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HUMAN HEALTH RISK ASSESSMENT
AMEREN MISSOURI HUSTER ROAD SUBSTATION
ST CHARLES, MISSOURI

by
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Boston, Massachusetts

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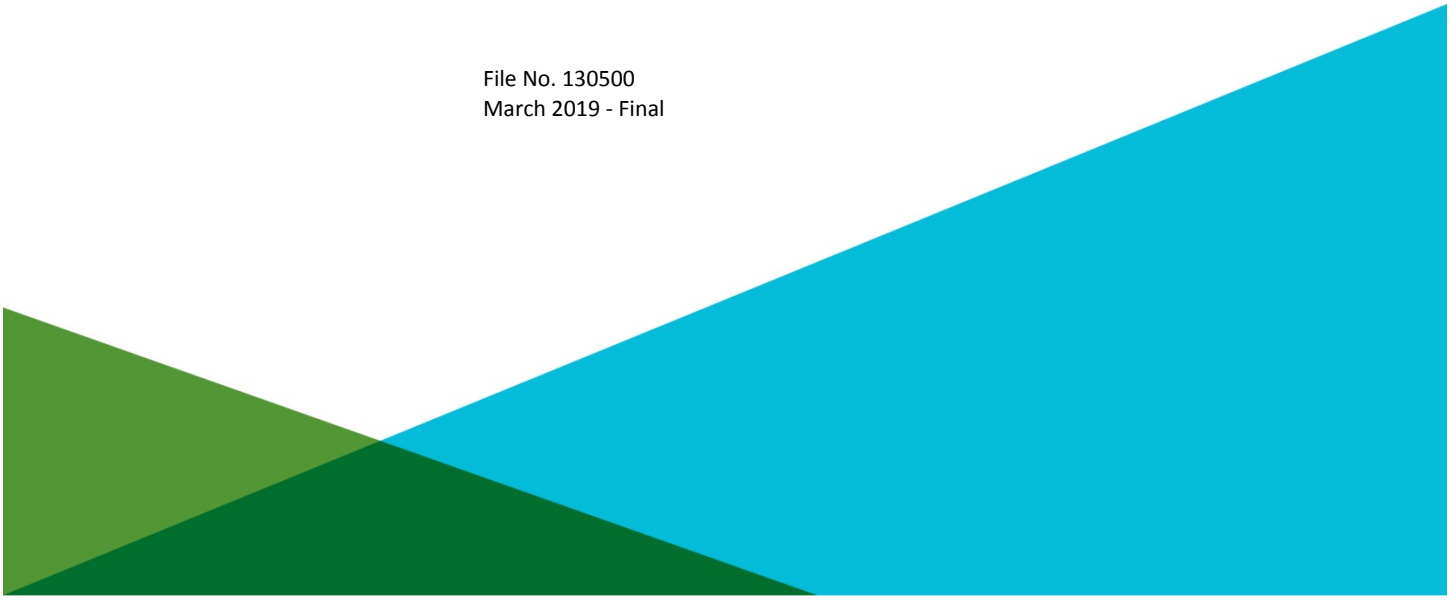

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List of Acronyms

ARAR	Applicable or Relevant And Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	Below ground surface
cDCE	cis-1,2-dichloroethylene
COPC	Constituent of Potential Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
ELCR	Excess Lifetime Cancer Risk
EPC	Exposure Point Concentration
ft	Feet
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IRIS	Integrated Risk Information System
LOAEL	Lowest-Observed-Adverse-Effect-Level
MCL	Maximum Contaminant Level
NCEA	National Center for Environmental Assessment
NCP	National Contingency Plan
NOAEL	No-Observed-Adverse-Effect-Level
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
RAGS	Risk Assessment Guidance for Superfund
RfC	Reference Concentration
RfD	Reference Dose
RME	Reasonable Maximum Exposure
RSL	Regional Screening Level
TBC	To Be Considered
TCE	Trichloroethylene
UCL	Upper Confidence Limit
UR	Unit Risk
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride
VISL	Vapor Intrusion Screening Level
VOC	Volatile Organic Compound

1. Introduction

This human health risk assessment (HHRA) was prepared on behalf of Ameren Corporation (Ameren) by Haley & Aldrich, Inc, (Haley & Aldrich) for the Huster Road Substation located at 3800 Huster Road, in St. Charles, Missouri. The HHRA evaluates potential exposures to, and health risks associated with, a release of chlorinated volatile organic compounds (VOCs) at the Site. The investigation history and remedial actions that have been performed at the Site were summarized in the "Site Investigation Data and Documents" report (CEC, 2014), and the Remedial Investigation Report to which this risk assessment is appended. This HHRA uses analytical data presented in those reports, as well as recommendations and conclusions from the Remedial Investigation Report, as the basis for evaluating health risks.

United States Environmental Protection Agency (USEPA) is presently the lead agency for the Site; therefore, the HHRA has been prepared in a manner consistent with guidance provided in USEPA's Risk Assessment Guidance for Superfund (RAGS) document series (USEPA, 1989; 2004; 2009). The risk assessment is conducted using the four-step paradigm, following this USEPA guidance:

- Data Evaluation – In this step, the data used in the assessment are summarized and the results of the process used for the selection of constituents of potential concern (COPCs) to be quantitatively evaluated in the risk assessment.
- Exposure Assessment – The purpose of the exposure assessment is to provide a quantitative estimate of the magnitude and frequency of potential exposure to COPCs for a receptor. Potentially exposed individuals, and the pathways through which those individuals may be exposed to COPCs, are identified based on the physical characteristics of the area, as well as the current and reasonably foreseeable future uses of the area and its environs. The extent of a receptor's exposure is estimated by constructing exposure scenarios that describe the potential pathways of exposure to COPCs and the activities and behaviors of individuals that might lead to contact with COPCs in the environment.
- Toxicity Assessment – In this step, the potential health effects associated with exposures to COPCs are described (hazard characterization) and the relationship between the magnitude of exposure (dose) and the potential for occurrence of specific health effects (response) for each COPC is evaluated (dose-response evaluation). Both potential carcinogenic and noncarcinogenic effects are considered.
- Risk Characterization – In this final step, the results of the exposure assessment and the dose-response assessment are integrated to derive site-specific numerical estimates of potentially carcinogenic and noncarcinogenic risks resulting from both current and reasonably foreseeable future potential human exposures to COPCs, as well as the explanatory interpretation of the results, both quantitative and qualitative.

The results of the risk characterization are used to identify, from the COPCs evaluated, a subset termed the constituents of concern (COCs), whose potential risks result in receptor-specific risks above the target risk range of $1x10^{-6}$ to $1x10^{-4}$ for potential carcinogens and above a target Hazard Index (HI) of 1 for noncarcinogens (that act on the same target organ), as defined in USEPA guidance (USEPA, 1991). This will allow risk managers to judge whether risks $\geq 10^{-6}$, but $\leq 10^{-4}$ require remediation. The target risk levels used to identify COCs are based on USEPA guidance. Specifically, USEPA provides the following guidance (USEPA, 1991):

"EPA uses the general 10(-4) to 10(-6) risk range as a "target range" within which the Agency strives to manage risks as part of a Superfund cleanup. Once a decision has been made to make an action, the Agency has expressed a preference for cleanups achieving the more protective end of the range (i.e., 10(-6)), although waste management strategies achieving reductions in site risks anywhere within the risk range may be deemed acceptable by the EPA risk manager. Furthermore, the upper boundary of the risk range is not a discrete line at 1 x 10(-4), although EPA generally uses 1 x 10(-4) in making risk management decisions. A specific risk estimate around 10(-4) may be considered acceptable if justified based on site-specific conditions, including any remaining uncertainties on the nature and extent of contamination and associated risks. Therefore, in certain cases EPA may consider risk estimates slightly greater than 1 x 10(-4) to be protective."

And,

"Where the cumulative carcinogenic site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10-4, and the non-carcinogenic hazard quotient is less than 1, action generally is not warranted unless there are adverse environmental impacts."

1.1 SITE SETTING

The following terms are used in this risk assessment to describe the Site and its environs:

- **Substation**– The Huster Electrical Power Substation is an active substation located at 3800 Huster Road in St. Charles, Missouri. A Site Locus is provided as Figure 1. The Substation, which was first developed in 1963, is an approximately 4-acre parcel located about 500 feet (ft) south of Route 370. The Substation is walled-in by a 12-ft high levee that was constructed in 1994 due to flooding of the Substation by the Mississippi River. A fence was erected outside the perimeter of the levee to limit access to the Substation "Substation" refers to the land and groundwater inside the limits of the fence and the levee.
- **North of Levee** refers to land and groundwater north of (outside of) the levee (specifically, north of the Substation), up to and including the location of five piezometers (PZ-1, -2, -3, -11 and -12) installed north of Route 370. Ameren's northern property line is located approximately 100 ft north of the levee.

Site investigations have addressed a release of chlorinated VOCs at the Site. Chlorinated VOCs are/were present in soils and groundwater. Sample locations for soil are shown on Figures 2 and 3. All soil samples were collected on Ameren property. Sample locations for groundwater are shown on Figure 4. Figure 4 also shows the direction of groundwater flow. Groundwater sample locations designated 'MW' are located on Ameren property and groundwater sample locations designated 'PZ' are located off of Ameren property.

Land in the vicinity of the Substation is industrial, commercial, recreational, and residential. Fountain Lakes Park abuts the Substation to the north, east, and south. The park includes several lakes or ponds that are used for fishing, walking trails, and a skateboard park. Highway 370 runs along the north side of the park. A residential development is located southeast of the park. An industrial area is located across Highway 370 and Huster Road to the west of the Substation. Agricultural land is located south of the park, and south and north of the industrial area. North and west of Highway 370 is continued agricultural land, and additional industrial/commercial property. Future land use is anticipated to remain the same.

According to boring logs provided by others, geology in the area consists of a silty clay which is present from ground surface to a depth of approximately 29-34 ft below ground surface (bgs). A fine to medium-grained sand layer is present below the silty clay layer, from approximately 30 ft bgs to the top of bedrock, which was measured at approximately 110 ft bgs. The shallowest available depth-to-groundwater measured during the Site investigation activities is 12 ft bgs, which occurred when the Mississippi River was at flood stage. Depth to groundwater during the Site investigation activities was more typically encountered at 20 +/- ft bgs.

Groundwater downgradient of the substation is a source of public drinking water supply, and the City of St. Charles Well No. 5 is located approximately 180-200 ft north of the Substation, as shown on Figure 4. However, installation of private water supply wells within the area north of the levee is prohibited by local ordinance.

1.2 SUMMARY OF ACTIONS

The following work has been conducted at the Site, according to the Remedial Investigation Report:

1. A groundwater capture system was installed at the northern end of the Site to limit migration of groundwater to the north of the substation. This system was started on 24 March 2014.
2. In 2014, a pilot study was conducted to evaluate three *in situ* soil and groundwater treatments at the substation, including zero valent iron, enhanced bioremediation, and in situ chemical oxidation.
3. In 2014, a pilot study was conducted to evaluate *in situ* remedies including zero valent iron and chemical oxidation at locations north of the Substation, near City Well No. 5.
4. In 2015 and 2018, a pilot study was performed consisting of sodium permanganate injections into the clays at the substation.
5. In 2016 and 2018, bio augmentation injections were performed at the substation to increase the biomass near the areas of highest impact of CVOCs.

Quarterly groundwater monitoring has been on-going since 2014; the most recent groundwater samples were collected in October 2018.

1.3 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) describes the sources and potential migration pathways through which constituents may have been transported to other environmental media (receiving media), and the human and environmental receptors that may in turn contact the receiving media. The linkage between a receiving medium and potential exposure is called an exposure pathway. For an exposure pathway to be complete, the following conditions must exist (as defined by USEPA (1989)):

1. A source and mechanism of chemical release to the environment;
2. An environmental transport medium (e.g., air, water, soil);
3. A point of potential contact with the receiving medium by a receptor; and
4. A receptor exposure route at the contact point (e.g., inhalation, ingestion, dermal contact).

If any of these four components are not present, the pathway is not complete. The components of the CSM for this Site are described below and shown on Table 1.

1.3.1 Sources

Chlorinated solvents were historically used at the Substation for degreasing and metal cleaning. VOCs, primarily comprised of tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (cDCE) and vinyl chloride (VC) have been detected in soil and groundwater at the Substation. In addition, chlorinated VOCs (primarily cDCE and VC) have been detected in groundwater to the north of the Substation. In June 2010, VOCs that were potentially Site-related were detected in the City of St. Charles Well No. 5, which as noted above is located approximately 180-200 ft north of the Substation (Figure 4).

1.3.2 Migration Pathways and Receiving Media

Site investigation data indicate that VOCs in soil at the substation migrated vertically through soil, to groundwater, dispersed in groundwater, and then migrated with groundwater flow downgradient, to the north. Consequently, receiving media include soil and groundwater at the substation, and groundwater downgradient (north) of the Site.

As described in the Remedial Investigation Report, prior to work at the Site, the extent of groundwater VOCs above drinking water standards or Maximum Contaminant Levels (MCLs) (USEPA, 2012) were confined to depths 45 ft and shallower at the substation, except at GW100 where the concentration of tetrachloroethene was above the MCL at depths 53-87 ft, and there was no indication of dense non-aqueous phase liquid observed at the Site. Therefore, monitoring wells and piezometers installed north of the levee were screened at 40 to 45 ft bgs.

VOC concentrations in substation soil and in groundwater have substantially decreased following Ameren's work. VOC concentrations in groundwater near the City of St. Charles Well No. 5 (i.e., as measured at locations PZ-5, PZ-7 and PZ-8) have decreased to below MCLs, and as described in the Remedial Investigation Report, no detections of Site-related VOCs have been reported in City Wells since February 2016. The reductions in VOC concentrations that have taken place since the original sampling of the Site are documented in Appendices D and E of the RI Report (PZ database for off-property wells and MW data base for on property wells, respectively). The groundwater data indicate that the area of groundwater impacts is shrinking, as evidenced by fewer wells exhibiting concentrations of VOCs above drinking water standards. Presently, all VOC concentrations in monitoring wells and piezometers north of the levee are below MCLs. The forthcoming feasibility study will provide a closer examination of trends and migration in order to support selection of the remedy for the Site.

VOCs can partition from soil to outdoor air, and from soil and groundwater to soil gas. Soil gas containing VOCs can then migrate through interstitial soil pore space, and potentially be drawn into buildings that are located in close proximity to VOC sources. This migration pathway is referred to as vapor intrusion; vapor intrusion can result in indoor air being a potential exposure medium for VOCs present in subsurface media. Based on information presented in the Remedial Investigation Report and recent groundwater sampling, VOCs are not present in groundwater near any occupied buildings. The shortest distance between the leading edge of the plume (PZ-2) and the nearest existing occupied building is approximately 300 ft (building located to the north of Highway 370). Therefore, vapor intrusion of VOCs from groundwater to indoor air is not a current complete exposure pathway. The potential for vapor intrusion to be a complete pathway if occupied buildings are constructed over the groundwater plume in the future is evaluated in the HHRA.

Although groundwater that discharges to surface water can result in migration of constituents to surface water, the Site investigation activities have demonstrated that VOCs are not present in downgradient groundwater at locations near surface water bodies, indicating that surface water is not a receiving medium for this Site.

