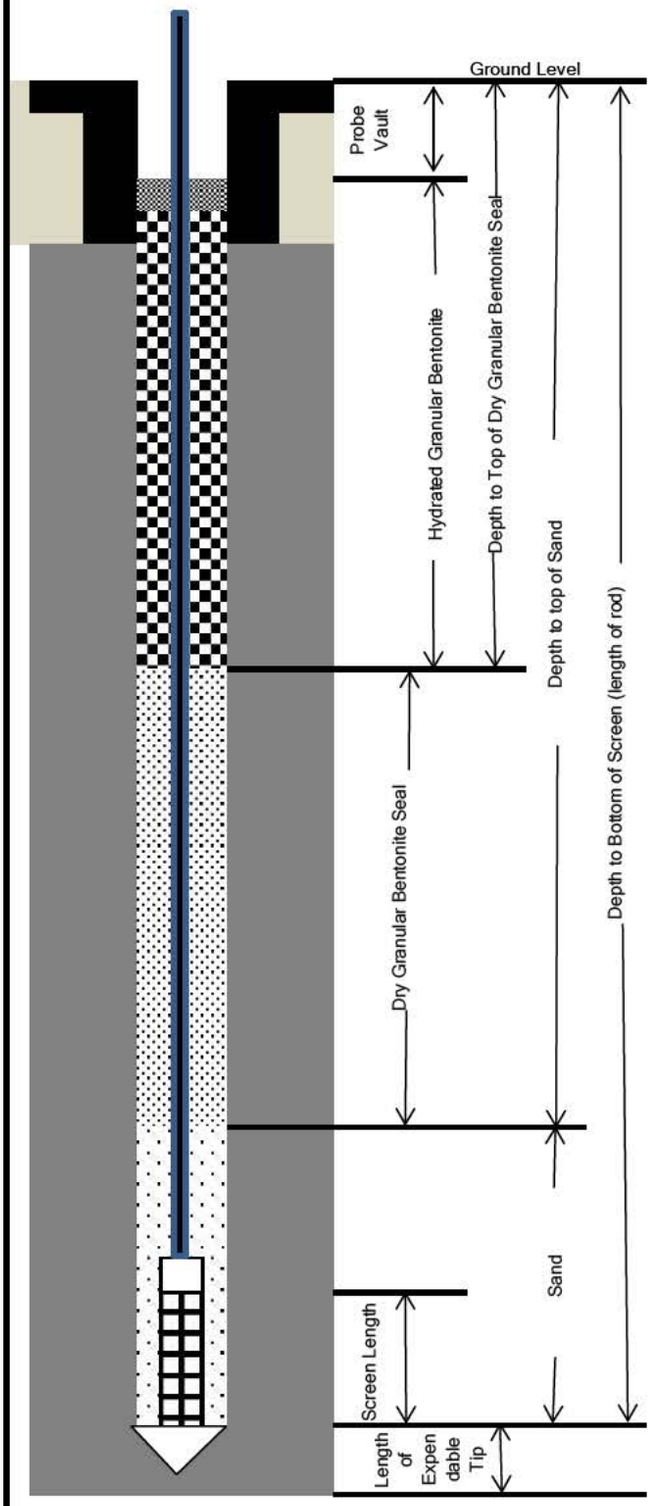
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : 2.5" O.D. Hand Auger

START : 9/16/2015 10:30 END: 9/16/2015 11:10 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.5
(1) Depth to Bottom of Screen (ft. bgs)	7.2
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	3.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.2
(2-3) Length of Dry Granular Bentonite Seal (ft.)	2.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	2.5
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	Not Applicable

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 7.4 feet below ground surface.

PROJECT NUMBER	PROBE NUMBER	SG-66
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

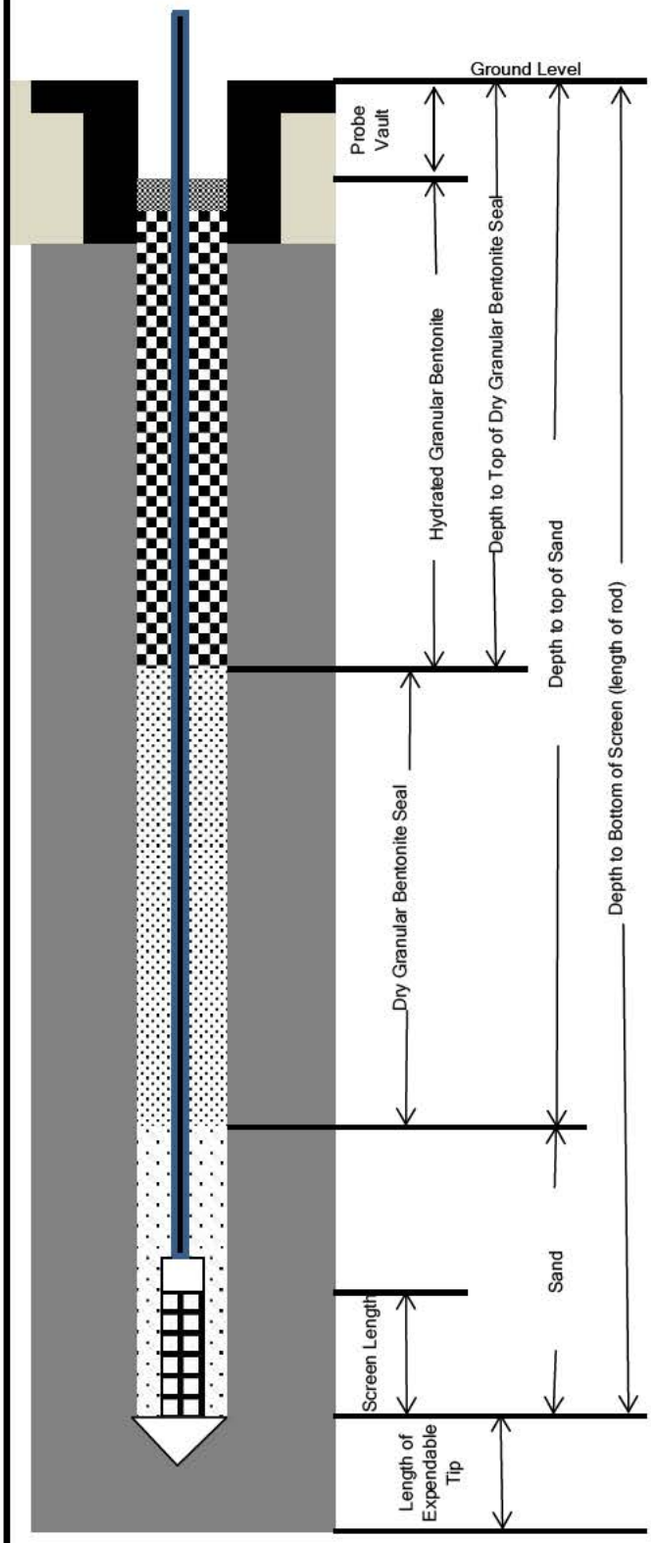
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6620DT 2.25 inch outer diameter rods

START : 9/16/2015 16:40 END: 9/16/2015 17:00 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	5.8
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	4.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	0.8
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	3.5
Screen Diameter (in.) / Length (ft.)	0.5" / 0 5'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	6.0-7.0'

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	On the first attempt, a probe was advanced to 20 feet below ground surface (bgs). The hole collapsed to 9 2 feet bgs, and water filled the hole to 7.2 feet bgs. This hole was abandoned and a second attempt was made to install the probe, 5 feet from the initial location. The hole was advanced to 7 feet bgs, and no water was observed in the hole. The probe was installed at 6 feet bgs so that the bottom of the screen was at least 1 foot above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-67
476243.ET.01	SHEET 1 OF 1	DATE: 9/17/2015

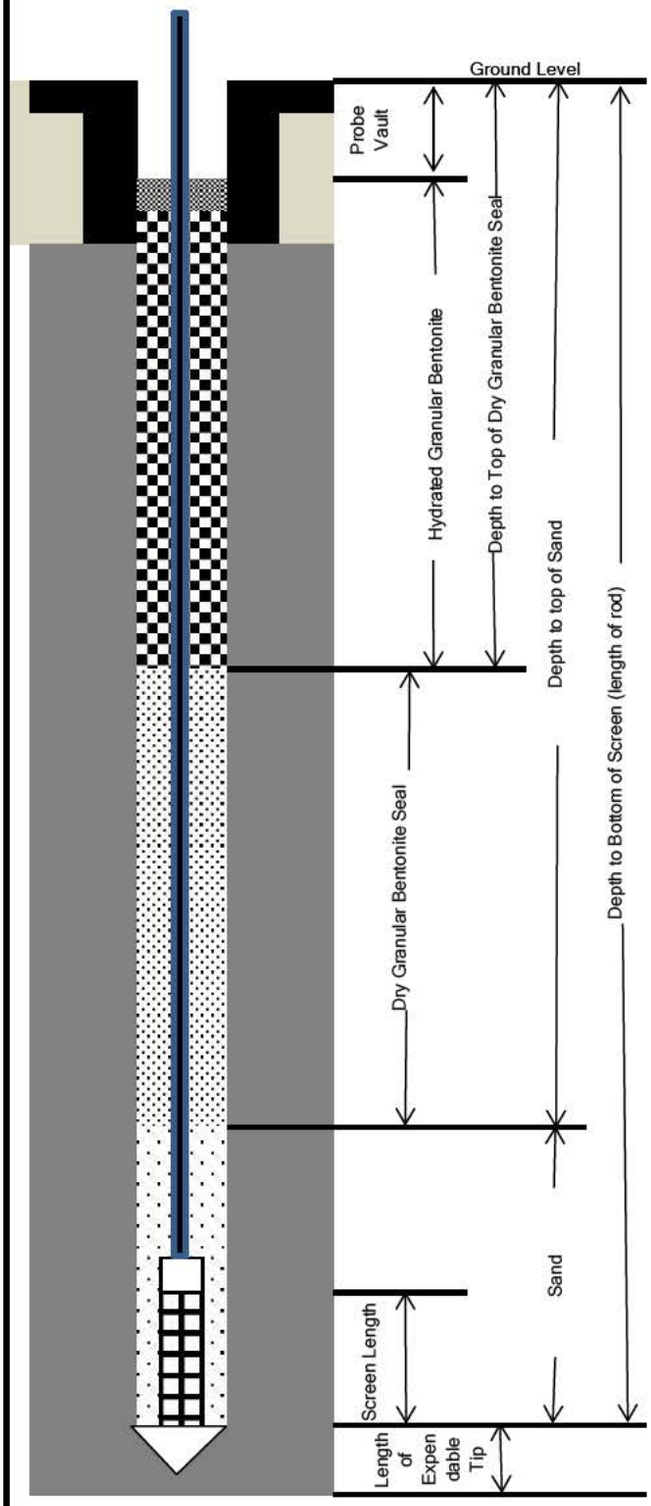
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/17/2015 8:20 END: 9/17/2015 8:22 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	14.6
(2)Depth to Top of Sand (ft. bgs)	12.2
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	11.2
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.4
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	10.7
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	14.8 to 16.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 16 feet below ground surface with drilling rods to determine probe was being placed above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-68
476243.ET.01	SHEET 1 OF 1	DATE: 9/15/2015

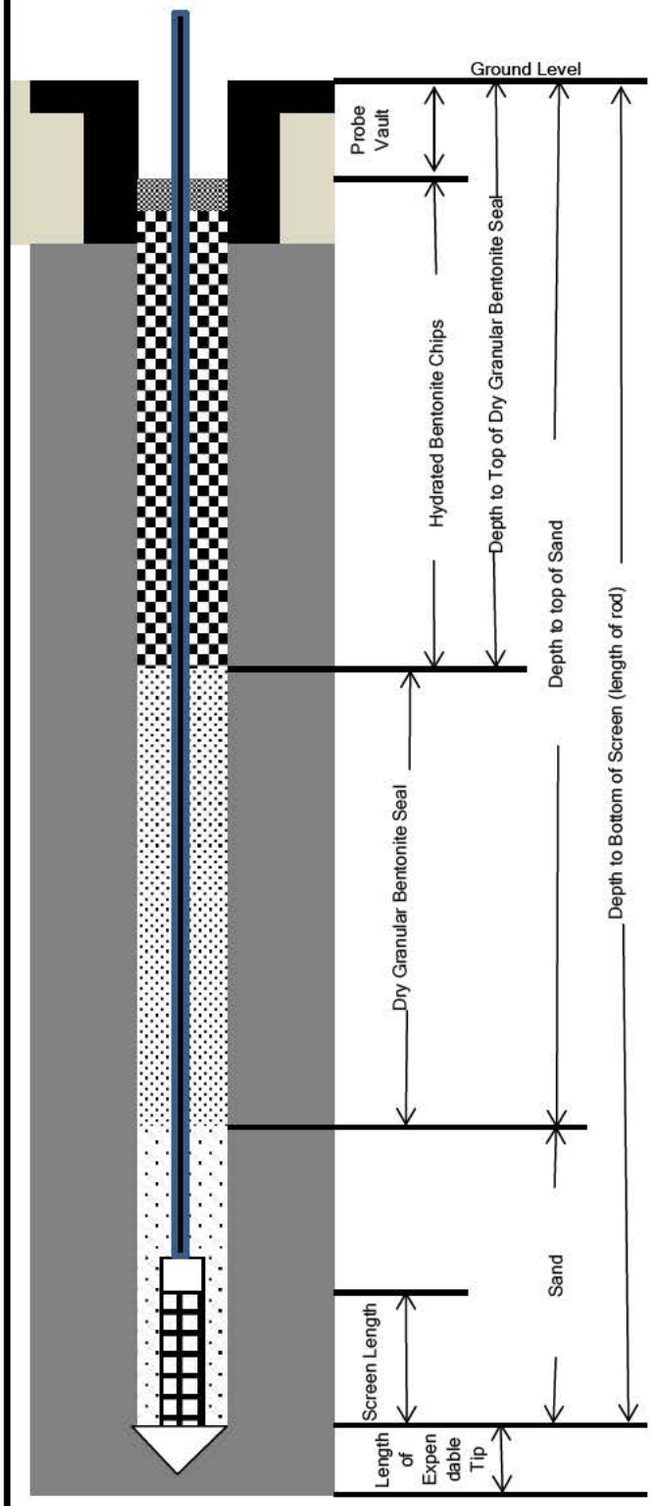
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6620DT 2.25 inch outer diameter rods

START : 9/15/2015 10:30 END: 9/15/2015 11:15 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	14.8
(2)Depth to Top of Sand (ft. bgs)	12.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	9.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	3.5
(3-4) Length of Hydrated Bentonite Seal (ft.)	8.5
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	15 .0 to 29.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Bentonite Chips:	Pure Wyoming Bentonite Well Plug, 3/8" chips.
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 29 feet below ground surface. Saturated conditions encountered at 24 feet below ground surface. Probe installed above moist zones observed in the soil boring.

PROJECT NUMBER	PROBE NUMBER	SG-69
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

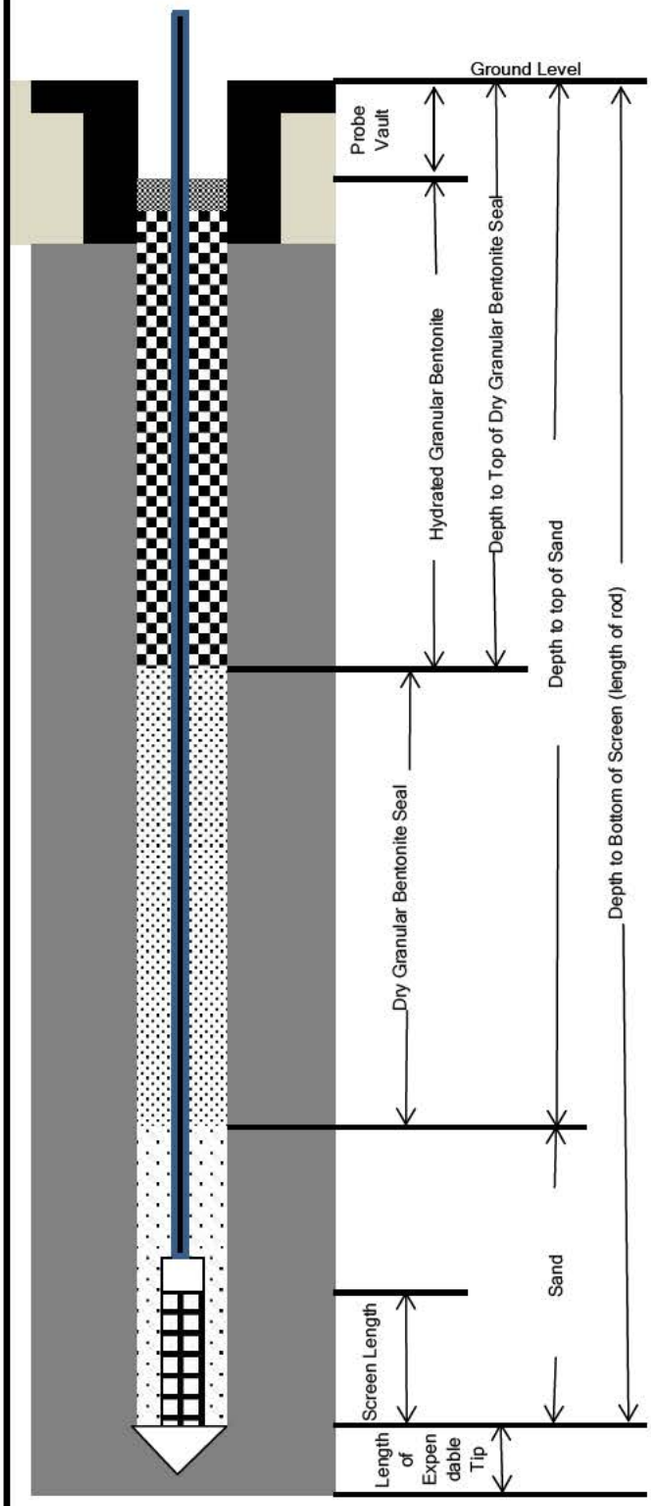
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/16/2015 8:45 END: 9/16/2015 9:05 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	7.3
(2)Depth to Top of Sand (ft. bgs)	5.0
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	4.0
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	3.5
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	7.5 to 11.5

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Soil boring advanced to refusal at 14.5 feet below ground surface, it collapsed to 11.5 feet below ground surface. The bottom of the boring was observed to be wet after left open for 10 minutes.

PROJECT NUMBER	PROBE NUMBER	SG-71
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

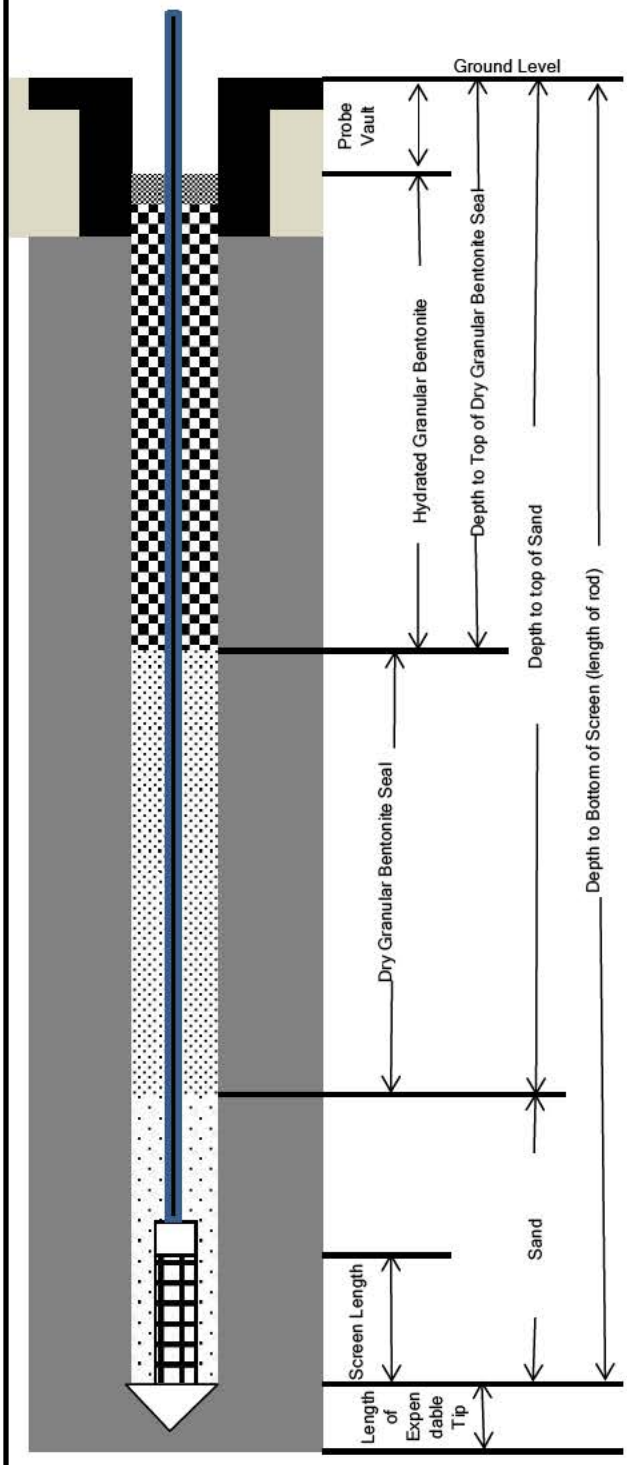
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6610DT 2.25 inch outer diameter rods

START : 9/16/2015 13:30 END: 9/16/2015 14:00 LOGGER : T. Oxley



Outer Diameter of Boring (in.)	2 25
(1) Depth to Bottom of Screen (ft. bgs)	11.0
(2)Depth to Top of Sand (ft. bgs)	8.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	7.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.5
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	7.0
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.01
Teflon Tubing Outer Diameter (in.)	0 25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	11.2 to 12.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 12 feet below ground surface with drilling rods to determine probe was being placed above the water table.

PROJECT NUMBER	PROBE NUMBER	SG-72
476243.ET.01	SHEET 1 OF 1	DATE: 9/16/2015

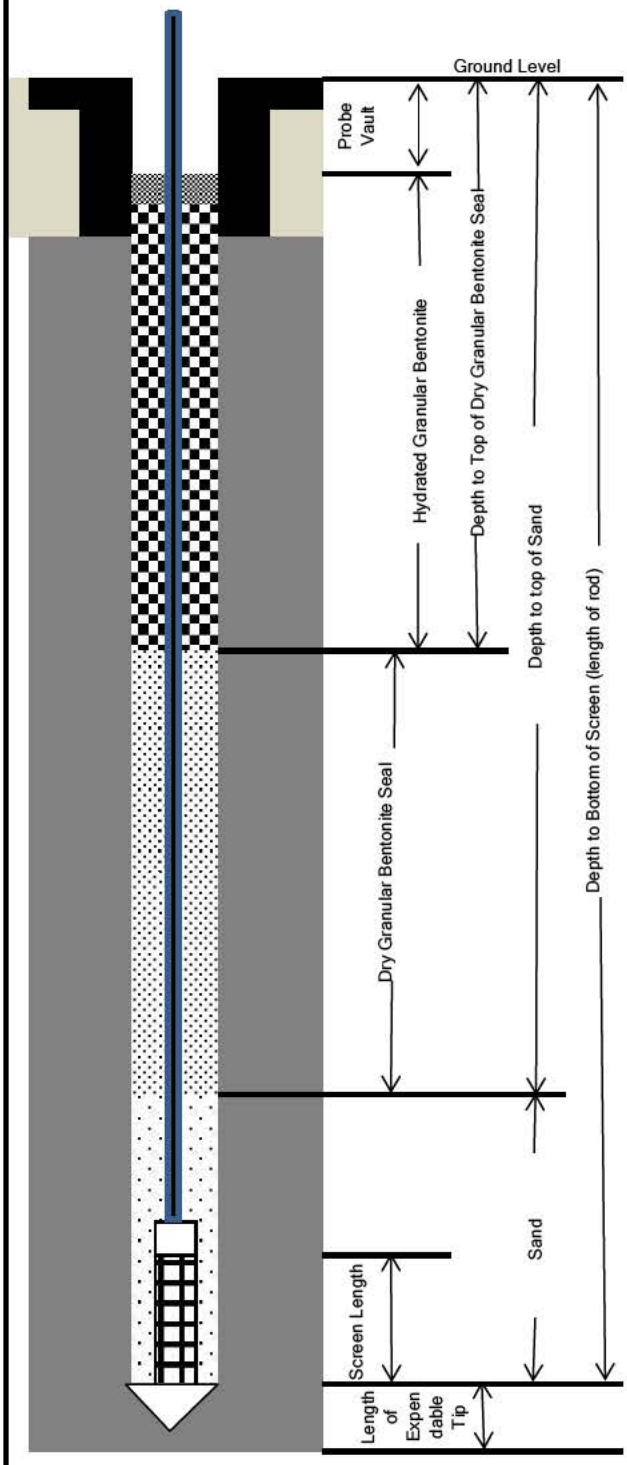
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : 2.5" O.D. Hand Auger 2.25 inch outer diameter rods

START : 9/16/2015 850 END: 9/16/2015 9:40 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.5
(1) Depth to Bottom of Screen (ft. bgs)	7.6
(2)Depth to Top of Sand (ft. bgs)	5.3
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	3.3
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	2.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	2.8
Screen Diameter (in.) / Length (ft.)	0 5" / 1.75'
Screen Mesh (in.)	0.01
Teflon Tubing Outer Diameter (in.)	0 25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	Yes
Sand Backfill (ft. bgs)	Not Applicable

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to refusal at 7.8 below ground surface.

PROJECT NUMBER	PROBE NUMBER	SG-73
476243.ET.01	SHEET 1 OF 1	DATE: 9/17/2015

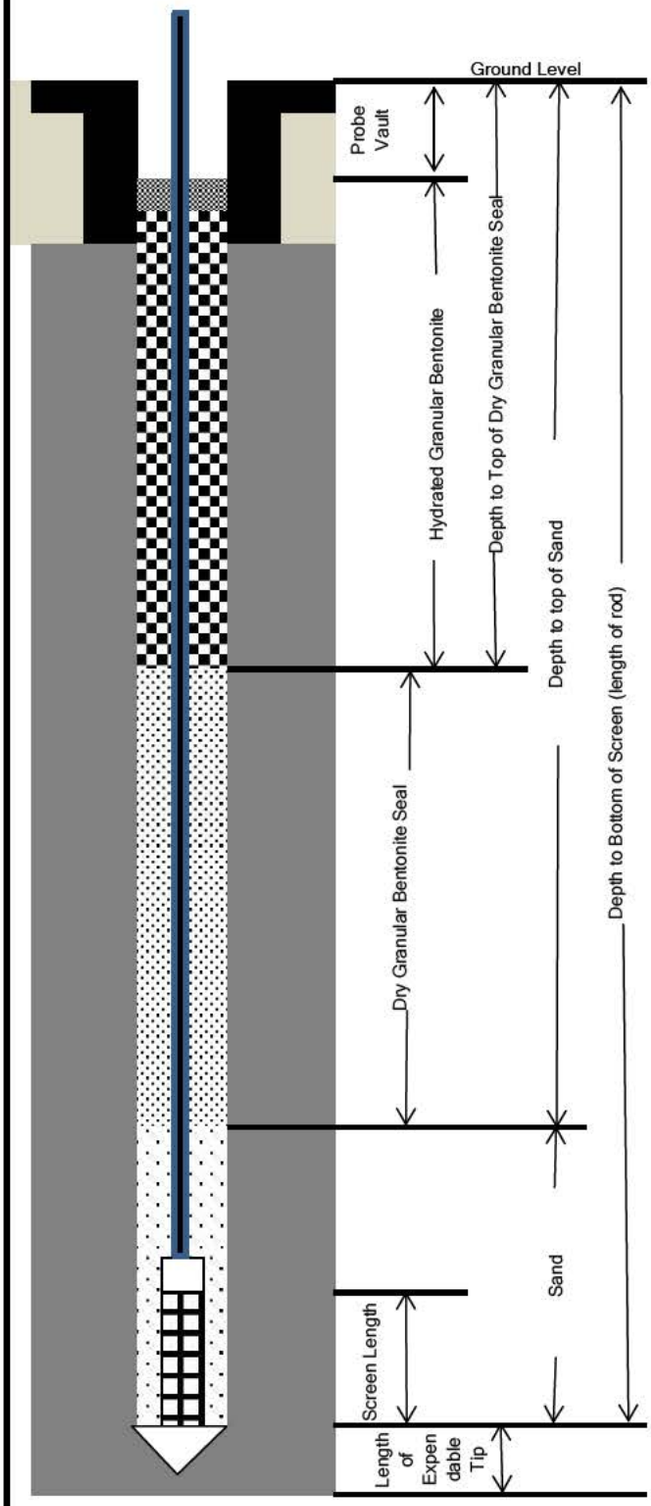
Soil Gas Probe Installation Form

PROJECT : SE Rockford Groundwater Contamination Superfund Site LOCATION : Rockford, IL

DRILLING CONTRACTOR : Mateco

DRILLING METHOD AND EQUIPMENT USED : Geoprobe 6620DT 2.25 inch outer diameter rods

START : 9/17/2015 810 END: 9/17/2015 9:30 LOGGER : C. Nickel



Outer Diameter of Boring (in.)	2.25
(1) Depth to Bottom of Screen (ft. bgs)	14.8
(2)Depth to Top of Sand (ft. bgs)	12.5
(3)Depth to Top of Dry Granular Bentonite Seal (ft. bgs)	11.5
(4)Depth of Probe Vault (ft.)	0.5
(1-2) Length of Sand (ft.)	2.3
(2-3) Length of Dry Granular Bentonite Seal (ft.)	1.0
(3-4) Length of Hydrated Granular Bentonite Seal (ft.)	11.0
Screen Diameter (in.) / Length (ft.)	0.5" / 1.75'
Screen Mesh (in.)	0.006
Teflon Tubing Outer Diameter (in.)	0.25
Flush Mount Diameter (in.)	6.6
Length of Expendable Tip (ft.)	0.2
Soil Boring Conducted	No
Sand Backfill (ft. bgs)	15.0 to 16.0

Specifications (Quantity and Type)

Sand:	K&E Well Gravel WP#1 (US Sieve Size 12-40).
Granular Bentonite Seal:	Benseal Uniform Granular Wyoming Sodium Bentonite
Surface Completion:	Flush mount with concrete pad
Notes:	Hole advanced to 16.0 feet below ground surface.

Attachment 4
Soil Gas Sampling Forms

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SEK-SG-01-0815 Date: 8/11/15

Sampler Name(s) Steve / Angela

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15.00
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.81 L
Probe Purge	Purge Rate (mL/min)	200 ml/min
	Purge Start Time	1612
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1628
	Total Purge Time (Minutes)	16 min
	Total Purge Volume (Liters)	2.43
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	19%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	.1/.1/.1	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.3/17.0/17.2
CO	0/0/0	LEL	4/3/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	8019
	Flow Controller ID	FL00321
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	8/11/15 @ 1628
	Initial Canister Vacuum (" Hg)	DIGITAL -29.37 ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ 1631 ANALOG -13.00
	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ 1632 ANALOG -7.00
Finish	Sample Completion Date and Time	8/11/15 @ ~~1637~~ 1635
	Final Canister Vacuum (" Hg)	DIGITAL ~~-7.00~~ -1.78 ANALOG -2.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 85°F

Description of Probe Conditon: Probe seems to be in good shape.

Description of Probe Location: [redacted]

Observations and Comments: Closest address seems to be [redacted]

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-02 [redacted]

Sample ID: SER-SG-02-0815 Date: 8/13/15

Sampler Name(s) CNichol K. Kotowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 1 min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.8
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1012
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1034
	Total Purge Time (Minutes)	22
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	13%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.0/0.0/0.0	H2S ppm	0/0/0
HE (% or ppmv)	0/0/0	O2 %	17.7/17.8/17.8
CO ppm	0/0/0	LEL %	Not Working
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	3767R
	Flow Controller ID	FC00188
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	8/13/15 @ 1035
	Initial Canister Vacuum (" Hg)	DIGITAL -29.19
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	8/13/15 @ 1037
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	8/13/15 @ 1039
		ANALOG -9
Finish	Sample Completion Date and Time	8/13/15 @ 1041
	Final Canister Vacuum (" Hg)	DIGITAL -4.07
		ANALOG -4.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 68°F mostly cloudy

Description of Probe Conditon: good condition [redacted]

Description of Probe Location: [redacted]

Observations and Comments: probe twisted at bottom of tubing

REV. 8/4/2015

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-03 [redacted]

Sample ID: SER-SG-03-0815 **Date:** 8/13/15

Sampler Name(s) Cnitel K. Kruwoski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 2m.n
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.38
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	9:20
	Purge Vacuum (" Hg)	0
	Purge Completion Time	0934
	Total Purge Time (Minutes)	14 m.n
	Total Purge Volume (Liters)	1.5L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	20%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.2/0.1/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	16.1%/15.3/15.4
CO	10/2/0	LEL	not working
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	54588
	Flow Controller ID	FC00190
	Pressure Gauge ID (optional)	Na
	Sampling Duration or Rate (hours/mt/min)	8 m.n
Start	Sample Start Date and Time	8/13/15 @ 0935
	Initial Canister Vacuum (" Hg)	DIGITAL -29.21 ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	8/13/15 @ 0938 ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	8/13/15 @ 0940 ANALOG -10
Finish	Sample Completion Date and Time	8/13/15 @ 0943
	Final Canister Vacuum (" Hg)	DIGITAL -2.62 ANALOG -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 66°F, partly cloudy

Description of Probe Conditon: Good condition

Description of Probe Location: [redacted]

Observations and Comments: /

REV. 8/4/2015

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-05-0815 **Date:** 8/12/15

Sampler Name(s) Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.43 L
Probe Purge	Purge Rate (mL/min)	200 ml/min
	Purge Start Time	~~1453~~ 1503
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1510
	Total Purge Time (Minutes)	7 min
	Total Purge Volume (Liters)	1.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	16%
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv) 0/0/0	H2S 0/0/0
	HE (% or ppmv) 0/0/0	O2 18.3/18.6/17.9
	CO 0/0/0	LEL N/A
	Helium Leak Test: Pass/Fail? *	Pass

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	2040
	Flow Controller ID	FC00723
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	8/12/15 @ 1511
	Initial Canister Vacuum (" Hg)	DIGITAL -29.43
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1514
		ANALOG -12
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1515
		ANALOG -7.5
Finish	Sample Completion Date and Time	8/12/15 @ 1517
	Final Canister Vacuum (" Hg)	DIGITAL -3.75
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 84°F

Description of Probe Conditon: Good condition

Description of Probe Location: [redacted]

Observations and Comments: probe tubing is twisted at box inside of the vault. [redacted]

REV. 8/4/2015

Fixed: During ~~the~~ 1st purge a pressure of -12 was observed. The probe

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-S6-06 [redacted]

Sample ID: SER-S6-06-0815 Date: 8/13/15

Sampler Name(s) C. Nickel K. Krakowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 1mm
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.51
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1115
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1131
	Total Purge Time (Minutes)	16
	Total Purge Volume (Liters)	1.5 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	20%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.1/0.0/0.0	H2S ppm	0/0/0
HE (% or ppmv)	0/0/0	O2 %	19.2/19.3/19.3
CO ppm	0/0/0	LEL	Not Working
Helium Leak Test: Pass/Fail? *		Pass	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	15753
	Flow Controller ID	FC00526 for canistr 3568
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	8/13/15 @ 1132
	Initial Canister Vacuum (" Hg)	DIGITAL -29.18
		ANALOG -29.5
	Sampling Vacuum Check 1 (" Hg)	8/13/15 @ 1134
		ANALOG -18
In Progress	Sampling Vacuum Check 2 (" Hg)	8/13/15 @ 1136
		ANALOG -8.5
Finish	Sample Completion Date and Time	8/13/15 @ 1138
	Final Canister Vacuum (" Hg)	DIGITAL -4.40
		ANALOG -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 80°F, humid sunny

Description of Probe Conditon: Concrete pad is starting to crumble / in bad condition

Description of Probe Location: [redacted]

Observations and Comments: Canis flow controller does not match canistr. a matching pair was not sent [redacted]

REV. 8/4/2015

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-07-0815 Date: 8/12/15

Sampler Name(s) Stem / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.63 L
Probe Purge	Purge Rate (mL/min)	200 ml/min
	Purge Start Time	1609
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1616
	Total Purge Time (Minutes)	7 min
	Total Purge Volume (Liters)	1.9
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.0/18.9/18.8
CO	0/0/0	LEL	N/A
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37841
	Flow Controller ID	FC006575
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	8/12/15 @ 1617
	Initial Canister Vacuum (" Hg)	DIGITAL -29.42
		ANALOG -29.00
	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1619
		ANALOG -21.00
In Progress	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1621
		ANALOG -19.00
Finish	Sample Completion Date and Time	8/12/15 @ 1625
	Final Canister Vacuum (" Hg)	DIGITAL -3.01
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny (88°F)

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments:

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SFR-SG-09-0815 Date: 8/13/15

Sampler Name(s): Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-16
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.71 L
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1052
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1103
	Total Purge Time (Minutes)	11 min.
	Total Purge Volume (Liters)	1.45
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.2/16.8/16.6
CO	0/0/0	LEL	N/A
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	102812
	Flow Controller ID	FC00751
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	8/13/15 @ 1104
	Initial Canister Vacuum (" Hg)	DIGITAL -29.48
		ANALOG -29.5
	Sampling Vacuum Check 1 (" Hg)	8/13/15 @ 1106
		ANALOG -15.00
In Progress	Sampling Vacuum Check 2 (" Hg)	8/13/15 @ 1107
		ANALOG -10.00
	Sample Completion Date and Time	8/13/15 @ 1110
Finish	Final Canister Vacuum (" Hg)	DIGITAL -3.03
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy (77°F)

Description of Probe Conditon: Good Condition

Description of Probe Location: [redacted]

Observations and Comments: Probe Test Tube is really short.

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Location is around a corner in a blind spot right next to a semi-busy road be careful to stay away from streets.

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-10-0815 (FD) Date: 8/13/15

Sampler Name(s): Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-17
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (~~mL~~) (L)	0.44
Probe Purge	Purge Rate (mL/min)	200 ml/min
	Purge Start Time	935
	Purge Vacuum (" Hg)	0
	Purge Completion Time	945
	Total Purge Time (Minutes)	10 min
	Total Purge Volume (Liters)	1.8
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	20%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.1/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.3/19.2/19.9
CO	0/0/0	LEL	~~0~~ NA
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	(FD)	
Canister Sampling	Canister ID	31781	37652
	Flow Controller ID	FC00179	FC00076
	Pressure Gauge ID (optional)	NA	
	Sampling Duration or Rate (hours/m/min)	7 min	
Start	Sample Start Date and Time	8/13/15 @ 946	
	Initial Canister Vacuum (" Hg)	DIGITAL -29.18	-29.33
		ANALOG -29.00	-30.00
	Sampling Vacuum Check 1 (" Hg)	8/13/15 @ 948	
		ANALOG -15.00	-15.00
In Progress	Sampling Vacuum Check 2 (" Hg)	8/13/15 @ 949	
		ANALOG -10	-10
Finish	Sample Completion Date and Time	8/13/15 @ 953	
	Final Canister Vacuum (" Hg)	DIGITAL -3.00	-3.00
		ANALOG -2.73	-2.76

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy 70°F

Description of Probe Conditon: Good Condition

Description of Probe Location: [redacted]

Observations and Comments:

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☆ LEL Failed Cal.

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-11 [redacted]

Sample ID: SER-SG-11-0815 **Date:** 8/12/15

Sampler Name(s) C Nickel / K. Krukowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.91
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1453
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1524
	Total Purge Time (Minutes)	31
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.9/18.8/18.8
CO	0/0/0	LEL	not working
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	34091
	Flow Controller ID	FC00891
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	8/12/15 @ 1527
	Initial Canister Vacuum (" Hg)	DIGITAL -29.36 ANALOG -28
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1529 ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1531 ANALOG -8
Finish	Sample Completion Date and Time	8/12/15 @ 1533
	Final Canister Vacuum (" Hg)	DIGITAL -2.62 ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 80°F mostly sunny light breeze

Description of Probe Conditon: good condition on

Description of Probe Location: [redacted]

Observations and Comments: Poison Summac by well Fence (SE corn) at [redacted]

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SFR-SG-12-0815 Date: 8/12/15

Sampler Name(s): Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)(L)	0.52
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1054
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1101
	Total Purge Time (Minutes)	7 min
	Total Purge Volume (Liters)	1.56
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	.1/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.1/17.9/17.8
CO	0/0/0	LEL☆	N/A
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L2716
	Flow Controller ID	FC00530
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/mt/min)	7 min
Start	Sample Start Date and Time	8/12/15 @ 1102
	Initial Canister Vacuum (" Hg)	DIGITAL -29.36
		ANALOG -25.00
	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1106
		ANALOG -13.00
In Progress	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1107
		ANALOG -7.00
Finish	Sample Completion Date and Time	8/12/15 @ 1109
	Final Canister Vacuum (" Hg)	DIGITAL -2.30
		ANALOG -2.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny (75°F)

Description of Probe Condition: In good condition.

Description of Probe Location: [redacted]

Observations and Comments: VERY HARD TO FIND WHEN plants and grass are grown.

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☆ LEL Failed Calibration

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-03-091T Date: 8/12/15

Sampler Name(s) Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)(L)	0.99
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1137
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1153
	Total Purge Time (Minutes)	16 min
	Total Purge Volume (Liters)	3 liters
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	.1/.1/.1	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	0/0/0
CO	0/0/0	LEL	N/A
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37713
	Flow Controller ID	F00098
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	5 min
Start	Sample Start Date and Time	8/12/15 @ 1156
	Initial Canister Vacuum (" Hg)	DIGITAL -29.37
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1158
		ANALOG -15.00
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1159
		ANALOG -6.5
Finish	Sample Completion Date and Time	8/12/15 @ 1201
	Final Canister Vacuum (" Hg)	DIGITAL -3.60
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny (76°F)

Description of Probe Conditon: Good Condition

Description of Probe Location: [redacted]

Observations and Comments:

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-14

Sample ID: SER-SG-14-0815 [redacted] **Date:** 8/12/15

Sampler Name(s) C Nickel K. Kruwoski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 1mn
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1622
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1645
	Total Purge Time (Minutes)	23
	Total Purge Volume (Liters)	3L
Helium Leak Check	**Average Helium Concentration in Enclosure During Purging. ***	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.4/0.0/0.0	**H2S** ppm	0/0/
HE (% or ppmv)	0/0/0	**O2** %	18.8/18.8/18.9
CO ppm	0/0/0	**LEL**	not working
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	33733
	Flow Controller ID	FC00681
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	10 min
Start	Sample Start Date and Time	8/12/15 @ 1648
	Initial Canister Vacuum (" Hg)	DIGITAL -29.65
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1650
		ANALOG -23
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1653
		ANALOG -16.5
Finish	Sample Completion Date and Time	8/12/15 @ 1652
	Final Canister Vacuum (" Hg)	DIGITAL -2.97
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 84°F Sunny

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments: [redacted]

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-15 [redacted]

Sample ID: SER-SG-15-0815 **Date:** 8/11/15

Sampler Name(s) C Nickel, K. Knowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.75
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1700
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1723
	Total Purge Time (Minutes)	23
	Total Purge Volume (Liters)	3.0
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.7/18.7/18.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	14745
	Flow Controller ID	40791
	Pressure Gauge ID (optional)	MA
	Sampling Duration or Rate (hours/ml/min)	5 min
Start	Sample Start Date and Time	8/11/15 @ 1728
	Initial Canister Vacuum (" Hg)	DIGITAL -29.39 ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ 1729 ANALOG -18.5
	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ 1731 ANALOG -9
Finish	Sample Completion Date and Time	8/11/15 @ 1753
	Final Canister Vacuum (" Hg)	DIGITAL -3.89 ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 85°F Partly cloudy

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments: None

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: SER-SG-16 [redacted]

Sample ID: SER-SG-16-0815 **Date:** 8/12/15

Sampler Name(s) C. Nickl K. Krukowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 for 1 min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87 L
Probe Purge	Purge Rate (mL/min)	200 ml/min
	Purge Start Time	1342
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1405
	Total Purge Time (Minutes)	23
	Total Purge Volume (Liters)	2.91
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	00/0.0/0.0	H2S	18.5/18.4/18.4
HE (% or ppmv)	0/0/0	O2	0/0/0
CO	0/0/0	LEL	Sensor not working
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL1537
	Flow Controller ID	FC00793
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	5 minutes
Start	Sample Start Date and Time	8/12/15 @ 1407
	Initial Canister Vacuum (" Hg)	DIGITAL -29.30
		ANALOG -28
	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1409
		ANALOG -17
In Progress	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1410
		ANALOG -8
Finish	Sample Completion Date and Time	8/12/15 @ 1412
	Final Canister Vacuum (" Hg)	DIGITAL -4.63
		ANALOG -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 80°F mostly sunny, light breze

Description of Probe Conditon: Good condition

Description of Probe Location: [redacted]

Observations and Comments: [redacted]

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no sample collected ~~sample~~

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-17 [redacted]

Sample ID: ~~SER-SG-17-0815~~ **Date:** 8/11/15

Sampler Name(s) CNickel / K. Kruwski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10.5 1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.54
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1615
	Purge Vacuum (" Hg)	-9
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	**Average Helium Concentration in Enclosure During Purging. ***	

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)		**H2S**	
HE (% or ppmv)		**O2**	
CO		**LEL**	
Helium Leak Test: Pass/Fail? *			

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL1745
	Flow Controller ID	40791
	Pressure Gauge ID (optional)	
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	@
	Initial Canister Vacuum (" Hg)	*DIGITAL* -29.39 *ANALOG*
In Progress	Sampling Vacuum Check 1 (" Hg)	@ *ANALOG*
	Sampling Vacuum Check 2 (" Hg)	@ *ANALOG*
Finish	Sample Completion Date and Time	@
	Final Canister Vacuum (" Hg)	*DIGITAL* *ANALOG*

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 85°F Partly cloudy

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments: unable to sample, negative vacuum when purging, turn pumping rate down still negative pressure by reversing pump to see if something is stuck in probe → got positive pressure. unable to sample. J. Simms said not to hook up canister without purging → she said no.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-18 [redacted]

Sample ID: SER-SG-18-0815 SER-SG-18-0815-FD **Date:** 8/11/15

Sampler Name(s) C Nichel K. Kruouski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9.5/1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.89
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1443
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1507
	Total Purge Time (Minutes)	24
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.2/0.1/	H2S	0/0/
HE (% or ppmv)	0/0/	O2	18.3/18.1/
CO	0/0/	LEL	0/0/
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	N / FD
Canister Sampling	Canister ID	14822/ 14929
	Flow Controller ID	FC00565/ 5000006 48
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 minutes
Start	Sample Start Date and Time	8/11/15 @ 1508
	Initial Canister Vacuum (" Hg)	DIGITAL -29.45/ -29.42 ANALOG -29 / -29
In Progress	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ 1509 ANALOG -18 / -19
	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ 1511 ANALOG -11 / -13
Finish	Sample Completion Date and Time	8/11/15 @ 1514
	Final Canister Vacuum (" Hg)	DIGITAL -4.30 / -3.73 ANALOG -4 / -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 85° mostly sunny, light wind

Description of Probe Conditon: good condition - but buried under dirt/grass

Description of Probe Location: [redacted]

Observations and Comments: None.

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canister 14822 sampled 1.5 minutes faster than the FD

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-19-0815 **Date:** 8/12/15

Sampler Name(s) Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-20
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL) (L)	0.88
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1338
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1353
	Total Purge Time (Minutes)	15 min.
	Total Purge Volume (Liters)	2.64
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	20%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.1/18.2/18.1
CO	0/0/0	LEL	N/A
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37427
	Flow Controller ID	FC00866
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	8/12/15 @ ~~1355~~ 1355
	Initial Canister Vacuum (" Hg)	DIGITAL -29.50
		ANALOG -30.00
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1357
		ANALOG -16.00
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1358
		ANALOG -11.00
Finish	Sample Completion Date and Time	8/12/15 @ 1401
	Final Canister Vacuum (" Hg)	DIGITAL -3.12
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 83°F

Description of Probe Conditon: Probe is in good Condition

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-2D [redacted]

Sample ID: SER-SG-2D-0815 **Date:** 8/12/15

Sampler Name(s) C. Nied K. Krukowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9.5 1mn
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.64
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1149
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1213
	Total Purge Time (Minutes)	24
	Total Purge Volume (Liters)	2.3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19/19.1/19.1
CO	0/0/0	LEL	0/ SASC broken
Helium Leak Test: Pass/Fail? *		Pass	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	14559
	Flow Controller ID	FC00981
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6mn
Start	Sample Start Date and Time	8/12/15 @ 1214
	Initial Canister Vacuum (" Hg)	DIGITAL -29.27
		ANALOG -28
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1216
		ANALOG -13.5
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ NA
		ANALOG NA
Finish	Sample Completion Date and Time	8/12/15 @ 1220
	Final Canister Vacuum (" Hg)	DIGITAL -4.53
		ANALOG -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 75°F partly cloudy

Description of Probe Conditon: Poor condition - concrete Pad cracking / broken

Description of Probe Location: [redacted]

Observations and Comments: None

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-21 [redacted]

Sample ID: SER-SG-21-0815 **Date:** 8/12/15

Sampler Name(s) C Nichol / K. Kulaski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 / 3mn
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.85
Probe Purge	Purge Rate (mL/min)	150
	Purge Start Time	1028
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1057
	Total Purge Time (Minutes)	29
	Total Purge Volume (Liters)	2.9L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	20%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.5/17.0/16.8
CO	0/0/0	LEL	Sensor not working
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L1612
	Flow Controller ID	FC00594
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	8/12/15 @ 1058
	Initial Canister Vacuum (" Hg)	DIGITAL -29.29 ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	8/12/15 @ 1100 ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	8/12/15 @ 1102 ANALOG -13
Finish	Sample Completion Date and Time	8/12/15 @ 1106
	Final Canister Vacuum (" Hg)	DIGITAL -4.34 ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 74°F, light wind, partly cloudy

Description of Probe Conditon: Good condition

Description of Probe Location: [redacted]

Observations and Comments: Partially buried by soil

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-22-0815 Date: 8/11/15

Sampler Name(s): Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL) (L)	0.91
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1507
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1523
	Total Purge Time (Minutes)	16 min
	Total Purge Volume (Liters)	2.73
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	18 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	.1/.1/.1	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.5/18.4/18.4
CO	7/0/0	LEL %	5/4/4
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37418
	Flow Controller ID	FC00754
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	8 min.
Start	Sample Start Date and Time	8/11/15 @ 1525
	Initial Canister Vacuum (" Hg)	DIGITAL -29.37
		ANALOG -29.00
	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ 1527
		ANALOG -25
In Progress	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ 1530
		ANALOG -6.00
Finish	Sample Completion Date and Time	8/11/15 @ 1533
	Final Canister Vacuum (" Hg)	DIGITAL -3.24
		ANALOG -2.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 85°F

Description of Probe Condition: Probe seems to be in good condition. The probe was buried and hard to find.

Description of Probe Location: [redacted]

Observations and Comments:

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No Sample - pulled vacuum

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-03 [redacted]

Sample ID: **Date:** 8/11/15

Sampler Name(s) C. Nickl K. Kruszewski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 1mM
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.7C
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1126
	Purge Vacuum (" Hg)	-18
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)		H2S	
HE (% or ppmv)		O2	
CO		LEL	
Helium Leak Test: Pass/Fail? *			

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L2733
	Flow Controller ID	FC00418
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	@
	Initial Canister Vacuum (" Hg)	DIGITAL
		ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	@
		ANALOG
	Sampling Vacuum Check 2 (" Hg)	@
		ANALOG
Finish	Sample Completion Date and Time	@
	Final Canister Vacuum (" Hg)	DIGITAL
		ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 80°F Sunny light wind

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments: not able to sample. during purging pulled vacuum of -18. Turn down rate on pump still pulls vacuum and not observe water not filling up tedlar bag during purging.

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No Sample Collected

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-241

Sample ID: not sampled Date: 8/11/2015

Sampler Name(s) C. Nickl K. Krukowski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 /min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.88L
Probe Purge	Purge Rate (mL/min)	200mL/min
	Purge Start Time	1040
	Purge Vacuum (" Hg)	-12 see note
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv)	H2S
	HE (% or ppmv)	O2
	CO	LEL
	Helium Leak Test: Pass/Fail? *	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L2733
	Flow Controller ID	FC004118
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	8/11/15 @
	Initial Canister Vacuum (" Hg)	DIGITAL -29.14
		ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	@
		ANALOG
	Sampling Vacuum Check 2 (" Hg)	@
		ANALOG
Finish	Sample Completion Date and Time	@
	Final Canister Vacuum (" Hg)	DIGITAL
		ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 75° Sunny

Description of Probe Conditon: good condition - hard to find barrel

Description of Probe Location: [redacted]

Observations and Comments: During purging probe had a negative vacuum of -12 "Hg turned down purge flow as low as possible and purge vacuum still -12 "Hg. no flow into tedlar bag. No visible water but unable to sample.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name:	SE Rockford Groundwater Contamination Superfund Site	Project # :	476243.ET.01
Probe Name and Address:	[redacted]		SER-SG-27
Sample ID:	SER-SG-27-0815	Date:	8/11/15
Sampler Name(s)	Steve / Angelo		

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL) (L)	0.87
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1357
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1411
	Total Purge Time (Minutes)	14 min
	Total Purge Volume (Liters)	2.61
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	14%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	.1/.1/.1	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.4/18.0/18.1
CO	0/0/0	LEL%	5/4/4
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37774
	Flow Controller ID	FC00218
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	25 min
Start	Sample Start Date and Time	8/11/15 @ 1413
	Initial Canister Vacuum (" Hg)	DIGITAL -29.27
		ANALOG no reading
	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ ~~time~~
		ANALOG no reading
In Progress	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ ~~time~~
		ANALOG no reading
Finish	Sample Completion Date and Time	8/11/15 @ 1438
	Final Canister Vacuum (" Hg)	DIGITAL -3.66
		ANALOG no reading

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 84°F

Description of Probe Conditon: Probe appears to be in good condition

Description of Probe Location: [redacted]

Observations and Comments:

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Flow Controller gauge was broken read -5.00 the entire sample time.

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG 31 [redacted]

Sample ID: SER-SG-31-0815 / SER-SG-31-0815-FD Date: 8/10/15

Sampler Name(s): C.N. Gil / S. Palmer

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-8 1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.89L
Probe Purge	Purge Rate (mL/min)	200mL/min
	Purge Start Time	1646
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1706
	Total Purge Time (Minutes)	20
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	25%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.1/0/0.1	H2S ppm	0/0/0
HE (% or ppmv)	0/0/0	O2 %	18.7/18.7/18.7
CO ppm	0/0/0	LEL %	5/5/4
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	N / FD
Canister Sampling	Canister ID	15729 / 36494
	Flow Controller ID	916985010 / F000523
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	~~8 min~~ 10 min
Start	Sample Start Date and Time	8/10/15 @ 1707
	Initial Canister Vacuum (" Hg)	DIGITAL -29.18 / -29.12; ANALOG -28 / -30
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1711; ANALOG -13 / -14
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1715; ANALOG -8 / -9
Finish	Sample Completion Date and Time	8/10/15 @ 1717
	Final Canister Vacuum (" Hg)	~~DIGITAL~~ -4 / -7 Analog; ~~ANALOG~~ -3.66 / -4.78 Digital

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 85°F humid, partly cloudy occasional rain (2d")

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-S6-31 [redacted]

Sample ID: SER-S6-31-0815 Date: 8/10/15

Sampler Name(s): C. Nicks / R. Hunt

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-12 Inn
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	~~500~~ 1L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1434
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1500
	Total Purge Time (Minutes)	26
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	20%
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv) 0/0.1/0.0	H2S% 0/0/0
	HE (% or ppmv) 0/0/0	O2% 15.1/15.3/15.3
	CO ppm 0/0/0	LEL% 5/4/5
	Helium Leak Test: Pass/Fail? *	Pass

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL1583
	Flow Controller ID	FC00115
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	8min
Start	Sample Start Date and Time	8/10/15 @ 1301
	Initial Canister Vacuum (" Hg)	DIGITAL -29.09
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1503
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1505
		ANALOG -8
Finish	Sample Completion Date and Time	8/10/15 @ 1509
	Final Canister Vacuum (" Hg)	DIGITAL -2.84
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Partly cloudy 80°F humid

Description of Probe Conditon: good condition overgrown

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-036

Sample ID: SER-SG-36-0815 [redacted] **Date:** 8/10/15

Sampler Name(s) CNichol / S Partner

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 1m.n
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - Including screen, sand pack, and tubing (mL)	0.8L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1532
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1550
	Total Purge Time (Minutes)	18
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S ppm	0.0/0/0
HE (%-or ppmv)	0/0/0	O2 %	15.5/15.2/15.1
CO ppm	0/0/0	LEL %	6/4/3
Helium Leak Test: Pass/Fail?*	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36442
	Flow Controller ID	FC00880
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	98mn
Start	Sample Start Date and Time	8/10/15 @ 1351
	Initial Canister Vacuum (" Hg)	DIGITAL -29.17
		ANALOG -27
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1352
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1355
		ANALOG -9
Finish	Sample Completion Date and Time	8/10/15 @ 1400
	Final Canister Vacuum (" Hg)	DIGITAL -3.35
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 80°F, hot humid, partly cloudy

Description of Probe Conditon: [redacted]

Description of Probe Location: probe valve moves / shifts

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SER-SG-39 [redacted]

Sample ID: SER-SG-39-0815 **Date:** 8/11/15

Sampler Name(s) Cniani K. Kruski

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87L
Probe Purge	Purge Rate (mL/min)	200mL/min
	Purge Start Time	~~1204~~ 1230
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1251
	Total Purge Time (Minutes)	21
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	~~[illegible]~~ 15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.1/0.0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.5/18.7/18.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL2733
	Flow Controller ID	FC00418
	Pressure Gauge ID (optional)	MA
	Sampling Duration or Rate (hours/ml/min)	9 min
Start	Sample Start Date and Time	8/11/15 @ ~~1250~~ 1251
	Initial Canister Vacuum (" Hg)	DIGITAL -29.14
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ 1253
		ANALOG -22
	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ 1257
		ANALOG -8
Finish	Sample Completion Date and Time	8/11/15 @ 1300
	Final Canister Vacuum (" Hg)	DIGITAL -3.00
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 75°F partly cloudy

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments: 0

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NO Sample

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-40-0815 **Date:** 8/11/15

Sampler Name(s) Steve B. / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing ~~(mL)~~ (L)	0.89
Probe Purge	Purge Rate (mL/min)	200 ml/min
	Purge Start Time	0945
	Purge Vacuum (" Hg)	
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)		H2S	
HE (% or ppmv)		O2	
CO		LEL	
Helium Leak Test: Pass/Fail? *			

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	~~34603~~
	Flow Controller ID	~~FC00185~~
	Pressure Gauge ID (optional)	
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	8/11/15 @
	Initial Canister Vacuum (" Hg)	DIGITAL -29.14
		ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	8/11/15 @
		ANALOG
	Sampling Vacuum Check 2 (" Hg)	8/11/15 @
		ANALOG
Finish	Sample Completion Date and Time	8/11/15 @
	Final Canister Vacuum (" Hg)	DIGITAL
		ANALOG

used at another Location

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 73°F

Description of Probe Conditon: [redacted]

Description of Probe Location: Probe seems to be in good shape.

Observations and Comments:

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☆ Water was observed during the start of the 1st purge.

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: [redacted] SEP-SG-42

Sample ID: ~~42~~ SEP-SG-42-0815 **Date:** 8/10/15

Sampler Name(s) Steve B. / Angelo C.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (~~mL~~ L)	0.91
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1310
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1327
	Total Purge Time (Minutes)	17 min.
	Total Purge Volume (Liters)	2.73
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	14.8/14.2/14.3
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	24398
	Flow Controller ID	FC0000984
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	1328 @ 8/10/15
	Initial Canister Vacuum (" Hg)	DIGITAL -29.2
		ANALOG -27.5
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1330
		ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1332
		ANALOG -6
Finish	Sample Completion Date and Time	8/10/15 @ 1334
	Final Canister Vacuum (" Hg)	DIGITAL -2.73
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny with Partial Clouds (post rain)

Description of Probe Conditon: Probe seems to be in good condition

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-44 [redacted]

Sample ID: SER-SG-44-0815 Date: 8/10/15

Sampler Name(s) Steve B. / Angelo C.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-19
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL) (L)	0.88
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1503
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1522
	Total Purge Time (Minutes)	19 min.
	Total Purge Volume (Liters)	2.64
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	13.2/13.3/13.5
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail?*	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36448
	Flow Controller ID	F000598
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	8/10/15 @ 15.22
	Initial Canister Vacuum (" Hg)	DIGITAL -29.16
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1526
		ANALOG -10.00
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1527
		ANALOG -6.2
Finish	Sample Completion Date and Time	8/10/15 @ 1528
	Final Canister Vacuum (" Hg)	DIGITAL -3.41
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny, clouds moving in. (80°F)

Description of Probe Conditon: Probe seems to be in good shape.