1.3.3 Exposure Setting and Receptors

The Site is an active electrical power substation. Due to safety concerns, access to the substation is only granted to authorized personnel (Ameren employees or their subcontractors). Access by unauthorized persons does not occur due to fencing and locking gates. Ground within the substation is covered with crushed stone. The use of the land where the substation is located, including the entirety of Ameren property, is not expected to change in the future. Therefore, potential receptors under current and future conditions include:

- Industrial workers (workers who maintain the substation: current or future use)
- Construction workers (workers who may perform upgrades or modifications to the substation that involve subsurface excavation: future use)
- Future residents (future use of groundwater as drinking water and potential for vapor intrusion)

The surrounding land use is commercial, recreational, residential, and agricultural. However, the area north of the levee that is not on Ameren's property (i.e., where residual CVOCs have been detected in groundwater) is presently open space. Hypothetically, that land could be developed for recreational, commercial, or residential uses. However, installation of private water supply wells in that area is prohibited by local ordinance.

1.3.4 Potential Exposure Pathways

Exposure pathways that may potentially be complete and evaluated in this HHRA are summarized below:

- Substation Soil: Although the ground within the substation is covered with stone, which prevents direct contact with soil, the HHRA incorporates the assumption that industrial workers who access the substation could be exposed to surface soil, and construction workers who may perform intrusive subsurface work at the substation may contact surface and subsurface soil. Exposure to soil is assumed to occur by:
  - Dermal contact, which occurs when a substance is absorbed through the skin following adherence of soil on the skin (e.g., when skin surfaces, such as hands, contact the soil);
  - Incidental ingestion, which occurs when soil that is adhered the skin is transferred to the mouth during incidental hand-mouth contact; and
  - Inhalation, which can occur if VOCs partition from soil to the outdoor air as vapors, or adsorb to particulates which are then released to the outdoor air as dust.

  Future use of the substation property is expected to remain the same as the current use.
- Soil North of Levee: Soil north of the levee is not covered with stone, but there are no on-going activities that would result in exposure to that soil. Since all soil samples were collected on Ameren property, the HHRA incorporates the same exposure pathway assumptions for soil outside of the levee as it does for soil within the substation.

- Substation Groundwater: Although the substation will not be used for any purposes other than as a substation, the HHRA incorporates the assumption that groundwater beneath the substation could be used as a future source of drinking water. Where groundwater is used as a source of drinking water, residents are assumed to potentially be exposed to COPCs. The drinking water pathway assumes that residents use groundwater as a source of tap water and are exposed via ingestion as drinking water and dermal contact and inhalation of VOCs that may be released from the water to indoor air during household uses (including bathing). Construction workers could potentially be exposed to COPCs in groundwater via incidental ingestion and dermal contact if shallow groundwater is encountered during excavation activities. However, site groundwater is located at a depth (12 to 23 ft bgs) that is greater than depths that would realistically be encountered during excavation activities, indicating that direct contact with groundwater is not a complete exposure pathway for a construction worker.
- Groundwater North of Levee: Although groundwater north of the levee is used as a source of drinking water for public water supply, no Site-related constituents have been detected in the City Wells since February 2016, and installation of private supply wells in the area north of the levee is prohibited by local ordinance. There are no occupied buildings in that area. Therefore, under current use conditions, there are no complete exposure pathways to groundwater north of the levee. Furthermore, analytical results for on-going groundwater monitoring of the area north of the levee demonstrate that VOCs are below drinking water standards. Evaluation of substation groundwater as a hypothetical future source of drinking water is conservative for all groundwater associated with the Site.
- Vapor Intrusion: Although the vapor intrusion exposure pathway is incomplete under current use conditions, groundwater is evaluated as a potential future source of vapor intrusion for a residential receptor.

1.4 DOCUMENT ORGANIZATION

The HHRA is organized into the following sections:

- Section 2 provides the Data Evaluation;
- Section 3 provides the Exposure Assessment;
- Section 4 provides the Toxicity Assessment;
- Section 5 provides the Risk Characterization and uncertainty analysis;
- Section 6 provides conclusions.

References used to complete the HHRA are provided at the end of the document in Section 8.

2. Data Evaluation

This section identifies the data available for use in HHRA and documents the selection or exclusion of particular data for use in the risk assessment, provides the rationale for the way data will be grouped for evaluation in the risk assessment, and documents the methods used to summarize data using statistical descriptors. This section also provides the methods used to select COPCs and documents the COPC selection results.

2.1 SOIL CHEMICAL CHARACTERIZATION

2.1.1 Soil Sampling and Analysis

Soil samples were collected under pre-remedial conditions in 2012 and 2013, and under post-remedial conditions in 2016 as follows:

- **2012**: 354 soil samples, including 35 field duplicates, were collected at 62 locations (SB-01 through SB-20, SB-20A through SB-41, and SS-01 through SS-20).
- **2013**: 30 soil samples, including 2 field duplicates, were collected at 3 locations (SB-42, SB-43, and SB-44).
- **2018**: 30 post-remedial soil samples were collected at nineteen locations (IP-27 through IP-46). 10 post-remedial soil samples were collected at depths between 2-10 ft bgs and 10-23 ft bgs at 6 locations (IP-28, -29, -32, -33, -36, -38). The remaining locations were sampled from depths greater than 23 ft bgs and were therefore not used in the risk assessment, as discussed in Section 2.1.2 below.

The analytical data representative of both pre-remedial conditions (2012 and 2013 data) and post-remedial conditions (2018 data) were used in the HHRA. The pre-remedial data provide a conservative assessment of potential exposure conditions, recognizing that VOC concentrations in soil data from 2018 are currently lower than those represented by the 2012 and 2013 investigation data. 2018 post-remedial analytical data were used in the HHRA to provide a current assessment of potential exposure conditions.

Soil samples were analyzed for VOCs by EPA Method 8260B, polychlorinated biphenyls (PCBs) by EPA Method 8082, and/or total organic carbon. Soil samples were collected from ground surface to up to 96 ft bgs. Analytical data are provided in Attachment A.

Pre-remedial soil samples collected at the substation are from the following investigation locations:

- SB-1 through SB-16
- SB-28, SB-29, SB-30
- SB-33 through SB-44
- All of the SS series (SS-01 through SS-20)

Pre-remedial soil samples collected north of the levee are from the following investigation locations:

- SB-17 through SB-20
- SB-20A through SB-27
- SB-31, SB-32

Post-remedial soil samples were collected at the substation from the following investigation locations:

- IP-28 and -29,
- IP-32, -33,
- IP-36,
- IP-38

All soil data were validated in accordance with USEPA data validation procedures, as described in the Remedial Investigation Report (Ameren, 2017).

2.1.2 Soil Data Evaluation and Summarization

The samples listed above were evaluated quantitatively in this HHRA. Soil sampling depths used to define surface soil and subsurface soil were as follows:

- Surface soil (0-2 ft bgs)
- Subsurface soil (2-10 ft bgs) and (10-23 ft bgs)

At this Site, the top of the water table was measured at 23 ft bgs in September 2012 (as reported in the 2017 Remedial Investigation Report). Although shallower depth-to-groundwater measurements were recorded based on seasonal variations, soil as deep as 23 ft bgs was evaluated to provide perspective on soil VOC concentrations.

The analytical data for soil were summarized separately as follows:

- **Table 2:** Pre-Remedial Substation soil 0 to 2 ft bgs
- **Table 3:** Pre-Remedial Substation subsurface soil 2 to 10 ft bgs
- **Table 4:** Pre-Remedial Substation subsurface soil 10 to 23 ft bgs
- **Table 5:** Pre-Remedial north of levee surface soil 0 to 2 ft bgs
- **Table 6:** Pre-Remedial north of levee subsurface soil 2 to 10 ft bgs
- **Table 7:** Pre-Remedial north of levee subsurface soil 10 to 23 ft bgs
- **Tables 8 and 10:** Post-Remedial Substation subsurface soil 2 to 10 ft bgs
- **Table2 9 and 11:** Post-Remedial Substation subsurface soil 10 to 23 ft bgs

Each table identifies the number of positively detected results and the total number of results (i.e., the frequency of detection), the range of detected concentrations, the data qualifier assigned to the maximum detected concentration, the location of the maximum detected concentration, the range of detection limits, and potential applicable or relevant and appropriate requirement (ARAR)/to be considered (TBC) values. The following procedures were applied when summarizing the analytical data:

- Only analytes that were positively detected in at least one sample were included in the data summaries.
- Results qualified as estimated (“J” qualified) were used in the risk assessment.
- Results qualified as rejected (“R” qualified), if present in the data set, were not used in the risk assessment.
- Field duplicate samples were evaluated as follows: If both samples were detected concentrations, the higher concentration was used. If one sample was detected and the other was non-detect, the detected concentration was used. If both samples were non-detect, the lower laboratory reporting limit was used.

Section 2.3.1 provides the methods used to review these data sets to select soil COPCs.

2.2 GROUNDWATER CHEMICAL CHARACTERIZATION

2.2.1 Groundwater Sampling and Analysis

Groundwater samples were collected during investigations conducted in 2012 through 2018 at up to 29 locations, and were analyzed for VOCs by EPA Method 8260. Groundwater data were selected for use in the HHRA as wells that represent the core of the substation groundwater plume (USEPA, 2014a). Samples collected between January 2017 and October 2018 were selected for use in the HHRA, as they represent post-remedial conditions.

Groundwater sampling locations at the substation include:

- MW-8
- MW-13 and MW-14
- MW-39, MW-40, MW-41

Groundwater samples collected north of the levee include:

- PZ-1 through PZ-12
- MW-6 and MW-7

Data collected from December 2017 through June 2018 were used were selected for use in the HHRA, as they are considered representative of current conditions.

Analytical data for groundwater samples are provided in Attachment A.

2.2.2 Groundwater Data Evaluation and Summarization

The analytical data for substation groundwater representing the core of the groundwater plume (future conditions) is summarized in Table 12, and includes analytical data collected since the December 2016 remedial amendments were injected (i.e., data collected between January 2017 and October 2018). Table 13 summarizes analytical data for north of levee groundwater for the most recent sampling round. Analytical results for all wells and piezometers north of the Levee indicate that groundwater concentrations are stable or decreasing. Therefore, the most recent groundwater concentrations are representative of current conditions.

Tables 12 and 13 identify the number of positively detected results and the total number of results (i.e., the frequency of detection), the range of detected concentrations, the location of the maximum detected concentration, the data qualifier assigned to the maximum detected concentration, the range of detection limits, and potential ARAR/TBC values. The procedures applied to summarizing soil data (Section 2.1.2) were applied when summarizing the analytical data for groundwater.

Section 2.3.2 provides the methods used to review these data sets to select groundwater COPCs.

2.3 CHEMICALS OF POTENTIAL CONCERN

The procedure used to select COPCs for the HHRA is summarized below and is consistent with USEPA methodology. COPC selection is documented on Tables 2 through 11 for soil, and Tables 12 and 13 for groundwater.

2.3.1 Soil

A concentration-toxicity screening is used to reduce the number of chemicals evaluated in the risk assessment to only those that would potentially pose more than a *de minimis* health risk (USEPA, 1989). The maximum detected concentration of each chemical in soil is compared to the appropriate human health risk-based screening value. These screening values represent concentrations at or below which there is no significant potential health concern.

Screening was conducted using the USEPA Regional Screening Levels (RSLs) (USEPA, 2018b). The soil RSLs are based on upper-bound exposure assumptions for direct contact with soil (incidental ingestion and dermal contact), dust inhalation, and ambient vapor inhalation and, therefore, are protective screening criteria. Residential soil RSLs are protective for residential receptor exposure to soil, and industrial RSLs are protective for non-residential receptor exposure to soil. RSLs used for screening are based on a target cancer risk of 1E-06 and a target hazard quotient (HQ) of 0.1.

Pre-remedial soil data were screened against RSLs as follows:

- Substation soil was screened using industrial RSLs, since only non-residential exposures by industrial or construction workers may potentially occur.
- Surface soil north of the levee was screened using residential RSLs as a conservative approach.
- Subsurface soil north of the levee was screened using industrial RSLs since construction workers would be the only potential receptors for that soil.

Post-remedial soil data were screened against RSLs as follows:

- Substation soil (2 – 10 and 10 – 23 ft bgs) was screened against both the industrial and residential RSLs. The use of residential RSLs for post-remedial substation soil is a conservative assumption because access to the substation is restricted to authorized personnel via fencing and locking gates, and land use at the site is not expected to change in the future. However, the COPC screening using residential RSLs provides additional perspective concerning post-remediation soil quality.

COPCs were selected using the following criteria:

- If the higher of the maximum detected concentration and maximum reporting limit for non-detects is below the risk-based screening levels (i.e., the RSL), the detected analyte may be eliminated as a COPC.
- If the higher of the maximum detected concentration and maximum reporting limit for non-detects is above the risk-based screening level, the analyte is selected as a COPC.

The results of the screening against RSLs (shown on Tables 2 through 11) are provided below.

No COPCs were selected for the following soil data sets/scenarios:

- Table 2: Pre-Remedial Substation soil 0 to 2 ft bgs
- Table 5: Pre-Remedial North of levee surface soil 0 to 2 ft bgs
- Table 6: Pre-Remedial North of levee subsurface soil 2 to 10 ft bgs
- Table 7: Pre-Remedial North of levee subsurface soil 10 to 23 ft bgs
- Table 8: Post-Remedial Substation subsurface soil 2 to 10 ft bgs – Commercial/Industrial Scenario
- Table 9: Post-Remedial Substation subsurface soil 10 to 23 ft bgs – Commercial/Industrial Scenario
- Table 10: Post-Remedial Substation subsurface soil 2 to 10 ft bgs – Residential Scenario

One or more COPCs were selected for the following data sets/scenarios:

- Table 3: Pre-Remedial Substation subsurface soil 2 to 10 ft bgs: Trichloroethene was selected as a COPC.
- Table 4: Pre-Remedial Substation subsurface soil 10 to 23 ft bgs: Trichloroethene and Tetrachloroethene were selected as COPCs.
- Table 11: Post-Remedial Substation subsurface soil 10 to 23 ft bgs – Residential Scenario: Vinyl chloride was selected as a COPC.

2.3.2 Groundwater

Screening of groundwater was conducted using the USEPA RSLs for tapwater (USEPA, 2018b). The tapwater RSLs are protective for residential receptor exposure to groundwater. The tapwater RSLs used for screening are based on a target cancer risk of 1E-06 and a target HQ of 0.1. Drinking water standards (Maximum Contaminant Levels; MCLs) (USEPA, 2018a) were provided along with the RSLs in the screening tables. COPCs were selected using the following criteria:

- If the higher of the maximum detected concentration and maximum reporting limit for non-detects in groundwater is below the tapwater RSL, the detected analyte may be eliminated as a COPC.
- If the higher of the maximum detected concentration and maximum reporting limit for non-detects is above the tapwater RSL, the analyte is selected as a COPC.

Groundwater wells that represent the core of the substation groundwater plume, as discussed in Section 2.1.1, were used for screening against RSLs. As can be seen in Appendix A, for all groundwater constituents, the higher of the maximum detected concentrations or reporting limits for non-detects in all substation wells are found in wells representing the core of the substation groundwater plume. Therefore, using analytical data from wells representing the core of the substation groundwater plume

rather than all substation groundwater wells does not impact the COPC screening results. The results of the screening against RSLs (shown on Tables 12 through 13) are as follows:

- Substation Groundwater: 1,1-Dichloroethene, Acetone, cis-1,2-Dichloroethene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, Trichloroethene, and Vinyl chloride were selected as COPCs.
- North of Levee Groundwater: cis-1,2-Dichloroethene, Tetrachloroethene, Trichloroethene, and Vinyl chloride were selected as COPCs.