Description of Probe Location: [redacted]

Observations and Comments: Probe location almost touching the curb.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SG-46

Sample ID: SER-SG-46-0815 Date: 8/10/15

Sampler Name(s): Steve B. / Angelo C.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-20.00
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (pt) (L)	0.89
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	~~1626~~ 1633
	Purge Vacuum (" Hg)	-6.00
	Purge Completion Time	1658
	Total Purge Time (Minutes)	25 min
	Total Purge Volume (Liters)	2.67
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	13%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	20.7/18.7/19.5
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	34083
	Flow Controller ID	FC00690
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	24 min
Start	Sample Start Date and Time	8/10/15 @ 1701
	Initial Canister Vacuum (" Hg)	DIGITAL -29.06
		ANALOG -28.00
	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1706
		ANALOG -17.5
In Progress	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1717
		ANALOG -7.00
Finish	Sample Completion Date and Time	8/10/15 @ ~~1721~~ 1725
	Final Canister Vacuum (" Hg)	DIGITAL ~~-4.71~~ -4.10
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny, with slight cloud cover. (post rain event).

Description of Probe Condition: Probe appears to be in good condition.

Description of Probe Location: [redacted]

Observations and Comments: [redacted]

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Sample and purge went really slowly seemed like the probe was having a hard time getting air out. No water was observed

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-47 [redacted]

Sample ID: SER-SG-47-0815 Date: 8/10/2015

Sampler Name(s) CHM all tom

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18 1min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.8L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1041
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1056
	Total Purge Time (Minutes)	15
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.3/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.6/18.4/18.6
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	[redacted] 34607
	Flow Controller ID	[redacted] FC00721
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	8/10/15 @ 1058
	Initial Canister Vacuum (" Hg)	DIGITAL -29.11
		ANALOG -27
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1101
		ANALOG -16
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1103
		ANALOG -8
Finish	Sample Completion Date and Time	8/10/15 @ 1105
	Final Canister Vacuum (" Hg)	DIGITAL -4.92
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling:

Description of Probe Conditon: good condition but overgrown

Description of Probe Location: [redacted]

Observations and Comments:

FD not collected

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: [redacted]

Sample ID: SER-SG-48-0815 (FD) **Date:** 8/11/15

Sampler Name(s) Steve / Angelo

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14.00
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing ~~(mL)~~ (L)	0.71
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1032
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1044
	Total Purge Time (Minutes)	12 min
	Total Purge Volume (Liters)	2.13
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	11%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	1/1/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	13.4/13.1/13.4
CO	0/0/0	LEL %	4/5/5
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36536/34603
	Flow Controller ID	FC00438/FC00486
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	1 hr. 10 min (FD) / [illegible]
Start	Sample Start Date and Time	8/11/15 @ 1046
	Initial Canister Vacuum (" Hg)	DIGITAL -29.29 / -29.14; ANALOG -27.5 / -30.0
	Sampling Vacuum Check 1 (" Hg)	8/11/15 @ 1058 (FD) / 104[illegible]
		ANALOG -11 / -23
In Progress	Sampling Vacuum Check 2 (" Hg)	8/11/15 @ 1115 (FD) / 1050
		ANALOG -8 / -14
	Sample Completion Date and Time	8/11/15 @ 1156 (FD) / 105[illegible]
Finish	Final Canister Vacuum (" Hg)	DIGITAL -2.5 / -3.5; ANALOG -2.86 / -2.69

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 73°F

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: [redacted]

Observations and Comments: Flow Controller on Canister 34603 is moving air a lot slower than the Flow Controller on 36536. FD not collected, took over an hour to fill and is not representative

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-S6-50

Sample ID: SER-S6-50-0815 Date: 8/10/15

Sampler Name(s): Steve B. / Angela C.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-17
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing ~~(mL)~~ (L)	0.85
Probe Purge	Purge Rate (mL/min)	200 mL/min
	Purge Start Time	1407
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1426
	Total Purge Time (Minutes)	19 min
	Total Purge Volume (Liters)	2.55
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	22%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	4.9/4.8/4.1
CO (ppm)	7/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	~~-29.04~~ 33408
	Flow Controller ID	FC00445
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	7 min.
Start	Sample Start Date and Time	8/10/15 @ 1428
	Initial Canister Vacuum (" Hg)	DIGITAL -29.04
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	8/10/15 @ 1431
		ANALOG -15.00
	Sampling Vacuum Check 2 (" Hg)	8/10/15 @ 1433
		ANALOG -10.00
Finish	Sample Completion Date and Time	8/10/15 @ 1435
	Final Canister Vacuum (" Hg)	DIGITAL -4.58
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny, partly Cloudy (80°F)

Description of Probe Conditon: Probe and cement are in good condition

Description of Probe Location: [redacted]

Observations and Comments:

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ch2m:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-01 [redacted]

Sample ID: SER-SG-01-1215 Date: ~~12/8/15~~ 12/9/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.81L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1142
	Purge Vacuum (" Hg)	-1
	Purge Completion Time	1224
	Total Purge Time (Minutes)	42min
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	14.5/19.1/19.6
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L19 10
	Flow Controller ID	1L1647
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	12/9/15 @ 1225
	Initial Canister Vacuum (" Hg)	DIGITAL -30.06
		ANALOG -28
In Progress	Sampling Vacuum Check 1 (" Hg)	12/9/15 @ 1227
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	12/9/15 @ 1230
		ANALOG -7
Finish	Sample Completion Date and Time	12/9/15 @ 1232
	Final Canister Vacuum (" Hg)	DIGITAL -4.41
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny clear sky ~45°F

Description of Probe Conditon: good condition

Description of Probe Location: [redacted]

Observations and Comments: none

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ch2m

Sheet 2 of 2

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-02

Sample ID: SER-SG-02-1215 Date: 12-10-15

Sampler Name(s) Angelo + ~~Evan~~ Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-12
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.79L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	947
	Purge Vacuum (" Hg)	0
	Purge Completion Time	~~9~~ 1000
	Total Purge Time (Minutes)	13 min
	Total Purge Volume (Liters)	2.40
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)							
Total VOCs (ppmv)	0	0	0	H2S	0	0	0
HE (% or ppmv)	0	0	0	O2	18.6	18.2	18.2
CO	0	0	0	LEL	0	0	0
Helium Leak Test: Pass/Fail? *	Pass						

Canister Size/Lab	1 Liter.	
Canister Sampling	Canister ID	3291
	Flow Controller ID	FC00618
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	12-10-15 @1000
	Initial Canister Vacuum (" Hg)	DIGITAL -28.71
		ANALOG -27.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-10-15 @1001
		ANALOG -19.00
	Sampling Vacuum Check 2 (" Hg)	12-10-15 @1003
		ANALOG -11.00
Finish	Sample Completion Date and Time	12-10-15 @1006
	Final Canister Vacuum (" Hg)	DIGITAL -4.6
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: cloudy, breezy (40°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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ch2m:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-03

Sample ID: SER-SG-03-1215 Date: 12-10-15

Sampler Name(s): Angelo and Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.40L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	907
	Purge Vacuum (" Hg)	0
	Purge Completion Time	915
	Total Purge Time (Minutes)	8
	Total Purge Volume (Liters)	1.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0 / 0 / 0			H2S	0 / 0 / 0
HE (% or ppmv)	0 / 0 / 0			O2	17.0 / 16.6 / 17.0
CO	0 / 0 / 0			LEL	0 / 0 / 0
Helium Leak Test: Pass/Fail? *	Pass				

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	2170
	Flow Controller ID	FC06441
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/m/min)	6 min.
Start	Sample Start Date and Time	12-10-15 @ 919
	Initial Canister Vacuum (" Hg)	DIGITAL -28.32
		ANALOG -29.00
In Progress	Sampling Vacuum Check 1 (" Hg)	12-10-15 @ 921
		ANALOG -13.00
	Sampling Vacuum Check 2 (" Hg)	12-10-15 @ 923
		ANALOG -8
Finish	Sample Completion Date and Time	12-10-15 @ 925
	Final Canister Vacuum (" Hg)	DIGITAL -3.33
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy, breezy (40°F)

Description of Probe Conditon: Probe is in good condition.

Description of Probe Location: —

Observations and Comments: — FC00212 is bad, we will use a different FC.

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ch2m:

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-S6-05

Sample ID: (AC) ~~SER-S6-1215~~ SER-S6-05-1215 Date: (AC) ~~12/18~~ 12/19/15

Sampler Name(s): Angelo + Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-13
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.43L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	934
	Purge Vacuum (" Hg)	0
	Purge Completion Time	944
	Total Purge Time (Minutes)	10 min
	Total Purge Volume (Liters)	1.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	19%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.4/19.2/19.2
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1358
	Flow Controller ID	FC008821
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	12-9-15 @ 944
	Initial Canister Vacuum (" Hg)	DIGITAL -29.09
		ANALOG -28.00
In Progress	Sampling Vacuum Check 1 (" Hg)	12-9-15 @ 946
		ANALOG -16.00
	Sampling Vacuum Check 2 (" Hg)	12-9-15 @ 948
		ANALOG -10.00
Finish	Sample Completion Date and Time	12-9-15 @ 950
	Final Canister Vacuum (" Hg)	DIGITAL -3.77
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny, (45°F)

Description of Probe Conditon: Good condition the top is a little loose since the bolt is sprizzed.

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-06

Sample ID: SER-SG-06-1215 Date: 12-9-15

Sampler Name(s): Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-13
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.51L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1119
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1130
	Total Purge Time (Minutes)	11 min
	Total Purge Volume (Liters)	1.6
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)				
Total VOCs (ppmv)	.1 / .1 / 0	H2S	0 / 0 / 0
HE (% or ppmv)	0 / 0 / 0	O2	19.2 / 19.5 / 19.2
CO	0 / 0 / 0	LEL	0 / 0 / 0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37654
	Flow Controller ID	FC00773
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12-9-15 @ 1030
	Initial Canister Vacuum (" Hg)	DIGITAL -28.91
		ANALOG -28.00
In Progress	Sampling Vacuum Check 1 (" Hg)	12-9-15 @ 1033
		ANALOG -20.00
	Sampling Vacuum Check 2 (" Hg)	12-9-15 @ 1134
		ANALOG -11.00
Finish	Sample Completion Date and Time	12-9-15 @ 1136
	Final Canister Vacuum (" Hg)	DIGITAL -3.71
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny (45°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: —

Observations and Comments: — Collect these samples in the morning/daytime. ~~Be~~ rough area.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SG-07

Sample ID: SER-SG-07-1215 Date: 12-9-15

Sampler Name(s): Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-13
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.63L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1015
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1029
	Total Purge Time (Minutes)	14 min
	Total Purge Volume (Liters)	2.0
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	17 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.8/18.4/18.4
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36538
	Flow Controller ID	FC00823
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	5 min.
Start	Sample Start Date and Time	12-9-15 @1029
	Initial Canister Vacuum (" Hg)	DIGITAL -29.34
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-9-15 @1030
		ANALOG -19.5
	Sampling Vacuum Check 2 (" Hg)	12-9-15 @1032
		ANALOG -9.5
Finish	Sample Completion Date and Time	12-9-15 @1039
	Final Canister Vacuum (" Hg)	DIGITAL -2.98
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Partly Cloudy. (43°F)

Description of Probe Conditon: Probe is in good condition. The tubing from the probe is very shorty too short to shroud. We had to connect extra tubing

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-09@ [redacted]

Sample ID: SER-SG-09-1215 Date: 12/10/15

Sampler Name(s) C. Nickel & J Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.71L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1153
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	1211
	Total Purge Time (Minutes)	18 min
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0 / 0 / 0	H2S	0/0/0
HE (% or ppmv)	0 / 0 / 0	O2	19.1/18.8/20
CO	1 / 0 / 0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *		PASS	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1737
	Flow Controller ID	37741
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12/10/15 @ 1212
	Initial Canister Vacuum (" Hg)	DIGITAL -29.48
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	12/10/15 @ 1214
		ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	12/10/15 @ 1216
		ANALOG -7.5
Finish	Sample Completion Date and Time	12/10/15 @ 1218
	Final Canister Vacuum (" Hg)	DIGITAL -2.63
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: ~~Ano~~ (15) overcast with wind ~ 55°F

Description of Probe Conditon: Needs replacement. Near by building was torn down and probe was badly damaged, concrete pad is gone, flesh mount vault exposed but not stable

~~Description of Probe Location:~~ enough to take off cap ... and stuck at the bottom by remaining tubing with in.

Observations and Comments: 1. Dirt is good 2. hard to open well/probe top 3. Possibility that this probe will be further damaged in near future due to construction/deconstruction activity.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER- SG-10, [redacted]

Sample ID: SER-SG-10 7215 Date: 12/10/15

Sampler Name(s) K.Ma, S.Mainofer

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 (1 min)
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.44L
Probe Purge	Purge Rate (mL/min)	~~[illegible]~~ 200
	Purge Start Time	935
	Purge Vacuum (" Hg)	0
	Purge Completion Time	946
	Total Purge Time (Minutes)	11
	Total Purge Volume (Liters)	1.35L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	1.7, 1.4, 1.0	H2S	0, 0, 0
HE (% or ppmv)	0, 0, 0	O2	20.2, 20.3, 20.4
CO	0, 0, 0	LEL	0, 0, 0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	104285
	Flow Controller ID	N2170
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 minutes
Start	Sample Start Date and Time	12/10/15 @ 946
	Initial Canister Vacuum (" Hg)	DIGITAL -28
		ANALOG -29.92
	Sampling Vacuum Check 1 (" Hg)	12/10/15 @ 948
		ANALOG -17.5
In Progress	Sampling Vacuum Check 2 (" Hg)	12/10/15 @ 951
		ANALOG -7.5
Finish	Sample Completion Date and Time	12/10/15 @ 953
	Final Canister Vacuum (" Hg)	DIGITAL -3.65
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 45°F, ~~light~~ moderate breeze

Description of Probe Condition: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-11@ [redacted]

Sample ID: SER-SG-11-1215 Date: 12/10/15

Sampler Name(s) C. Nickel & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.91 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1039
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	1100
	Total Purge Time (Minutes)	21
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging.*	(JS) ~~3L~~ 10%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0 / 0 / 0	H2S	0 / 0 / 0
HE (% or ppmv)	0 / 0 / 0	O2	20.6/20.3/20.3
CO	0 / 0 / 0	LEL	0 / 0 / 0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	9468
	Flow Controller ID	37653
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12/10/15 @ 1101
	Initial Canister Vacuum (" Hg)	DIGITAL -29.44
		ANALOG -27
In Progress	Sampling Vacuum Check 1 (" Hg)	12/10/15 @ 1103
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	12/10/15 @ 1104
		ANALOG -10
Finish	Sample Completion Date and Time	12/10/15 @ ~~1106~~ (JS) 1107
	Final Canister Vacuum (" Hg)	DIGITAL -3.91
		ANALOG ~~-3~~ (JS) -1

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: mostly cloudy, wind, ~54°F

Description of Probe Conditon: good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-12 + FD, [redacted]

Sample ID: SER-SG-12-1215 Date: 12/10/15

Sampler Name(s) Mauhofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 (1 min)		Canister Size/Lab	1 Liter	356633	FD
	Leak check (hold vacuum) - Pass/Fail?	Pass		Canister Sampling	Canister ID	~~[illegible]~~	12031
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.52 L			Flow Controller ID	1L1536	1L1513
Probe Purge	Purge Rate (mL/min)	200			Pressure Gauge ID (optional)	—	
	Purge Start Time	1142			Sampling Duration or Rate (hours/ml/min)	7 minutes	
	Purge Vacuum (" Hg)	0		Start	Sample Start Date and Time	12/10/15 @ 1151	
	Purge Completion Time	1151			Initial Canister Vacuum (" Hg)	DIGITAL	
	Total Purge Time (Minutes)	9				ANALOG -28.5	-28
	Total Purge Volume (Liters)	1.5L			Sampling Vacuum Check 1 (" Hg)	12/10/15 @ 1153	
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10%				ANALOG -15.5	-14.5
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			In Progress	Sampling Vacuum Check 2 (" Hg)	12/10/15 @ 1156	
	Total VOCs (ppmv)	0,0,0	H2S 0,0,0			ANALOG -7.5	-5
	HE (% or ppmv)	0,0,0	O2 189, 189, 18.6		Sample Completion Date and Time	12/10/15 @ 1158	
	CO	0,0,0	LEL 0,0,0	Finish	Final Canister Vacuum (" Hg)	DIGITAL -3.36	-1.80
	Helium Leak Test: Pass/Fail? *	Yes				ANALOG -3.5	-2.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 50°, cloudy, moderate breeze

Description of Probe Conditon: OK, covered by tall grass

Description of Probe Location: [redacted]

Observations and Comments: ~~[illegible]~~

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-13 [redacted]

Sample ID: SER-SG-13-1215 Date: 12/9/15

Sampler Name(s) C. Nickle & J Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.99 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1452
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	1527
	Total Purge Time (Minutes)	35
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	25%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.2/ 0 / 0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	12/13.2/11.5
CO	1/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	31767
	Flow Controller ID	31759
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12/9/15 @1528
	Initial Canister Vacuum (" Hg)	DIGITAL -30.02
		ANALOG -28
	Sampling Vacuum Check 1 (" Hg)	12/9/15 @1530
		ANALOG -16
In Progress	Sampling Vacuum Check 2 (" Hg)	12/9/15 @ 1531
		ANALOG -14
Finish	Sample Completion Date and Time	12/9/15 @1534
	Final Canister Vacuum (" Hg)	DIGITAL -3.37
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny with scattered clouds, ~48°F

Description of Probe Conditon: good

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER - SG-14, [redacted]

Sample ID: SER-SG-14-1215 Date: 12/10/15

Sampler Name(s) Mathofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-8 (1 min)
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1028
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1041
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	19.5, 18.8, 19.3
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	104286
	Flow Controller ID	33408
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 minutes
Start	Sample Start Date and Time	12/10/15 @ 104
	Initial Canister Vacuum (" Hg)	DIGITAL -29.99
		ANALOG -27
	Sampling Vacuum Check 1 (" Hg)	12/10/15 @1043
		ANALOG -17
In Progress	Sampling Vacuum Check 2 (" Hg)	12/10/15 @ 1045
		ANALOG -10
Finish	Sample Completion Date and Time	12/10/15 @ 1048
	Final Canister Vacuum (" Hg)	DIGITAL <-30
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 51°, cloudy, moderate breeze

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER- SG-15, [redacted]

Sample ID: SER-SG-15-1215 Date: 12/9/15

Sampler Name(s) Mathuter, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-7 (2mins)
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.74L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1438
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1447
	Total Purge Time (Minutes)	9
	Total Purge Volume (Liters)	1.50 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	18.7, 18.4, 18.3
CO	1,4,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	141536
	Flow Controller ID	20773
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 minutes
Start	Sample Start Date and Time	12/9/15 @1447
	Initial Canister Vacuum (" Hg)	DIGITAL -30.05
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/9/15 @1451
		ANALOG -10
	Sampling Vacuum Check 2 (" Hg)	12/9/15 @1452
		ANALOG -5
Finish	Sample Completion Date and Time	12/9/15 @1454
	Final Canister Vacuum (" Hg)	DIGITAL -2.64
		ANALOG -3

% % % % % %

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40°, mostly cloudy, light breeze

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-16 [redacted]

Sample ID: SER-SG-16-1215 Date: 12/8/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1058
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	1135
	Total Purge Time (Minutes)	37
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.5/19.1/19.1
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	3022
	Flow Controller ID	3022
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	5min
Start	Sample Start Date and Time	12/8/15 @ 1136
	Initial Canister Vacuum (" Hg)	DIGITAL -30.07
		ANALOG -28
In Progress	Sampling Vacuum Check 1 (" Hg)	12/8/15 @ 1138
		ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	12/8/15 @ 1139
		ANALOG -10
Finish	Sample Completion Date and Time	12/8/15 @ 1141
	Final Canister Vacuum (" Hg)	DIGITAL -3.73
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, breeze, ~43°F

Description of Probe Condition: good

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-17, [redacted]

Sample ID: SER-SG-17-1215 Date: 12/9/15

Sampler Name(s) Mauhofer, Mea

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.52 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1100
	Purge Vacuum (" Hg)	-5 " Hg
	Purge Completion Time	1114
	Total Purge Time (Minutes)	14
	Total Purge Volume (Liters)	1.6 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	19.7, 19.7, 19.1
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37718
	Flow Controller ID	SH32899
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	14 minutes
Start	Sample Start Date and Time	12/9/15 @ 1114
	Initial Canister Vacuum (" Hg)	DIGITAL -29.15
		ANALOG -28.5
	Sampling Vacuum Check 1 (" Hg)	12/9/15 @ 1118
		ANALOG -20
In Progress	Sampling Vacuum Check 2 (" Hg)	12/9/15 @ 1124
		ANALOG -9
Finish	Sample Completion Date and Time	12/9/15 @ 1128
	Final Canister Vacuum (" Hg)	DIGITAL -2.88
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 45° sunny light breeze

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: During purge quickly got a vacuum of -5 but also quickly returned to 0" Hg when we turned off the pump.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER- SG-18, [redacted]

Sample ID: SER-SG-18-1215 Date: 12/9/15

Sampler Name(s) Manhster, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 (2mins)
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.89 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	0959
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1008
	Total Purge Time (Minutes)	9
	Total Purge Volume (Liters)	2.9 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	11%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	18.5,18.4,18.5
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	13900
	Flow Controller ID	11
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	12/9/15 @ 1008
	Initial Canister Vacuum (" Hg)	DIGITAL -27.04
		ANALOG -24 (bad reg?)
In Progress	Sampling Vacuum Check 1 (" Hg)	12/9/15 @ 1009
		ANALOG -17 (bad reg?)
	Sampling Vacuum Check 2 (" Hg)	12/9/15 @ 1011
		ANALOG -10
Finish	Sample Completion Date and Time	12/9/15 @ 1015
	Final Canister Vacuum (" Hg)	DIGITAL -2.95
		ANALOG -2.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 45°, cloudy

Description of Probe Condition: ok, vegetated

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER - SG-19, [redacted]

Sample ID: SER-SG-19-1215 Date: 12/9/15

Sampler Name(s): Mauhifer, Me

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.88 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1157
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1206
	Total Purge Time (Minutes)	9
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0,0,0	H2S	40,0
HE (% or ppmv)	0,0,0	O2	18.6,18.7,18.3
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L1642
	Flow Controller ID	SH3691
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	9 min
Start	Sample Start Date and Time	12/9/15 @1206
	Initial Canister Vacuum (" Hg)	DIGITAL -29.28
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/9/15 @1208
		ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	12/9/15 @1211
		ANALOG -16
Finish	Sample Completion Date and Time	12/9/15 @1215
	Final Canister Vacuum (" Hg)	DIGITAL -2.67
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 45° sunny

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-20 [redacted]

Sample ID: SER-SG-20-1215 Date: 12/8/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-8 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.64 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1211
	Purge Vacuum (" Hg)	0.00
	Purge Completion Time	1237
	Total Purge Time (Minutes)	26
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.3/19.2/19.1
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	34649
	Flow Controller ID	34649
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	12/8/15 @1238
	Initial Canister Vacuum (" Hg)	DIGITAL -30.01
		ANALOG way past -30
	Sampling Vacuum Check 1 (" Hg)	12/8/15 @1240
		ANALOG -19
In Progress	Sampling Vacuum Check 2 (" Hg)	12/8/15 @1241
		ANALOG -12.5
Finish	Sample Completion Date and Time	12/8/15 @12:46
	Final Canister Vacuum (" Hg)	DIGITAL -3.45
		ANALOG -5.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, ~43°F, light breeze

Description of Probe Conditon: concrete in bad condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-21[redacted]

Sample ID: SER-SG-21-1215 / SER-SG-21-1215-FD Date: 12/8/15

Sampler Name(s) C. Nickle & J. Sutton

* check note @ Bottom

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.85 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1419
	Purge Vacuum (" Hg)	0.00
	Purge Completion Time	1448
	Total Purge Time (Minutes)	29
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.4/18.2/18.1
CO	0/0/1	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L1701 / DUP 1L1753
	Flow Controller ID	1L1701 / DUP 1L1753
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12/8/15 @1449
	Initial Canister Vacuum (" Hg)	DIGITAL -24.65 / DUP -30.12; ANALOG -29 / DUP -31
	Sampling Vacuum Check 1 (" Hg)	12/8/15 @1451; ANALOG -15 / DUP -21
In Progress	Sampling Vacuum Check 2 (" Hg)	12/8/15 @1452; ANALOG -8 / DUP -15
Finish	Sample Completion Date and Time	12/8/15 @1455
	Final Canister Vacuum (" Hg)	DIGITAL -2.79 / DUP -6.55; ANALOG -3 / DUP -9 *

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, 45°F, some sun peeking through clouds... kinda... cold wind/breeze

Description of Probe Conditon:

Description of Probe Location: [redacted]

Observations and Comments: *NOTE - tell lab to hold this sample(s) so we can try to get a more representative FD via different sample location.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-22 [redacted]

Sample ID: SER-SG-22-1215 Date: 12/8/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-8 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.91 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1608
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	1639
	Total Purge Time (Minutes)	31
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	10%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.9/19.7/19.7
CO	0/0/	LEL	0/0/
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	~~34588~~ 30825
	Flow Controller ID	~~34588~~ 30825
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	8min
Start	Sample Start Date and Time	12/8/15 @ 1639
	Initial Canister Vacuum (" Hg)	DIGITAL -30.18
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/8/15 @ 1640
		ANALOG -21
	Sampling Vacuum Check 2 (" Hg)	12/8/15 @ 1642
		ANALOG -13
Finish	Sample Completion Date and Time	12/8/15 @ 1645
	Final Canister Vacuum (" Hg)	DIGITAL -3.39
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Mostly cloudy / overcast, ~45°F

Description of Probe Conditon: good condition

Description of Probe Location: —

Observations and Comments: —

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Flow control #34588 not working.

NO SAMPLE

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-23 [redacted]

Sample ID: SER-SG-23-1215 Date: 12/8/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-6 / 5min
	Leak check (hold vacuum) - Pass/Fail?	—
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.76 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	—
	Purge Vacuum (" Hg)	—
	Purge Completion Time	—
	Total Purge Time (Minutes)	—
	Total Purge Volume (Liters)	—
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	—

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	—	H2S	—
HE (% or ppmv)	—	O2	—
CO	—	LEL	—
Helium Leak Test: Pass/Fail? *	—		

Canister Size/Lab	1 Liter		
Canister Sampling	Canister ID	—	
	Flow Controller ID	—	
	Pressure Gauge ID (optional)	—	
	Sampling Duration or Rate (hours/ml/min)	—	
Start	Sample Start Date and Time	— @ —	
	Initial Canister Vacuum (" Hg)	DIGITAL —	ANALOG —
In Progress	Sampling Vacuum Check 1 (" Hg)	— @ —	ANALOG —
	Sampling Vacuum Check 2 (" Hg)	— @ —	ANALOG —
Finish	Sample Completion Date and Time	— @ —	
	Final Canister Vacuum (" Hg)	DIGITAL —	ANALOG —

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, some sun spots, ~45°F

Description of Probe Conditon: No Sample

Description of Probe Location:

Observations and Comments: when the valve to pump was closed and valve to probe stayed open vacuum stayed at -6 for 5 min, did not equalize, the probe could not be sampled.

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Did not sample

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SG-24

Sample ID: SER-SG-24-1215 Date: 12/8/15

Sampler Name(s): Angelo + Cianfrocca

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-12
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.84L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	849
	Purge Vacuum (" Hg)	-10
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv)	H2S
	HE (% or ppmv)	O2
	CO	LEL
	Helium Leak Test: Pass/Fail? *	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL1754
	Flow Controller ID	FC0D445
	Pressure Gauge ID (optional)	
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	845 @ 12-8-15
	Initial Canister Vacuum (" Hg)	DIGITAL -29.45
		ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	12-8-15 @
		ANALOG
	Sampling Vacuum Check 2 (" Hg)	12-8-15 @
		ANALOG
Finish	Sample Completion Date and Time	12-8-15 @
	Final Canister Vacuum (" Hg)	DIGITAL
		ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy (36°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location:

Observations and Comments: We observed a vacuum during ~~sam~~ purging

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Vacuum during Purge

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER- SG-27 [redacted]

Sample ID: SER-SG-27-1215 Date: 12/08/15

Sampler Name(s) Mashofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 1min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1540
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1552
	Total Purge Time (Minutes)	12
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	11%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	17.8,17.8,17.7
CO	21,1	LEL	00,0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	346668
	Flow Controller ID	"
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	12/8/15 @1552
	Initial Canister Vacuum (" Hg)	DIGITAL -29.26
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/8/15 @1554
		ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	12/8/15 @1557
		ANALOG -8.5
Finish	Sample Completion Date and Time	12/8/15 @1600
	Final Canister Vacuum (" Hg)	DIGITAL -2.08
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 38°, cloudy, light breeze

Description of Probe Conditon: [redacted]

Description of Probe Location: good

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-31 [redacted]

Sample ID: SER-SG-31-1215 (+FD) Date: 12/8/15

Sampler Name(s) K. Ma, S. Mainofer

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 (1 min)
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.89L
Probe Purge	Purge Rate (mL/min)	~~0.89L~~ 200
	Purge Start Time	0920
	Purge Vacuum (" Hg)	0
	Purge Completion Time	0931
	Total Purge Time (Minutes)	11 mins
	Total Purge Volume (Liters)	2.7L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0
HE (% or ppmv)	0,0,0	O2	18.9, 18.5, 18.6
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	FD
Canister Sampling	Canister ID	37727 | 2L1647
	Flow Controller ID	" " " "
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	9 min
Start	Sample Start Date and Time	12/8/15 @ 933
	Initial Canister Vacuum (" Hg)	DIGITAL -29.40 | -29.53
		ANALOG -29 | -29
	Sampling Vacuum Check 1 (" Hg)	12/8/15 @ 935
		ANALOG -22.5 | -22
In Progress	Sampling Vacuum Check 2 (" Hg)	12/8/15 @ 937
		ANALOG -12 | -11.5
Finish	Sample Completion Date and Time	12/8/15 @ 942
	Final Canister Vacuum (" Hg)	DIGITAL -2.45 | -2.37
		ANALOG -3.5 | -3

check 3
12/8/15 @ 9[illegible]
-7 | -6.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40°F Cloudy

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER - SG-34 [redacted]

Sample ID: SER-SG-34-1215 Date: 12/8/15

Sampler Name(s) Mallinder, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	~~0.89 L~~ 0.94 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1033
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1046
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	13%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0, 0, 0	H2S	0, 0, 0
HE (% or ppmv)	0, 0, 0	O2	15.5, 15, 15
CO	0, 0, 0	LEL	0, 0, 0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36386
	Flow Controller ID	11
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	12/8/15 @1046
	Initial Canister Vacuum (" Hg)	DIGITAL -29.36
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	12/8/15 @1047
		ANALOG -23.5
	Sampling Vacuum Check 2 (" Hg)	12/8/15 @1049
		ANALOG -13
Finish	Sample Completion Date and Time	12/8/15 @1053
	Final Canister Vacuum (" Hg)	DIGITAL -2.69
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40° cloudy light breeze

Description of Probe Conditon: good, under grass

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-36

Sample ID: SER-SG-36-1215 Date: 12-7-15

Sampler Name(s) Angelo and Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.8 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1607
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1618
	Total Purge Time (Minutes)	11 min.
	Total Purge Volume (Liters)	3.00
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	17 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	16.4/16.5/15.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36418
	Flow Controller ID	FC00778
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	8 minutes
Start	Sample Start Date and Time	12-7-15 @ 1618
	Initial Canister Vacuum (" Hg)	DIGITAL -29.58
		ANALOG -29.00
In Progress	Sampling Vacuum Check 1 (" Hg)	12-7-15 @ 1622
		ANALOG -15.00
	Sampling Vacuum Check 2 (" Hg)	12-7-15 @ 1624
		ANALOG -9.00
Finish	Sample Completion Date and Time	12-7-15 @ 1626
	Final Canister Vacuum (" Hg)	DIGITAL -2.86
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy / Foggy (33°F)

Description of Probe Conditon: Probe looks to be in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-39 [redacted]

Sample ID: SER-SG-39-1215 Date: 12/9/15

Sampler Name(s) Mauhofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-12, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.87 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1400
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1412
	Total Purge Time (Minutes)	12
	Total Purge Volume (Liters)	2.9
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	18.7,18.8,19.6
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter		
Canister Sampling	Canister ID	7998	
	Flow Controller ID	31767	
	Pressure Gauge ID (optional)	—	
	Sampling Duration or Rate (hours/ml/min)	6 min	
Start	Sample Start Date and Time	12/9/15 @1412	
	Initial Canister Vacuum (" Hg)	DIGITAL -30.01	ANALOG -28
In Progress	Sampling Vacuum Check 1 (" Hg)	12/9/15 @1413	ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	12/9/15 @1415	ANALOG -10
Finish	Sample Completion Date and Time	12/9/15 @1418	
	Final Canister Vacuum (" Hg)	DIGITAL -3.90	ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40°, partly sunny, light breeze

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices PROBE NOT SAMPLED
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info	
Project Name:	SE Rockford Groundwater Contamination Superfund Site — Project # : 476243.ET.01
Probe Name and Address:	SER-SG-40, [redacted]
Sample ID:	SER-SG-40-1215/ ~~SER-SG-40-1215-FD~~ — Date: 12/7/15
Sampler Name(s)	C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.89 L
Probe Purge	Purge Rate (mL/min)	—
	Purge Start Time	14:42
	Purge Vacuum (" Hg)	—
	Purge Completion Time	—
	Total Purge Time (Minutes)	—
	Total Purge Volume (Liters)	—
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	—
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv) —	H2S —
	HE (% or ppmv) —	O2 —
	CO —	LEL —
	Helium Leak Test: Pass/Fail? *	—

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36466 / DUP 104284
	Flow Controller ID	36466 / DUP 104284
	Pressure Gauge ID (optional)	~~30.22~~ / ~~DUP 30.36~~ NA
	Sampling Duration or Rate (hours/ml/min)	—
Start	Sample Start Date and Time	— @ —
	Initial Canister Vacuum (" Hg)	DIGITAL -30.22 / DUP -30.36; ANALOG —
	Sampling Vacuum Check 1 (" Hg)	— @ —
		ANALOG —
In Progress	Sampling Vacuum Check 2 (" Hg)	— @ —
		ANALOG —
Finish	Sample Completion Date and Time	— @ —
	Final Canister Vacuum (" Hg)	DIGITAL — ; ANALOG —

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, cold breeze, light fog, ~39°F

Description of Probe Conditon: Pulled vacum of -10 while purging, closed purge valve and probe didnt recover. Visible moisture droplets inside probe tube.

Description of Probe Location:

Observations and Comments: Note: Tried to purge probe at lowest flow rate with result of neg vacuum

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good condition

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-42

Sample ID: SER-SG-42-1215 Date: 12-7-15

Sampler Name(s) Angelo and Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-16
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.91 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1230
	Purge Vacuum (" Hg)	0
	Purge Completion Time	~~1245~~ 1243
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	3.00
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)				
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.2/15.4/15.1
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L2703
	Flow Controller ID	FC006486
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	12-7-15 @1244
	Initial Canister Vacuum (" Hg)	DIGITAL -29.54
		ANALOG -29.00
	Sampling Vacuum Check 1 (" Hg)	12-7-15 @~~1244~~ 1246
		ANALOG -17.00
In Progress	Sampling Vacuum Check 2 (" Hg)	12-7-15 @1248
		ANALOG -10.00
Finish	Sample Completion Date and Time	12-7-15 @~~1255~~ 1250
	Final Canister Vacuum (" Hg)	DIGITAL -5.18
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy - 35°F

Description of Probe Conditon: The probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-44 [redacted]

Sample ID: SER-SG-44-1215 Date: 12/7/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11 / 1 min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.88 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	12:03
	Purge Vacuum (" Hg)	0.00
	Purge Completion Time	12:33
	Total Purge Time (Minutes)	33
	Total Purge Volume (Liters)	3
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	15.9/15/14.9
CO	0/0/0	LEL	0/0/1
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	25285
	Flow Controller ID	25285
	Pressure Gauge ID (optional)	- NA
	Sampling Duration or Rate (hours/ml/min)	5 min
Start	Sample Start Date and Time	12/7/15 @ 1235
	Initial Canister Vacuum (" Hg)	DIGITAL -30.29
		ANALOG not working
	Sampling Vacuum Check 1 (" Hg)	— @ —
		ANALOG not working
In Progress	Sampling Vacuum Check 2 (" Hg)	— @ —
		ANALOG not working
Finish	Sample Completion Date and Time	12/7/15 @ 12:40
	Final Canister Vacuum (" Hg)	DIGITAL -4.13
		ANALOG not working

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, gentle cold breeze, 39°F, fog.

Description of Probe Conditon: Concrete pad a little ~~warm~~ warm, but ok.

Description of Probe Location: —

Observations and Comments: —

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Did NOT Sample

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-SG-46

Sample ID: SER-SG-46-1215 Date: 12/7/15

Sampler Name(s) Angelo and Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	—
Probe Purge	Purge Rate (mL/min)	
	Purge Start Time	
	Purge Vacuum (" Hg)	
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv)	H2S
	HE (% or ppmv)	O2
	CO	LEL
	Helium Leak Test: Pass/Fail? *	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36409
	Flow Controller ID	FC00162
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	12-7-15 @
	Initial Canister Vacuum (" Hg)	DIGITAL -29.41
		ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	12-7-15 @
		ANALOG
	Sampling Vacuum Check 2 (" Hg)	12-7-15 @
		ANALOG
Finish	Sample Completion Date and Time	12-7-15 @
	Final Canister Vacuum (" Hg)	DIGITAL
		ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy (37°F)

Description of Probe Condition: Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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No Sample collected

Vacuum during Purge

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-47, [redacted]

Sample ID: SER-SG-47-1215 Date: 12/7/15

Sampler Name(s) Manhofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.83 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1115
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1130
	Total Purge Time (Minutes)	15
	Total Purge Volume (Liters)	2.5 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	19.1, 18.9, 19.0
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *		yes	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36501
	Flow Controller ID	"
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	12/7/15 @1133
	Initial Canister Vacuum (" Hg)	DIGITAL -29.59
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	12/7/15 @1134
		ANALOG -24
	Sampling Vacuum Check 2 (" Hg)	12/7/15 @1136
		ANALOG -13
Finish	Sample Completion Date and Time	12/7/15 @1141
	Final Canister Vacuum (" Hg)	DIGITAL -2.92
		ANALOG -3.0

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40°, fog + cloudy, breezy

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-48 [redacted]

Sample ID: SER-SG-48-1215 Date: 12/7/15

Sampler Name(s) Machofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.71 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1223
	Purge Vacuum (" Hg)	0-(-1)
	Purge Completion Time	1236
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	2.2 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	18 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0, 0, 0	H2S	0, 0, 0
HE (% or ppmv)	0, 0, 0	O2	14.7, 14.7, 15
CO	0, 0, 0	LEL	0, 0, 0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L2725
	Flow Controller ID	"
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	12/7/15 @1237
	Initial Canister Vacuum (" Hg)	DIGITAL -29.52
		ANALOG -29.5
	Sampling Vacuum Check 1 (" Hg)	12/7/15 @1238
		ANALOG -24
In Progress	Sampling Vacuum Check 2 (" Hg)	12/7/15 @1240
		ANALOG -15
Finish	Sample Completion Date and Time	12/7/15 @1245
	Final Canister Vacuum (" Hg)	DIGITAL -2.72
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40°, cloudy

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: —

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Did Not Sample

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SG-50

Sample ID: SER-SG-50-1215 Date: 12-7-15

Sampler Name(s) Angelo and Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	
	Leak check (hold vacuum) - Pass/Fail?	
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	
Probe Purge	Purge Rate (mL/min)	
	Purge Start Time	
	Purge Vacuum (" Hg)	
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv) / H2S	
	HE (% or ppmv) / O2	
	CO / LEL	
	Helium Leak Test: Pass/Fail? *	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36409
	Flow Controller ID	FC00162
	Pressure Gauge ID (optional)	
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	12-7-15 @
	Initial Canister Vacuum (" Hg)	DIGITAL -29.41
		ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	12-7-15 @
		ANALOG
	Sampling Vacuum Check 2 (" Hg)	12-7-15 @
		ANALOG
Finish	Sample Completion Date and Time	12-7-15 @
	Final Canister Vacuum (" Hg)	DIGITAL
		ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy / Foggy (35°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: –

Observations and Comments:

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Water during Purge.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SG-51

Sample ID: SER-SG-51-1215/SER-SG-51-1215-FD Date: 12-10-15

Sampler Name(s): Angelo Cianfrocco + Steve Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.75L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1221
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1237
	Total Purge Time (Minutes)	16 min
	Total Purge Volume (Liters)	~~2.4~~ 3.0
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	25%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)					
Total VOCs (ppmv)	.3	.2	.3	H2S	0 / 0 / 0
HE (% or ppmv)	0	0	0	O2	19.2 / 18.6 / 19.3
CO	0	0	0	LEL	0 / 0 / 0
Helium Leak Test: Pass/Fail? *	Pass				

Canister Size/Lab	1 Liter		FD
Canister Sampling	Canister ID	37741	37653
	Flow Controller ID	FC00220	FC00687
	Pressure Gauge ID (optional)	N/A	N/A
	Sampling Duration or Rate (hours/ml/min)	10 min	
Start	Sample Start Date and Time	12-10-15	@ 1237
	Initial Canister Vacuum (" Hg)	DIGITAL -28.68	-28.77 FD
		ANALOG -29.0	-29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-10-15	@ 1240
		ANALOG -14	-18 FD
	Sampling Vacuum Check 2 (" Hg)	12-10-15	@ 1241
		ANALOG -18	-14 FD
Finish	Sample Completion Date and Time	12-10-15	@ 1247
	Final Canister Vacuum (" Hg)	DIGITAL -2.88	-5.13 FD
		ANALOG -2.5	-6.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy, breezy (40°F)

Description of Probe Conditon: The probe cement casing has been ripped out of the ground. It looks like it was upended by a plow and placed back in Dasley

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SE-52

Sample ID: SER-SE-52-1215 Date: 12-9-15

Sampler Name(s): Angelo + Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.74L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1356
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1408
	Total Purge Time (Minutes)	11 min
	Total Purge Volume (Liters)	2.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)				
Total VOCs (ppmv)	0 / 0 /		H2S	0 / 0 /
HE (% or ppmv)	0 / 0 /		O2	18.4 / 18.2 /
CO	0 / 0 /		LEL	0 / 0 /
Helium Leak Test: Pass/Fail? *	Pass			

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L1808
	Flow Controller ID	FC00365
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	12-9-15 @ 1408
	Initial Canister Vacuum (" Hg)	DIGITAL -28.28
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-9-15 @ 1409
		ANALOG -19.00
	Sampling Vacuum Check 2 (" Hg)	12-9-15 @ 1413
		ANALOG ~~-1~~ -8
Finish	Sample Completion Date and Time	12-9-15 @ 1415
	Final Canister Vacuum (" Hg)	DIGITAL -2.28
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny (53°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SG-53

Sample ID: SER-SG-53-1215/SER-SG-53-1215-FD Date: 12-8-15

Sampler Name(s) Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.71L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1400
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1413
	Total Purge Time (Minutes)	13 min
	Total Purge Volume (Liters)	2.3
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18/18.1/18.2
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter		
Canister Sampling	Canister ID	34587 / 37653 FD	
	Flow Controller ID	F00120 / FC00471 FD	
	Pressure Gauge ID (optional)	N/A / N/A	
	Sampling Duration or Rate (hours/ml/min)	7 min.	
Start	Sample Start Date and Time	12-8-15 @ 1414	
	Initial Canister Vacuum (" Hg)	DIGITAL -29.35 ~~-28.5~~	-28.27 FD
		ANALOG -28.5	-26.00
In Progress	Sampling Vacuum Check 1 (" Hg)	12-8-15 @ 1416	
		ANALOG -18	-16 FD
	Sampling Vacuum Check 2 (" Hg)	12-8-15 @ 1417	
		ANALOG -11.5	-10.5 FD
Finish	Sample Completion Date and Time	12-8-15 @ 1421	
	Final Canister Vacuum (" Hg)	DIGITAL -2.76	-4.69 FD
		ANALOG -3.5	-3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy, Breezy, (40°F)

Description of Probe Conditon: Probe is in good condition.

Description of Probe Location:

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-S6-54

Sample ID: SER-S6-54-1215 Date: 12-8-15

Sampler Name(s): Angelo and steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-11
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	2.47 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	913
	Purge Vacuum (" Hg)	0
	Purge Completion Time	949
	Total Purge Time (Minutes)	36 min
	Total Purge Volume (Liters)	7.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	16.5 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.1/15.5/16.2
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL1754
	Flow Controller ID	FC00445
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12-8-15 @ 949
	Initial Canister Vacuum (" Hg)	DIGITAL -29.45
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-8-15 @ 951
		ANALOG -15.0
	Sampling Vacuum Check 2 (" Hg)	12-8-15 @ 953
		ANALOG -7.00
Finish	Sample Completion Date and Time	12-8-15 @ 955
	Final Canister Vacuum (" Hg)	DIGITAL -2.21
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy (35°F)

Description of Probe Conditon:

Description of Probe Location: Probe is in good condition

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SER-SG-55

Sample ID: SER-SG-55-1215 Date: 12/8/15

Sampler Name(s): Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.29L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1014
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1035
	Total Purge Time (Minutes)	41.00
	Total Purge Volume (Liters)	21min.
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	27%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.6/17.7/17.3
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37686
	Flow Controller ID	FC00789
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	5 min.
Start	Sample Start Date and Time	12-8-15 @ 1035
	Initial Canister Vacuum (" Hg)	DIGITAL -29.35
		ANALOG -28.00
	Sampling Vacuum Check 1 (" Hg)	12-8-15 @ 1037
		ANALOG -15.00
In Progress	Sampling Vacuum Check 2 (" Hg)	12-8-15 @ 1038
		ANALOG -8.00
Finish	Sample Completion Date and Time	12-8-15 @ 1040
	Final Canister Vacuum (" Hg)	DIGITAL -3.71
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy (35°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-S6-S6

Sample ID: SER-S6-S6-1215 Date: 12/8/15

Sampler Name(s) Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.39L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1055
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1116
	Total Purge Time (Minutes)	21 min.
	Total Purge Volume (Liters)	4.4
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.2/17.6/18.3
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L1551
	Flow Controller ID	FC00167
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	12-8-15 @ 1116
	Initial Canister Vacuum (" Hg)	DIGITAL -28.9
		ANALOG -28.5
	Sampling Vacuum Check 1 (" Hg)	12-8-15 @ 1117
		ANALOG -17.00
In Progress	Sampling Vacuum Check 2 (" Hg)	12-8-15 @ 1117
		ANALOG -11.00
Finish	Sample Completion Date and Time	12-8-15 @ 1122
	Final Canister Vacuum (" Hg)	DIGITAL -2.5
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy (35°F)

Description of Probe Conditon: The Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-56-57

Sample ID: SER-56-57-1215 Date: 12-10-15

Sampler Name(s) Angelo + Steve.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.43L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1050
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1117
	Total Purge Time (Minutes)	27 min
	Total Purge Volume (Liters)	4.8
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	16.0%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/	O2	18.8/19.0/19.2
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L02
	Flow Controller ID	FC00638
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	8 min.
Start	Sample Start Date and Time	12-10-15 @ 1117
	Initial Canister Vacuum (" Hg)	DIGITAL -28.58
		ANALOG -29.0
In Progress	Sampling Vacuum Check 1 (" Hg)	12-10-15 @ 1119
		ANALOG -19.00
	Sampling Vacuum Check 2 (" Hg)	12-10-15 @ 1121
		ANALOG -10.00
Finish	Sample Completion Date and Time	12-10-15 @ 1125
	Final Canister Vacuum (" Hg)	DIGITAL -3.24
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy, breezy (43°F)

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: [redacted] SEK-S6-S8

Sample ID: SEK-S6-S8-1215 Date: 12/8/15

Sampler Name(s): Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-1'o
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	4.18L
Probe Purge	Purge Rate (mL/min)	~~200~~ 250
	Purge Start Time	1459
	Purge Vacuum (" Hg)	0
	Purge Completion Time	# 1555
	Total Purge Time (Minutes)	56 min
	Total Purge Volume (Liters)	13.75
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	16%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.8/20.0/19.8
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	35656
	Flow Controller ID	FC00733
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6 min.
Start	Sample Start Date and Time	12-8-15 @ ~~1556~~ 1555
	Initial Canister Vacuum (" Hg)	DIGITAL -27.36
		ANALOG -30.00
In Progress	Sampling Vacuum Check 1 (" Hg)	12-8-15 @ 1557
		ANALOG -15.00
	Sampling Vacuum Check 2 (" Hg)	12-8-15 @ 1558
		ANALOG -11.00
Finish	Sample Completion Date and Time	12-8-15 @ ~~1555~~ 1601
	Final Canister Vacuum (" Hg)	DIGITAL -2.55
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy, breezy and (42°F)

Description of Probe Conditon: Probe looks to be in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-S6-59

Sample ID: SER-S6-59-1215 Date: 12/8/15

Sampler Name(s) Steve and Argeb

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.29L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1144
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1202
	Total Purge Time (Minutes)	18 min
	Total Purge Volume (Liters)	3.8
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	17%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	20.8/19.7/19.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	1L1914
	Flow Controller ID	FC30520
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/mi/min)	7 min.
Start	Sample Start Date and Time	12-8-15 @ 1202
	Initial Canister Vacuum (" Hg)	DIGITAL -28.39
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-8-15 @ 1205
		ANALOG -15.00
	Sampling Vacuum Check 2 (" Hg)	12-8-15 @ 1206
		ANALOG -10.00
Finish	Sample Completion Date and Time	12-8-15 @ 1209
	Final Canister Vacuum (" Hg)	DIGITAL -3.00
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy and Foggy (35°F)

Description of Probe Conditon: The probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-S6-60

Sample ID: SER-S0-60-1215 Date: 12-9-15

Sampler Name(s) Angelo + Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-13
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.2L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1457
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1517
	Total Purge Time (Minutes)	20 min.
	Total Purge Volume (Liters)	4.0
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	13%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0	0	0	H2S	0	0	0
HE (% or ppmv)	0	0	0	O2	10.9	12.1	12.8
CO	0	0	0	LEL	0	0	0

Helium Leak Test: Pass/Fail? * Pass

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	8014
	Flow Controller ID	FC00105
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	7 min.
Start	Sample Start Date and Time	12-9-15 @ 1517
	Initial Canister Vacuum (" Hg)	DIGITAL -28.95
		ANALOG -28.5
	Sampling Vacuum Check 1 (" Hg)	12-9-15 @ 1519
		ANALOG -19.00
In Progress	Sampling Vacuum Check 2 (" Hg)	12-9-15 @ 1521
		ANALOG -10.00
Finish	Sample Completion Date and Time	12-9-15 @ 1524
	Final Canister Vacuum (" Hg)	DIGITAL -3.27
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Partly Cloudy 43°F

Description of Probe Conditon: Probe is in good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-61 [redacted] SER-SG-61

Sample ID: SER-SG-61-1215 Date: 12/8/15

Sampler Name(s) Manchster, Ma.

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.20 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1416
	Purge Vacuum (" Hg)	0-6" Hg/7"
	Purge Completion Time	1434
	Total Purge Time (Minutes)	18
	Total Purge Volume (Liters)	3.6 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	18 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	1.7, 1.5, 6.2	H2S	0, 0, 0
HE (% or ppmv)	0, 0, 0	O2	5.9, 9.1, 16.6
CO	0, 0, 1	LEL	0, 2, 7
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37792
	Flow Controller ID	"
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	25 minutes
Start	Sample Start Date and Time	12/8/15 @1440
	Initial Canister Vacuum (" Hg)	DIGITAL -28.71
		ANALOG -27.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/8/15 @1443
		ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	12/8/15 @1450
		ANALOG -15
Finish	Sample Completion Date and Time	12/8/15 @1505
	Final Canister Vacuum (" Hg)	DIGITAL -15.00
		ANALOG -15

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40° cloudy

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: During first volume purge vacuum went from -0-6" Hg. During second vol purge vacuum went from -6-7" Hg. Pause and allowed to recover to ~~1~~ -4" Hg. During third volume purge vac went from 4-7" Hg. Allowed to recover to -3" Hg before starting canister.

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no sample

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER SG-62 [redacted]

Sample ID: SER-SG-62-1215 (no sample) Date: 12/8/15

Sampler Name(s) Mashofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration		
	Leak check (hold vacuum) - Pass/Fail?		
Probe Installation	Dead-volume - including screen, sand pack, and tubing (mL)		
Probe Purge	Purge Rate (mL/min)		
	Purge Start Time		
	Purge Vacuum (" Hg)		
	Purge Completion Time		
	Total Purge Time (Minutes)		
	Total Purge Volume (Liters)		
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *		
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)		
	Total VOCs (ppmv)	H2S	
	HE (% or ppmv)	O2	
	CO	LEL	
	Helium Leak Test: Pass/Fail? *		

Canister Size/Lab	1 Liter		
Canister Sampling	Canister ID		
	Flow Controller ID		
	Pressure Gauge ID (optional)		
	Sampling Duration or Rate (hours/ml/min)		
Start	Sample Start Date and Time		@
	Initial Canister Vacuum (" Hg)	DIGITAL	
		ANALOG	
In Progress	Sampling Vacuum Check 1 (" Hg)		@
		ANALOG	
	Sampling Vacuum Check 2 (" Hg)		@
		ANALOG	
Finish	Sample Completion Date and Time		@
	Final Canister Vacuum (" Hg)	DIGITAL	
		ANALOG	

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40° cloudy

Description of Probe Conditon: pad + line OK

Description of Probe Location: [redacted]

Observations and Comments: Set up pump at manifold to check condition of probe prior to performing tests due to presence of >7 in Hg vacuum @ previous event. At 200mL/min, started purge test, immediately observed vacuum (~7-10 in Hg) + observed water in line. Did not sample.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER - SG-63 [redacted]

Sample ID: SER-SG-63-1215 Date: 12/8/15

Sampler Name(s) Manhofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-2, 1min
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	3.18 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1136
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1152
	Total Purge Time (Minutes)	16
	Total Purge Volume (Liters)	9.6 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	15%-12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0,0,0	H2S	0,0,0
HE (% or ppmv)	0,0,0	O2	19.6,19.6,19.6
CO	0,0,0	LEL	0,0,0
Helium Leak Test: Pass/Fail? *		pass	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	~~1L13 1L13~~ 37855
	Flow Controller ID	11
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	12/8/15 @ ~~1153~~ 1201
	Initial Canister Vacuum (" Hg)	DIGITAL -29.28
		ANALOG -28.0
	Sampling Vacuum Check 1 (" Hg)	12/8/15 @ 1202
		ANALOG -21
In Progress	Sampling Vacuum Check 2 (" Hg)	12/8/15 @ 1204
		ANALOG -15
Finish	Sample Completion Date and Time	12/8/15 @ 1209
	Final Canister Vacuum (" Hg)	DIGITAL -3.24
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 40° cloudy light breeze

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-64 [redacted]

Sample ID: SER-SG-64-1215 Date: 12/8/15

Sampler Name(s) C. Nickle & J Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.89L
Probe Purge	Purge Rate (mL/min)	200 ~~33 min~~
	Purge Start Time	0850
	Purge Vacuum (" Hg)	0.00
	Purge Completion Time	0.923
	Total Purge Time (Minutes)	33 min
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	~~3L~~ 15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.8/19.2/16.5
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	14529
	Flow Controller ID	14529
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	9min
Start	Sample Start Date and Time	12/8/15 @0923
	Initial Canister Vacuum (" Hg)	DIGITAL -30.06
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	12/8/15 @0926
		ANALOG -19
	Sampling Vacuum Check 2 (" Hg)	12/8/15 @0928
		ANALOG -10
Finish	Sample Completion Date and Time	12/8/15 @0932
	Final Canister Vacuum (" Hg)	DIGITAL -3.01
		ANALOG -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, cold breeze, ~37°F, feels like 25°F! Fog

Description of Probe Conditon: good

Description of Probe Location: —

Observations and Comments: —

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Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-65 / [redacted]

Sample ID: SER-SG-65-1215 / SER-SG-65-1215-FD Date: 12/7/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS ~~0.85L~~ (5)
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.85 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	15:40
	Purge Vacuum (" Hg)	0.00
	Purge Completion Time	16:03
	Total Purge Time (Minutes)	23
	Total Purge Volume (Liters)	3
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.4/17.3/17.4
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36466 / DUP 104284
	Flow Controller ID	36466 / DUP 104284
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	12/7/15 @ 16:03
	Initial Canister Vacuum (" Hg)	DIGITAL -30.22 / DUP -30.36
		ANALOG -28 / DUP -28
	Sampling Vacuum Check 1 (" Hg)	12/7/15 @ 16:05
		ANALOG -21 / DUP -21
In Progress	Sampling Vacuum Check 2 (" Hg)	12/7/15 @ 16:07
		ANALOG -11 / DUP -13
Finish	Sample Completion Date and Time	12/7/15 @ 16:09 ~~16:10~~ DUP
	Final Canister Vacuum (" Hg)	DIGITAL -3.45 / DUP -5.03
		ANALOG -3 / DUP -4

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, cool breeze ~36°F

Description of Probe Conditon: Probe in good condition

Description of Probe Location: [redacted]

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-66- [redacted]

Sample ID: SER-SG-66-1215 Date: 12/9/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.32 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1339
	Purge Vacuum (" Hg)	-2
	Purge Completion Time	1354
	Total Purge Time (Minutes)	15
	Total Purge Volume (Liters)	1L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	25%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0 / 0 / 0	H2S	0/0/0
HE (% or ppmv)	0 / 0 / 0	O2	18.9/18/18.9
CO	1 / 1 / 2	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	104285
	Flow Controller ID	37718
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	12/9/15 @ 1355
	Initial Canister Vacuum (" Hg)	DIGITAL -30.04
		ANALOG -30
	Sampling Vacuum Check 1 (" Hg)	12/9/15 @ ~~135~~ 1357
		ANALOG -21
In Progress	Sampling Vacuum Check 2 (" Hg)	12/9/15 @ 1359
		ANALOG -11
Finish	Sample Completion Date and Time	12/9/15 @ 1403
	Final Canister Vacuum (" Hg)	DIGITAL -2.21
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny, scattered clouds, ~48°F

Description of Probe Conditon: good Condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SER-SG-67 [redacted]

Sample ID: SER-SG-67-1215 Date: 12/9/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-8 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.08L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	0838
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	0927
	Total Purge Time (Minutes)	49
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	14%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	20.7/20/19.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	72309
	Flow Controller ID	35644
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/m/min)	7min
Start	Sample Start Date and Time	12/9/15 @0928
	Initial Canister Vacuum (" Hg)	DIGITAL -30.13
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/9/15 @0932
		ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	12/9/15 @0934
		ANALOG -6
Finish	Sample Completion Date and Time	12/9/15 @0935
	Final Canister Vacuum (" Hg)	DIGITAL -3.89
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny with scattered clouds, mild fog ~37°F

Description of Probe Conditon: good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-68 [redacted]

Sample ID: SER-SG-68-1215 Date: 12/10/15

Sampler Name(s) C. Nickel & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	4.06 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	0853
	Purge Vacuum (" Hg)	0.0
	Purge Completion Time	1003
	Total Purge Time (Minutes)	70 min
	Total Purge Volume (Liters)	12.2 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	10 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0.2/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.9/18.6/18.5
CO	1/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *		Pass	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	9448
	Flow Controller ID	31768
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	4 min
Start	Sample Start Date and Time	12/10/15 @ 1004
	Initial Canister Vacuum (" Hg)	DIGITAL -29.48
		ANALOG -26
In Progress	Sampling Vacuum Check 1 (" Hg)	12/10/15 @ 1005
		ANALOG -19
	Sampling Vacuum Check 2 (" Hg)	12/10/15 @ 1006
		ANALOG -12.5
Finish	Sample Completion Date and Time	12/10/15 @ 1008
	Final Canister Vacuum (" Hg)	DIGITAL -4.62
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: mostly cloudy, light wind, ~50°F

Description of Probe Conditon: good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-69, [redacted]

Sample ID: SER-SG-69-1215 Date: 12/7/15

Sampler Name(s) Mahofer, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	2.35 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	~~1430~~ 1423
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1443
	Total Purge Time (Minutes)	20
	Total Purge Volume (Liters)	~~6.9~~ 7 L
Helium Leak Check	Average Helium Concentration In Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0, 0, 0	H2S	0, 0, 0
HE (% or ppmv)	0, 0, 0	O2	18.4, 18.6, 19.1
CO	0, 0, 0	LEL	0, 0, 0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	3025
	Flow Controller ID	"
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	~3 min
Start	Sample Start Date and Time	12/7/15 @1444
	Initial Canister Vacuum (" Hg)	DIGITAL -29.54
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12/7/15 @1445
		ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	12/7/15 @1446
		ANALOG -12
Finish	Sample Completion Date and Time	12/7/15 @ 1447
	Final Canister Vacuum (" Hg)	DIGITAL -3.18
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 38°, cloudy, breezy

Description of Probe Conditon: ~~a~~ good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: [redacted] SER-S6-71

Sample ID: SER-S6-71-1215 Date: 12-7-15

Sampler Name(s): Angelo and Steve

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-12
	Leak check (hold vacuum) - Pass/Fail?	Pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.98 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1517
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1530
	Total Purge Time (Minutes)	13 min
	Total Purge Volume (Liters)	3 liters
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	~15.0%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/
HE (% or ppmv)	0/0/0	O2	16.3/16.1/16.8
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36409
	Flow Controller ID	FC00162
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	12-7-15 @ 15:31
	Initial Canister Vacuum (" Hg)	DIGITAL -29.41
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	12-7-15 @ 1533
		ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	12-7-15 @ 1534
		ANALOG -13
Finish	Sample Completion Date and Time	12-7-15 @ 1538
	Final Canister Vacuum (" Hg)	DIGITAL -2.89
		ANALOG -3.00

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Cloudy / Foggy (35°F)

Description of Probe Conditon: Probe is in good condition.