2.3.3 Summary of Screening

COPCs that were selected at the Site are summarized below.

	Pre-Remedial Soil		Post-Remedial Soil	Groundwater	
	Substation - Commercial/Industrial		Substation - Residential		
COPCs	**2-10 ft**	**10-23 ft**	**10-23 ft**	**Substation**	**North of Levee**
1,1-Dichloroethene				X	
Acetone				X	
cis-1,2-Dichloroethene				X	X
Tetrachloroethene		X		X	X
Toluene				X	
trans-1,2-Dichloroethene				X	
Trichloroethene	X	X		X	X
Vinyl chloride			X	X	X

3. Exposure Assessment

This risk assessment is being conducted to evaluate health risks associated with current and potential future conditions at the site. This section of the HHRA identifies the current and future populations of humans that use or access the substation and area north of the levee, the mechanisms or exposure pathways by which those humans may be potentially exposed to COPCs, and the magnitude of exposure that may occur through the potential exposure pathways. The exposure assessment process involves the following steps:

1. Characterization of the exposure setting in terms of physical characteristics, and uses of soil and groundwater;
2. Identifying the receptors that may be potentially exposed to COPCs under current and potential future land uses, and identification of exposure points and potential exposure pathways to which the receptors may be exposed; and
3. Quantification of exposure for each receptor from all exposure pathways. Exposures are quantified by developing receptor exposure scenarios, identifying exposure point concentrations, and then calculating chemical intakes.

The exposure setting, receptors, and potential exposure pathways were described in the CSM discussion in Section 1 and shown in Table 1. In this section, the outcome of the COPC selection (Section 2) is combined with the conclusions from the CSM discussion, to identify potentially complete exposure pathways that are evaluated in the HHRA, as well as the methods used to quantify exposures through those exposure pathways.

3.1 IDENTIFICATION OF POTENTIAL EXPOSURE PATHWAYS AND EXPOSURE POINTS

3.1.1 Soil Exposure Pathways and Exposure Points

Although COPCs have been identified for pre-remedial substation soil (2-10 ft bgs and 10-23 ft bgs), there are no complete exposure pathways to soil greater than 10 ft bgs, and no COPCs were identified in post-remedial substation soil (2-10 ft bgs and 10-23 ft bgs) using industrial soil RSLs. This indicates that, based on the post-remedial (current) conditions, residual VOC concentrations in Site soils are below concentrations that would pose a de minimis risk for continued industrial use of the Site.

No COPCs were identified in post-remedial substation soil (2-10 ft bgs) using residential RSLs. Vinyl chloride was identified as a COPC in post-remedial substation soil (10-23 ft bgs) due to one exceedance of the residential RSLs at a depth of 20.5 ft bgs. However, there are no complete exposure pathways to soil greater than 10 ft bgs.

No COPCs were identified in pre-remedial north of levee soil (0-2 ft bgs, 2-10 ft bgs, or 10-23 ft bgs).

Based on the results of the COPC selection, no quantitative evaluation of risks for potential exposures to substation soil or north of levee soil is required.

3.1.2 Groundwater Exposure Pathways

COPCs have been identified for substation and north of levee groundwater. However, there are no current complete exposure pathways associated with potable use of groundwater. Specifically:

- Substation groundwater is not used as a source of potable water and will not be used for potable use in the future.
- Substation groundwater is not a potential source of VOCs to municipal water because the on-going groundwater containment system controls potential migration of VOCs to the north of the substation.
- No VOCs have been detected in a City of St. Charles municipal well since February 2016.
- Although COPCs were identified in groundwater north of the levee based on detected concentrations above tapwater RSLs, VOC concentrations in groundwater north of the substation are all below the MCLs, indicating that groundwater is not a potential source to the City of St. Charles Well No. 5. Furthermore, the zero-valent iron permeable barrier controls further potential migration of VOCs north of City Well No. 5.
- Even if VOCs were detected in groundwater north of the levee at concentrations above the MCL, and groundwater entered the municipal well at concentrations above the MCL, the water from multiple city wells is blended before being distributed. The blending, as well as various drinking water treatment processes, would significantly reduce or eliminate VOCs in municipal drinking water.

Realistically, there are no complete exposure pathways to groundwater under future conditions because institutional controls will continue until groundwater COPC concentrations have achieved MCLs. However, in accordance with USEPA guidance for baseline risk assessments (USEPA, 1989), the HHRA incorporates the assumption that groundwater within the VOC plume could be used as source of drinking water in the future. Therefore, the substation groundwater data set evaluated in the HHRA represents data from the core of the groundwater plume and is used as a conservative estimate of potential future exposure. There are three exposure routes by which humans can be exposed to COPCs in groundwater: ingestion, dermal contact, and inhalation of volatiles that may be released from groundwater to indoor air during household uses of the water. Potentially complete exposure pathways for future receptors at the Site are presented below:

Receptor Type	Exposure Point	Exposure Pathway
Future Resident	Core of plume (within Substation)	- Ingestion as drinking water - Dermal Contact - Inhalation of volatiles

Vapor intrusion is an incomplete pathway for current land use conditions. There are no occupied structures at the Substation, and it is not anticipated that occupied structures will be built at the Substation in the future. There are currently no structures in close proximity to groundwater where VOCs have been detected. The nearest occupiable building to the downgradient edge of the plume (PZ-2) is approximately 300 ft away, on the north side of Highway 370. Therefore, the vapor intrusion exposure pathway is incomplete under current use conditions.

To evaluate the potential for vapor intrusion to be a complete pathway if occupied buildings are constructed in the future, the maximum concentrations of VOCs that were detected in substation

groundwater were compared to USEPA residential vapor intrusion screening levels (VISLs), as shown on Tables 12 and 13. Tetrachloroethene, trichloroethene, and vinyl chloride were detected at concentrations in Substation groundwater above the VISLs, indicating that the vapor intrusion pathway could potentially be complete if buildings were constructed over the core of the plume in the future. No VOCs were detected in groundwater north of the levee at concentrations above VISLs. However the maximum reporting limit (for non-detects) for vinyl chloride of 0.002 mg/L is slightly above the VISL of 0.00178 mg/L. Vinyl chloride was detected in only two of fourteen groundwater samples in the data set for groundwater north of the levee, at concentrations of 0.0001 mg/L and 0.0006 mg/L. This suggests that, although the reporting limit for vinyl chloride is above the VISL, vinyl chloride is unlikely to be present in groundwater north of the levee at concentrations above the VISL. Therefore, the vapor intrusion pathway is unlikely to be complete if occupied buildings were constructed over that portion of the plume. VISLs were calculated using the November 2018 USEPA VISL Calculator, (USEPA, 2018c), and assuming a target risk of 1E-05, a target HQ of 1, and a groundwater temperature of 17°C. The VISL Calculator output is provided in Attachment B.

Direct contact with groundwater is an incomplete exposure pathway for all receptors. Of the receptors identified at the Site, only construction workers are anticipated to do subsurface work (i.e., deeper than 3 ft bgs). However, it is anticipated that future construction would not likely extend deeper than 10 ft bgs. Groundwater depths measured during site investigation activities range from 12 ft bgs to 23 ft bgs. Consequently, groundwater is not expected to be encountered during construction activities.

3.2 QUANTIFICATION OF POTENTIAL EXPOSURE

3.2.1 Exposure Point Concentrations

The USEPA defines the exposure point concentration (EPC) as the representative chemical concentration a receptor may contact at an exposure point over the exposure period (USEPA, 1989). The typical concept of human exposure within a defined exposure point is that an individual contacts the contaminated medium on a periodic and random basis. Because of the repeated nature of such contact, the exposure does not generally occur at a fixed point but rather at a variety of points with equal likelihood. Thus, the EPCs should be the arithmetic averages of the chemical concentrations. However, to account for uncertainty in estimating the arithmetic mean concentration, the USEPA recommends that an upper confidence limit (UCL) be used to represent the EPC.

In accordance with USEPA guidance, 95% UCL values were calculated using USEPA ProUCL Statistical Software for Environmental Applications version 5.1.002 (USEPA, 2016). The ProUCL software performs a goodness-of-fit test that accounts for data sets without any non-detect observations, as well as data sets with non-detect observations. The software then determines the distribution of the data set for which the EPC is being derived (e.g., normal, lognormal, gamma, or non-discernable), and then calculates a conservative and stable 95% UCL value in accordance with the framework described in "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites" (USEPA, 2002). The software includes numerous algorithms for calculating 95% UCL values and provides a recommended UCL value based on the algorithm that is most applicable to the statistical distribution of the data set. For this risk assessment, when ProUCL recommended more than one UCL for use, the highest of the recommended values was conservatively selected as the representative 95% UCL. ProUCL calculations are provided in Attachment C.

The EPCs for substation groundwater are derived using analytical data for the groundwater data set for wells within the core of the plume (MW-8, MW-13 and MW-14, MW-39, MW-40, MW-41).

In accordance with USEPA guidance, if the 95% UCL value was higher than the maximum detected concentration, the exposure point concentration to evaluate the Reasonable Maximum Exposure (RME) was selected as the maximum detected concentration. This condition did not occur for site COPCs. EPCs for substation groundwater are provided in Table 14. EPCs are not applicable for soil or groundwater north of the levee, as there were no COPCs and/or complete pathways identified.

3.2.2 Reasonable Maximum Exposure Scenarios

Exposure scenarios are used to quantitatively describe the COPC exposures that could theoretically occur for each land use and exposure pathway evaluated. The exposure scenarios are used in conjunction with EPCs to derive quantitative estimates of COPC intake or exposure. For each receptor population, the RME was quantified. The RME is defined by the USEPA as the highest exposure that is reasonably expected to occur at a Site (USEPA, 1989). It should be noted that the intent of the RME is to provide a conservative estimate of exposure, which is well above the average exposure but still within the range of plausible exposures. The RME is determined using upper bound estimates (i.e., 90^{th} to 95^{th} percentile values) for key exposure parameters.

As indicated in prior sections of this risk assessment, future residential exposure to substation groundwater represented by the core of the groundwater plume is the only complete exposure pathway for which: 1) COPCs were identified, and 2) potentially complete exposure pathways exist for the COPCs. This scenario was quantitatively evaluated for a future resident. Exposure parameters for the adult and child resident are USEPA default values (USEPA, 2014b) and are provided in Table 15. Exposures associated with a potential future vapor intrusion pathway at the core of the groundwater plume were not quantitatively evaluated; the results of the vapor intrusion screening (Table 12 and Table 13) are discussed in the Risk Characterization (Section 5).

3.2.3 Calculation of Intake

The intake (i.e., ingestion, dermal absorption, or inhalation) of COPCs by a human was quantified according to standard USEPA calculation algorithms (USEPA, 1989; 2004; 2009). Intakes are quantified to estimate the potential for non-cancer and carcinogenic health effects. The equations and intake calculations are presented in Attachment D for residential use of groundwater as drinking water.

4. Toxicity Assessment

There are two components of the Toxicity Assessment; the Hazard Identification and the Dose-Response Evaluation.

4.1 HAZARD IDENTIFICATION

The USEPA Integrated Risk Information System (IRIS) provides the toxicity information for the COPCs identified in the Data Evaluation (Section 2.3). The IRIS summaries for each constituent are lengthy and can be accessed as shown below.

COPCs	IRIS Webpage Address
1,1-Dichloroethene	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=39
Acetone	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=128
cis-1,2-Dichloroethene	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=418
Tetrachloroethene	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=106
Toluene	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=118
trans-1,2-Dichloroethene	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=314
Trichloroethene	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=199
Vinyl chloride	https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=1001

Tables 16 through 19 provide the dose-response values for each COPC. For potential carcinogenic effects, the weight of evidence/ cancer guideline description is provided in the tables. For potential noncarcinogenic effects, the primary target organ or system/critical effects are provided in the tables.

4.2 DOSE-RESPONSE EVALUATION

A Dose-Response Evaluation was conducted and is provided in Attachment E. A summary of the dose-response evaluation is provided below. The toxicity values are presented in Tables 16 through 19.

- **Chronic Non-Carcinogenic Health Effects:** USEPA has established chronic non-carcinogenic health criteria termed reference doses (RfDs) for oral and dermal exposure routes, and reference concentrations (RfCs) for the inhalation exposure route. The derivation of RfDs and RfCs is described in Attachment E. The RfD and RfC are each a daily intake level for the human population, including sensitive subpopulations, that are not expected to cause adverse health effects over a lifetime of exposure (USEPA, 1989). It should be noted that RfDs and RfCs are generally very conservative (i.e., health protective) due to the use of large uncertainty factors. Chronic RfDs and RfCs were used to quantify non-carcinogenic risks for the future resident scenario evaluated in this HHRA, consistent with USEPA guidance (USEPA, 1989).
- **Carcinogenic Health Effects:** USEPA has established cancer toxicity values termed cancer slope factors (CSFs) for oral and dermal exposure routes, and unit risks (URs) for the inhalation exposure route. A discussion of the modeling that has been conducted to describe the expected quantitative relationship between dose of a carcinogen and associated risk of developing cancer is provided in Attachment E.

  USEPA uses both an alpha-numeric system and a weight-of-evidence-based descriptive narrative to describe the carcinogenic potential of an agent. Descriptors are provided in Attachment E.

The carcinogenic potential for COPCs identified in environmental media at the Site is provided below:

- 1,1-Dichloroethene, acetone, 1,2-Dichloroethene (cis), 1,2-Dichloroethene (trans), and toluene have inadequate evidence to determine carcinogenic potential.
- Trichloroethylene is classified as 'Carcinogenic in Humans' by the oral/dermal and inhalation exposure routes. Trichloroethylene is also classified as a mutagen under current USEPA cancer guidelines (USEPA, 2018d). Age-dependent adjustment factors are used to account for mutagenicity and are applied to evaluate child exposure receptors (USEPA, 2018d).
- Tetrachloroethylene is classified as 'Likely to be Carcinogenic in Humans' by the oral/dermal and inhalation exposure routes.
- Vinyl chloride is classified as 'Known human carcinogen' by the oral/dermal and inhalation exposure routes. Vinyl chloride is also classified as a mutagen under current USEPA cancer guidelines (USEPA, 2018e). Age-dependent adjustment factors are used to account for mutagenicity and are applied to evaluate child exposure receptors (USEPA, 2018e).

- **Toxicity Values for Dermal Exposure:** Route-specific toxicity values are not available for the dermal pathway and are, therefore, extrapolated from the oral toxicity values following USEPA guidance (USEPA, 2004), as described further in Attachment E.
- **Sources of Dose-Response Values:** The sources used to identify dose-response values for this HHRA are consistent with USEPA guidance and are provided in Attachment E.

5. Risk Characterization

The risk characterization provides a quantitative and qualitative discussion of the potential health hazards posed by the COPCs in environmental media for the receptor scenarios evaluated at the Site.

5.1 RISK CHARACTERIZATION METHODOLOGY

Cancer risks associated with exposure to each COPC are calculated by multiplying the exposure route pathway-specific intake (e.g., oral exposure to groundwater) or exposure concentration (e.g., inhalation of volatiles) by its exposure route-specific CSF (e.g., oral CSF) or UR.

$$Intake\ (mg/kg/day\ or\ ug/m^3) \times CSF\ (mg/kg/day)^{-1}\ or\ UR\ (ug/m^3)^{-1} = ELCR$$

The calculated value is an Excess Lifetime Cancer Risk (ELCR) and represents an upper bound of the probability of an individual developing cancer over a lifetime as the result of exposure to a COPC. This process is repeated for all exposure pathways for each receptor at each exposure point.

Non-cancer risks associated with exposure to each COPC are calculated by dividing the exposure route pathway-specific intake (e.g., oral exposure to groundwater) or exposure concentration (e.g., inhalation of volatiles) by its exposure route-specific RfD or RfC.

$$Intake\ (mg/kg/day\ or\ ug/m^3) / RfD\ (mg/kg/day)\ or\ RfC\ (ug/m^3) = HQ$$

The calculated value is a hazard quotient (HQ). Chemical-specific HQs are then summed among all exposure pathways for each receptor at each exposure point to produce an HI. An HI less than 1 indicates that non-carcinogenic toxic effects are unlikely to occur as a result of COPC exposure. HIs greater than 1 may be indicative of a possible non-carcinogenic toxic effect.

Risk calculations are presented in Attachment D and summarized in Table 20. Total future resident ELCR and hazard index were compared to acceptable risk levels established in the National Contingency Plan (NCP; USEPA, 1990). According to the NCP and USEPA (1991) guidance "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," USEPA uses a hazard index of unity (i.e., 1) that act on the same target organ, and a 10^{-4} (one in ten-thousand) to 10^{-6} (one in a million) risk range as a "target range" within which the Agency strives to manage risks as part of a Superfund cleanup.

5.2 RISK CHARACTERIZATION RESULTS

Quantitative risk estimates were made for the Potential future resident (adult and child) receptor. COPSs were not identified for the other receptors, or the potential exposure pathways are not complete.

Potential future resident (adult and child) exposure to substation groundwater is associated with an ELCR of 2E-01. The cancer risks are above the NCP risk range of 10^{-6} to 10^{-4}. The cumulative HI is 950, which is above the target HI of 1. COPCs in substation groundwater have RfD and RfC values that are based on effects to different target organs, as shown in Tables 18 and 19. The HI's for substation groundwater based on target organ are also above 1, due to the hazard quotients associated with cis-1,2-dichloroethene, 1-2-Dichloroethene (trans), tetrachloroethylene, trichloroethene and vinyl chloride (Table 20).

As shown in Table 12, maximum detected COPC concentrations within the core of the plume are between one and four orders of magnitude higher than VISLs. This indicates that if construction of an occupied building was to occur over the core of the groundwater plume, vapor intrusion exposures could be associated with risks above the NCP acceptable risk levels, and that further assessment of the vapor intrusion pathway would be required.

5.3 RISK ASSESSMENT QUALITATIVE UNCERTAINTY ANALYSIS

This section identifies and discusses uncertainties in the risk assessment. These uncertainties are identified to place the results in context or perspective. The following types of uncertainties should be considered in any human-health risk evaluation:

- Uncertainties in the nature and extent of the release of a COPC;
- Uncertainties associated with estimating the frequency, duration, and magnitude of possible exposure;
- Uncertainties associated with assigning exposure parameters to a heterogeneous population that includes both men and women and young and old (e.g., body weight and ingestion rates);
- Uncertainties in estimating potential carcinogenic and/or non-carcinogenic measures of toxicity (e.g., CSFs, URs, RfDs, and/or RfCs); and
- Uncertainties about possible synergistic or antagonistic chemical interactions of a chemical mixture.

These generic uncertainties, which are applicable to all risk assessments, are not evaluated in this uncertainty analysis. Rather, this uncertainty analysis evaluates site-specific uncertainties that could have a bearing on the interpretation of the risk assessment results. The following presents a consideration of the HHRA-specific uncertainties.

Soil Exposure Pathways

Only one constituent (trichloroethene) was selected as a COPC in pre-remediation substation soil. The maximum detected concentration of trichloroethene (6.78 mg/kg) is only slightly higher than the industrial RSL based on a 1E-06 cancer risk (6.0 mg/kg) and below the industrial RSL based on an HI of 1 (19 mg/kg). This indicates that even under pre-remedial conditions, risks associated with industrial use exposures to soil would be negligible.

Exposure Scenarios

Exposure scenarios in a risk assessment are selected to be representative of potential exposures to COPCs in media that may be experienced by human receptors based on current and reasonably foreseeable land use. These exposure scenarios are developed for a hypothetical receptor, but one that would represent the RME scenario. Therefore, exposure levels are assumed for these receptors that are much greater than expected to typically occur in an actual population.

Sample Location

The data used to calculate EPCs are assumed to be representative of general area conditions and a result of random sampling. Sample locations for the substation groundwater EPCs were selected to represent the core of the chlorinated VOCs groundwater plume and are based on previous knowledge of areas where chlorinated VOCs had been detected in higher concentrations. These sample locations are

biased towards areas that are more likely to contain higher concentrations of chlorinated VOC-derived constituents, compared to what may be present at other areas of the site. Thus, it is expected that concentrations measured in the substation groundwater wells are a conservative estimate of exposure point concentrations.

Consideration of Future Scenarios

Section 5 provides an evaluation of the future residential drinking water pathway using data available from January 2017 through May 2018. Based on the information provided in the RI Report, the groundwater data indicate that VOC concentrations in groundwater outside of the core of the plume are decreasing (downward trends). Within the core of the plume, concentrations of tetrachloroethene and trichloroethene are decreasing, while concentrations of degradation products (cis-1,2-dichloroethene and vinyl chloride) are decreasing in some wells and variable in other wells as the plume continues to degrade. The area of groundwater impacts is shrinking, as evidenced by fewer wells exhibiting concentrations of VOCs above drinking water standards. Therefore, while the groundwater data used in the HHRA is representative of the time period over which it was collected, information provided in the RI Report indicate that these conditions will continue to decrease in the future.

6. Conclusions

This HHRA was performed in a manner consistent guidance provided in USEPA's *Risk Assessment Guidance for Superfund* (RAGS) document series (USEPA, 1989; 2004; 2009), and was completed to determine if, under current and future land use, potential exposures to soil or groundwater are associated with health risks that are above USEPA risk management criteria.

The results of the HHRA support the following conclusions:

- Post-remedial soil concentrations are below USEPA RSLs for receptors that would reasonably be expected to access an active electrical power substation (industrial workers and construction workers). Furthermore, post-remedial soil concentrations are below residential RSLs. No further remediation of soil is necessary to mitigate health risks associated with potential exposures to substation soil.
- No analytes were retained as COPCs in soil north of the levee, indicating that there are no complete exposure pathways to that soil. Therefore, soil north of the levee does not pose health risks above USEPA risk management ranges. No further remediation of soil is necessary to mitigate health risks associated with potential exposures to soil north of the levee.
- There are no complete exposure pathways to groundwater north of the levee and, therefore, groundwater north of the substation does not pose health risks in excess of USEPA risk management criteria. VOCs were not detected in groundwater north of the levee at concentrations above drinking water standards (MCLs), indicating that the remedial actions at the Site have reduced VOC concentrations in groundwater north of the levee to potable use targets. Based on the data evaluated in this HHRA, no further remediation of that groundwater is required to ensure that groundwater north of the levee meets drinking water standards and is not a potential source of VOCs to the municipal water supply.
- The shortest distance between the leading edge of the plume (PZ-2) and the nearest existing occupied building is approximately 300 ft (building located to the north of Highway 370). Therefore, the vapor intrusion pathway is not currently complete. VOCs were detected in substation groundwater at concentrations above VISLs, indicating that the vapor intrusion pathway could be potentially complete if occupied buildings were constructed in that area the future.
- Although groundwater at the substation poses health risks above USEPA risk management ranges for a future residential scenario, there are no current complete exposure pathways to groundwater beneath the substation and, therefore, substation groundwater does not pose health risks in excess of USEPA risk management criteria under current use conditions. Risks above USEPA risk management criteria for future use conditions indicate that institutional controls must continue to be used until residual VOC concentrations have been reduced to meet drinking water standards.

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TABLES

TABLE 1: SELECTION OF EXPOSURE PATHWAYS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
CURRENT	Groundwater	North of Levee Groundwater	North of Levee	Resident	Adult	Dermal	None	Although groundwater north of the levee is used as a source of drinking water for public water supply, no Site -related constituents have been detected in the City Wells since February 2016, and installation of private supply wells in the area north of the levee is prohibited by local ordinance. There are no occupied buildings in that area. Therefore, under current use conditions, there are no complete exposure pathways to off-site groundwater.
						Inhalation	None	
						Ingestion	None	
					Child	Dermal	None	
						Inhalation	None	
						Ingestion	None	
				C/I Worker	Adult	Dermal	None	
						Inhalation	None	
						Ingestion	None	
				Construction Worker	Adult	Dermal	None	Groundwater is located at a depth (ranging from 12-23 ft bgs) that is greater than depths that would realistically be encountered during excavation activities, therefore direct contact with groundwater is not a complete exposure pathway for a construction worker.
						Inhalation	None	
						Ingestion	None	
	Soil/ Groundwater	Indoor Air	Substation and North of Levee	Resident	Adult	Inhalation	None	There are no occupied structures at the Substation, and it is not anticipated that occupied structures will be built at the Substation in the future. The shortest distance between the leading edge of the plume and the nearest building is approximately 300 feet (building located to the north of Huster Road). Therefore, vapor intrusion of VOCs from site soil/groundwater to indoor air is not a current complete exposure pathway.
					Child	Inhalation	None	
				C/I Worker	Adult	Inhalation	None	
CURRENT/ FUTURE	Soil	Soil 0 - 2 ft	Substation and North of Levee	C/I Worker	Adult	Dermal	Quantitative	Commercial workers are assumed to contact surface soil during outdoor activities, while working at the property.
						Ingestion	Quantitative	
		Soil 0-23 ft	Substation and North of Levee	Construction Worker	Adult	Dermal	Quantitative	Construction/excavation workers are assumed to incidentally ingest and dermally contact surface and subsurface soil during redevelopment work.
						Ingestion	Quantitative	
		Air - Dust	Substation and North of Levee	C/I Worker	Adult	Inhalation	Quantitative	Windborne dust can be inhaled by persons at or down-wind of unvegetated soil.
				Construction Worker	Adult	Inhalation	Quantitative	Excavation activities could produce dust.
		Air - Vapors	Substation and North of Levee	C/I Worker	Adult	Inhalation	Quantitative	VOCs partitioned from soil to outdoor air as vapors can be inhaled by persons at or down-wind of unvegetated soil.
				Construction Worker	Adult	Inhalation	Quantitative	VOCs partitioned from soil to outdoor air as vapors could be produced during excavation activities.
	Soil/ Groundwater	Surface Water	Surface Water	Recreational Visitor	Adult	Dermal	None	Although groundwater that discharges to surface water can result in migration of constituents to surface water, the Site investigation activities have demonstrated that VOCs are not present in downgradient groundwater at locations near surface water bodies, indicating that surface water is not a receiving medium for this Site.
						Inhalation	None	
						Ingestion	None	
					Child	Dermal	None	
						Inhalation	None	
						Ingestion	None	
FUTURE	Groundwater	Substation Groundwater	Substation	Resident	Adult	Dermal	Quantitative	There are no current potential exposure pathways associated with groundwater beneath the substation. Although the substation will not be used for any purposes other than as a substation, potential exposure pathways associated with groundwater beneath the substation will be evaluated for future residential drinking water exposures.
						Inhalation	Quantitative	
						Ingestion	Quantitative	
					Child	Dermal	Quantitative	
						Inhalation	Quantitative	
						Ingestion	Quantitative	
				C/I Worker	Adult	Dermal	None	The residential scenario is protective for commercial workers; therefore, a commercial worker scenario is not quantitatively evaluated.
						Inhalation	None	
						Ingestion	None	
				Construction Worker	Adult	Dermal	None	Groundwater is located at a depth (ranging from 12-23 ft bgs) that is greater than depths that would realistically be encountered during excavation activities, therefore direct contact with groundwater is not a complete exposure pathway for a construction worker.
						Inhalation	None	
						Ingestion	None	
	Soil/ Groundwater	Indoor Air	Substation	Resident	Adult	Inhalation	Quantitative	The potential for vapor intrusion to be a complete pathway for future residential receptors if occupied buildings are constructed in the future is evaluated in the HHRA.
					Child	Inhalation	Quantitative	
				C/I Worker	Adult	Inhalation	None	The residential scenario is protective for commercial workers; therefore, a commercial worker scenario is not quantitatively evaluated.
	Groundwater	North of Levee Groundwater	North of Levee	Resident	Adult	Dermal	Qualitative	Evaluation of groundwater as a future source of drinking water is based on analytical data for the core of the plume, which is located in the substation property.
						Inhalation	Qualitative	
						Ingestion	Qualitative	
					Child	Dermal	Qualitative	
						Inhalation	Qualitative	
						Ingestion	Qualitative	
				C/I Worker	Adult	Dermal	Qualitative	
						Inhalation	Qualitative	
						Ingestion	Qualitative	
				Construction Worker	Adult	Dermal	None	Groundwater is located at a depth (ranging from 12-23 ft bgs) that is greater than depths that would realistically be encountered during excavation activities, therefore direct contact with groundwater is not a complete exposure pathway for a construction worker.
						Inhalation	None	
						Ingestion	None	
	Soil/ Groundwater	Indoor Air	North of Levee	Resident	Adult	Inhalation	None	Evaluation of groundwater as a future source of vapor intrusion is based on analytical data for the core of the plume, which is located in the substation property.
					Child	Inhalation	None	
				C/I Worker	Adult	Inhalation	None	

Notes:
bgs = below ground surface.
C/I = Commercial/Industrial.
ft = feet.
HHRA = Human Health Risk Assessment.
VOCs = Volatile Organic Compounds.