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-72 [redacted]

Sample ID: SER-SG-72-1215 (FD) Date: 12/7/15

Sampler Name(s) Manhster, Ma

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-10, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.85 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1534
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1547
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	~~25.5 L~~ 2.5L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.1, 0.1	H2S	0, 0, 0
HE (% or ppmv)	0, 0, 0	O2	19, 18.5, 18.4
CO	0, 0, 0	LEL	0, 0, 0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter		dup
Canister Sampling	Canister ID	33398	~~[illegible]~~
	Flow Controller ID	"	"
	Pressure Gauge ID (optional)	—	—
	Sampling Duration or Rate (hours/ml/min)	7 min	7 min
Start	Sample Start Date and Time	12/7/15	@1547
	Initial Canister Vacuum (" Hg)	DIGITAL -28.75	-29.48
		ANALOG -26 (bad reg?)	-29.5
	Sampling Vacuum Check 1 (" Hg)	12/7/15	@1549
		ANALOG -21	-20.5
In Progress	Sampling Vacuum Check 2 (" Hg)	12/7/15	@1550
		ANALOG -15	-14.5
Finish	Sample Completion Date and Time	12/7/15	@1554
	Final Canister Vacuum (" Hg)	DIGITAL -3.26	-2.67
		ANALOG -5	-3

1L1517
~~104284~~

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 38°, cloudy, light breeze

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: NA

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SER-SG-73 [redacted]

Sample ID: SER-SG-73-1215 Date: 12/9/15

Sampler Name(s) C. Nickle & J. Sutton

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-9 / 1min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.78L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1019
	Purge Vacuum (" Hg)	-2
	Purge Completion Time	1047
	Total Purge Time (Minutes)	28
	Total Purge Volume (Liters)	3L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	12 %

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	20/19.9/20
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	PASS		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	34588
	Flow Controller ID	34600
	Pressure Gauge ID (optional)	NA
	Sampling Duration or Rate (hours/ml/min)	9 min
Start	Sample Start Date and Time	12/9/15 @ 1048
	Initial Canister Vacuum (" Hg)	DIGITAL -30.18
		ANALOG -29
	Sampling Vacuum Check 1 (" Hg)	12/9/15 @ 1051
		ANALOG -18
In Progress	Sampling Vacuum Check 2 (" Hg)	12/9/15 @ 1053
		ANALOG -10
Finish	Sample Completion Date and Time	12/9/15 @ 1057
	Final Canister Vacuum (" Hg)	DIGITAL -2.59
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: overcast, cold breeze, 37°F

Description of Probe Conditon: good condition

Description of Probe Location: —

Observations and Comments: —

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project # :** 476243.ET.01

Probe Name and Address: SG-51 [redacted]

Sample ID: ~~-15~~ SER-SG-51-0915 **Date:** 9/21/15

Sampler Name(s) J. Beasley, T. Oxley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18 in Hg for 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	830
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	10:10
	Purge Vacuum (" Hg)	0
	Purge Completion Time	10:23
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	26
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10-24%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.2/0.2/0.2	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.7/18.7/18.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	35672
	Flow Controller ID	6850
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 minutes
Start	Sample Start Date and Time	9/21/15 @10:40
	Initial Canister Vacuum (" Hg)	DIGITAL 29.42
		ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @1041
		ANALOG -20
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @1045
		ANALOG -6
Finish	Sample Completion Date and Time	9/21/15 @1047
	Final Canister Vacuum (" Hg)	DIGITAL 3.84
		ANALOG -4.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny, 70s

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: regulator leak check @ -13 in Hg for 1 min, pass

REV. 8/4/2015

SG-52

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: SG-52, [redacted]

Sample ID: SER-SG-52-0915 **Date:** 9/21/15

Sampler Name(s) J. Beasley, T. Oxley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18 ; 3 min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	740
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	11:37
	Purge Vacuum (" Hg)	-1
	Purge Completion Time	11:48
	Total Purge Time (Minutes)	11:00
	Total Purge Volume (Liters)	2.2
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10-17%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.3 / 0.1/0.1	H2S	0/ 0/0
HE (% or ppmv)	0/ 0/0	O2	16.5/16.4/16.4
CO	0/ 0/0	LEL	3%/0/0
Helium Leak Test: Pass/Fail? *		pass	

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	1L1513
	Flow Controller ID	6514
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/mt/min)	7min /
Start	Sample Start Date and Time	9/21/15 @ ~~1128~~ 11:52
	Initial Canister Vacuum (" Hg)	DIGITAL -29.41
		ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ 1154
		ANALOG -22
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ 1156
		ANALOG -12
Finish	Sample Completion Date and Time	9/21/15 @ 1159
	Final Canister Vacuum (" Hg)	DIGITAL -3.63
		ANALOG -5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 70's sunny

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: Regulator leak check @ -21 ; PASS - 2 min ← canister failed vaccum
Regulator check @ -18; pass - 2 min

REV. 8/4/2015

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-53 [redacted]

Sample ID: SER-SG-53-0915 Date: 9/22/15

Sampler Name(s) Mathofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-12, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.71
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	0755
	Purge Vacuum (" Hg)	0
	Purge Completion Time	0808
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	2.2 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	20

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	16/15.9/15.8
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	3536571
	Flow Controller ID	FC00975
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	9/22/15 @0812
	Initial Canister Vacuum (" Hg)	DIGITAL -29.20
		ANALOG -28.
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @0814
		ANALOG -16
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @0818
		ANALOG -4.5
Finish	Sample Completion Date and Time	9/22/15 @0819
	Final Canister Vacuum (" Hg)	DIGITAL -4.35
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 62°, sunny, calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

REV. 8/4/2015

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-54, [redacted]

Sample ID: SER-SG-54-0915 Date: 9/22/15

Sampler Name(s) Mauhler, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-13, 2 min
	Leak check (hold vacuum) - Pass/Fail?	~~-13~~ pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	2.47 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	844
	Purge Vacuum (" Hg)	0
	Purge Completion Time	909
	Total Purge Time (Minutes)	25
	Total Purge Volume (Liters)	7.5 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	10.9/12.4/13.6
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37372
	Flow Controller ID	FC00219
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	9 min
Start	Sample Start Date and Time	9/22/15 @ 0913
	Initial Canister Vacuum (" Hg)	DIGITAL -29.41
		ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @ 0917
		ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @ 0919
		ANALOG -8
Finish	Sample Completion Date and Time	9/22/15 @ 0922
	Final Canister Vacuum (" Hg)	DIGITAL -2.91
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 65°, sunny, calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

REV. 8/4/2015

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SG-55 [redacted]

Sample ID: SER-SG-55-0915 Date: 9/22/15

Sampler Name(s) Mahofer, Bryda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2 min
	Leak check (hold vacuum) - Pass/Fail?	~~-15~~ PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.29 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1003
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1020
	Total Purge Time (Minutes)	17
	Total Purge Volume (Liters)	4 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)	
	Total VOCs (ppmv) 0/0/0	H2S 0/0/0
	HE (% or ppmv) 0/0/0	O2 16.4/16.4/16.4
	CO 0/0/0	LEL 0/0/0
	Helium Leak Test: Pass/Fail? *	PASS

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36443
	Flow Controller ID	0000006743
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	8 min
Start	Sample Start Date and Time	9/22/15 @ 1022
	Initial Canister Vacuum (" Hg)	DIGITAL -29.36
		ANALOG -29.50
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @ 1024
		ANALOG -17
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @ 1026
		ANALOG -7
Finish	Sample Completion Date and Time	9/22/15 @ 1030
	Final Canister Vacuum (" Hg)	DIGITAL -2.44
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 68° sunny, calm

Description of Probe Conditon: Good

Description of Probe Location: [redacted]

Observations and Comments:

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Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: SG-56, [redacted]

Sample ID: SER-SG-56-0915 **Date:** 9/22/15

Sampler Name(s) Mailhofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.39
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1051
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1108
	Total Purge Time (Minutes)	17
	Total Purge Volume (Liters)	4.2
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	15.7/15.5/~~15.4~~ 15.6
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36569
	Flow Controller ID	FC00805
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	9/22/15 @ 1111
	Initial Canister Vacuum (" Hg)	DIGITAL -27.67
		ANALOG -27.50
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @ 1113
		ANALOG 10.5
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @ 1115
		ANALOG 7.5
Finish	Sample Completion Date and Time	9/22/15 @ 1117
	Final Canister Vacuum (" Hg)	DIGITAL -3.08
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 70° sunny calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-57 [redacted]

Sample ID: SER-SG-57-0915 Date: 9/22/15

Sampler Name(s) Mailofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.43
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1327
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1345
	Total Purge Time (Minutes)	18
	Total Purge Volume (Liters)	4.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	20%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.5/17.5/17.6
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36418
	Flow Controller ID	~~-2~~ FC00115
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	8min
Start	Sample Start Date and Time	9/22/15 @1352
	Initial Canister Vacuum (" Hg)	DIGITAL -29.27
		ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @ ~~1352~~ 1354
		ANALOG -22
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @ 1355
		ANALOG -12
Finish	Sample Completion Date and Time	9/22/15 @ 1400
	Final Canister Vacuum (" Hg)	DIGITAL -2.01
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 70°, sunny, light breeze

Description of Probe Conditon: good

Description of Probe Location:

Observations and Comments: mothballs around side of house ~~need~~ near probe

REV. 8/4/2015

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-58, [redacted]

Sample ID: SER-SG-58-0915 Date: 9/22/15

Sampler Name(s) Mainhart, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2 min
	Leak check (hold vacuum) - Pass/Fail?	~~-15~~ pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	4.18
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1444
	Purge Vacuum (" Hg)	-1
	Purge Completion Time	1520
	Total Purge Time (Minutes)	~~36~~ 36
	Total Purge Volume (Liters)	12.5
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	19.3/19.3/19.4
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	Pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36533
	Flow Controller ID	FC00598
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	5 min
Start	Sample Start Date and Time	9/22/15 @1521
	Initial Canister Vacuum (" Hg)	DIGITAL -29.33
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @1523
		ANALOG -15
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @1524
		ANALOG -9
Finish	Sample Completion Date and Time	9/22/15 @1526
	Final Canister Vacuum (" Hg)	DIGITAL -3.72
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 75° sunny, calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

REV. 8/4/2015

ch2m:

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-59 [redacted]

Sample ID: SER-SG-59-0915 Date: 9/22/15

Sampler Name(s) T. Oxley, J. Beasley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18in Hg for 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1290
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1455
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1515
	Total Purge Time (Minutes)	20
	Total Purge Volume (Liters)	4.0
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	10-46%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.9/18.8/18.7
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	IL1952
	Flow Controller ID	40837
	Pressure Gauge ID (optional)	–
	Sampling Duration or Rate (hours/ml/min)	6min/
Start	Sample Start Date and Time	9/22/15 @1516
	Initial Canister Vacuum (" Hg)	DIGITAL -28.92
		ANALOG -28
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @1518
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @ 1520
		ANALOG -10
Finish	Sample Completion Date and Time	9/22/15 @1522
	Final Canister Vacuum (" Hg)	DIGITAL -4.35
		ANALOG -4.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny, 70s

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: regulator leak test @ -6.5, pass - 3min

REV. 8/4/2015

ch2m:

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-60, [redacted]

Sample ID: SER-SG-60-0915 Date: 9/23/15

Sampler Name(s) Malwofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.2 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1010
	Purge Vacuum (" Hg)	-2
	Purge Completion Time	1030
	Total Purge Time (Minutes)	20
	Total Purge Volume (Liters)	3.7
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.1/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	9.4/8.0/8.4
CO	0/0/0	LEL	4/4/4
Helium Leak Test: Pass/Fail? *		PASS	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37659
	Flow Controller ID	FC00318
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/m/min)	6 min
Start	Sample Start Date and Time	9/23/15 @ 1031
	Initial Canister Vacuum (" Hg)	DIGITAL -29.45
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	9/23/15 @ 1033
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	9/23/15 @ 1035
		ANALOG -9
Finish	Sample Completion Date and Time	9/23/15 @ 1037
	Final Canister Vacuum (" Hg)	DIGITAL -2.52
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 70° sunny ~~clear~~ calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

REV 6/4/2015

SG-61

ch2m:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SG-61 [redacted]

Sample ID: SER-SG-61-0915 Date: 9/23/15

Sampler Name(s) T. Oxley; J. Breslay

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-18; 5 min
	Leak check (hold vacuum) - Pass/Fail?	PASS
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1200
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	846
	Purge Vacuum (" Hg)	0 - 7
	Purge Completion Time	multiple purge times due to vacuum in probe
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	3.6L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10% during purge and sampling

See log book

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	1.5/0.6	H2S	~~4.8~~ 10.9/4.8
HE (% or ppmv)	4525 ppm/%	O2	15.9/18.5
CO	134/112	LEL	14/4
Helium Leak Test: Pass/Fail? *		methane interferance	

Canister Size/Lab	1 Liter / Eurofins			
Canister Sampling	Canister ID	~~35546~~	~~1L2749~~	8008
	Flow Controller ID	~~FC00530~~	~~FC00530~~	FC00532
	Pressure Gauge ID (optional)	NA	NA	
	Sampling Duration or Rate (hours/ml/min)	—	—	
Start	Sample Start Date and Time	9/23/15	@1130	
	Initial Canister Vacuum (" Hg)	DIGITAL ~~-27.38~~	~~-29.45~~	-27.5
		ANALOG		-23
	Sampling Vacuum Check 1 (" Hg)	9/23/15	@1132	
		ANALOG		-18.5
In Progress	Sampling Vacuum Check 2 (" Hg)	9/23/15	@1134	
		ANALOG		-14
Finish	Sample Completion Date and Time	9/23/15	~~@1136~~	1153
	Final Canister Vacuum (" Hg)	DIGITAL		-4.68
		ANALOG		-4.5

contaminated sample air

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Performed test w/ He Should due to methane @ leak check. N 10% He.

Weather conditions during sampling: sunny, 60's

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: Regulator leak check: -8" Hg. PASS 3 min

REV. 8/4/2015 * Sampling Train Leaked During Initial Summa can valve opening on the two cans. Ambient Air filled the cans, cannot use cans 35546 + 1L2749. Not enough Summa cans left to collect FD.

18 min purge

Sample not collected

Sheet 1 of 1

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-62 [redacted]

Sample ID: Date: 9/21/15

Sampler Name(s) Mauhofer, Bidga

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1 L
Probe Purge	Purge Rate (mL/min)	
	Purge Start Time	1538
	Purge Vacuum (" Hg)	~~10~~ -7
	Purge Completion Time	
	Total Purge Time (Minutes)	
	Total Purge Volume (Liters)	
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	Fail

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0 →	H2S	0/8/0
HE (% or ppmv)	3%/2%/3%/1%	O2	~19 →
CO	60/100/222/300	LEL	0/0/0/8
Helium Leak Test: Pass/Fail? *			

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36571
	Flow Controller ID	FC00975
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	
Start	Sample Start Date and Time	9/21/15 @
	Initial Canister Vacuum (" Hg)	DIGITAL -29.20 / ANALOG
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ / ANALOG
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ / ANALOG
Finish	Sample Completion Date and Time	9/21/15 @
	Final Canister Vacuum (" Hg)	DIGITAL / ANALOG

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 80° sunny to calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: He check failed, could be methane interance. Purge line to remove He to check for methane/LEL. Vacuum stopped recovering. Called Jen Simms → can not sample probe.

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SG-63 [redacted]

Sample ID: SER-SG-63-0915 + duplicate Date: 9/23/15

Sampler Name(s) Mahnfer, Brada

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	3.18 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	857
	Purge Vacuum (" Hg)	0
	Purge Completion Time	933
	Total Purge Time (Minutes)	6
	Total Purge Volume (Liters)	9.6 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.8/18.9/18.8
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37336 / 14527
	Flow Controller ID	FC00866 / FC00526
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	6 min dup
Start	Sample Start Date and Time	9/23/15 @936
	Initial Canister Vacuum (" Hg)	DIGITAL -29.45 / -29.46; ANALOG -30 / -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	9/23/15 @938; ANALOG -17.5 / -16.5
	Sampling Vacuum Check 2 (" Hg)	9/23/15 @940; ANALOG -9 / -8.5
Finish	Sample Completion Date and Time	9/23/15 @942
	Final Canister Vacuum (" Hg)	DIGITAL -3.06 / -3.55; ANALOG -3.5 / -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 65°

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-64 [redacted]

Sample ID: SER-SG-64-0915 Date: 9/23/15

Sampler Name(s): Mathofer, Oxley, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	~~18~~ 15, 2 min	
	Leak check (hold vacuum) - Pass/Fail?	pass	
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	1.0	1
Probe Purge	Purge Rate (mL/min)	200	
	Purge Start Time	1547	
	Purge Vacuum (" Hg)	0	
	Purge Completion Time	1607	
	Total Purge Time (Minutes)	20	
	Total Purge Volume (Liters)	3.0	3
Helium Leak Check	Average Helium Concentration in Enclosure During Purging.*	15%	
	Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)		
	Total VOCs (ppmv)	0.1/0.1/0.1	H2S: 0/0/0
	HE (% or ppmv)	0/0/0	O2: 15.1/14.8/14.9
	CO	0/0/0	LEL: 0/0/0
	Helium Leak Test: Pass/Fail? *	Pass	

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	IL1583
	Flow Controller ID	FC00673
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	12 min
Start	Sample Start Date and Time	9/23/15 @ 1609
	Initial Canister Vacuum (" Hg)	DIGITAL -29.46 ~~ANALOG~~ N/A
In Progress	Sampling Vacuum Check 1 (" Hg)	9/23/15 @ ~~1614~~ 1614 ~~ANALOG~~ digital 11.09
	Sampling Vacuum Check 2 (" Hg)	9/23/15 @ 1617 ~~ANALOG~~ digital 6.96
Finish	Sample Completion Date and Time	9/23/15 @ 1621
	Final Canister Vacuum (" Hg)	DIGITAL -4.15 ~~ANALOG~~ N/A

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 75° sunny calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments: analog flow controller gauge stuck, does not appear to be reading correctly. Instead take canister off to check w/ digital gauge periodically

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: SG-65 [redacted]

Sample ID: SER-SG-65-0915 **Date:** 9/21/15

Sampler Name(s) Manhofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.85 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1437
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1450
	Total Purge Time (Minutes)	13
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	15.4/15.2/14.9
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	36517
	Flow Controller ID	FC00796
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	9/21/15 @ 1454
	Initial Canister Vacuum (" Hg)	DIGITAL -29.16
		ANALOG -28.5
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ 1456
		ANALOG -16
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ 1458
		ANALOG -9.5
Finish	Sample Completion Date and Time	9/21/15 @ 1500
	Final Canister Vacuum (" Hg)	DIGITAL 4.34
		ANALOG -3.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 77°, sunny, calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SG-66 [redacted]

Sample ID: SER-SG-66-0915 Date: 9/21/15

Sampler Name(s) J. Bewley, T. Oxley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-20 in Hg for 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	320
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	16:22
	Purge Vacuum (" Hg)	0
	Purge Completion Time	16:27
	Total Purge Time (Minutes)	5
	Total Purge Volume (Liters)	1.0
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10-22%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	7.9	H2S	0
HE (% or ppmv)	0	O2	14.6
CO	0	LEL	0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	34625
	Flow Controller ID	FC00569
	Pressure Gauge ID (optional)	N/A
	Sampling Duration or Rate (hours/ml/min)	6min/
Start	Sample Start Date and Time	9/21/15 @ 1629
	Initial Canister Vacuum (" Hg)	DIGITAL -29.27
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ 1632
		ANALOG -14.5
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ 1633
		ANALOG -10
Finish	Sample Completion Date and Time	9/21/15 @ 1635
	Final Canister Vacuum (" Hg)	DIGITAL -4.7
		ANALOG -5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny, 70's

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: regulator leak check @ -21, pass - 2min

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SG-67

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-67 [redacted]

Sample ID: SER-SG-67-0915 Date: 9/22/~~24~~ 15

Sampler Name(s) T. Oxley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-20 in Hg for 2min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	~~780~~ 1080
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1316
	Purge Vacuum (" Hg)	10
	Purge Completion Time	1332
	Total Purge Time (Minutes)	16
	Total Purge Volume (Liters)	3.2
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10-38%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.3/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.7/19.5/18.5
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	30831
	Flow Controller ID	FC0039
	Pressure Gauge ID (optional)	–
	Sampling Duration or Rate (hours/ml/min)	6 min
Start	Sample Start Date and Time	9/22/15 @1333
	Initial Canister Vacuum (" Hg)	DIGITAL -29.45
		ANALOG -30
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @1335
		ANALOG -18
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @1337
		ANALOG -10
Finish	Sample Completion Date and Time	9/22/15 @1339
	Final Canister Vacuum (" Hg)	DIGITAL -4.26
		ANALOG -5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: Sunny 70s

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: regulator leak check @ -8, pass - 2min

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project #: 476243.ET.01

Probe Name and Address: SG-68 [redacted]

Sample ID: SER-SG-68-0915 Date: 9/22/15

Sampler Name(s) T. Oxley, J. Beasley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-26 in Hg for 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	4000
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	~~824~~ 825
	Purge Vacuum (" Hg)	0
	Purge Completion Time	925
	Total Purge Time (Minutes)	60
	Total Purge Volume (Liters)	12
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10-26%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.1/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	15.8/15.8/15.7
CO	0/0/0	LEL	5/5/4
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	~~8008~~ 33394
	Flow Controller ID	~~30570~~ 06749
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	6 min /
Start	Sample Start Date and Time	9/22/15 @ 926
	Initial Canister Vacuum (" Hg)	DIGITAL -29.36
		ANALOG -28
	Sampling Vacuum Check 1 (" Hg)	9/22/15 @928
		ANALOG -19
In Progress	Sampling Vacuum Check 2 (" Hg)	9/22/15 @930
		ANALOG -10
Finish	Sample Completion Date and Time	9/22/15 @ 932
	Final Canister Vacuum (" Hg)	DIGITAL -5.22
		ANALOG -4.5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny 60's

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: regulator leak check @ -22, pass - 2 min - canister only @ -27.4, used different set
" " " @ -11, pass - 2 min

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-69 [redacted]

Sample ID: SER-SG-69-0915 Date: 9/21/15

Sampler Name(s) Mahofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	2.35 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	945
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1005
	Total Purge Time (Minutes)	20
	Total Purge Volume (Liters)	2.35x3
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	15%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.2/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	16.9/14.8/13.6
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37291
	Flow Controller ID	FC00184
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	~~4.8~~ 7 min
Start	Sample Start Date and Time	9/21/15 @10.07
	Initial Canister Vacuum (" Hg)	DIGITAL -29.30
		ANALOG -29
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ 1009
		ANALOG -17
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ 1011
		ANALOG -11
Finish	Sample Completion Date and Time	9/21/15 @1014
	Final Canister Vacuum (" Hg)	DIGITAL -2.55
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 65°, clear, calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-71 [redacted]

Sample ID: SER-SG71-0915 + FD Date: 9/21/15

Sampler Name(s) Mahofer, Bagda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-15, 3 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.98 L
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1103
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1117
	Total Purge Time (Minutes)	14
	Total Purge Volume (Liters)	3 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	18%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	13.8/13.3/13.3
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	dup
Canister Sampling	Canister ID	37741 / 36457
	Flow Controller ID	0000000713/FC00285
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	7 min
Start	Sample Start Date and Time	9/21/15 @ ~~1103~~ 1120
	Initial Canister Vacuum (" Hg)	DIGITAL -29.2 / -29.20
		ANALOG -30 / -29
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ 1122
		ANALOG -19.5 / -18
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ 1124
		ANALOG -9 / -8.5
Finish	Sample Completion Date and Time	9/21/15 @ 1127
	Final Canister Vacuum (" Hg)	DIGITAL -2.52 / -2.40
		ANALOG -3.5 / -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 68°, clear

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site **Project #:** 476243.ET.01

Probe Name and Address: SG-72 [redacted]

Sample ID: SER-SG-72-0915 **Date:** 9/21/15

Sampler Name(s) Maihofer, Bigda

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-14, 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	0.85
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1339
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1349
	Total Purge Time (Minutes)	10
	Total Purge Volume (Liters)	2.8 L
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	12%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)

Total VOCs (ppmv)	0/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	17.1/17.0/17.0
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter	
Canister Sampling	Canister ID	37378
	Flow Controller ID	FC00723
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	5 min
Start	Sample Start Date and Time	9/21/15 @ 1354
	Initial Canister Vacuum (" Hg)	DIGITAL -28.55
		ANALOG ~~-30~~ -29
In Progress	Sampling Vacuum Check 1 (" Hg)	9/21/15 @ 1557
		ANALOG -8
	Sampling Vacuum Check 2 (" Hg)	9/21/15 @ 1558
		ANALOG -6
Finish	Sample Completion Date and Time	9/21/15 @ ~~-3~~ 1559
	Final Canister Vacuum (" Hg)	DIGITAL ~~-3~~ -4.22
		ANALOG -3

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: 74°, sunny, calm

Description of Probe Conditon: good

Description of Probe Location: [redacted]

Observations and Comments:

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Vapor Intrusion Best Practices
Exterior Soil Gas Probe Installation and Sampling Log - Canister Method

Project Info

Project Name: SE Rockford Groundwater Contamination Superfund Site Project # : 476243.ET.01

Probe Name and Address: SG-73 [redacted]

Sample ID: SER-SG-73-0915 Date: 9/22/15

Sampler Name(s) J. Oxley, J. Beasley

Soil Gas Probe Installation, Purging, Leak Checking, & Sampling Log

Manifold Leak Check	Vacuum and Duration	-20 in Hg for 2 min
	Leak check (hold vacuum) - Pass/Fail?	pass
Probe Installation	Dead volume - including screen, sand pack, and tubing (mL)	780
Probe Purge	Purge Rate (mL/min)	200
	Purge Start Time	1403
	Purge Vacuum (" Hg)	0
	Purge Completion Time	1415
	Total Purge Time (Minutes)	12
	Total Purge Volume (Liters)	2.4
Helium Leak Check	Average Helium Concentration in Enclosure During Purging. *	10-21%

Tedlar Bag Screening (1 Vol/ 2 Vol/ 3 Vol)			
Total VOCs (ppmv)	0.1/0/0	H2S	0/0/0
HE (% or ppmv)	0/0/0	O2	18.1/18.1/18.1
CO	0/0/0	LEL	0/0/0
Helium Leak Test: Pass/Fail? *	pass		

Canister Size/Lab	1 Liter / eurofins	
Canister Sampling	Canister ID	1L1686
	Flow Controller ID	FC00293
	Pressure Gauge ID (optional)	—
	Sampling Duration or Rate (hours/ml/min)	5 min
Start	Sample Start Date and Time	9/22/15 @1417
	Initial Canister Vacuum (" Hg)	DIGITAL -29.42
		ANALOG -29.5
In Progress	Sampling Vacuum Check 1 (" Hg)	9/22/15 @1419
		ANALOG -19
	Sampling Vacuum Check 2 (" Hg)	9/22/15 @1420
		ANALOG -12
Finish	Sample Completion Date and Time	9/22/15 @1422
	Final Canister Vacuum (" Hg)	DIGITAL -5.22
		ANALOG -5

* The average helium concentration in the enclosure during purging should be 10% or greater. The soil gas probe passes the helium leak check if the detected helium concentration in the tedlar bag is less than 1% of the average concentration in the enclosure. Do NOT collect a soil gas sample if the probe fails the helium leak test.