TABLE 2: SUMMARY OF SUBSTATION SURFACE SOIL DATA (0-2 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)	
	Volatile Organic Compounds												
526-73-8	1,2,3-Trimethylbenzene	0.0719	0.0719	mg/kg	SS-18 (0-3 ft)	1 / 30	0.0038 - 0.102	0.102	200			No	BSL
95-63-6	1,2,4-Trimethylbenzene	0.0482	0.0482	mg/kg	SS-18 (0-3 ft)	1 / 30	0.0038 - 0.102	0.102	180			No	BSL
108-67-8	1,3,5-Trimethylbenzene	0.0035 J	0.0035 J	mg/kg	SB-40 (1-2 ft)	1 / 30	0.0038 - 0.102	0.102	150			No	BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.018 J	0.018 J	mg/kg	SB-40 (1-2 ft)	1 / 30	0.0376 - 1.02	1.02	19000			No	BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0137	0.0137	mg/kg	SS-18 (0-3 ft)	1 / 30	0.0038 - 0.102	0.102	12000			No	BSL
67-64-1	Acetone	0.0085 J	0.41 J	mg/kg	SB-30 (0-3 ft)	13 / 30	0.0376 - 0.0612	0.41	67000			No	BSL
74-87-3	Chloromethane (Methyl Chloride)	0.0062 J	0.0062 J	mg/kg	SB-36 (0-3 ft)	1 / 30	0.0075 - 0.204	0.204	46			No	BSL
156-59-2	cis-1,2-Dichloroethene	0.0058	0.0079	mg/kg	SS-09 (0-3 ft)	3 / 30	0.0038 - 0.102	0.102	230			No	BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0035	0.0035 J	mg/kg	SS-18 (0-3 ft)	1 / 30	0.0038 - 0.102	0.102	990			No	BSL
100-41-4	Ethylbenzene	0.0014 J	0.0015 J	mg/kg	SB-40 (1-2 ft)	2 / 30	0.0038 - 0.102	0.102	25			No	BSL
98-82-8	Isopropylbenzene (Cumene)	0.001 J	0.0011 J	mg/kg	SS-18 (0-3 ft)	2 / 30	0.0038 - 0.102	0.102	990			No	BSL
179601-23-1	m,p-Xylenes	0.0011 J	0.0045 J	mg/kg	SB-40 (1-2 ft)	4 / 30	0.0038 - 0.102	0.102	250			No	BSL
75-09-2	Methylene chloride	0.0009 J	0.098 J	mg/kg	SB-30 (0-3 ft)	16 / 30	0.0039 - 0.0061	0.098	320			No	BSL
95-47-6	o-Xylene	0.0014 J	0.002 J	mg/kg	SB-40 (1-2 ft)	2 / 30	0.0038 - 0.102	0.102	280			No	BSL
127-18-4	Tetrachloroethene	0.0009 J	2	mg/kg	SS-09 (0-3 ft) Dup	12 / 30	0.0038 - 0.102	2	39			No	BSL
108-88-3	Toluene	0.0008 J	0.004 J	mg/kg	SS-05 0-3 ft	18 / 30	0.0039 - 0.102	0.102	4700			No	BSL
79-01-6	Trichloroethene	0.0173	0.107	mg/kg	SS-09 (0-3 ft)	3 / 30	0.0038 - 0.102	0.107	1.9			No	BSL
	PCBs												
11096-82-5	Aroclor-1260 (PCB-1260)	0.022 J	0.022 J	mg/kg	SS-19 (0-3 ft)	1 / 35	0.0393 - 0.0551	0.0551	0.99			No	BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
Xylenes RSL used for m,p-Xylene.
Isopropylbenzene (cumene) RSL used for cymene (p-Isopropyltoluene) due to structural similarities.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 3: SUMMARY OF SUBSTATION SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (a)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (b)
	Volatile Organic Compounds											
75-35-4	1,1-Dichloroethene	0.0012 J	0.0012 J	mg/kg	SB-14 (8-9 ft)	1 / 51	0.0043 - 0.565	0.565	100			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0021 J	0.0021 J	mg/kg	SB-28 dup (6-7 ft)	1 / 51	0.0043 - 0.565	0.565	180			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.1 J	0.18	mg/kg	SB-41 (5-6 ft)	2 / 51	0.0043 - 0.15	0.18	150			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.014 J	0.02 J	mg/kg	SB-44 (3-4 ft)	2 / 51	0.0432 - 5.65	5.65	19000			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0043 J	0.18	mg/kg	SB-41 (5-6 ft)	4 / 51	0.0043 - 0.112	0.18	12000			No BSL
67-64-1	Acetone	0.011 J	0.66 J	mg/kg	SB-39 (7-8 ft)	31 / 51	0.0438 - 5.65	5.65	67000			No BSL
156-59-2	cis-1,2-Dichloroethene	0.0017 J	10.7	mg/kg	SB-41 (5-6 ft)	14 / 51	0.0043 - 0.125	10.7	230			No BSL
100-41-4	Ethylbenzene	0.0012 J	0.17	mg/kg	SB-39 (7-8 ft)	2 / 51	0.0043 - 0.15	0.17	25			No BSL
98-82-8	Isopropylbenzene (Cumene)	0.059 J	0.3	mg/kg	SB-39 (7-8 ft)	2 / 51	0.0043 - 0.15	0.3	990			No BSL
179601-23-1	m,p-Xylenes	0.0012 J	0.12	mg/kg	SB-39 (7-8 ft)	5 / 51	0.0043 - 0.15	0.15	250			No BSL
75-09-2	Methylene chloride	0.001 J	0.031 J	mg/kg	SB-39 (7-8 ft)	20 / 51	0.0044 - 0.565	0.565	320			No BSL
104-51-8	n-Butylbenzene	0.063 J	0.063 J	mg/kg	SB-39 (7-8 ft)	1 / 51	0.0043 - 0.565	0.565	5800			No BSL
103-65-1	n-Propylbenzene	0.03 J	0.23	mg/kg	SB-39 (7-8 ft)	3 / 51	0.0043 - 0.112	0.23	2400			No BSL
95-47-6	o-Xylene	0.0014 J	0.0014 J	mg/kg	SB-28 dup (6-7 ft)	1 / 51	0.0043 - 0.565	0.565	280			No BSL
127-18-4	Tetrachloroethene	0.0012 J	35	mg/kg	SB-39 (7-8 ft)	4 / 51	0.0043 - 0.15	35	39			No BSL
109-99-9	Tetrahydrofuran	0.13 J	0.13 J	mg/kg	SB-42 (2-3 ft)	1 / 51	0.0432 - 5.65	5.65	9400			No BSL
108-88-3	Toluene	0.0012 J	0.0114	mg/kg	SB-12 (9-10 ft)	21 / 51	0.0043 - 0.565	0.565	4700			No BSL
156-60-5	trans-1,2-Dichloroethene	0.0012 J	0.0058 J	mg/kg	SB-11 (8-9 ft)	5 / 51	0.0043 - 0.565	0.565	2300			No BSL
79-01-6	Trichloroethene	0.0026 J	6.78	mg/kg	SB-39 (7-8 ft)	4 / 51	0.0043 - 0.15	6.78	1.9			Yes ASL
75-01-4	Vinyl chloride	0.0014 J	0.45	mg/kg	SB-39 (7-8 ft)	8 / 51	0.0017 - 0.0499	0.45	1.7			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
ASL = Above Screening Level.
BGS = Below ground surface.
BSL = Below screening level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1,
and were obtained from United States Environmental Protection Agency Regional Screening Table,
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
Xylenes RSL used for m,p-Xylene.
Isopropylbenzene (cumene) RSL used for cymene (p-Isopropyltoluene) due to structural similarities.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL
or if no screening level was available.

TABLE 4: SUMMARY OF SUBSTATION SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (a)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (b)
	Volatile Organic Compounds											
75-35-4	1,1-Dichloroethene	0.0009 J	0.0091	mg/kg	SB-10 (17-18 ft)	8 / 74	0.0043 - 1.25	1.25	100			No BSL
526-73-8	1,2,3-Trimethylbenzene	0.059 J	0.059 J	mg/kg	SB-39 (14-15 ft)	1 / 75	0.0043 - 1.25	1.25	200			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0021 J	0.048 J	mg/kg	SB-39 (14-15 ft)	2 / 75	0.0043 - 1.25	1.25	180			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.13 J	0.13 J	mg/kg	SB-41 (22-23 ft)	1 / 75	0.0043 - 1.25	1.25	150			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0016 J	0.15 J	mg/kg	SB-39 (14-15 ft)	3 / 75	0.0043 - 1.25	1.25	12000			No BSL
67-64-1	Acetone	0.012 J	0.71	mg/kg	SB-39 (18-19 ft)	25 / 75	0.0427 - 12.5	12.5	67000			No BSL
156-59-2	cis-1,2-Dichloroethene	0.0014 J	11.4	mg/kg	SB-41 (15-16 ft)	45 / 75	0.0044 - 0.0065	11.4	230			No BSL
179601-23-1	m,p-Xylenes	0.001 J	0.0029 J	mg/kg	SB-10 (17-18 ft)	12 / 74	0.0043 - 1.25	1.25	250			No BSL
75-09-2	Methylene chloride	0.0011 J	0.0079	mg/kg	SB-14 (21-22 ft)	19 / 75	0.0044 - 1.25	1.25	320			No BSL
104-51-8	n-Butylbenzene	0.23 J	0.23 J	mg/kg	SB-41 (14-15 ft)	1 / 75	0.0043 - 1.25	1.25	5800			No BSL
103-65-1	n-Propylbenzene	0.1 J	0.1 J	mg/kg	SB-41 (14-15 ft)	1 / 75	0.0043 - 1.25	1.25	2400			No BSL
95-47-6	o-Xylene	0.0015 J	0.0015 J	mg/kg	SB-30 (22-23 ft)	2 / 74	0.0043 - 1.25	1.25	280			No BSL
127-18-4	Tetrachloroethene	0.0065	195	mg/kg	SB-41 (14-15 ft)	12 / 75	0.0043 - 0.16	195	39			Yes ASL
108-88-3	Toluene	0.0009 J	0.0103	mg/kg	SB-15 (14-15 ft)	26 / 74	0.0043 - 1.25	1.25	4700			No BSL
156-60-5	trans-1,2-Dichloroethene	0.001 J	0.0207	mg/kg	SB-10 (17-18 ft)	26 / 75	0.0044 - 1.25	1.25	2300			No BSL
79-01-6	Trichloroethene	0.0016 J	14.4	mg/kg	SB-41 (15-16 ft)	20 / 74	0.0043 - 0.16	14.4	1.9			Yes ASL
75-01-4	Vinyl chloride	0.0011 J	0.525	mg/kg	SB-41 (22-23 ft)	35 / 75	0.0017 - 0.0545	0.525	1.7			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
ASL = Above Screening Level.
BGS = Below ground surface.
BSL = below screening level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018. Xylenes RSL used for m,p-Xylene.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 5: SUMMARY OF NORTH OF LEVEE SURFACE SOIL DATA (0-2 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Residential Soil RSL (HI = 0.1, ELCR = 1e-06) (a)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (b)
	Volatile Organic Compounds											
67-64-1	Acetone	0.016 J	0.016 J	mg/kg	SB-26 (0-3 ft)	1 / 9	0.0457 - 0.0595	0.0595	6100			No BSL
75-09-2	Methylene chloride	0.0011 J	0.0018 J	mg/kg	SB-21 (1-2 ft)	4 / 9	0.0055 - 0.0059	0.0059	35			No BSL
108-88-3	Toluene	0.0016 J	0.0032 J	mg/kg	SB-25 (0-3 ft)	2 / 9	0.0046 - 0.0059	0.0059	490			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Residential Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 6: SUMMARY OF NORTH OF LEVEE SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds											
67-64-1	Acetone	0.013 J	0.0573	mg/kg	SB-19 (4-5 ft)	5 / 18	0.0521 - 0.0629	0.0629	67000			No BSL
75-09-2	Methylene chloride	0.0012 J	0.0024 J	mg/kg	SB-21 (7-8 ft)	8 / 18	0.0052 - 0.0059	0.0059	320			No BSL
127-18-4	Tetrachloroethene	0.0016 J	0.0016 J	mg/kg	SB-21 (7-8 ft)	1 / 18	0.0052 - 0.0063	0.0063	39			No BSL
108-88-3	Toluene	0.0012 J	0.0012 J	mg/kg	SB-18 (9-10 ft)	1 / 18	0.0052 - 0.00731	0.00731	4700			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 7: SUMMARY OF NORTH OF LEVEE SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds											
67-64-1	Acetone	0.01 J	0.025 J	mg/kg	SB-26 (18-19 ft)	17 / 34	0.045 - 0.0628	0.0628	67000			No BSL
179601-23-1	m,p-Xylenes	0.0011 J	0.002 J	mg/kg	SB-25 (11-12 ft)	2 / 33	0.0041 - 0.0071	0.0071	250			No BSL
75-09-2	Methylene chloride	0.001 J	0.0044 J	mg/kg	SB-26 (18-19 ft)	16 / 34	0.0041 - 0.0063	0.0063	320			No BSL
108-88-3	Toluene	0.0009 J	0.0052	mg/kg	SB-19 (14-15 ft)	13 / 33	0.0041 - 0.0071	0.0071	4700			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018. Xylenes RSL used for m,p-Xylene.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 8: SUMMARY OF SUBSTATION POST-REMEDIAL SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds											
526-73-8	1,2,3-Trimethylbenzene	0.0023 J	0.0023 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	200			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	180			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0015 J	0.0015 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	150			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.013 J	0.013 J	mg/kg	IP-32-5.0	1 / 4	0.0456 - 0.983	0.983	19000			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	12000			No BSL
67-64-1	Acetone	0.0568	0.0809	mg/kg	IP-32-5.0	2 / 4	0.576 - 0.983	0.983	67000			No BSL
71-43-2	Benzene	0.0004 J	0.0004 J	mg/kg	IP-32-5.0	1 / 4	0.0018 - 0.0393	0.0393	5.1			No BSL
75-15-0	Carbon disulfide	0.064 J	0.064 J	mg/kg	IP-33-5.0	1 / 4	0.006 - 0.115	0.115	350			No BSL
74-87-3	Chloromethane (Methyl Chloride)	0.13 J	0.14 J	mg/kg	IP-33-5.0	2 / 4	0.0121 - 0.0182	0.14	46			No BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	990			No BSL
110-54-3	Hexane	0.0023 BJ	0.072 BJ	mg/kg	IP-32-5.0	4 / 4		0.072	250			No BSL
75-09-2	Methylene chloride	0.0062 J	0.18 J	mg/kg	IP-32-5.0	4 / 4		0.18	320			No BSL
95-47-6	o-Xylene	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	1 / 4	0.0073 - 0.157	0.157	280			No BSL
127-18-4	Tetrachloroethene	0.003 J	0.003 J	mg/kg	IP-28-6	1 / 4	0.0024 - 0.0786	0.0786	39			No BSL
108-88-3	Toluene	0.0005 J	0.0005 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	4700			No BSL
79-01-6	Trichloroethene	0.0006 J	0.0006 J	mg/kg	IP-28-6	1 / 4	0.0024 - 0.0786	0.0786	1.9			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
B = Result found in the associated method blank as well as in the sample.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018. Isopropylbenzene (cumene) RSL used for cymene (p-Isopropyltoluene) due to structural similarities.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 9: SUMMARY OF POST REMEDIAL SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds											
75-35-4	1,1-Dichloroethene	0.0007 J	0.0024	mg/kg	IP-28-15	2 / 6	0.0023 - 0.0044	0.0044	100			No BSL
526-73-8	1,2,3-Trimethylbenzene	0.0065	0.0065	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0065	200			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0019 J	0.0019 J	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	180			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0111	0.0111	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0111	150			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.008	0.0091 J	mg/kg	IP-29-10.5	3 / 6	0.0213 - 0.0544	0.0544	19000			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0241	0.0241	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0241	12000			No BSL
67-64-1	Acetone	0.0245	0.0581	mg/kg	IP-29-10.5	4 / 6	0.027 - 0.0544	0.0581	67000			No BSL
75-15-0	Carbon disulfide	0.0011 J	0.0041 J	mg/kg	IP-29-10.5	3 / 6	0.0054 - 0.0109	0.0109	350			No BSL
156-59-2	cis-1,2-Dichloroethene	0.0017 J	3.86	mg/kg	IP-36-20.5	5 / 6	0.0026 - 0.0026	3.86	230			No BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0037	0.0037	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	990			No BSL
100-41-4	Ethylbenzene	0.0021 J	0.0021 J	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	25			No BSL
110-54-3	Hexane	0.0014 BJ	0.0054 BJ	mg/kg	IP-38-14	6 / 6		0.0054	250			No BSL
98-82-8	Isopropylbenzene (Cumene)	0.0009 J	0.0009 J	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	990			No BSL
179601-23-1	m,p-Xylenes	0.0039 J	0.0039 J	mg/kg	IP-33-10	1 / 6	0.0034 - 0.0087	0.0087	250			No BSL
75-09-2	Methylene chloride	0.005 J	0.012 J	mg/kg	IP-38-14	4 / 6	0.0085 - 0.0108	0.012	320			No BSL
104-51-8	n-Butylbenzene	0.0322	0.0322	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0322	5800			No BSL
103-65-1	n-Propylbenzene	0.0074	0.0074	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0074	2400			No BSL
95-47-6	o-Xylene	0.0014 J	0.0014 J	mg/kg	IP-33-10	1 / 6	0.0034 - 0.0087	0.0087	280			No BSL
127-18-4	Tetrachloroethene	0.0007 J	0.0368	mg/kg	IP-28-15	3 / 6	0.0022 - 0.0026	0.0368	39			No BSL
108-88-3	Toluene	0.0005 BJ	0.0005 BJ	mg/kg	IP-36-20.5	1 / 6	0.0017 - 0.0044	0.0044	4700			No BSL
156-60-5	trans-1,2-Dichloroethene	0.0015 J	0.0583	mg/kg	IP-36-20.5	3 / 6	0.0026 - 0.0044	0.0583	2300			No BSL
79-01-6	Trichloroethene	0.0009 J	0.0019	mg/kg	IP-28-15	2 / 6	0.0022 - 0.0044	0.0044	1.9			No BSL
75-01-4	Vinyl chloride	0.0011 J	0.295	mg/kg	IP-36-20.5	4 / 6	0.0026 - 0.0044	0.295	1.7			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
B = Result found in the associated method blank as well as in the sample.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Industrial Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
Xylenes RSL used for m,p-Xylene.
Isopropylbenzene (cumene) RSL used for cymene (p-Isopropyltoluene) due to structural similarities.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 10: SUMMARY OF SUBSTATION POST-REMEDIAL SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF RESIDENTIAL COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Residential Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds											
526-73-8	1,2,3-Trimethylbenzene	0.0023 J	0.0023 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	34			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	30			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0015 J	0.0015 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	27			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.013 J	0.013 J	mg/kg	IP-32-5.0	1 / 4	0.0456 - 0.983	0.983	2700			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	780			No BSL
67-64-1	Acetone	0.0568	0.0809	mg/kg	IP-32-5.0	2 / 4	0.576 - 0.983	0.983	6100			No BSL
71-43-2	Benzene	0.0004 J	0.0004 J	mg/kg	IP-32-5.0	1 / 4	0.0018 - 0.0393	0.0393	1.2			No BSL
75-15-0	Carbon disulfide	0.064 J	0.064 J	mg/kg	IP-33-5.0	1 / 4	0.006 - 0.115	0.115	77			No BSL
74-87-3	Chloromethane (Methyl Chloride)	0.13 J	0.14 J	mg/kg	IP-33-5.0	2 / 4	0.0121 - 0.0182	0.14	11			No BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	190			No BSL
110-54-3	Hexane	0.0023 BJ	0.072 BJ	mg/kg	IP-32-5.0	4 / 4		0.072	61			No BSL
75-09-2	Methylene chloride	0.0062 J	0.18 J	mg/kg	IP-32-5.0	4 / 4		0.18	35			No BSL
95-47-6	o-Xylene	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	1 / 4	0.0073 - 0.157	0.157	65			No BSL
127-18-4	Tetrachloroethene	0.003 J	0.003 J	mg/kg	IP-28-6	1 / 4	0.0024 - 0.0786	0.0786	8.1			No BSL
108-88-3	Toluene	0.0005 J	0.0005 J	mg/kg	IP-32-5.0	1 / 4	0.0036 - 0.0786	0.0786	490			No BSL
79-01-6	Trichloroethene	0.0006 J	0.0006 J	mg/kg	IP-28-6	1 / 4	0.0024 - 0.0786	0.0786	0.41			No BSL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
B = Result found in the associated method blank as well as in the sample.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Residential Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018. Isopropylbenzene (cumene) RSL used for cymene (p-Isopropyltoluene) due to structural similarities.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 11: SUMMARY OF POST REMEDIAL SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF RESIDENTIAL COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Residential Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds											
75-35-4	1,1-Dichloroethene	0.0007 J	0.0024	mg/kg	IP-28-15	2 / 6	0.0023 - 0.0044	0.0044	23			No BSL
526-73-8	1,2,3-Trimethylbenzene	0.0065	0.0065	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0065	34			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0019 J	0.0019 J	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	30			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0111	0.0111	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0111	27			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.008	0.0091 J	mg/kg	IP-29-10.5	3 / 6	0.0213 - 0.0544	0.0544	2700			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0241	0.0241	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0241	780			No BSL
67-64-1	Acetone	0.0245	0.0581	mg/kg	IP-29-10.5	4 / 6	0.027 - 0.0544	0.0581	6100			No BSL
75-15-0	Carbon disulfide	0.0011 J	0.0041 J	mg/kg	IP-29-10.5	3 / 6	0.0054 - 0.0109	0.0109	77			No BSL
156-59-2	cis-1,2-Dichloroethene	0.0017 J	3.86	mg/kg	IP-36-20.5	5 / 6	0.0026 - 0.0026	3.86	16			No BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0037	0.0037	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	190			No BSL
100-41-4	Ethylbenzene	0.0021 J	0.0021 J	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	5.8			No BSL
110-54-3	Hexane	0.0014 BJ	0.0054 BJ	mg/kg	IP-38-14	6 / 6		0.0054	61			No BSL
98-82-8	Isopropylbenzene (Cumene)	0.0009 J	0.0009 J	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0044	190			No BSL
179601-23-1	m,p-Xylenes	0.0039 J	0.0039 J	mg/kg	IP-33-10	1 / 6	0.0034 - 0.0087	0.0087	58			No BSL
75-09-2	Methylene chloride	0.005 J	0.012 J	mg/kg	IP-38-14	4 / 6	0.0085 - 0.0108	0.012	35			No BSL
104-51-8	n-Butylbenzene	0.0322	0.0322	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0322	390			No BSL
103-65-1	n-Propylbenzene	0.0074	0.0074	mg/kg	IP-33-10	1 / 6	0.0017 - 0.0044	0.0074	380			No BSL
95-47-6	o-Xylene	0.0014 J	0.0014 J	mg/kg	IP-33-10	1 / 6	0.0034 - 0.0087	0.0087	65			No BSL
127-18-4	Tetrachloroethene	0.0007 J	0.0368	mg/kg	IP-28-15	3 / 6	0.0022 - 0.0026	0.0368	8.1			No BSL
108-88-3	Toluene	0.0005 BJ	0.0005 BJ	mg/kg	IP-36-20.5	1 / 6	0.0017 - 0.0044	0.0044	490			No BSL
156-60-5	trans-1,2-Dichloroethene	0.0015 J	0.0583	mg/kg	IP-36-20.5	3 / 6	0.0026 - 0.0044	0.0583	160			No BSL
79-01-6	Trichloroethene	0.0009 J	0.0019	mg/kg	IP-28-15	2 / 6	0.0022 - 0.0044	0.0044	0.41			No BSL
75-01-4	Vinyl chloride	0.0011 J	0.295	mg/kg	IP-36-20.5	4 / 6	0.0026 - 0.0044	0.295	0.059			Yes ASL