Weather conditions during sampling: sunny 70's

Description of Probe Conditon: new

Description of Probe Location: [redacted]

Observations and Comments: regulator leak check @ -7 in Hg

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Attachment 5
Waste Characterization Results and Disposal Documentation

Attachment 5 Table 1 Aqueous Investigative Derived Waste Sampling Results - September 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

Analyte	Unit	SER-IDW-02-0915 9/22/2015
Metals		
ARSENIC	mg/l	0.0154 J
BARIUM	mg/l	0.611
CADMIUM	mg/l	0 00067 J
CHROMIUM, TOTAL	mg/l	0 221
LEAD	mg/l	0.0181 J
MERCURY	mg/l	0 002 U
SELENIUM	mg/l	0.0096 J
SILVER	mg/l	0.01 U
Pesticides		
ALPHA-CHLORDANE	mg/l	0 0000081 U
BETA-CHLORDANE	mg/l	0.000016 U
CHLORDANE	mg/l	0 00041 U
ENDRIN	mg/l	0.000016 U
GAMMA BHC (LINDANE)	mg/l	0 0000081 U
HEPTACHLOR	mg/l	0 0000081 U
HEPTACHLOR EPOXIDE	mg/l	0.000004 J
METHOXYCHLOR	mg/l	0.000081 U
TOXAPHENE	mg/l	0 00081 U
Polychlorinated Biphenyls (PCBs)		
PCB-1016 (AROCHLOR 1016)	mg/l	0.0004 U
PCB-1221 (AROCHLOR 1221)	mg/l	0.0004 U
PCB-1232 (AROCHLOR 1232)	mg/l	0.0004 U
PCB-1242 (AROCHLOR 1242)	mg/l	0.0004 U
PCB-1248 (AROCHLOR 1248)	mg/l	0.0004 U
PCB-1254 (AROCHLOR 1254)	mg/l	0.0004 U
PCB-1260 (AROCHLOR 1260)	mg/l	0.0004 U
PCB-1268 (AROCHLOR 1268)	mg/l	0.0004 U
Semivolatile Organic Compounds		
2,4,5-TRICHLOROPHENOL	mg/l	0 001 U
2,4,6-TRICHLOROPHENOL	mg/l	0 001 U
2,4-DINITROTOLUENE	mg/l	0 005 U
2-METHYLPHENOL (O-CRESOL)	mg/l	0 001 U
4-METHYLPHENOL (P-CRESOL)	mg/l	0 001 U
HEXACHLOROBENZENE	mg/l	0.0005 U
HEXACHLOROBUTADIENE	mg/l	0 001 U
HEXACHLOROETHANE	mg/l	0 005 U
NITROBENZENE	mg/l	0 001 U
PENTACHLOROPHENOL	mg/l	0 005 U
PYRIDINE	mg/l	0 005 U
Volatile Organic Compounds		
1,1-DICHLOROETHENE	mg/l	0.05 U
1,2-DICHLOROETHANE	mg/l	0.05 U
1,4-DICHLOROBENZENE	mg/l	0.25 U
BENZENE	mg/l	0.05 U
CARBON TETRACHLORIDE	mg/l	0.05 U
CHLOROBENZENE	mg/l	0.05 U
CHLOROFORM	mg/l	0.05 U
METHYL ETHYL KETONE (2-BUTANONE)	mg/l	0 5 U
TETRACHLOROETHYLENE(PCE)	mg/l	0.05 U
TRICHLOROETHYLENE (TCE)	mg/l	0.05 U
VINYL CHLORIDE	mg/l	0.05 U
Wet Chemistry		
CORROSIVITY	none	0 U
FLASH POINT	deg f	0 U
PH	pH units	10.1 J
TEMPERATURE	deg c	20

mg/l = milligrams per liter

deg f = degrees Fahrenheit

deg c = degrees Celsius

> = greater than

U = Undetected: The analyte was analyzed for, but not detected above the reported sample

J = Estimated. The analyte was positively

Attachment 5, Table 2 Soil Investigative Derived Waste Sampling Results - September 2015

Southeast Rockford Groundwater Contamination Site Rockford, IL

Analyte	Unit	SER-IDW-01-0915 9/22/2015
Polychlorinated Biphenyls (PCBs)		
PCB-1016 (AROCHLOR 1016)	mg/kg	0.019 U
PCB-1221 (AROCHLOR 1221)	mg/kg	0.019 U
PCB-1232 (AROCHLOR 1232)	mg/kg	0.019 U
PCB-1242 (AROCHLOR 1242)	mg/kg	0.019 U
PCB-1248 (AROCHLOR 1248)	mg/kg	0.019 U
PCB-1254 (AROCHLOR 1254)	mg/kg	0.019 U
PCB-1260 (AROCHLOR 1260)	mg/kg	0.019 U
PCB-1268 (AROCHLOR 1268)	mg/kg	0.019 U
TCLP Metals		
ARSENIC	mg/l	0.04 U
BARIUM	mg/l	0.651
CADMIUM	mg/l	0.0013 J
CHROMIUM, TOTAL	mg/l	0.0027 J
LEAD	mg/l	0.03 U
MERCURY	mg/l	0.0002 U
SELENIUM	mg/l	0.04 U
SILVER	mg/l	0.01 U
TCLP Pesticides		
ALPHA-CHLORDANE	mg/l	0.0000081 U
BETA-CHLORDANE	mg/l	0.000016 U
CHLORDANE	mg/l	0.0004 U
ENDRIN	mg/l	0.000016 U
GAMMA BHC (LINDANE)	mg/l	0.0000081 U
HEPTACHLOR	mg/l	0.0000056 J
HEPTACHLOR EPOXIDE	mg/l	0.0000081 U
METHOXYCHLOR	mg/l	0.000081 U
TOXAPHENE	mg/l	0.00081 U
TCLP Semivolatile Organic Compounds		
2,4,5-TRICHLOROPHENOL	mg/l	0.005 U
2,4,6-TRICHLOROPHENOL	mg/l	0.005 U
2,4-DINITROTOLUENE	mg/l	0.025 U
2-METHYLPHENOL (O-CRESOL)	mg/l	0.005 U
4-METHYLPHENOL (P-CRESOL)	mg/l	0.005 U
HEXACHLOROBENZENE	mg/l	0.003 U
HEXACHLOROBUTADIENE	mg/l	0.005 U
HEXACHLOROETHANE	mg/l	0.025 U
NITROBENZENE	mg/l	0.005 U
PENTACHLOROPHENOL	mg/l	0.025 U
PYRIDINE	mg/l	0.025 U
TCLP Volatile Organic Compounds		
1,1-DICHLOROETHENE	mg/l	0.02 U
1,2-DICHLOROETHANE	mg/l	0.02 U
1,4-DICHLOROBENZENE	mg/l	0.1 U
BENZENE	mg/l	0.02 U
CARBON TETRACHLORIDE	mg/l	0.02 U
CHLOROBENZENE	mg/l	0.02 U
CHLOROFORM	mg/l	0.02 U
METHYL ETHYL KETONE (2-BUTANONE)	mg/l	0.2 U
TETRACHLOROETHYLENE(PCE)	mg/l	0.02 U
TRICHLOROETHYLENE (TCE)	mg/l	0.02 U
VINYL CHLORIDE	mg/l	0.02 U
Wet Chemistry		
CORROSIVITY	none	0 U
FLASH POINT	deg f	0 U
MOISTURE, PERCENT	%	9.1
PH	pH units	9.02

mg/l = milligrams per liter

mg/kg = milligrams per kilogram

deg f = degrees Fahrenheit

% = percent

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: I L D 9 8 1 0 0 0 4 1 7
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Waste Tracking Number: 1 1 2 0 1 5 0

5. Generator's Name and Mailing Address
USEPA Region V
Attn: Timothy Drexler
2613 S 11th Street
Rockford IL 61109
Generator's Phone: 414 353 4367

Generator's Site Address (if different than mailing address)
City of Rockford Yard
500 S Independence Avenue
Rockford IL 61109

6. Transporter 1 Company Name: Badger Disposal of WI Inc
U.S. EPA ID Number: W I D 9 8 8 5 8 0 0 4 6

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Badger Disposal of WI, Inc.
5611 West Hemlock Street
Milwaukee WI 53223
Facility's Phone: 414 760 9175
U.S. EPA ID Number: W I D 9 8 8 5 8 0 0 5 8

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-regulated material	00	DM	110	G	NONE
	2. Non-regulated material	00	DM	05	G	NONE
	3. Non-regulated material	01	DM	05	G	NONE
	4.					

13. Special Handling Instructions and Additional Information
1)WS042491-LF IDW Soil 2)(L) WS042491 IDW Water 3)(S) WS042492-LF PPE Emergency Contact CHEMTREC #CCN70804

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

6-NHM-C-C-11

6-GENERATOR'S INITIAL COPY

Attachment 6
Data Quality Evaluation (2015)

TECHNICAL MEMORANDUM

Analytical Data Summary of 2015 Soil Gas Investigation Sampling at the Southeast Rockford Groundwater Contamination Superfund Site, Winnebago County, Illinois

PREPARED FOR:	U.S. Environmental Protection Agency
PREPARED BY:	CH2M HILL, Inc.
DATE:	February 17, 2016

This memorandum presents the data quality evaluation (DQE) of the soil gas samples collected during the field investigation activities conducted between August 10 to 13, September 21 to 23, and December 7 to 10, 2015, at the Southeast Rockford Groundwater Contamination Superfund Site, Winnebago County, Illinois.

The objective of this investigation is detailed in the *Uniform Federal Policy Quality Assurance Project Plan (QAPP) Addendum I* (CH2M HILL, Inc. [CH2M] 2015). Guidance for the data quality evaluation assessment followed the *Quality Assurance Project Plan Southeast Rockford Groundwater Contamination Superfund Site, Winnebago County, Illinois* (CH2M 2014); *the QAPP Addendum I;* EPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 2014) and individual method requirements.

The 2015 sampling activities were performed by CH2M, and the samples were analyzed by Eurofins Air Toxics in Folsom, California. The samples were reported in eight sample delivery groups (SDGs) listed as 1508233, 1508216, 1508233, 1509418A, 1512189, 1512205A, 1512246, and 1512247. The analytical results were evaluated using the criteria of precision, accuracy, representativeness, comparability, and completeness (PARCC), as described in the QAPP and QAPP Addendum I. This technical memorandum summarizes the data issues identified during the general data quality assessment.

Analytical Data

This DQE report provides the results and validation for 101 normal soil gas samples and 11 field duplicates (FDs) collected and analyzed for site-specific volatile organic compounds by Method TO-15. Samples were shipped by an overnight carrier to the laboratory for analysis.

One-hundred percent of the data were reviewed to assess their analytical accuracy, precision, and completeness. The assessment of the data included a review of the following:

- Completeness
- Chain-of-custody documentation
- Holding times and sample receipt conditions
- Frequency of quality control (QC) samples
- Initial calibration, continuing calibration precision, and accuracy

- Blank contamination and, if any, its impact on the analytical results
- Laboratory control sample (LCS) accuracy
- Surrogate spike accuracy
- Internal standard accuracy and frequency
- Instrument tuning accuracy and frequency
- Laboratory and FD precision

In addition, 10 percent of the data were validated to verify identification of the analytes by reviewing the raw instrument data and to check the calculations of the sample and QC concentrations.

The quality assurance (QA)/QC criteria implemented during validation were those listed in the site-specific QAPP addendum. Standard data qualifiers were added as a means of classifying the data as to their conformance to QA/QC requirements. The qualifiers are entered into the electronic database. Multiple qualifiers are routinely applied to specific sample method/matrix/analyte combinations, but there is only one final qualifier. A final qualifier is applied to the data and is the most conservative of the applied validation qualifiers. The data qualifiers are defined as follows:

[R] The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.

[U] Undetected. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

[J] Estimated. The analyte was positively identified; the concentration is an estimation due to discrepancies in meeting certain analyte-specific QC criteria or was reported between the detection limit and reporting limit.

[UJ] The analyte was not detected; however, the result is estimated because of discrepancies in meeting certain analyte-specific QC.

[UB] Undetected due to blank contamination. The analyte was detected in the sample and in an associated method, field, or trip blank. The quantity of the analyte is deemed undetected because it falls below the 95 percent confidence interval (five times the blank concentration). The analyte concentration is potentially the result of contamination.

In instances where multiple analyses were performed, the analytical run with the lowest reporting limits was used if the QC criteria were met for that analysis. If a sample was analyzed more than one time due to a target parameter concentration above the calibration range, then the results for all parameters were reported from the lowest dilution, except for the parameters exceeding the calibration range, which were reported from the diluted analysis. In instances where multiple analyses were performed with QC outside criteria, the analytical run with the least number of exceptions or best possible QC was chosen for reporting purposes.

The analytical results were within project control limits, except where noted in the following section. Qualified data are listed in Table 1.

Soil Gas Sample Findings

The overall summaries of the data validation are contained in the following subsections.

Holding Time and Preservation

Acceptance criteria were met.

Calibration

Initial and continuing calibration analyses were performed as required by the methods, and acceptance criteria were met.

Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination, with the following exceptions:

- Benzene, toluene, trichloroethene, and/or 1,1,1-trichloroethane were detected at concentrations less than the reporting limit (RL) in several method blanks associated with Method TO-15. The data were qualified as not detected and flagged “UB” when the associated sample concentrations were less than five times the blank concentrations.

Laboratory Control Samples

LCS/laboratory control sample duplicates (LCSDs) were analyzed as required, and acceptance criteria were met.

Surrogate Standards

Surrogates were added to the sample, and acceptance criteria were met.

Internal Standards

Internal standards were added as required, and acceptance criteria were met.

Instrument Tunes

Instrument tunes were completed as required, and acceptance criteria were met.

Laboratory Duplicates

Laboratory duplicates were performed as required, and precision criteria were met.

Field Duplicates

FDs were collected and analyzed as required, and the relative percent differences (RPDs) were within established QC limits.

Level IV Validation

Level IV validation was performed on 10 percent of the samples by CH2M. No additional issues were noted during the Level IV review. The report can be found in Attachment A.

Overall Assessment

The goal of this assessment is to document that a sufficient number of representative samples were collected, and the resulting analytical data can be used to support the decision-making process.
The following summary highlights the PARCC findings for the sampling events:

- Precision of the data was verified through the review of the field and laboratory data quality indicators that include FD and LCS/LCSD RPDs. Precision was acceptable.
- Accuracy of the data was verified through the review of the calibration data, LCS/LCSD, surrogate, and internal standard recoveries, as well as the evaluation of the method blank data. Accuracy was generally acceptable with the exception of a few analytes which were qualified as not detected due to method blank contamination in several samples. Data users should consider the impact to results that are qualified as estimated, because it may indicate a bias that could affect the decision making process.
- Representativeness of the data was verified through the sample's collection, storage, and preservation procedures, and verification of holding-time compliance. The laboratory did not note discrepancies with sample collection, storage, or preservation procedures. The data were reported from analyses within the EPA recommended holding time.
- Comparability of the data was verified through the use of standard EPA analytical procedures and standard units for reporting. Results obtained are comparable to industry standards in that the collection and analytical techniques followed approved, documented procedures.
- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared to planned measurements. Valid data are defined as the data that are not rejected for project use. The data were considered valid, and the completeness goal of 90 percent was met for the analyte/method combinations.

References

CH2M HILL CH2M). 2015. *Quality Assurance Project Plan Addendum I, Southeast Rockford Groundwater Contamination Superfund Site, Winnebago County, Illinois.* July.

CH2M HILL (CH2M). 2014. *Quality Assurance Project Plan, Southeast Rockford Groundwater Contamination Superfund Site, Winnebago County, Illinois.* January.

U.S. Environmental Protection Agency (EPA). 2014. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. August.

Table 1. Data Qualification Summary

Location Identification	Scribe Sample Identification	Analytical Method	Analyte	Result	Unit	Validation Flag	Validation Reason
SER-SG-01-0815	15CR01-01b	TO15	1,1,1-TRICHLOROETHANE	1.6	µg/m^3	UB	LB<RL
SER-SG-01-0815	15CR01-01b	TO15	TRICHLOROETHYLENE (TCE)	4.2	µg/m^3	UB	LB<RL
SER-SG-11-0815	15CR01-04b	TO15	1,1,1-TRICHLOROETHANE	0.82	µg/m^3	UB	LB<RL
SER-SG-11-0815	15CR01-04b	TO15	TRICHLOROETHYLENE (TCE)	1.5	µg/m^3	UB	LB<RL
SER-SG-05-0815	15CR01-05b	TO15	1,1,1-TRICHLOROETHANE	2.8	µg/m^3	UB	LB<RL
SER-SG-12-0815	15CR01-08b	TO15	1,1,1-TRICHLOROETHANE	2.5	µg/m^3	UB	LB<RL
SER-SG-14-0815	15CR01-13b	TO15	1,1,1-TRICHLOROETHANE	2.4	µg/m^3	UB	LB<RL
SER-SG-15-0815	15CR01-14b	TO15	TRICHLOROETHYLENE (TCE)	2.7	µg/m^3	UB	LB<RL
SER-SG-18-0815	15CR01-17b	TO15	1,1,1-TRICHLOROETHANE	2.2	µg/m^3	UB	LB<RL

Table 1. Data Qualification Summary

Location Identification	Scribe Sample Identification	Analytical Method	Analyte	Result	Unit	Validation Flag	Validation Reason
SER-SG-18-0815	15CR01-17b	TO15	TRICHLOROETHYLENE (TCE)	2.5	µg/m^3	UB	LB<RL
SER-SG-18-0815-FD	15CR01-18b	TO15	1,1,1-TRICHLOROETHANE	1	µg/m^3	UB	LB<RL
SER-SG-18-0815-FD	15CR01-18b	TO15	TRICHLOROETHYLENE (TCE)	1.3	µg/m^3	UB	LB<RL
SER-SG-19-0815	15CR01-19b	TO15	1,1,1-TRICHLOROETHANE	3.7	µg/m^3	UB	LB<RL
SER-SG-19-0815	15CR01-19b	TO15	TRICHLOROETHYLENE (TCE)	2.2	µg/m^3	UB	LB<RL
SER-SG-20-0815	15CR01-20b	TO15	1,1,1-TRICHLOROETHANE	4.2	µg/m^3	UB	LB<RL
SER-SG-21-0815	15CR01-21b	TO15	1,1,1-TRICHLOROETHANE	0.89	µg/m^3	UB	LB<RL
SER-SG-27-0815	15CR01-25b	TO15	1,1,1-TRICHLOROETHANE	1.7	µg/m^3	UB	LB<RL
SER-SG-27-0815	15CR01-25b	TO15	TRICHLOROETHYLENE (TCE)	3.9	µg/m^3	UB	LB<RL
SER-SG-31-0815	15CR01-26b	TO15	TRICHLOROETHYLENE (TCE)	8.8	µg/m^3	UB	LB<RL
SER-SG-31-0815-FD	15CR01-27b	TO15	TRICHLOROETHYLENE (TCE)	6.1	µg/m^3	UB	LB<RL
SER-SG-36-0815	15CR01-29b	TO15	TRICHLOROETHYLENE (TCE)	2	µg/m^3	UB	LB<RL
SER-SG-42-0815	15CR01-32b	TO15	1,1,1-TRICHLOROETHANE	2.1	µg/m^3	UB	LB<RL
SER-SG-42-0815	15CR01-32b	TO15	TRICHLOROETHYLENE (TCE)	3.1	µg/m^3	UB	LB<RL
SER-SG-44-0815	15CR01-33b	TO15	TRICHLOROETHYLENE (TCE)	5.7	µg/m^3	UB	LB<RL
SER-SG-46-0815	15CR01-34b	TO15	TRICHLOROETHYLENE (TCE)	3.5	µg/m^3	UB	LB<RL
SER-SG-47-0815	15CR01-36b	TO15	TRICHLOROETHYLENE (TCE)	3	µg/m^3	UB	LB<RL
SER-SG-48-0815	15CR01-37b	TO15	TRICHLOROETHYLENE (TCE)	1.1	µg/m^3	UB	LB<RL
SER-SG-50-0815	15CR01-38b	TO15	TRICHLOROETHYLENE (TCE)	1.9	µg/m^3	UB	LB<RL
SER-SG-51-0915	15CR01-39b	TO15	BENZENE	1	µg/m^3	UB	LB<RL
SER-SG-57-0915	15CR01-45	TO15	BENZENE	0.57	µg/m^3	UB	LB<RL
SER-SG-60-0915	15CR01-48	TO15	BENZENE	0.43	µg/m^3	UB	LB<RL
SER-SG-63-0915	15CR01-50	TO15	BENZENE	2.4	µg/m^3	UB	LB<RL
SER-SG-63-0915-FD	15CR01-51	TO15	BENZENE	2	µg/m^3	UB	LB<RL
SER-SG-64-0915	15CR01-52	TO15	BENZENE	1.2	µg/m^3	UB	LB<RL
SER-SG-65-0915	15CR01-53	TO15	BENZENE	2.6	µg/m^3	UB	LB<RL
SER-SG-68-0915	15CR01-56	TO15	BENZENE	1.8	µg/m^3	UB	LB<RL
SER-SG-69-0915	15CR01-57	TO15	BENZENE	2.7	µg/m^3	UB	LB<RL
SER-SG-72-0915	15CR01-60	TO15	BENZENE	1.3	µg/m^3	UB	LB<RL
SER-SG-02-1215	16CR02-02	TO15	1,1,1-TRICHLOROETHANE	1.4	µg/m^3	UB	LB<RL
SER-SG-03-1215	16CR02-03	TO15	1,1,1-TRICHLOROETHANE	1.4	µg/m^3	UB	LB<RL
SER-SG-64-1215	16CR02-04	TO15	BENZENE	0.41	µg/m^3	UB	LB<RL

Table 1. Data Qualification Summary

Location Identification	Scribe Sample Identification	Analytical Method	Analyte	Result	Unit	Validation Flag	Validation Reason
SER-SG-11-1215	16CR02-11	TO15	1,1,1-TRICHLOROETHANE	1.6	µg/m^3	UB	LB<RL
SER-SG-11-1215	16CR02-11	TO15	TOLUENE	3.4	µg/m^3	UB	LB<RL
SER-SG-12-1215	16CR02-12	TO15	1,1,1-TRICHLOROETHANE	1.9	µg/m^3	UB	LB<RL
SER-SG-12-1215-FD	16CR02-13	TO15	1,1,1-TRICHLOROETHANE	1.9	µg/m^3	UB	LB<RL
SER-SG-14-1215	16CR02-15	TO15	1,1,1-TRICHLOROETHANE	2.5	µg/m^3	UB	LB<RL
SER-SG-16-1215	16CR02-17	TO15	BENZENE	1.9	µg/m^3	UB	LB<RL
SER-SG-21-1215	16CR02-22	TO15	BENZENE	0.38	µg/m^3	UB	LB<RL
SER-SG-34-1215	16CR02-29	TO15	BENZENE	0.45	µg/m^3	UB	LB<RL
SER-SG-53-1215-FD	16CR02-43	TO15	BENZENE	0.56	µg/m^3	UB	LB<RL
SER-SG-54-1215	16CR02-44	TO15	BENZENE	0.49	µg/m^3	UB	LB<RL
SER-SG-57-1215	16CR02-47	TO15	1,1,1-TRICHLOROETHANE	3	µg/m^3	UB	LB<RL
SER-SG-58-1215	16CR02-48	TO15	BENZENE	0.56	µg/m^3	UB	LB<RL
SER-SG-59-1215	16CR02-49	TO15	BENZENE	0.5	µg/m^3	UB	LB<RL
SER-SG-61-1215	16CR02-51	TO15	BENZENE	1.1	µg/m^3	UB	LB<RL
SER-SG-31-1215-FD	16CR02-53	TO15	BENZENE	0.36	µg/m^3	UB	LB<RL

Validation Reasons:

LB<RL	The analyte was detected in the method blank at a concentration less than the reporting limit.

Attachment A

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1512189**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of}_X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument:		**Date:**	**Time**	
msd3.i		11/19/2015/2014		
Tetrachloroethene	referenced to:	Chlorobenzene - d5		
			0.4430	**RRF 0.5**
			0.5078	**RRF 2.0**
63276		25	0.5284	**RRF 5.0**
598752		5		
	Calc RRF	**0.5284**		
			0.4174	**RRF 20**
			0.5306	**RRF 50**
			0.5147	**RRF 100**
			0.5135	**RRF 200**
Standard Deviation =	0.0447013			
Average RRF =	0.494	**Laboratory AVG RRF =**	0.494	
		OK?	**Yes**	
% RSD =	9.056	**Laboratory %RSD =**	9.0561	
		OK?	**Yes**	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1512189**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

CCAL Filename:		**Date/Time:**
3111504.d		12/15/2015 1149
Tetrachloroethene	referenced to:	Chlorobenzene - d5

634917		25	**CCAL RRF=**	0.604
525861		50		

Laboratory ICAL RRF = 0.494 **Laboratory CCAL RRF =** 0.604

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF} - \text{CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D = -22.3

Laboratory %D = -22.3
OK? **Yes**

Comment:

Sample Compound Concentrations - VOC

SDG Number: **1512189**

Formula for Calculation of Concentrations **Air**

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ppbv)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

$$\frac{(\text{Concentration in ppbv})\,(\text{molecular weight})}{\text{Ideal Gas Law Constant}} = \text{Concentration in ug/m3}$$

where:
Ideal Gas Law Constant = 24.45

Sample ID: **Air**
1508216 - 01A

Compound	Terachloroethene
On-Column Conc =	1.45272
$Area_x$ =	14847
$Area_{IS}$ =	517615
$Conc_{IS}$	25
RRF_X =	0.49362
Gas Law Constant =	24.45
MW =	165.83
DF =	2.12

Compound(s)	Lab Conc in ug/m3	Calc Concentration in ug/m3	Lab Conc in ppbv	Yes
Terachloroethene	21	21	3.08	3.08
Concentrations agree within 2% ?		**Yes**		**Yes**

Comment:

NR: Not reported

Sample Compound Concentrations - VOC #2

SDG Number: **1512189**

SDG if Different	**1512205A**	**1512205A**	**1512246**	**1512246**	**1512247**
Sample ID	**1512202A-01A**	**1512202A-06A**	**1512246-04A**	**1512246-09A**	**1512247-05A**
Date Analyzed	12/20/2015 1437	12/20/2015 1649	12/21/15 2243	12/22/15 1256	12/21/15 1627
Matrix	Air	Air	Air	Air	Air
Compound	1,1,1-Trichloroethane	Trichloroethene	Trichloroethene	1,1,1-Trichloroethane	Tetrachloroethene
$Amount_X$ (ppbv) =	14.085	0.65729	1.61582	1.8464	2.44892
$Area_X$ =	80644	5320	13283	26270	30301
$Area_{IS}$ =	164351	701518	333059	109092	703420
$Conc_{IS}$ =	25	25	25	25	25
RRF_X =	1.82019	0.28844	0.61705	3.26049	0.43975
Initial volume (mL)	NA	NA	NA	NA	NA
Final volume (mL)	NA	NA	NA	NA	NA
DF =	2.09	2.08	2.22	2.2	2.36
MW	133.42	131.39	131.39	133.42	165.85
Gas law constant	24.45	24.45	24.45	24.45	24.45
Calculated Concentration (ppbv)	14.085	1.367	3.587	4.062	5.779
Calculated Concentration (ug/m3)	77	7.3	19	22	39
Reported Concentration (ppbv)	14.085	1.367	3.587	4.062	5.779
Reported Concentration (ug/m3)	77	7.3	19	22	39
OK?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Comment: Differences due to rounding

Surrogate Recoveries - VOC

SDG Number: **1512205A**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
1512205A-10A

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	1,2-Dichloroethane-d4	24.3	25	97	97	**Yes**
2	Bromofluorobenzene	25.28	25	101.1	101.1	**Yes**
3	Toluene-d8	25.66	25	102.6	102.6	**Yes**

Comment:

NR: Not reported

LCS/LCSD Recoveries - VOC

SDG Number: **1512246**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: 1512246 - 20A

LCS Sample ID: 1512246 - 20AA

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	trans-1,2-Dichloroethene	39.2	42.5	92	92	**Yes**
LCSD #1	trans-1,2-Dichloroethene	40.9	42.5	96	96	**Yes**
LCS #2	1,1,2-Trichloroethane	45.7	50	91	91	**Yes**
LCSD #2	1,1,2-Trichloroethane	44.2	50	88	88	**Yes**
LCS #3	Tetrachloroethene	49.6	50	99	99	**Yes**
LCSD #3	Tetrachloroethene	48.1	50	96	96	**Yes**

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{|\text{LCSR} - \text{LCSDR}|}{(1/2)\,(\text{LCSR} + \text{LCSDR})} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	trans-1,2-Dichloroethene	4.2	4.2	**Yes**
2	1,1,2-Trichloroethane	3.3	3.4	**Yes**
3	Tetrachloroethene	3.0	3.1	**Yes**

Comment: Differences due to rounding

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1508216**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of}_X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument: msda.i		**Date**: 6/16 - 7/9/2014	**Time**	
Tetrachloroethene	referenced to:	Chlorobenzene - d5		
			0.5530	**RRF 0.5**
			0.4834	**RRF 2.0**
38835		25	0.4864	**RRF 5.0**
399177		5		
	Calc RRF	**0.4864**		
			0.5081	**RRF 20**
			0.4781	**RRF 50**
			0.4682	**RRF 100**
			0.4635	**RRF 200**
Standard Deviation =	0.030703			
Average RRF =	0.492	**Laboratory AVG RRF =**	0.492	
		OK?	**Yes**	
% RSD =	6.246	**Laboratory %RSD =**	6.246	
		OK?	**Yes**	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1508216**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

CCAL Filename: A081805.d

Date/Time: 8/18/2015 1332

Tetrachloroethene	referenced to:	Chlorobenzene - d5		
284865		25	**CCAL RRF=**	0.483
294894		50		

Laboratory ICAL RRF = 0.492 **Laboratory CCAL RRF =** 0.483

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF - CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D = 1.7

Laboratory %D = -1.7
OK? **Yes**

Comment:

Sample Compound Concentrations - VOC

SDG Number: **1508216**

Formula for Calculation of Concentrations **Air**

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ppbv)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

$$\frac{(\text{Concentration in ppbv})\,(\text{molecular weight})}{\text{Ideal Gas Law Constant}} = \text{Concentration in ug/m3}$$

where:
Ideal Gas Law Constant = 24.45

Sample ID: **Air**
1508216 - 01A

Compound	Terachloroethene
On-Column Conc =	0.86313
$Area_x$ =	4975
$Area_{IS}$ =	293158
$Conc_{IS}$	25
RRF_X =	0.49154
Gas Law Constant =	24.45
MW =	165.85
DF =	2.21

Compound(s)	Lab Conc in ug/m3	Calc Concentration in ug/m3	Lab Conc in ppbv	Yes
Terachloroethene	13	13	1.91	1.91
Concentrations agree within 2% ?		**Yes**		**Yes**

Comment:

NR: Not reported

Sample Compound Concentrations - VOC #2

SDG Number: **1508216**

SDG if Different	**1508233**	**1508234**	**1509418A**	**1509418A**	**1509418A**
Sample ID	**1508233-03A**	**1508234-04A**	**1509418A-03A**	**1509418A-16A**	**1509418A-16A**
Date Analyzed	8/19/2015 1403	8/20/2015 2148	9/29/15 2215	9/30/2015 0759	9/30/2015 0759
Matrix	Air	Air	Air	Air	Air
Compound	Trichloroethene	1,1,1-Trichloroethane	1,1,1-Trichloroethane	Trichloroethene	Tetrachloroethene
$Amount_X$ (ppbv) =	2.2392	0.5345	8.73734	93.183	158.074
$Area_X$ =	8579	6304	110453	24760	43898
$Area_{IS}$ =	274156	85466	142001	171765	142057
$Conc_{IS}$ =	25	25	25	400	400
RRF_X =	0.34938	3.44994	2.2256	0.61878	0.78196
Initial volume (mL)	NA	NA	NA	NA	NA
Final volume (mL)	NA	NA	NA	NA	NA
DF =	2.38	2.34	2.33	8.06	8.06
MW	131.39	133.42	133.42	131.39	165.85
Gas law constant	24.45	24.45	24.45	24.45	24.45
Calculated Concentration (ppbv)	5.329	1.251	20.358	751.06	1274.1
Calculated Concentration (ug/m3)	29	6.8	111	4036	8642
Reported Concentration (ppbv)	5.329	1.251	20.358	751.06	1274.1
Reported Concentration (ug/m3)	29	6.800	110	4000	8600
OK?	**Yes**	**Yes**	**Yes**		

Comment: Differences due to rounding

Surrogate Recoveries - VOC

SDG Number: **1508234**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
1508234-02A

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	1,2-Dichloroethane-d4	25.8	25	103	103	**Yes**
2	Bromofluorobenzene	24.93	25	99.7	99.7	**Yes**
3	Toluene-d8	24.12	25	96.5	96.5	**Yes**

Comment:

NR: Not reported

LCS/LCSD Recoveries - VOC

SDG Number: **1508233**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: 1508233 - 13A

LCS Sample ID: 1508233 - 13AA

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	cis-1,2-Dichloroethene	49.4	50	98.84	99	**Yes**
LCSD #1	cis-1,2-Dichloroethene	47.4	50	94.81	95	**Yes**
LCS #2	1,1,2-Trichloroethane	46.5	50	92.95	93	**Yes**
LCSD #2	1,1,2-Trichloroethane	45.0	50	89.98	90	**Yes**
LCS #3	Vinyl Chloride	47.2	50	94.36	94	**Yes**
LCSD #3	Vinyl Chloride	48.0	50	95.94	96	**Yes**

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{|\text{LCSR} - \text{LCSDR}|}{(1/2)\,(\text{LCSR} + \text{LCSDR})} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	cis-1,2-Dichloroethene	4.2	4.1	**Yes**
2	1,1,2-Trichloroethane	3.3	3.3	**Yes**
3	Vinyl Chloride	1.7	2.1	**Yes**

Comment: Differences due to rounding

Attachment 7
Vapor Intrusion Screening Level Calculator (Version 3.4.6)

OSWER VAPOR INTRUSION ASSESSMENT

Vapor Intrusion Screening Level (VISL) Calculator Version 3.4.6, November 2015 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Residential	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-05	Enter target risk for carcinogens
Target Hazard Quotient for Non-Carcinogens	THQ	1	Enter target hazard quotient for non-carcinogens
Average Groundwater Temperature (^{o}C)	Tgw	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Co

	CAS	Chemical Name	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Soil Source?	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source?	Target Indoor Air Conc. @ TCR = 10E-06 or THQ = 1	Toxicity Basis	Target Sub-Slab and Exterior Soil Gas Conc. @ TCR = 10E-06 or THQ = 1	Inhalation Unit Risk	IUR Source*	Reference Concentration	RFC Source*	Mutagenic Indicator
			Cvp > Cia,target?	Chc > Cia,target?	MIN(Cia,c;Cia,nc)		Csg	IUR		RfC		i
			Yes/No	Yes/No	(ug/m^3)	C/NC	(ug/m^3)	(ug/m^3)$^{-1}$		(mg/m^3)		
x	71-43-2	Benzene	Yes	Yes	3.6E+00	C	1.2E+02	7.80E-06	I	3.00E-02	I	
x	75-34-3	Dichloroethane, 1,1-	Yes	Yes	1.8E+01	C	5.8E+02	1.60E-06	CA			
x	107-06-2	Dichloroethane, 1,2-	Yes	Yes	1.1E+00	C	3.6E+01	2.60E-05	I	7.00E-03	P	
x	75-35-4	Dichloroethylene, 1,1-	Yes	Yes	2.1E+02	NC	7.0E+03			2.00E-01	I	
x	156-59-2	Dichloroethylene, 1,2-cis-	No Inhal. Tox. Info	No Inhal. Tox. Info								
x	156-60-5	Dichloroethylene, 1,2-trans-	No Inhal. Tox. Info	No Inhal. Tox. Info								
x	100-41-4	Ethylbenzene	Yes	Yes	1.1E+01	C	3.7E+02	2.50E-06	CA	1.00E+00	I	
x	75-09-2	Methylene Chloride	Yes	Yes	6.3E+02	NC	2.1E+04	1.00E-08	I	6.00E-01	I	Mut
x	127-18-4	Tetrachloroethylene	Yes	Yes	4.2E+01	NC	1.4E+03	2.60E-07	I	4.00E-02	I	
x	108-88-3	Toluene	Yes	Yes	5.2E+03	NC	1.7E+05			5.00E+00	I	
x	71-55-6	Trichloroethane, 1,1,1-	Yes	Yes	5.2E+03	NC	1.7E+05			5.00E+00	I	
x	79-00-5	Trichloroethane, 1,1,2-	Yes	Yes	2.1E-01	NC	7.0E+00	1.60E-05	I	2.00E-04	X	
x	79-01-6	Trichloroethylene	Yes	Yes	2.1E+00	NC	7.0E+01	see note	I	2.00E-03	I	TCE
x	75-01-4	Vinyl Chloride	Yes	Yes	1.7E+00	C	5.6E+01	4.40E-06	I	1.00E-01	I	VC
x	1330-20-7	Xylenes	Yes	Yes	1.0E+02	NC	3.5E+03			1.00E-01	I	

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	**Units**	**Residential Symbol**	**Residential Value**	**Selected (based**
Averaging time for carcinogens	(yrs)	ATc_R	70	
Averaging time for non-carcinogens	(yrs)	ATnc_R	26	
Exposure duration	(yrs)	ED_R	26	
Exposure frequency	(days/yr)	EF_R	350	
Exposure time	(hr/day)	ET_R	24	

(2) **Generic Attenuation Factors:**

Source Medium of Vapors		**Residential Symbol**	**Residential Value**	**Selected (based**
Groundwater	(-)	AFgw_R	0.001	
Sub-Slab and Exterior Soil Gas	(-)	AFss_R	0.03	

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)

Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)

Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene

	Residential	Selected (based
Symbol	Value	
mIURTCE_R	1.00E-06	
IURTCE_R	3.10E-06	

Mutagenic Chemicals

The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration (years)	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1
Mutagenic-mode-of-action (MMOA) adjustment factor		72

See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:

NVT = Not sufficiently volatile and/or toxic to pose inhalation risk in selected exposure scenario for the indicated medium
C = Carcinogenic
NC = Non-carcinogenic
I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at:
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at:
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at:
S = See RSL User Guide, Section 5
X = PPRTV Appendix
E = The Engineering ToolBox. Available online at http://www.engineeringtoolbox.com/explosive-concentration-limits-d_423.html
N = Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH). Pocket Guide to Chemical Hazards. Available online at:
M = Chemical-specific MSDS
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
**Lower explosive limit is the minimum concentration of the compound in air (% by volume) that is needed for the gas to ignite and explode.

Attachment 8
Soil Gas Analytical Results
(2014 and 2015)

Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

			SG-01				SG-02					SG-03				SG-04	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-001-01 4/8/2014**	**SG-001-02 10/20/2014**	**SG-01-0815 8/11/2015**	**SG-01-1215 12/9/2015**	**SG-002-01 3/5/2014**	**SG-002-01-FD 3/5/2014**	**SG-02-0815 8/13/2015**	**SG-002-02 10/23/2014**	**SG-02-1215 12/10/2015**	**SG-003-01 3/3/2014**	**SG-003-02 10/23/2014**	**SG-03-0815 8/13/2015**	**SG-03-1215 12/10/2015**	**SG-004-01 3/4/2014**	**SG-004-02 10/23/2014**
1,1,1-Trichloroethane	170,000	µg/m^3	0.47 J	2 U	1.6 UB	6.4 U	2 U	2 U	6.4 U	2 U	1.4 UB	2 U	1 9 J	1.3 J	1.4 UB	150	230
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6 U	6.4 U	2 U	2 U	6.4 U	2 U	6.6 U	2 U	2 U	6.1 U	6.2 U	2 U	2 U
1,1-Dichloroethane	580	µg/m^3	1.5 U	1.5 U	0.97 U	4.7 U	1.5 U	1.5 U	4.8 U	1 5 U	4.9 U	1.5 U	0.4 J	4.5 U	4.6 U	57	110
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	2.3 U	4.6 U	1.4 U	1.4 U	4.7 U	1.4 U	4.8 U	1.4 U	1.1 J	4.4 U	4.5 U	220	310
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.5 U	4.7 U	1.5 U	1.5 U	4.8 U	1 5 U	4.9 U	1.5 U	1 5 U	4.5 U	4.6 U	1.5 U	1.5 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	1.4 U	1.4 U	--	1.4 U	--	1.4 U	1.4 U	--	--	35	44
Benzene	120	µg/m^3	1.2 U	0.49 J	1 U	3.7 U	0.18 J	1.2 U	3.8 U	0.97 J	0.62 J	1.2 U	0.43 J	3.6 U	3.6 U	0.37 J	0.75 J
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	1.8 U	4.6 U	--	--	4.7 U	--	4.8 U	--	--	4.4 U	4.5 U	--	--
Ethylbenzene	370	µg/m^3	0.12 J	3.8	1.2 J	5.1 U	1.6 U	1.6 U	5.1 U	1.6 U	5.2 U	0.21 J	0.24 J	4.9 U	5 U	0.25 J	0.3 J
Methylene Chloride	21,000	µg/m^3	3.2 U	2.1 J	38 U	41 U	3.2 U	1.5 J	41 U	3 5	42 U	1.8 J	2.6 J	39 U	40 U	1.6 J	1.5 J
Tetrachloroethene	1,400	µg/m^3	5.6	15	13	10	2.2 J	2.1 J	4.3 J	3 9	3.9 J	0.46 J	1.1 J	2.2 J	7.8 U	83	110
Toluene	170,000	µg/m^3	0.29 J	3.1	4.2 U	4.4 U	0.42 J	0 54 J	4.4 U	0.48 J	4.5 U	0.76 J	0.41 J	4.2 U	4.3 U	0.63 J	0.77 J
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.4 U	4.6 U	--	--	4.7 U	--	4.8 U	--	--	4.4 U	4.5 U	--	--
Trichloroethene	70	µg/m^3	0.42 J	2 U	4.2 UB	6 3 U	0.42 J	2 U	6.3 U	2 U	1.3 J	0.44 J	1 J	6 U	6.2 U	250	330
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	2.8 U	3 U	0.93 U	0 93 U	3 U	0.93 U	3.1 U	0.93 U	0.93 U	2.9 U	2.9 U	0.93 U	0.93 U
Xylenes (Total)	3,500	µg/m^3	0.68 J	5	4.8 U	10 U	1.6 U	0 52 J	5.1 U	1.6 U	10 U	0.74 J	1.6 U	4.9 U	9.9 U	0.74 J	1.6 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-05				SG-06				SG-07				SG-08	
			SG-005-01 3/3/2014	SG-005-02 10/22/2014	SG-05-0815 8/12/2015	SG-05-1215 12/9/2015	SG-006-01 3/4/2014	SG-006-02 10/22/2014	SG-06-0815 8/12/2015	SG-06-1215 12/9/2015	SG-007-01 3/4/2014	SG-007-02 10/22/2014	SG-07-0815 8/13/2015	SG-07-1215 12/9/2015	SG-008-01 3/5/2014	SG-008-02 10/22/2014
1,1,1-Trichloroethane	170,000	µg/m^3	2 U	1.5 J	2.8 UB	6 U	2 U	2 U	6.7 U	6.4 U	1 9 J	0.84 J	1.1 U	6 U	21	5.6
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.4 U	6 U	2 U	2 U	6.7 U	6.4 U	2 U	2 U	6.5 U	6 U	2 U	2 U
1,1-Dichloroethane	580	µg/m^3	1.5 U	1.5 U	4.7 U	4.4 U	1 5 U	1.5 U	5 U	4.8 U	1 5 U	1.5 U	4.8 U	4.4 U	1.9	3.3
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.6 U	4.4 U	1.4 U	1.4 U	4.9 U	4.6 U	1.4 U	1.4 U	4.7 U	4.4 U	1.7	1.4 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.7 U	4.4 U	1 5 U	1.5 U	5 U	4.8 U	1 5 U	1.5 U	4.8 U	4.4 U	1.5 U	1.5 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	1.4 U	1.4 U	--	--	1.4 U	1.4 U	--	--	1.4 U	2
Benzene	120	µg/m^3	0.68 J	4.7	1 U	3.5 U	0.72 J	18	3.9 U	3.8 U	0.27 J	0.34 J	3.8 U	3.5 U	0.39 J	2
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.6 U	4.4 U	--	--	4.9 U	4.6 U	--	--	4.7 U	4.4 U	--	--
Ethylbenzene	370	µg/m^3	1.6 U	0 56 J	1.1 J	4.8 U	1.6 U	2.7	5.3 U	5.1 U	0.66 J	0.77 J	1.3 J	4.8 U	1.6 U	0.5 J
Methylene Chloride	21,000	µg/m^3	16	1.4 J	40 U	38 U	5.7	1.4 J	43 U	41 U	1.4 J	1.4 J	41 U	38 U	1.5 J	1.5 J
Tetrachloroethene	1,400	µg/m^3	2.5 U	7.6	16	9.2	2 5 U	0.79 J	1.5 J	8 U	3.5	4.7	9	5.3 J	9.9	9.5
Toluene	170,000	µg/m^3	0.66 J	8.6	4.4 U	4.1 U	0 5 J	28	4.6 U	4.4 U	0.57 J	0.47 J	4.5 U	4.1 U	1.6	4.4
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.6 U	4.4 U	--	--	4.9 U	4.6 U	--	--	4.7 U	4.4 U	--	--
Trichloroethene	70	µg/m^3	2 U	2 U	6.3 U	5.9 U	2 U	2 U	6.6 U	6.3 U	2 9	2 U	29	19	37	1.8 J
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	3 U	2.8 U	0.93 U	0.93 U	3.1 U	3 U	0.93 U	0.93 U	3 U	2.8 U	0.93 U	0.93 U
Xylenes (Total)	3,500	µg/m^3	1.6 U	1.7	5 U	9.6 U	1.6 U	11	2.6 J	10 U	4	3.5	3.6 J	9.6 U	0.69 J	1.5 J

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-09				SG-10					SG-11			
			SG-009-01 4/7/2014	SG-009-02 10/22/2014	SG-09-0815 8/12/2015	SG-09-1215 12/10/2015	SG-010-01 4/7/2014	SG-010-02 10/21/2014	SG-10-0815 8/12/2015	SG-10-0815-FD 8/13/2015	SG-10-1215 12/10/2015	SG-011-01 3/5/2014	SG-011-02 10/21/2014	SG-11-0815 8/13/2015	SG-11-1215 12/10/2015
1,1,1-Trichloroethane	170,000	µg/m^3	3.5	7.2	6.8	7.4	2 U	2 U	6.2 U	6.1 U	6.4 U	2 U	2 U	0 82 UB	1.6 UB
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.4 U	6.2 U	2 U	2 U	6.2 U	6.1 U	6.4 U	2 U	2 U	6.1 U	6.4 U
1,1-Dichloroethane	580	µg/m^3	1.5 U	1.5 U	4.7 U	4.6 U	1.5 U	1 5 U	4.6 U	4.5 U	4.7 U	1.5 U	1.5 U	4.5 U	4.8 U
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.6 U	4.5 U	1.4 U	1.4 U	4.5 U	4.4 U	4.6 U	1.4 U	1.4 U	4.4 U	4.7 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.7 U	4.6 U	1.5 U	1 5 U	4.6 U	4.5 U	4.7 U	1.5 U	1.5 U	4.5 U	4.8 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	1.4 U	1.4 U	--	--	--	0.95 J	1.4 U	--	--
Benzene	120	µg/m^3	0.15 J	1.9	3.7 U	3.6 U	0.16 J	1 2 U	3.6 U	1.1 J	0.47 J	0.35 J	1.2 U	1 U	3.8 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.6 U	4.5 U	--	--	4.5 U	4.4 U	4.6 U	--	--	4.4 U	4.7 U
Ethylbenzene	370	µg/m^3	0.2 J	0.5 J	1.3 J	4.9 U	0.19 J	1.6 U	5 U	4.8 U	5 U	0.32 J	1.6 U	4.9 U	5.1 U
Methylene Chloride	21,000	µg/m^3	3.2 U	3.2 U	41 U	39 U	1.1 J	2.4 J	40 U	39 U	40 U	3.2 U	2.1 J	39 U	41 U
Tetrachloroethene	1,400	µg/m^3	2.4	4.4	6 J	4.6 J	0.51 J	1 2 J	2.7 J	3.1 J	7.9 U	32	33	36	39
Toluene	170,000	µg/m^3	2.8	1.6	1.1 J	4.3 U	1.7	0.39 J	4.3 U	1.1 J	4.4 U	2.6	0.67 J	1.3 J	3.4 UB
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.6 U	4.5 U	--	--	4.5 U	4.4 U	4.6 U	--	--	4.4 U	4.7 U
Trichloroethene	70	µg/m^3	1.1 J	1.6 J	3.4 J	1.9 J	2 U	2 U	6.2 U	6 U	6.3 U	5.3	2 U	1.5 UB	6.3 U
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	3 U	2.9 U	0.93 U	0.93 U	2.9 U	2.8 U	3 U	0.93 U	0.93 U	2.9 U	3 U
Xylenes (Total)	3,500	µg/m^3	1.2 J	0.74 J	5.1 U	9.8 U	1.1 J	1.6 U	5 U	4.8 U	10 U	1.4 J	1.6 U	4.9 U	10 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-12					SG-13				SG-14			
			SG-012-01 4/7/2014	SG-012-02 10/21/2014	SG-12-0815 8/13/2015	SG-12-1215 12/10/2015	SG-12-1215-FD 12/10/2015	SG-013-01 4/7/2014	SG-013-02 10/20/2014	SG-13-0815 8/12/2015	SG-13-1215 12/9/2015	SG-014-01 3/4/2014	SG-014-02 10/22/2014	SG-14-0815 8/12/2015	SG-14-1215 12/10/2015
1,1,1-Trichloroethane	170,000	µg/m^3	0.59 J	1.8 J	2.5 UB	1 9 UB	1.9 UB	2 U	2 U	6.4 U	5.2 J	2.6	2.6	2.4 UB	2.5 UB
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6 U	6 3 U	5.8 U	2 U	2 U	6.4 U	6 U	2 U	2 U	6.4 U	6.3 U
1,1-Dichloroethane	580	µg/m^3	15	1.5 U	4.4 U	4.6 U	4.3 U	1.5 U	1 5 U	4.7 U	0.72 J	1.5 U	1 5 U	4.7 U	4.7 U
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.4 U	4.6 U	4.2 U	1.4 U	1.4 U	4.6 U	4.4 U	1.4 U	1.4 U	4.6 U	4.6 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.4 U	4.6 U	4.3 U	1.5 U	1 5 U	4.7 U	4.5 U	1.5 U	1 5 U	4.7 U	4.7 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	--	5.6	1.4 J	--	--	1.4 U	1.4 U	--	--
Benzene	120	µg/m^3	1.2 U	0 28 J	1.1 U	3.7 U	3.4 U	5.6	1.6	3.7 U	3.5 U	0.18 J	1 2 U	0.68 U	3.7 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.4 U	4.6 U	4.2 U	--	--	4.9	4.4 U	--	--	4.6 U	4.6 U
Ethylbenzene	370	µg/m^3	1.6 U	1.6 U	1.9 J	5 U	4.6 U	1.6 U	0.35 J	1.3 J	4.8 U	1.6 U	0 5 J	5 U	5 U
Methylene Chloride	21,000	µg/m^3	3.2 U	1.7 J	38 U	40 U	37 U	3.2 U	1.4 J	40 U	38 U	3.2 U	1 8 J	40 U	40 U
Tetrachloroethene	1,400	µg/m^3	220	2.8	4.6 J	7 8 U	7.2 U	2.8	2 J	4.2 J	3.9 J	18	20	20	20
Toluene	170,000	µg/m^3	1.4	0.66 J	4.1 U	4 3 U	4 U	1.7	0.95 J	4.4 U	4.2 U	0.41 J	0.58 J	4.4 U	4.4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.4 U	4.6 U	4.2 U	--	--	4.6 U	4.4 U	--	--	4.6 U	4.6 U
Trichloroethene	70	µg/m^3	0.47 J	2 U	5.9 U	6 2 U	5.8 U	11	9.6	14	19	9.5	8.4	7.4	8
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	2.8 U	2 9 U	2.7 U	8.8	0.72 J	3 U	2.8 U	0.93 U	0.93 U	3 U	3 U
Xylenes (Total)	3,500	µg/m^3	1.6 U	1.6 U	4.8 U	10 U	9.3 U	1.6 U	0.65 J	5 U	9.6 U	1.6 U	1.6 U	5 U	10 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-15				SG-16				SG-17			SG-18				
			SG-015-01 4/7/2014	SG-015-02 10/21/2014	SG-15-0815 8/11/2015	SG-15-1215 12/9/2015	SG-016-01 4/8/2014	SG-016-02 10/23/2014	SG-16-0815 8/12/2015	SG-16-1215 12/8/2015	SG-017-01 4/7/2014	SG-017-02 10/20/2014	SG-17-1215 12/9/2015	SG-018-01 4/8/2014	SG-018-02 10/21/2014	SG-18-0815 8/11/2015	SG-18-0815-FD 8/11/2015	SG-18-1215 12/9/2015
1,1,1-Trichloroethane	170,000	µg/m^3	1.8 J	16	7.9	5.1 J	2 UJ	2 U	6.6 U	1.6 J	0.46 J	2 U	6.1 U	1 J	1.4 J	2 2 UB	1 UB	5.7 U
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.5 U	6 U	2 UJ	2 U	6.6 U	2.8 J	2 U	2 U	6.1 U	2 U	2 U	6.7 U	6.6 U	5.7 U
1,1-Dichloroethane	580	µg/m^3	12	1.6	1.4 U	4.4 U	1.5 UJ	1.5 U	4 9 U	1.4 J	5.6	1.5 U	4 5 U	1.5 U	1.5 U	5 U	4.9 U	4.2 U
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.7 U	4 3 U	1.4 UJ	1.4 U	4 8 U	4.4 U	1.4 U	1.4 U	4.4 U	1.4 U	1.4 U	4 9 U	4.8 U	4.1 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.8 U	4.4 U	1.5 UJ	1.5 U	4 9 U	1 8 J	1.5 U	1.5 U	4 5 U	1.5 U	1.5 U	5 U	4.9 U	4.2 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	1.4 UJ	1.4 U	--	--	1.4 U	1.4 U	--	1.4 U	1.4 U	--	--	--
Benzene	120	µg/m^3	0.12 J	0 31 J	0.87 U	3 5 U	0 24 UJ	1 J	3 9 U	1 9 UB	0.25 J	0.41 J	3.6 U	0.16 J	9.5	0.83 U	0.78 U	3.3 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.7 U	4 3 U	--	--	4 8 U	2 3 J	--	--	4.4 U	--	--	4 9 U	4.8 U	4.1 U
Ethylbenzene	370	µg/m^3	1.6 U	0.67 J	5.2 U	4 8 U	0.3 UJ	1.6 U	5 2 U	2 J	1.6 U	2.1	4 8 U	0.1 J	0.56 J	5 3 U	5.2 U	4.5 U
Methylene Chloride	21,000	µg/m^3	1.6 J	1.3 J	41 U	38 U	3.2 UJ	1.6 J	42 U	39 U	3.2 U	2.5 J	39 U	1.3 J	5.6	43 U	42 U	4.4 J
Tetrachloroethene	1,400	µg/m^3	190	37	28	36	0 59 UJ	0.58 J	8 2 U	4.9 J	150	19	21	1.5 J	3.1	2 8 J	2.2 J	2.4 J
Toluene	170,000	µg/m^3	1.3 J	0.72 J	4.5 U	4.1 U	1.6 J	0.31 J	4.6 U	2 5 J	5.4	1.9	4.2 U	0.49 J	1.5	4.6 U	4.5 U	1 J
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.7 U	4 3 U	--	--	4 8 U	1 8 J	--	--	4.4 U	--	--	4 9 U	4.8 U	4.1 U
Trichloroethene	70	µg/m^3	9.9	1.5 J	2.7 UB	5 9 U	2 UJ	2 U	6 5 U	3 2 J	0.38 J	2 U	6 U	0.45 J	2 U	2 5 UB	1.3 UB	5.6 U
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	3 U	2 8 U	0 93 UJ	0.93 U	3.1 U	2.9 U	0.93 U	0 93 U	2 8 U	0 93 U	0.93 U	3.1 U	3.1 U	2.6 U
Xylenes (Total)	3,500	µg/m^3	1.6 U	0 87 J	5.2 U	9 5 U	1.5 UJ	1.6 U	5 2 U	9.7 U	1.6 U	2.5	9.7 U	1.6 U	0.36 J	5 3 U	5.2 U	9 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-19				SG-20						SG-21			
			SG-019-01 4/7/2014	SG-019-02 10/21/2014	SG-19-0815 8/12/2015	SG-19-1215 12/9/2015	SG-020-01 4/8/2014	SG-020-01-FD 4/8/2014	SG-020-02 10/24/2014	SG-020-02 FR 10/24/2014	SG-20-0815 8/12/2015	SG-20-1215 12/8/2015	SG-021-01 4/8/2014	SG-021-02 10/24/2014	SG-21-0815 8/12/2015	SG-21-1215 12/8/2015
1,1,1-Trichloroethane	170,000	µg/m^3	2.3	3.8	3.7 UB	3 J	2.4	3.1	3.7	3.6	4.2 UB	4 J	3.7	2 U	0 89 UB	5.9 U
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.2 U	6.1 U	2 U	2 U	2 U	2 U	6.5 U	6 U	2 U	2 U	6.5 U	5.9 U
1,1-Dichloroethane	580	µg/m^3	4.1	1.5 U	4.6 U	4 5 U	1.5 U	1.5 U	1.5 U	1 5 U	4.8 U	4.4 U	1 5 U	1.5 U	4.8 U	4.4 U
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.5 U	4.4 U	1.4 U	1.4 U	1.4 U	1.4 U	4.7 U	4.3 U	1.4 U	1.4 U	4.7 U	4.3 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.6 U	4 5 U	1.5 U	1.5 U	1.5 U	1 5 U	4.8 U	4.4 U	1 5 U	1.5 U	4.8 U	4.4 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	1.4 U	1.4 U	1.4 U	1.4 U	--	--	1.4 U	1.4 U	--	--
Benzene	120	µg/m^3	0.52 J	0.74 J	3.6 U	3.6 U	1.2 U	1.2 U	1.2 U	1 2 U	0.78 U	3.5 U	0.22 J	0.72 J	3.8 U	0 38 UB
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.5 U	4.4 U	--	--	--	--	4.7 U	4.3 U	--	--	4.7 U	4.3 U
Ethylbenzene	370	µg/m^3	1.6 U	0 35 J	1.5 J	4 9 U	1.6 U	0 37 J	1.6 U	1.6 U	5.2 U	4.8 U	0.33 J	0.41 J	5.2 U	4.7 U
Methylene Chloride	21,000	µg/m^3	3.8	1.9 J	40 U	39 U	1.4 J	3.2 U	1.7 J	1.6 J	41 U	38 U	1 3 J	1.5 J	41 U	38 U
Tetrachloroethene	1,400	µg/m^3	100	14	19	23	2.1 J	3	3.1	3 2	4.6 J	3.6 J	2.6	6.1	9.8	11
Toluene	170,000	µg/m^3	14	2	4.3 U	4 2 U	0.41 J	0 86 J	1.4 U	0.49 J	4.5 U	4.1 U	5 2	0.77 J	4.5 U	1.1 J
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.5 U	4.4 U	--	--	--	--	4.7 U	4.3 U	--	--	4.7 U	4.3 U
Trichloroethene	70	µg/m^3	2 U	2 U	2.2 UB	6 U	2 U	2 U	2 U	2 U	6.4 U	5.9 U	2 U	2 U	6.4 U	5.8 U
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	2.9 U	2 9 U	0 93 U	0 93 U	0 93 U	0.93 U	3 U	2.8 U	0.93 U	0.93 U	3 U	2.8 U
Xylenes (Total)	3,500	µg/m^3	7.8	0 94 J	5 U	9.7 U	1.1 J	2.7	1.6 U	1.6 U	5.2 U	9.5 U	1 5 J	1.6 U	5.2 U	9.4 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

U = Undetected: The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J = Estimated. The analyte was positively identified; the quantitation is an estimation because of discrepancies in meeting certain analyte-specific quality control criteria.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-22				SG-23	SG-24	SG-25		SG-26		SG-27				SG-28	
			SG-022-01 4/8/2014	SG-022-02 10/24/2014	SG-22-0815 8/11/2015	SG-22-1215 12/8/2015	SG-023-01 4/8/2014	SG-024-01 4/8/2014	SG-025-01 4/8/2014	SG-025-01-FD 4/8/2014	SG-026-01 4/9/2014	SG-026-02 10/24/2014	SG-027-01 4/8/2014	SG-027-02 10/23/2014	SG-27-0815 8/11/2015	SG-27-1215 12/8/2015	SG-028-01 4/9/2014	SG-028-02 10/23/2014
1,1,1-Trichloroethane	170,000	$\mu g/m^3$	6.8	36	24	22	2.1	6.6	190,000	170,000	19,000	22,000	1.7 J	1.9	1.7 UB	1.4 J	290	270
1,1,2-Trichloroethane	7	$\mu g/m^3$	2 U	2 U	6.5 U	6 U	2 U	2 U	300 U	300 U	19 U	35 U	2 U	2 U	6.6 U	5.7 U	2 U	2 U
1,1-Dichloroethane	580	$\mu g/m^3$	5.5	2.2	2 U	2.9 J	3.4	3.3	2,400	2,400	200	360	1.5 U	1.5 U	4.9 U	4 2 U	39	42
1,1-Dichloroethene	7,000	$\mu g/m^3$	1.4 U	1.4 U	4.8 U	4.4 U	1.4 U	1.4 U	1,200	1,200	95	110	1.4 U	1.4 U	4.8 U	4 2 U	26	22
1,2-Dichloroethane	36	$\mu g/m^3$	1.5 U	1.5 U	4.8 U	4.4 U	1.5 U	1.5 U	230 U	220 U	14 U	26 U	1.5 U	1.5 U	4.9 U	4 2 U	1.5 U	1.5 U
1,2-Dichloroethene	NA	$\mu g/m^3$	0.48 J	1.4 U	--	--	1.4 U	1.4 U	220 U	220 U	14 U	8.7 J	1.4 U	1.4 U	--	--	19	19
Benzene	120	$\mu g/m^3$	1.2 U	1.2 U	0.7 U	3.5 U	1.2 U	0.23 J	180 U	180 U	11 U	21 U	1.2 U	0 32 J	2 J	3.4 U	0.25 J	0 32 J
Cis-1,2-Dichloroethene	NA	$\mu g/m^3$	--	--	4.8 U	4.4 U	--	--	--	--	--	--	--	--	4.8 U	4 2 U	--	--
Ethylbenzene	370	$\mu g/m^3$	1.6 U	1.6 U	1.7 J	4.8 U	1.6 U	1.6 U	240 U	240 U	15 U	7.2 J	1.6 U	1.6 U	5.3	4.6 U	1.6 U	1.6 U
Methylene Chloride	21,000	$\mu g/m^3$	3.2 U	1.7 J	42 U	38 U	3.2 U	2.8 J	480 U	480 U	31 U	56 U	3.2 U	38	42 U	36 U	27	6.6
Tetrachloroethene	1,400	$\mu g/m^3$	88	14	19	12	87	90	50 J	54 J	62	44 U	2.7	7	17	1 8 J	1,800	2,200
Toluene	170,000	$\mu g/m^3$	0.65 J	0.4 J	4.5 U	4.1 U	0.65 J	2	210 U	210 U	13 U	370	0.37 J	1.7	2.2 J	4 U	0.46 J	1.4
Trans-1,2-Dichloroethene	NA	$\mu g/m^3$	--	--	4.8 U	4.4 U	--	--	--	--	--	--	--	--	4.8 U	4 2 U	--	--
Trichloroethene	70	$\mu g/m^3$	4.8	7.3	11	4.2 J	0.45 J	2 U	390	420	51	100	0.36 J	0 38 J	3.9 UB	5.6 U	56	61
Vinyl Chloride	56	$\mu g/m^3$	0.93 U	0 93 U	3.1 U	2.8 U	0.93 U	0.93 U	140 U	140 U	9.1 U	17 U	0.93 U	0 93 U	3.1 U	2.7 U	0.55 J	0 92 U
Xylenes (Total)	3,500	$\mu g/m^3$	1.6 U	1.6 U	5.2 U	9.6 U	1.6 U	1.6 U	240 U	240 U	15 U	33	1.6 U	1.6 U	5.2 U	9.1 U	1.6 U	1.6 U

NA = not applicable. Criteria is not available for this compound.