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
B = Result found in the associated method blank as well as in the sample.
BGS = Below ground surface.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
FT = Feet.
HI = Hazard index.
J = Value is estimated.
mg/kg = Milligram per Kilogram.
RSL = Regional Screening Level.
TBC = To Be Considered.

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the Residential Soil values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
Xylenes RSL used for m,p-Xylene.
Isopropylbenzene (cumene) RSL used for cymene (p-Isopropyltoluene) due to structural similarities.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the Industrial Soil RSL or if no screening level was available.

TABLE 12: SUMMARY OF SUBSTATION GROUNDWATER DATA AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Tap Water RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)	November 2018 Vapor Intrusion Screening Level (VISL) (d)	Concentration Used for Screening Exceeds VISL?
	Volatile Organic Compounds													
75-35-4	1,1-Dichloroethene	0.0037 J	0.16 J	mg/L	MW-13-20180314	14 / 21	0.002 - 2.5	2.5	0.028	0.007	MCL	Yes ASL	0.257	Yes
67-64-1	Acetone	0.0051	0.007 J	mg/L	MW-40-20170907	3 / 6	2.5 - 12.5	12.5	1.4			Yes ASL	31000	No
156-59-2	cis-1,2-Dichloroethene	0.0015 J	88	mg/L	MW 41-20180314	45 / 45		88	0.0036	0.07	MCL	Yes ASL	NA	No
127-18-4	Tetrachloroethene	0.0016 J	0.519	mg/L	MW 41-20180606	5 / 45	0.0005 - 2.5	2.5	0.0041	0.005	MCL	Yes ASL	0.0872	Yes
108-88-3	Toluene	0.0018 J	0.0018 J	mg/L	MW 14-20170905	1 / 6	0.005 - 2.5	2.5	0.11	1	MCL	Yes ASL	28.5	No
156-60-5	trans-1,2-Dichloroethene	0.0005 J	1.5 J	mg/L	MW 41-20180314	21 / 23	0.005 - 2.5	2.5	0.036	0.1	MCL	Yes ASL	NA	No
79-01-6	Trichloroethene	0.0002 J	0.36	mg/L	MW 41-20180606	6 / 45	0.002 - 2.5	2.5	0.00028	0.005	MCL	Yes ASL	0.00742	Yes
75-01-4	Vinyl chloride	0.0008 J	11.5	mg/L	MW 41-20171206	45 / 45		11.5	0.000019	0.002	MCL	Yes ASL	0.00178	Yes

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
ASL = Above Screening Level.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
HI = Hazard index.
J = Value is estimated.
MCL = Maximum Contaminant Level.
mg/L = Milligram per Liter.
NA = Not Applicable.
RSL = Regional Screening Level.
TBC = To Be Considered.
VISL = Vapor Intrusion Screening Level, calculated using the EPA .VISL Calculator (May 2018).

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects.
(b) Regional Screening Levels are the tapwater values, based on a cancer risk of 1E-06 and a hazard index of 0.1, and were obtained from United States Environmental Protection Agency Regional Screening Table, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the tapwater RSL or if no screening level was available.
(d) Vapor Intrusion Screening levels, based on a cancer risk of 1E-05, hazard index of 1, and a groundwater temperature of 17°C. were obtained from the November 2018 United States Environmental Protection Agency VISL Calculator, https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls

TABLE 13: SUMMARY OF NORTH OF LEVEE GROUNDWATER DATA AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Frequency of Detection	Range of Reporting Limits for Non-Detects	Concentration Used for Screening (a)	November 2018 Tap Water RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)		November 2018 Vapor Intrusion Screening Level (VISL) (d)	Concentration Used for Screening Exceeds VISL?
	Volatile Organic Compounds														
156-59-2	cis-1,2-Dichloroethene	0.0003 J	0.0142	mg/L	PZ-2-20180605	11 / 14	0.002 - 0.005	0.0142	0.0036	0.07	MCL	Yes	ASL	NA	No
179601-23-1	m,p-Xylenes	0.0012 J	0.0012 J	mg/L	PZ-1-20170907 PZ-2-20170907	2 / 14	0.005 - 0.005	0.005	0.019	10	MCL	No	BSL	0.6	No
127-18-4	Tetrachloroethene	0.0003 J	0.0003 J	mg/L	PZ-6-20180606	1 / 14	0.0005 - 0.005	0.005	0.0041	0.005	MCL	Yes	ASL	0.0872	No
108-88-3	Toluene	0.0011 J	0.0013 J	mg/L	PZ-11-20170906 PZ-11-20180605	2 / 14	0.005 - 0.005	0.005	0.11	1	MCL	No	BSL	28.5	No
79-01-6	Trichloroethene	0.0002 J	0.0004 J	mg/L	PZ-12-20180605	3 / 14	0.002 - 0.005	0.005	0.00028	0.005	MCL	Yes	ASL	0.00742	No
75-01-4	Vinyl chloride	0.0001 J	0.0006	mg/L	PZ-2-20180605	2 / 14	0.002 - 0.002	0.002	0.000019	0.002	MCL	Yes	ASL	0.00178	Yes

Notes:

ARAR = Applicable or Relevant and Appropriate Requirement.
ASL = Above Screening Level.
BSL = Below Screening Level.
CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
ELCR = Excess Lifetime Cancer Risk.
HI = Hazard index.
J = Value is estimated.
MCL= Maximum Contaminant Level.
mg/L = Milligram per Liter.
NA = Not Applicable.
RSL = Regional Screening Level.
TBC = To Be Considered.
VISL = Vapor Intrusion Screening Level, calculated using the EPA VISL Calculator (May 2018)

(a) The concentration used for screening is the higher of the maximum detected concentration or maximum reporting limit for non-detects
(b) Regional Screening Levels are the tapwater values, based on a cancer risk of 1E-06 and a hazard index of 0.1,
and were obtained from United States Environmental Protection Agency Regional Screening Table,
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, updated November 2018.
Xylenes RSL used for m,p-Xylene.
(c) A compound was selected as a COPC if the concentration used for screening exceeds the tapwater RSL
or if no screening level was available.
(d) Vapor Intrusion Screening levels, based on a cancer risk of 1E-05, hazard index of 1, and a groundwater temperature of 17°C.
were obtained from the November 2018 United States Environmental Protection Agency VISL Calculator,
Xylenes VISL used for m,p-Xylene.
https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls

TABLE 14: SELECTION OF SUBSTATION GROUNDWATER EPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

CAS No.	COPC	Units	Arithmetic Mean	Maximum Concentration (Qualifier)	95% UCL (a)	Statistic	EPC (b)
	Volatile Organic Compounds						
75-35-4	1,1-Dichloroethene	mg/L	0.106	0.16 J	0.0678	G [a]	0.0678
67-64-1	Acetone	mg/L	1.461	0.007 J	0.0073	N [c]	0.007
156-59-2	cis-1,2-Dichloroethene	mg/L	17.40	88	29.77	G [b]	29.77
127-18-4	Tetrachloroethene	mg/L	0.298	0.519	0.0753	G [a]	0.0753
108-88-3	Toluene	mg/L	0.293	0.0018 J	NA	NA	0.0018
156-60-5	trans-1,2-Dichloroethene	mg/L	0.332	1.5 J	0.621	G [a]	0.621
79-01-6	Trichloroethene	mg/L	0.298	0.36	0.0586	G [a]	0.0586
75-01-4	Vinyl chloride	mg/L	2.92	11.5	4.514	G [b]	4.514

Abbreviations

CAS No. = Chemical Abstracts Service Registry Number.
COPC = Compound of Potential Concern.
EPC = Exposure Point Concentration.
J = Value is estimated.
mg/L = Milligram per Liter.
NA - Not applicable.
UCL = Upper Confidence Limit.

(a) 95% Upper Confidence Limits (95% UCLs) are calculated using 2016 EPA ProUCL software, version 5.1.002. See text.
Statistic key:
[a] Gamma distribution - Gamma Adjusted KM-UCL.
[b] Gamma distribution - Gamma Adjusted UCL.
[c] Normal distribution - 95% KM (t) UCL
(b) EPCs are the lower value of either the calculated 95% Upper Confidence Limit (95% UCL), or the maximum detected concentrations of COPCs.