$\mu g/m^3$ = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-31						SG-34				SG-36			
			SG-031-01 4/9/2014	SG-031-02 10/23/2014	SG-31-0815 8/10/2015	SG-31-0815-FD 8/10/2015	SG-31-1215 12/8/2015	SG-31-1215-FD 12/8/2015	SG-034-01 4/9/2014	SG-034-02 10/23/2014	SG-34-0815 8/10/2015	SG-34-1215 12/8/2015	SG-036-01 4/9/2014	SG-036-02 10/22/2014	SG-36-0815 8/10/2015	SG-36-1215 12/7/2015
1,1,1-Trichloroethane	170,000	µg/m^3	210	290	230	210	260	250	390	360	380	410	24	34	33	34
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.5 U	6.7 U	5.7 U	5.7 U	2 U	2 U	6.5 U	5 8 U	2 U	2 U	6 5 U	5.8 U
1,1-Dichloroethane	580	µg/m^3	2.3	1 J	1.6 U	5 U	4.2 U	4.2 U	7 9	7.3	6.1	3.7 J	1.5 U	1.5 U	4 8 U	4.3 U
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.7 U	4 9 U	4.1 U	4.2 U	2 3	0.97 J	4.7 U	4 2 U	1.4 U	1.4 U	4.7 U	4.2 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.8 U	5 U	4.2 U	4.2 U	1 5 U	1.5 U	4.8 U	4 3 U	1.5 U	1.5 U	4 8 U	4.3 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	1.4 U	--	--	--	--	4 8	3	--	--	1.4 U	0.83 J	--	--
Benzene	120	µg/m^3	0.88 J	1.2 U	0.66 U	0.96 U	3.3 U	0 36 UB	1.4	0.51 J	3.8 U	0.45 UB	1.2 U	1.2 U	0.77 U	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.7 U	4 9 U	4.1 U	4.2 U	--	--	4.7 U	4 2 U	--	--	4.7 U	4.2 U
Ethylbenzene	370	µg/m^3	1.6 U	1.6 U	5.1 U	5 3 U	4.5 U	4.6 U	2 8	0.24 J	5.1 U	4.6 U	1.6 U	1.6 U	5.1 U	4.6 U
Methylene Chloride	21,000	µg/m^3	3.2 U	2.6 J	41 U	43 U	36 U	36 U	3 2 U	16	41 U	37 U	1.3 J	1.3 J	41 U	37 U
Tetrachloroethene	1,400	µg/m^3	56	5.5	4.4 J	5 9 J	3.9 J	4.3 J	11	8.3	12	10	7.6	15	17	21
Toluene	170,000	µg/m^3	2	0 82 J	4.5 U	1.1 J	3.9 U	4 U	5 5	1.3 J	4.5 U	4 U	2.8	1.2 J	4 5 U	4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.7 U	4 9 U	4.1 U	4.2 U	--	--	1.6 U	4 2 U	--	--	4.7 U	4.2 U
Trichloroethene	70	µg/m^3	4	6.3	8.8 UB	6.1 UB	7.3	6.3	12	12	17	15	2 U	0.35 J	2 UB	5.7 U
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	3 U	3.1 U	2.6 U	2.7 U	0.93 U	0.28 J	3 U	2.7 U	0 93 U	0.93 U	3 U	2.7 U
Xylenes (Total)	3,500	µg/m^3	2.7	1.6 U	5.1 U	5 3 U	9 U	9.1 U	9.4	0.69 J	5.1 U	9 2 U	1.6 U	1.6 U	5.1 U	9.2 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

			SG-39				SG-40	SG-42				SG-44					
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-039-01 4/8/2014**	**SG-039-02 10/22/2014**	**SG-39-0815 8/11/2015**	**SG-39-1215 12/9/2014**	**SG-040-01 4/9/2014**	**SG-042-01 4/9/2014**	**SG-042-02 10/21/2014**	**SG-42-0815 8/10/2015**	**SG-42-1215 12/7/2015**	**SG-044-01 4/10/2014**	**SG-044-01-FD 4/10/2014**	**SG-044-02 10/21/2014**	**SG-044-02 FR 10/21/2014**	**SG-44-0815 8/10/2015**	**SG-44-1215 12/7/2015**
1,1,1-Trichloroethane	170,000	µg/m^3	110	120	91	130	3 8	0 86 J	2	2.1 UB	1 5 J	270	240	410	440	370	270
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.3 U	6.2 U	2 U	2 U	2 U	6.2 U	5 9 U	2 U	2 U	2 U	2 U	6.5 U	6 U
1,1-Dichloroethane	580	µg/m^3	19	6.5	11	10	1.1 J	1.5 U	1.5 U	4.6 U	4.4 U	1.1 J	1 J	0.57 J	0.56 J	4.8 U	4.5 U
1,1-Dichloroethene	7,000	µg/m^3	8.1	1.4 U	5.8	4.5 U	1.4 U	1.4 U	1.4 U	4 5 U	4 3 U	4.2	3.7	1.4 U	1.4 U	4.7 U	4.4 U
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	4.6 U	4.6 U	1 5 U	1.5 U	1.5 U	4.6 U	4.4 U	1.5 U	1.5 U	1 5 U	1.5 U	4.8 U	4.5 U
1,2-Dichloroethene	NA	µg/m^3	2.3	0.75 J	--	--	1.4 U	1.4 U	1.4 U	--	--	2.7	2	1.4 U	1.4 U	--	--
Benzene	120	µg/m^3	1.2 U	0.2 J	3.7 U	3.6 U	0.27 J	0.5 J	1.2 U	2 3 J	3.4 U	0 37 J	0.38 J	0.23 J	0.21 J	1.2 U	3.5 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	4.6 U	1.3 J	--	--	--	1 5 U	4.3 U	--	--	--	--	1.4 U	4.4 U
Ethylbenzene	370	µg/m^3	1.6 U	1.6 U	5 U	5 U	1.6 U	0.63 J	1.6 U	2.6 J	4.7 U	1.6 U	1.6 U	1.6 U	1.6 U	1.8 J	4.8 U
Methylene Chloride	21,000	µg/m^3	3.2 U	1.5 J	40 U	40 U	1.4 J	3.2 U	1.3 J	40 U	37 U	3.2 U	3.2 U	1.7 J	1.5 J	41 U	38 U
Tetrachloroethene	1,400	µg/m^3	140	20	20	23	43	1.3 J	2.6	9 2	7 3 U	17	14	30	32	38	25
Toluene	170,000	µg/m^3	0.94 J	0 54 J	4.3 U	4.3 U	0.83 J	3.4	0.39 J	2.4 J	4 U	0.79 J	0.91 J	0.36 J	0.33 J	1.3 J	4.2 U
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.6 U	4.5 U	--	--	--	4 5 U	4.3 U	--	--	--	--	4.7 U	4.4 U
Trichloroethene	70	µg/m^3	16	20	14	22	2 U	2 U	2 U	3.1 UB	5 8 U	1.8 J	1.6 J	4.1	4	5.7 UB	2.2 J
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	2.9 U	2.9 U	0.93 U	0 93 U	0 93 U	2.9 U	2.7 U	0 93 U	0.93 U	0.93 U	0.93 U	3 U	2.8 U
Xylenes (Total)	3,500	µg/m^3	1.6 U	1.6 U	5 U	9.9 U	1.6 U	1.5 J	1.6 U	5 U	9 3 U	1.6 U	0.56 J	1.6 U	1.6 U	5.2 U	9.6 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

			SG-45		SG-46				SG-47						SG-48			
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-045-01 4/10/2014**	**SG-045-02 10/21/2014**	**SG-046-01 8/19/2014**	**SG-046-01-FD 8/19/2014**	**SG-046-02 10/20/2014**	**SG-46-0815 8/10/2015**	**SG-047-01 4/10/2014**	**SG-047-01-FD 4/10/2014**	**SG-047-02 10/21/2014**	**SG-047-02 FR 10/21/2014**	**SG-47-0815 8/10/2015**	**SG-47-1215 12/7/2015**	**SG-048-01 4/10/2014**	**SG-048-02 10/20/2014**	**SG-48-0815 8/11/2015**	**SG-48-1215 12/7/2015**
1,1,1-Trichloroethane	170,000	µg/m^3	8,500	12,000	53	56	74	13	13	11	12	8	12	12	2 U	2 U	6.1 U	5.7 U
1,1,2-Trichloroethane	7	µg/m^3	7.6 U	13 U	3 U	3 U	2.2 U	6.6 U	2 U	2 U	2 U	2 U	6 8 U	5.8 U	2 U	2 U	6.1 U	5.7 U
1,1-Dichloroethane	580	µg/m^3	49	88	2.2 U	2.2 U	0.37 J	4 9 U	1.5 U	1.5 U	1.5 U	1.5 U	5.1 U	4.3 U	1.5 U	1 5 U	4.5 U	4.2 U
1,1-Dichloroethene	7,000	µg/m^3	1,100	1,500	2.2 U	0.64 J	1.6 U	4 8 U	0.75 J	1.4 U	1.4 U	1.4 U	2 9 U	4.2 U	1.4 U	1.4 U	4.4 U	4.1 U
1,2-Dichloroethane	36	µg/m^3	5.7 U	9.6 U	2.2 U	2.2 U	1.6 U	4 9 U	1.5 U	1.5 U	1.5 U	1.5 U	5.1 U	4.3 U	1.5 U	1 5 U	4.5 U	4.2 U
1,2-Dichloroethene	NA	µg/m^3	320	530	2.2 U	2.2 U	1.6 U	--	1.4 U	1.4 U	1.4 U	1.4 U	--	--	1.4 U	1.4 U	--	--
Benzene	120	µg/m^3	4.5 U	7.6 U	5.1	4.4	3.3	1 9 J	0.23 J	0.5 J	1.2 U	0.18 J	6	3.4 U	0.86 J	0.22 J	1.1 U	3.3 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	--	--	--	2 3 U	--	--	--	--	5 U	4.2 U	--	--	4.4 U	4.1 U
Ethylbenzene	370	µg/m^3	6.1 U	10 U	3.9	3.7	1.7 U	5.1 J	1.6 U	2	1.6 U	1.6 U	2 8 J	4.6 U	3.1	1.6 U	1.3 J	4.5 U
Methylene Chloride	21,000	µg/m^3	12 U	8.6 J	4.2 J	4.4 J	5	42 U	1.7 J	3.2 U	1.4 J	3 5	2.6 U	37 U	3.2 U	1.4 J	39 U	36 U
Tetrachloroethene	1,400	µg/m^3	670	980	5.4	5.8	11	14	0.81 J	1 J	1.8 J	1 9 J	7.4 J	7.2 U	0.34 J	4.4	3.3 J	7.1 U
Toluene	170,000	µg/m^3	5.3 U	9 U	20	17	3.6	1 9 J	0.42 J	1.9	1.4 U	0.37 J	1.7 J	4 U	4.9	0.95 J	2.4 J	3.9 U
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	--	--	--	4 8 U	--	--	--	--	5 U	4.2 U	--	--	4.4 U	4.1 U
Trichloroethene	70	µg/m^3	180	270	1.1 J	1.2 J	1.2 J	3 5 UB	0.32 J	0 36 J	2 U	2 U	3 UB	5.7 U	2 U	2 U	1.1 UB	5.6 U
Vinyl Chloride	56	µg/m^3	1.5 J	1.4 J	1.4 U	1.4 U	1 U	3.1 U	0.93 U	0 93 U	0 93 U	0.93 U	3 2 U	2.7 U	0.93 U	0.93 U	2.9 U	2.7 U
Xylenes (Total)	3,500	µg/m^3	6.1 U	10 U	16	16	3	5 2 U	1.6 U	7.6	1.6 U	1.6 U	2 8 J	9.2 U	12	1 9	2.1 J	9.1 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

			SG-50			SG-51			SG-52		SG-53			SG-54		SG-55	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-050-01 4/10/2014**	**SG-050-02 10/20/2014**	**SG-50-0815 8/10/2015**	**SG-51-0915 9/21/2015**	**SG-51-1215 12/10/2015**	**SG-51-1215-FD 12/10/2015**	**SG-52-0915 9/21/2015**	**SG-52-1215 12/9/2015**	**SG-53-0915 9/22/2015**	**SG-53-1215 12/8/2015**	**SG-53-1215-FD 12/8/2015**	**SG-54-0915 9/22/2015**	**SG-54-1215 12/8/2015**	**SG-55-0915 9/22/2015**	**SG-55-1215 12/8/2015**
1,1,1-Trichloroethane	170,000	µg/m^3	1.7 J	2 U	6.8 U	280	260	250	4 J	1.9 J	110	71	68	380	420	7,200	5,200
1,1,2-Trichloroethane	7	µg/m^3	2 U	2 U	6.8 U	6 5 U	6.2 U	6.6 U	6.5 U	5.9 U	6.4 U	5 9 U	6.3 U	6.4 U	5.7 U	24 U	20 U
1,1-Dichloroethane	580	µg/m^3	0.64 J	1.5 U	5 U	90	120	120	4.8 U	4.4 U	4.7 U	4.4 U	4.7 U	4.7 U	4 2 U	18 J	8.4 J
1,1-Dichloroethene	7,000	µg/m^3	1.4 U	1.4 U	4.9 U	230	320	310	4.7 U	4.3 U	4.6 U	4 3 U	4.6 U	4.6 U	4 2 U	13 J	10 J
1,2-Dichloroethane	36	µg/m^3	1.5 U	1.5 U	5 U	4 8 U	4.6 U	4.9 U	4.8 U	4.4 U	4.7 U	4.4 U	4.7 U	4.7 U	4 2 U	18 U	14 U
1,2-Dichloroethene	NA	µg/m^3	1.4 U	0 56 J	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	120	µg/m^3	0.4 J	1.2 U	1.7 U	1 UB	3.6 U	0.62 J	3.8 U	3.4 U	3.7 U	3.4 U	0.56 UB	3.7 U	0.49 UB	14 U	11 U
Cis-1,2-Dichloroethene	NA	µg/m^3	--	--	1.7 U	26	29	28	4.7 U	4.3 U	4.6 U	4 3 U	4.6 U	4.6 U	4 2 U	18 U	14 U
Ethylbenzene	370	µg/m^3	1.6 U	1.6 U	2.4 J	1 8 J	4.9 U	5.3 U	5.2 U	1.2 J	5 U	4.7 U	5 U	5 U	4.6 U	19 U	16 U
Methylene Chloride	21,000	µg/m^3	3.2 U	1.9 J	43 U	41 U	40 U	42 U	41 U	38 U	40 U	38 U	2.2 J	40 U	36 U	160 U	120 U
Tetrachloroethene	1,400	µg/m^3	30	7.6	8.1 J	260	120	120	6.8 J	1.6 J	11	4 2 J	3.8 J	26	12	31	11 J
Toluene	170,000	µg/m^3	1.2 J	0 87 J	1.2 J	5 2	4.3 U	4.6 U	0.7 J	1.3 J	1.6 J	4.1 U	4.4 U	4.4 U	4 U	6 J	14 U
Trans-1,2-Dichloroethene	NA	µg/m^3	--	--	4.9 U	3.1 J	3.4 J	3.7 J	4.7 U	4.3 U	4.6 U	4 3 U	4.6 U	4.6 U	4 2 U	18 U	14 U
Trichloroethene	70	µg/m^3	2 U	0 52 J	1.9 UB	330	260	260	6.4 U	5.8 U	6.3 U	5 8 U	6.2 U	6.3 U	5.6 U	13 J	9.1 J
Vinyl Chloride	56	µg/m^3	0.93 U	0 93 U	3.2 U	3 U	2.9 U	3.1 U	3 U	2.8 U	3 U	2 8 U	3 U	3 U	2.7 U	11 U	9.2 U
Xylenes (Total)	3,500	µg/m^3	2.1	0.74 J	5.2 J	10 U	9.9 U	10 U	10 U	9.4 U	10 U	9.4 U	10 U	10 U	9.1 U	39 U	31 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

[a]EPA Vapor Intrusion Screening Level (VISL) provided in the VISL Calculator Version 3.4.6, November 2015 Regional Screening Levels (RSLs) (based on a residential exposure scenario, target hazard quotient of 1, and target carcinogenic risk of 1E-5).

Highlighted concentrations exceed the Project Action Limit.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

Volatile Organic Compound	Project Action Limit[a]	Units	SG-56		SG-57		SG-58		SG-59		SG-60		SG-61		SG-63		
			SG-56-0915 9/22/2015	SG-56-1215 12/8/2015	SG-57-0915 9/22/2015	SG-57-1215 12/10/2015	SG-58-0915 9/22/2015	SG-58-1215 12/8/2015	SG-59-0915 9/22/2015	SG-59-1215 12/8/2015	SG-60-0915 9/23/2015	SG-60-1215 12/9/2015	SG-61-0915 9/23/2015	SG-61-1215 12/8/2015	SG-63-0915 9/23/2015	SG-63-0915-FD 9/23/2015	SG-63-1215 12/8/2015
1,1,1-Trichloroethane	170,000	µg/m^3	540	510	4.7 J	3 UB	6.6 U	1 2 J	6.6 U	3 J	6 U	6.1 U	6.5 U	10 U	6.2 U	6.4 U	0.92 J
1,1,2-Trichloroethane	7	µg/m^3	6.1 U	5.8 U	6 U	6.2 U	6.6 U	5.7 U	6.6 U	5.9 U	6 U	6.1 U	6.5 U	10 U	6.2 U	6.4 U	5.9 U
1,1-Dichloroethane	580	µg/m^3	4.5 U	4.3 U	4.4 U	4.6 U	4.9 U	4 2 U	4.9 U	4.4 U	4.4 U	4.5 U	4.8 U	7.8 U	4.6 U	4.7 U	4.4 U
1,1-Dichloroethene	7,000	µg/m^3	4.4 U	4.2 U	4.4 U	4.5 U	4.8 U	4.1 U	4.8 U	4.3 U	4.4 U	4.4 U	4.7 U	7.7 U	4.5 U	4.6 U	4.3 U
1,2-Dichloroethane	36	µg/m^3	4.5 U	4.3 U	4.4 U	4.6 U	4.9 U	4 2 U	4.9 U	4.4 U	4.4 U	4.5 U	4.8 U	7.8 U	4.6 U	4.7 U	4.4 U
1,2-Dichloroethene	NA	µg/m^3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	120	µg/m^3	3.6 U	3.4 U	0.57 UB	0.41 J	3.9 U	0.56 UB	3.9 U	0.5 UB	0.43 UB	3.6 U	53	1.1 UB	2.4 UB	2 UB	3.5 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.2 U	4.4 U	4.5 U	4.8 U	4.1 U	4.8 U	4.3 U	4.4 U	4.4 U	4.7 U	7.7 U	4.5 U	4.6 U	4.3 U
Ethylbenzene	370	µg/m^3	4.9 U	4.6 U	4 8 U	5 U	2.2 J	4 5 U	5.2 U	1.6 J	4 8 U	4.9 U	73	8.4 U	10	11	4.7 U
Methylene Chloride	21,000	µg/m^3	6.4 J	37 U	38 U	40 U	42 U	36 U	42 U	2.5 J	38 U	39 U	3.4 J	4 J	40 U	40 U	38 U
Tetrachloroethene	1,400	µg/m^3	1.2 J	7.1 J	23	14	6.8 J	7.1 U	1.5 J	7.3 U	5 3 J	1.7 J	260	13 U	37	39	7.4 U
Toluene	170,000	µg/m^3	0.95 J	1.2 J	4.1 U	4.3 U	4.2 J	3 9 U	1.2 J	4 U	1 8 J	4.2 U	400	6.4 J	16	16	4.1 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.2 U	4.4 U	4.5 U	4.8 U	4.1 U	4.8 U	4.3 U	4.4 U	4.4 U	4.7 U	7.7 U	4.5 U	4.6 U	4.3 U
Trichloroethene	70	µg/m^3	6 U	5.7 U	5 9 U	6.2 U	6.5 U	5.6 U	6.5 U	5.8 U	5 9 U	6 U	6.4 U	10 U	6.2 U	2.1 J	5.8 U
Vinyl Chloride	56	µg/m^3	2.9 U	2.7 U	2 8 U	2.9 U	3.1 U	2.7 U	3.1 U	2.7 U	2 8 U	2.9 U	3 U	4.9 U	2.9 U	3 U	2.8 U
Xylenes (Total)	3,500	µg/m^3	9.7 U	9.2 U	9.6 U	9.9 U	10 U	9.1 U	10 U	9.3 U	9.6 U	9.7 U	260	17 U	43	43	9.5 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

-- = not analyzed. The sample was not analyzed for this compound.

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

			SG-64		SG-65			SG-66		SG-67		SG-68		SG-69	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-64-0915 9/23/2015**	**SG-64-1215 12/8/2015**	**SG-65-0915 9/21/2015**	**SG-65-1215 12/7/2015**	**SG-65-1215-FD 12/7/2015**	**SG-66-0915 9/21/2015**	**SG-66-1215 12/9/2015**	**SG-67-0915 9/22/2015**	**SG-67-1215 12/9/2015**	**SG-68-0915 9/22/2015**	**SG-68-1215 12/10/2015**	**SG-69-0915 9/21/2015**	**SG-69-1215 12/7/2015**
1,1,1-Trichloroethane	170,000	µg/m^3	110	77	10	1.4 J	1.4 J	110,000	35,000	360	390	210	180	6 U	5 9 U
1,1,2-Trichloroethane	7	µg/m^3	6.6 U	5.7 U	6 5 U	5.9 U	6.3 U	220 U	120 U	6.6 U	6.2 U	6.9 U	6.5 U	6 U	5 9 U
1,1-Dichloroethane	580	µg/m^3	4.9 U	4.2 U	4 8 U	4.4 U	4.7 U	25,000	6,000	1.5 J	1.4 J	1.6 J	2.4 J	4.4 U	4.4 U
1,1-Dichloroethene	7,000	µg/m^3	4.8 U	4.1 U	4.7 U	4.3 U	4.6 U	15,000	1,500	4.8 U	5.6	5 U	4.8 U	4.4 U	4 3 U
1,2-Dichloroethane	36	µg/m^3	4.9 U	4.2 U	4 8 U	4.4 U	4.7 U	160 U	88 U	4.9 U	4.6 U	5.1 U	4.8 U	4.4 U	4.4 U
1,2-Dichloroethene	NA	µg/m^3	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	120	µg/m^3	1.2 UB	0.41 UB	2.6 UB	3.4 U	3.7 U	130 U	70 U	3.9 U	3.6 U	1.8 UB	3.8 U	2.7 UB	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.8 U	4.1 U	4.7 U	4.3 U	4.6 U	9,200	1,900	4.8 U	4.5 U	5 U	4.8 U	4.4 U	4 3 U
Ethylbenzene	370	µg/m^3	5.2 U	4.5 U	4.6 J	4.7 U	5 U	170 U	95 U	5.2 U	4.9 U	1.1 J	5.2 U	4.1 J	4.7 U
Methylene Chloride	21,000	µg/m^3	42 U	36 U	41 U	38 U	40 U	140 U	760 U	42 U	39 U	44 U	42 U	38 U	38 U
Tetrachloroethene	1,400	µg/m^3	490	290	58	5.9 J	6.3 J	8,600	4,000	38	33	30	19	140	8 5
Toluene	170,000	µg/m^3	1.9 J	3.9 U	22	4.1 U	4.4 U	31 J	82 U	4.6 U	4.3 U	5.5	4.5 U	21	4.1 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.8 U	4.1 U	4.7 U	4.3 U	4.6 U	1,600	410	4.8 U	4.5 U	5 U	4.8 U	4.4 U	4 3 U
Trichloroethene	70	µg/m^3	7.8	4.9 J	6.4 U	5.8 U	6.2 U	4,000	1,500	6.5 U	2.5 J	3.6 J	2.6 J	5.9 U	5 8 U
Vinyl Chloride	56	µg/m^3	3.1 U	2.7 U	3 U	2.8 U	3 U	180	56 U	3.1 U	2.9 U	3.2 U	3.1 U	2.8 U	2 8 U
Xylenes (Total)	3,500	µg/m^3	10 U	9.1 U	12	9.4 U	10 U	700 U	190 U	10 U	9.8 U	11 U	10 U	20	9.4 U

NA = not applicable. Criteria is not available for this compound.

µg/m^3 = micrograms per cubic meter

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Attachment 8, Table 1 Soil Gas Probe Sampling Results - March 2014 to December 2015

Southeast Rockford Groundwater Contamination Site
Rockford, IL

			SG-71			SG-72			SG-73	
Volatile Organic Compound	**Project Action Limit[a]**	**Units**	**SG-71-0915 9/21/2015**	**SG-71-0915-FD 9/21/2015**	**SG-71-1215 12/7/2015**	**SG-72-0915 9/21/2015**	**SG-72-1215 12/7/2015**	**SG-72-1215-FD 12/7/2015**	**SG-73-0915 9/22/2015**	**SG-73-1215 12/9/2015**
1,1,1-Trichloroethane	170,000	µg/m^3	2.4 J	6 U	6	6.6 U	5.9 U	5.7 U	6 9 U	5.8 U
1,1,2-Trichloroethane	7	µg/m^3	6 U	6 U	5.8 U	6.6 U	5.9 U	5.7 U	6 9 U	5.8 U
1,1-Dichloroethane	580	µg/m^3	4.4 U	4.4 U	4.3 U	4.9 U	4.4 U	4.2 U	5.1 U	4.3 U
1,1-Dichloroethene	7,000	µg/m^3	4.4 U	4.4 U	4.2 U	4.8 U	4.3 U	4.2 U	5 U	4.2 U
1,2-Dichloroethane	36	µg/m^3	4.4 U	4.4 U	4.3 U	4.9 U	4.4 U	4.2 U	5.1 U	4.3 U
1,2-Dichloroethene	NA	µg/m^3	--	--	--	--	--	--	--	--
Benzene	120	µg/m^3	3.5 U	3.5 U	3.4 U	1.3 UB	3.4 U	3.4 U	4 U	3.4 U
Cis-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.4 U	4.2 U	4.8 U	4.3 U	4.2 U	5 U	4.2 U
Ethylbenzene	370	µg/m^3	1.8 J	1.8 J	4.6 U	1.7 J	4.7 U	4.6 U	5.5 U	4.6 U
Methylene Chloride	21,000	µg/m^3	38 U	38 U	37 U	42 U	3.9 J	36 U	44 U	37 U
Tetrachloroethene	1,400	µg/m^3	3.8 J	4.6 J	7.2 U	7.3 J	7.3 U	7.1 U	5.6 J	1.7 J
Toluene	170,000	µg/m^3	8.4	8.2	4 U	8.4	4 U	4 U	4.7 U	4 U
Trans-1,2-Dichloroethene	NA	µg/m^3	4.4 U	4.4 U	4.2 U	4.8 U	4.3 U	4.2 U	5 U	4.2 U
Trichloroethene	70	µg/m^3	5.9 U	5.9 U	5.7 U	6.5 U	5.8 U	5.6 U	6 8 U	5.7 U
Vinyl Chloride	56	µg/m^3	2.8 U	2.8 U	2.7 U	3.1 U	2.7 U	2.7 U	3 2 U	2.7 U
Xylenes (Total)	3,500	µg/m^3	9.6 U	9.6 U	9.2 U	10 U	9.3 U	9.1 U	11 U	9.2 U

NA = not applicable. Criteria is not available for this compound.

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