TABLE 15: RESIDENT GROUNDWATER EXPOSURE FACTORS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

RECEPTOR			CHILD (AGE 0-<2)		CHILD (2 - <6)		OLDER CHILD (AGE 6 - <16)		ADULT	
Standard Parameters										
Body Weight	BW	kg	15	USEPA, 2014	15	USEPA, 2014	80	USEPA, 2014	80	USEPA, 2014
Exposure Frequency	EF	day/year	350	USEPA, 2014	350	USEPA, 2014	350	USEPA, 2014	350	USEPA, 2014
Exposure Duration	ED	year	2	Ages 0 - <2	4	Ages 2 - <6	10	Ages 6 - <16	10	Balance of 26-yr exposure
Non–carcinogenic Averaging Time	AT	day	730	Exposure duration expressed in days	1460	Exposure duration expressed in days	3650	Exposure duration expressed in days	3650	Exposure duration expressed in days
Carcinogenic Averaging Time	ATlifetime	day	25550	70 year lifetime	25550	70 year lifetime	25550	70 year lifetime	25550	70 year lifetime
Age-Dependent Adjustment Factor	ADAF	unitless	10	USEPA, 2018	3	USEPA, 2018	3	USEPA, 2018	1	USEPA, 2018
Ingestion of Water										
Water Ingestion Rate	IR	L/day	0.78	USEPA, 2014	0.78	USEPA, 2014	2.5	USEPA, 2014	2.5	USEPA, 2014
Fraction Ingested	FI	unitless	1.0	Assumption	1.0	Assumption	1.0	Assumption	1.0	Assumption
Dermal Exposure with Water										
Exposed Skin Surface Area	SA	cm2	6365	USEPA, 2014	6365	USEPA, 2014	19652	USEPA, 2014	19652	USEPA, 2014
Exposure Time	Tevent	hr/event	0.54	USEPA, 2014	0.54	USEPA, 2014	0.71	USEPA, 2014	0.71	USEPA, 2014
Events per Day	EV	event/day	1	Assumption	1	Assumption	1	Assumption	1	Assumption
Vapor Inhalation										
Exposure Time	ETVap	hours/day	24	USEPA, 2014	24	USEPA, 2014	24	USEPA, 2014	24	USEPA, 2014

Notes:

USEPA, 2014 - Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120. February 6, 2014

USEPA, 2018 - Regional Screening Levels (RSLs) - User's Guide. May 2018. https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide#mutagens

TABLE 16: CANCER TOXICITY DATA -- ORAL/DERMAL
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Constituent of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency Factor for Dermal (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source(s)	Date(s)
VOLATILES								
1,1-Dichloroethene	ND			ND		Cannot be determined	IRIS	March 2019
1,2-Dichloroethene (cis)	ND			ND		Inadequate evidence	IRIS	March 2019
1,2-Dichloroethene (trans)	ND			ND		Inadequate evidence	IRIS	March 2019
Acetone	NA			NA		Cannot be determined	IRIS	March 2019
Tetrachloroethene	2.1E-03	$(mg/kg/day)^{-1}$	100%	2.1E-03	$(mg/kg/day)^{-1}$	Likely to be carcinogenic in humans	IRIS	March 2019
Toluene	NA			NA		D	IRIS	March 2019
Trichloroethene	4.6E-02	$(mg/kg/day)^{-1}$	100%	4.6E-02	$(mg/kg/day)^{-1}$	Carcinogenic to humans	IRIS	March 2019
Vinyl Chloride	7.2E-01	$(mg/kg/day)^{-1}$	100%	7.2E-01	$(mg/kg/day)^{-1}$	Known carcinogen	IRIS	March 2019

Notes:

(1) Values obtained from RAGS Volume 1 (Part E, Supplemental Guidance for Dermal Risk Assessment, Interim Guidance, USEPA, 2004). Per this guidance, a value of 100% is used for analytes without published values.
(2) Adjusted Dermal Slope Factor = Oral Slope Factor / Oral Aborption Efficiency Factor for Dermal. Per RAGS Part E (USEPA, 2004), adjustments are only performed for chemicals that have an oral absorption efficiency of less than 50%.

IRIS = USEPA Integrated Risk Information System.
kg = kilogram.
mg = milligram.
ND = no data available.
RAGS = Risk Assessment Guidance for Superfund, Volume 1. Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment, OSWER 9285.7-02EP, July 2004.
USEPA = United States Environmental Protection Agency.

TABLE 17: CANCER TOXICITY DATA -- INHALATION
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Constituent of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk: Inhalation Cancer Slope Factor	
	Value	Units		Source(s)	Date(s)
1,1-Dichloroethene	ND		Inadequate data	IRIS	March 2019
1,2-Dichloroethene (cis)	ND		Inadequate data	IRIS	March 2019
1,2-Dichloroethene (trans)	ND		Inadequate data	IRIS	March 2019
Acetone	NA		Cannot be determined	IRIS	March 2019
Tetrachloroethene	2.6E-07	$(ug/m^3)^{-1}$	Likely to be carcinogenic in humans	IRIS	March 2019
Toluene	NA		D	IRIS	March 2019
Trichloroethene	4.1E-06	$(ug/m^3)^{-1}$	Carcinogenic to humans	IRIS	March 2019
Vinyl Chloride	4.4E-06	$(ug/m^3)^{-1}$	Known human carcinogen	IRIS	March 2019

Notes:
IRIS = USEPA Integrated Risk Information System.
m^3 = cubic meter.
ND = no data available.
ug = microgram.
USEPA = United States Environmental Protection Agency.

TABLE 18: NON-CANCER TOXICITY DATA -- ORAL/DERMAL
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Constituent of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency Factor for Dermal (1)	Adjusted Dermal RfD (2)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/ Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s)
1,1-Dichloroethene	chronic	5.0E-02	mg/kg/day	100%	5.0E-02	mg/kg/day	Liver; fatty change	100/1	IRIS	March 2019
1,2-Dichloroethene (cis)	chronic	2.0E-03	mg/kg/day	100%	2.0E-03	mg/kg/day	Kidney; increased kidney weight	3,000	IRIS	March 2019
1,2-Dichloroethene (trans	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Immunological; decreased antibody forming cells	3,000	IRIS	March 2019
Acetone	chronic	9.0E-01	mg/kg/day	100%	9.0E-01	mg/kg/day	Kidney; nephropathy	1,000/1	IRIS	March 2019
Tetrachloroethene	chronic	6.0E-03	mg/kg/day	100%	6.0E-03	mg/kg/day	CNS; neurotoxicity	100	IRIS	March 2019
Toluene	chronic	8.0E-02	mg/kg/day	100%	8.0E-02	mg/kg/day	Kidney; increased kidney weight	1,000/1	IRIS	March 2019
Trichloroethene	chronic	5.0E-04	mg/kg/day	100%	5.0E-04	mg/kg/day	Developmental; Immunological	10 to 1000	IRIS	March 2019
Vinyl Chloride	chronic	3.0E-03	mg/kg/day	100%	3.0E-03	mg/kg/day	Liver; liver cell polymorphism	30/1	IRIS	March 2019

Notes:

(1) Values obtained from RAGS Volume 1 (Part E, Supplemental Guidance for Dermal Risk Assessment, Interim Guidance, USEPA, 2004).
Per this guidance, a value of 100% is used for analytes without published values

(2) Adjusted Dermal RfD = Oral RfD x Oral Absorption Efficiency Factor for Dermal. Per RAGS Part E (USEPA, 2004), adjustments are only performed for chemicals that have an oral absorption efficiency of less than 50%.

chronic = chronic RfDs apply to exposure durations longer than seven years; the chronic value is used as the subchronic RfD if a subchronic RfD is not available.
CNS = central nervous system.
kg = kilogram.
IRIS = USEPA Integrated Risk Information System.
mg = milligram.
RfD = reference dose.
RAGS = Risk Assessment Guidance for Superfund, Volume 1. Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment, OSWER 9285.7-02EP, July 2004

TABLE 19: NON-CANCER TOXICITY DATA -- INHALATION
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Constituent of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source(s)	Date(s)
1,1-Dichloroethene	chronic	2.0E-01	mg/m^3	Liver; fatty change	30/1	IRIS	March 2019
1,2-Dichloroethene (cis)	chronic	ND				IRIS	March 2019
1,2-Dichloroethene (trans)	chronic	ND				IRIS	March 2019
Acetone	chronic	3.1E+01	mg/m3	CNS	100	MRL	March 2019
Tetrachloroethene	chronic	4.0E-02	mg/m^3	CNS; neurotoxicity	100	IRIS	March 2019
Toluene	chronic	5.0E+00	mg/m3	CNS; neurotoxicity	100	IRIS	March 2019
Trichloroethene	chronic	2.0E-03	mg/m^3	Developmental; Immunological	10 to 1000	IRIS	March 2019
Vinyl Chloride	chronic	1.0E-01	mg/m^3	Liver; liver cell polymorphism	30/1	IRIS	March 2019

Notes:

CNS = central nervous system.
chronic = chronic RfDs apply to exposure durations greater than 7 years; the chronic value is used as the subchronic RfD if a subchronic RfD is not available
IRIS = USEPA Integrated Risk Information System.
m^3 = cubic meter.
mg = milligram.
MRL = Minimum Risk Level (ATSDR: chronic MRLs).
ND = no data available.
RfC = reference concentration.

TABLE 20: TOTAL SITE RISK
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

POTENTIAL RECEPTOR/ USE SCENARIO	EXPOSURE ROUTE AND MIGRATION PATHWAY	Exposure Medium: Substation Groundwater HAZARD INDEX	ELCR
Future Resident (Adult and Child)	Ingestion	825	2.E-01
	Dermal Contact	88	2.E-02
	Ambient Vapor Inhalation	37	1.E-02
	Total	950	2.E-01

	Target Organ	Hazard Quotient
1,1-Dichloroethene	Liver	0.24
Acetone	Kidney	0.0005
1,2-Dichloroethene (cis)	Kidney	824
1,2-Dichloroethene (trans)	Immune system	1.7
Tetrachloroethylene	Nervous System	1.9
Toluene	Kidney	0.002
Trichloroethene	Developmental; Immune system	20.74
Vinyl Chloride	Liver	102
Sum: Liver		102
Sum: Kidney		824
Sum: Immune System		22.5
Sum: Nervous System		1.9
Sum: Developmental		20.7

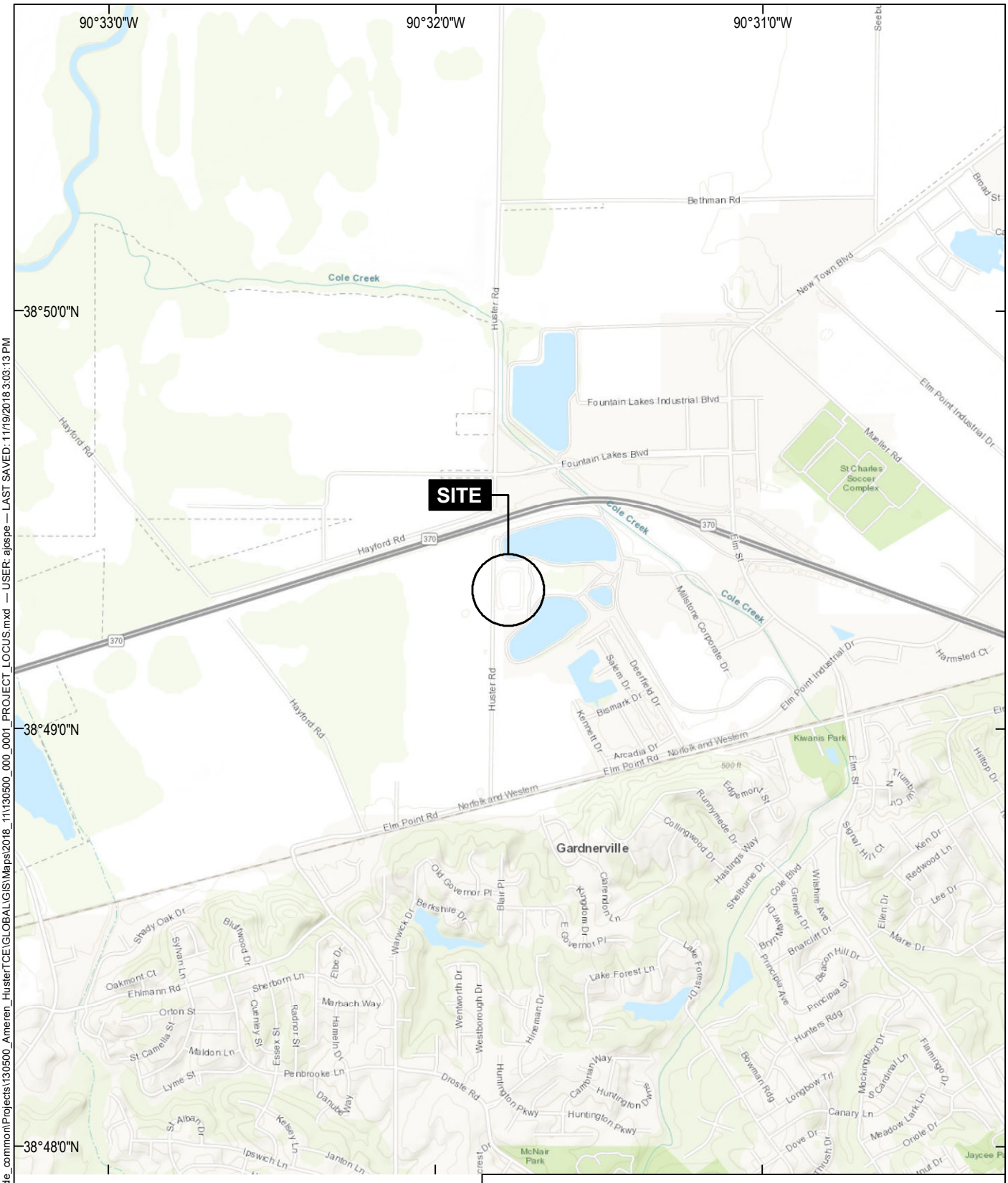
Notes:

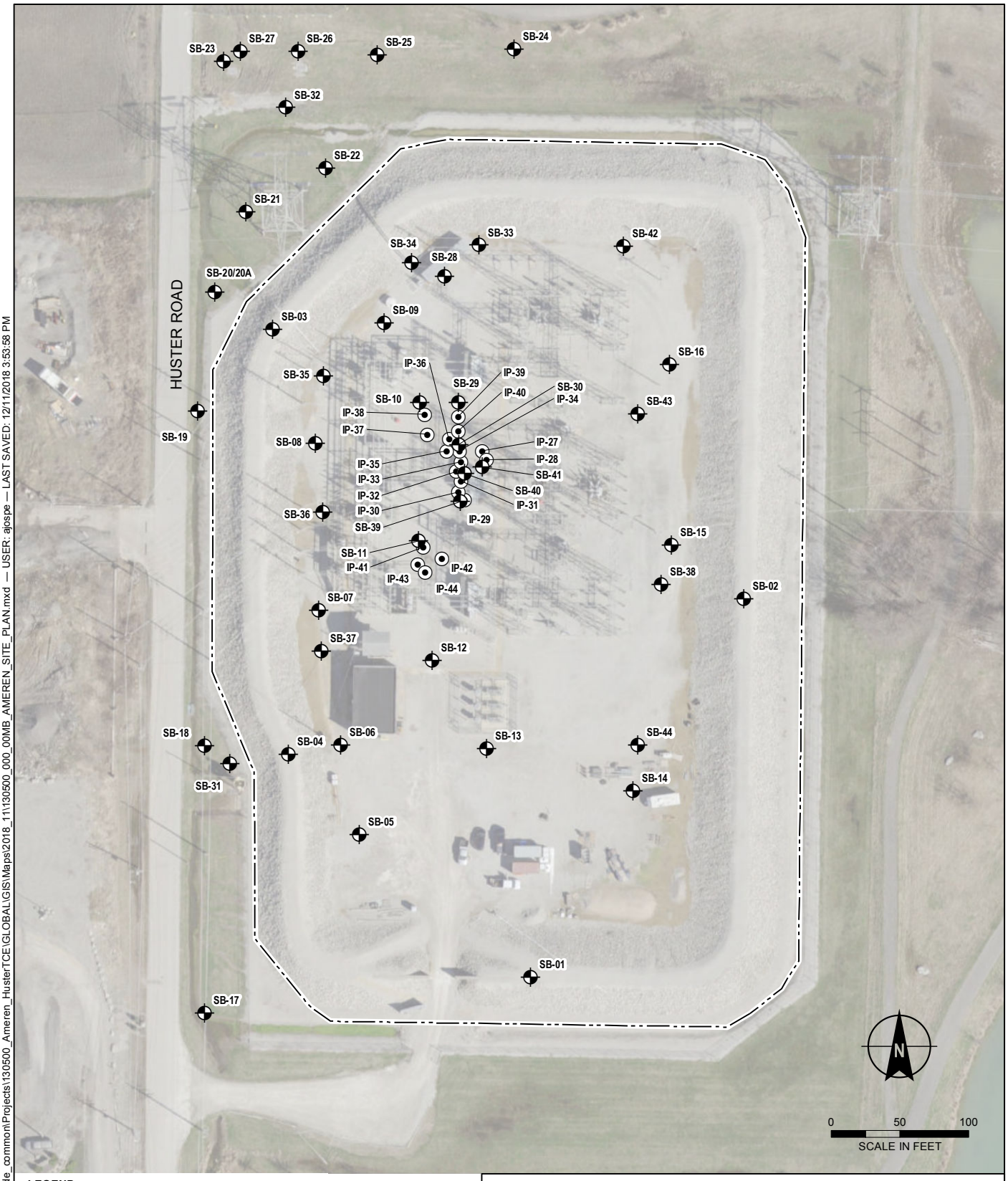
- Risk calculations are provided in Attachment D.

ELCR = Excess Lifetime Cancer Risk.

1. Hazard index is based on child receptor and is calculated as the hazards for child exposure to groundwater.
   Cancer risk is the sum of risks for child exposure to groundwater and adult exposure to groundwater.

FIGURES


90°33'0"W
90°32'0"W
90°31'0"W
38°50'0"N
38°49'0"N
38°48'0"N
SITE
Bethman Rd
Cole Creek
Huster Rd
New Town Blvd
Fountain Lakes Industrial Blvd
Fountain Lakes Blvd
Hayford Rd
370
Elm Point Industrial Dr
Mueller Rd
St Charles Soccer Complex
Millstone Corporate Dr
Elm Point Rd
Norfolk and Western
Gardnerville
Kiwanis Park
McNair Park
Droste Rd
Huntington Pkwy
Lake Forest Ln
Marbach Way
Ipswich Ln
Janton Ln
MO
N
HALEY ALDRICH
AMEREN CORPORATION
HUSTER SUBSTATION
ST. CHARLES, MISSOURI
PROJECT LOCUS
MAP SOURCE: ESRI
SITE COORDINATES: 90°31'45"W 38°49'19"N
APPROXIMATE SCALE: 1 IN = 2000 FT
DECEMBER 2018
FIGURE 1
GIS FILE PATH: \\haleyaldrich.com\share\de_common\Projects\130500_Ameren_HusterTCE\GLOBAL\GIS\Maps\2018_11\130500_000_0001_PROJECT_LOCUS.mxd — USER: ajospe — LAST SAVED: 11/19/2018 3:03:13 PM



LEGEND

- SOIL BORING
- INJECTION POINT
- APPROXIMATE SITE LIMIT

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. SAMPLE LOCATION SOURCE: "SOIL BORING LOCATIONS" PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (CEC), JANUARY 2014
3. AERIAL IMAGERY SOURCE: ESRI

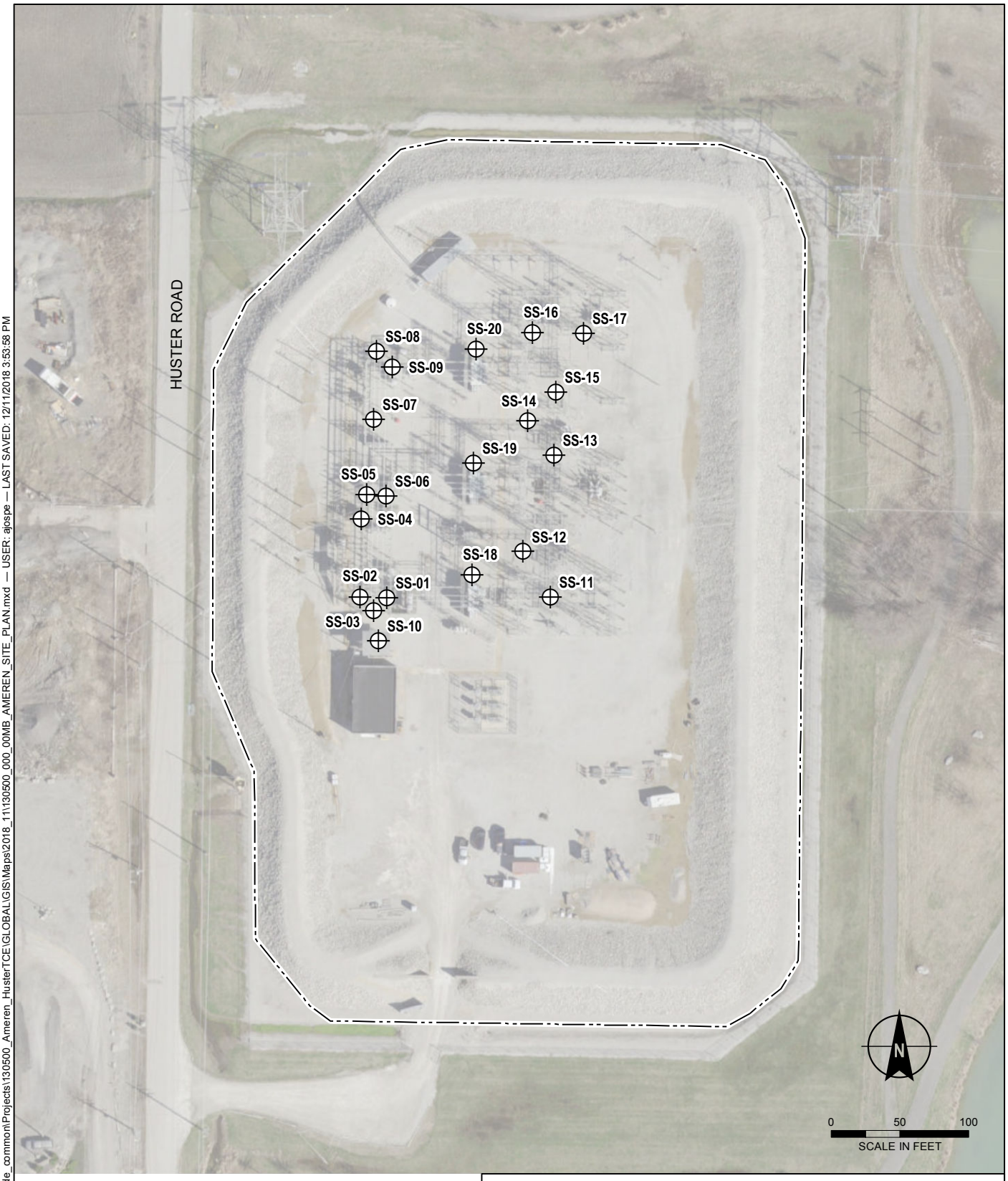
HALEY ALDRICH

AMEREN CORPORATION
HUSTER SUBSTATION
ST. CHARLES, MISSOURI

SOIL BORING LOCATIONS

DECEMBER 2018

FIGURE 2



LEGEND

EXISTING SURFACE SOIL SAMPLE

APPROXIMATE SITE LIMIT

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. SAMPLE LOCATION SOURCE: "SOIL BORING LOCATIONS" PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (CEC), JANUARY 2014
3. AERIAL IMAGERY SOURCE: ESRI

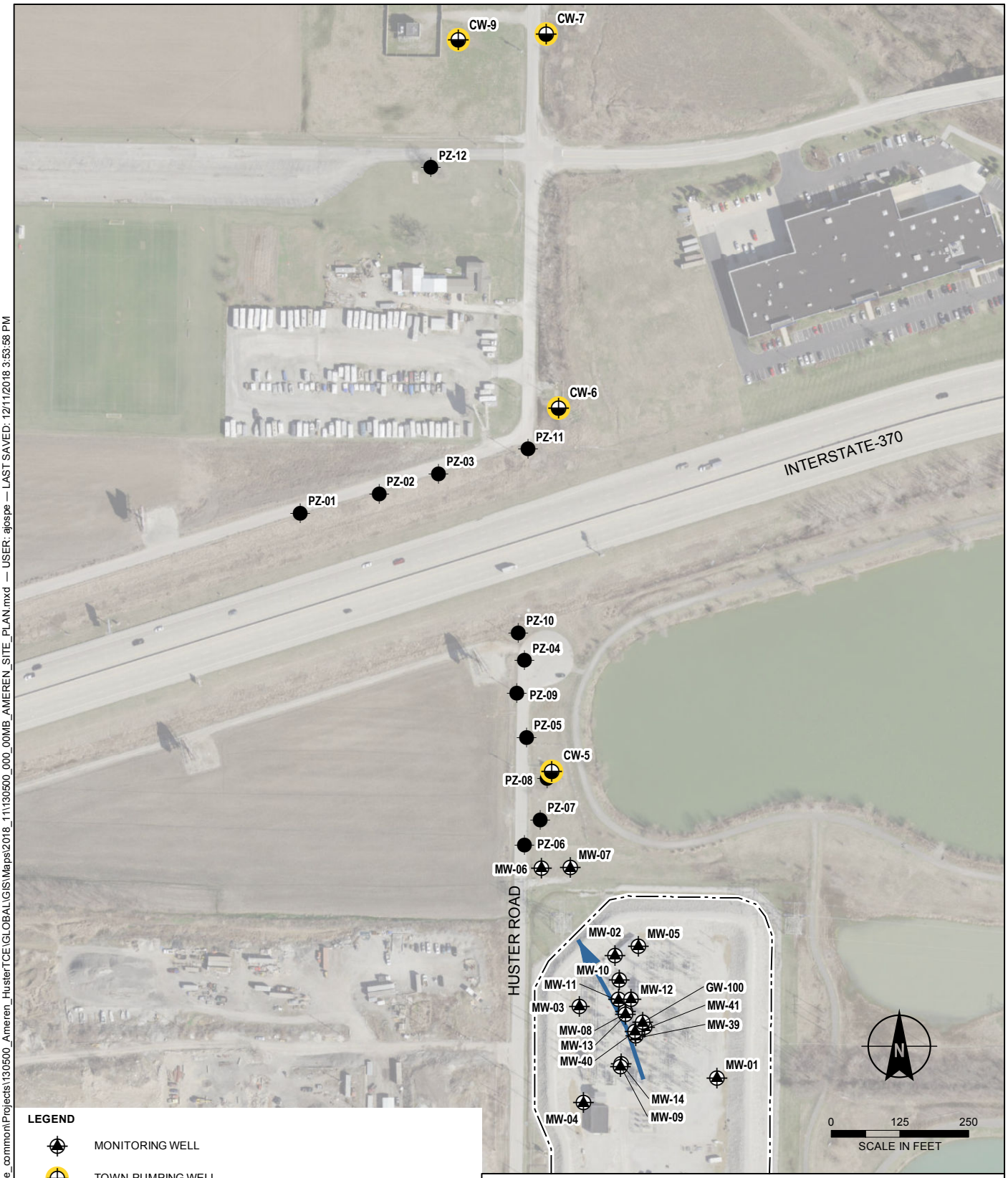
HALEY ALDRICH

AMEREN CORPORATION
HUSTER SUBSTATION
ST. CHARLES, MISSOURI

SURFACE SOIL SAMPLE LOCATIONS

DECEMBER 2018

FIGURE 3



LEGEND

- MONITORING WELL
- TOWN PUMPING WELL
- PIEZOMETER
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- APPROXIMATE SITE LIMIT

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. WELL LOCATION SOURCE: AUGUST 2017 REMEDIAL INVESTIGATION REPORT
3. AERIAL IMAGERY SOURCE: ESRI

HALEY ALDRICH

AMEREN CORPORATION
HUSTER SUBSTATION
ST. CHARLES, MISSOURI

GROUNDWATER MONITORING LOCATIONS

DECEMBER 2018

FIGURE 4

ATTACHMENT A

Data Used in Risk Assessment

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-7	MW-7	MW-7
Sample Name	MW-6-20121203	MW-6-20140528	MW-6-20140724	MW-6-20140918	MW-6-20141208	MW-6-20150318	MW-6-20150610	MW-6-20150903	MW-6-20151214	MW-6-20160316	MW-6-20160609	MW-6-20160906	MW-6-20161202	MW-6-20170307	MW-6-20170607	MW 6-20170907	MW-6-20170907	MW-6-20171206	MW-6-20180314	MW-6-20180605	MW-7-20121203	MW-7-20140528	MW-7-20140724	
Sample Date	12/03/2012	05/28/2014	07/24/2014	09/18/2014	12/08/2014	03/18/2015	06/10/2015	09/03/2015	12/14/2015	03/16/2016	06/09/2016	09/06/2016	12/02/2016	03/07/2017	06/07/2017	09/07/2017	09/07/2017	12/06/2017	03/14/2018	06/05/2018	12/03/2012	05/28/2014	07/24/2014	
Lab Sample ID	MW-6-20121203	MW-6-20140528	MW-6-20140724	MW-6-20140918	MW-6-20141208	MW-6-20150318	MW-6-20150610	MW-6-20150903	MW-6-20151214	MW-6-20160316	MW-6-20160609	MW-6-20160906	MW-6-20161202	MW-6-20170307	MW-6-20170607	MW 6-20170907	MW-6-20170907	MW-6-20171206	MW-6-20180314	MW-6-20180605	MW-7-20121203	MW-7-20140528	MW-7-20140724	
Volatile Organic Compounds (mg/L)																								
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	
cis-1,2-Dichloroethene	0.59	0.0344	0.234	0.0175	0.011	0.0156	0.0031 J	0.004 J	0.0032 J	0.0031 J	0.0385	0.0068	0.0247	0.0455	0.0195	0.002 J	0.002 J	0.0018 J	0.0018 J	0.001 J	0.083	0.0837	0.0886	
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	
Tetrachloroethene	ND (0.00028)	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.00028)	ND (0.0005)	ND (0.0005)	
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	
Trichloroethene	ND (0.00029)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.00029)	0.00027 J	ND (0.001)	
Vinyl chloride	0.021	0.0015	0.0208	0.0009	ND (0.002)	0.0007	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.005	0.0018 J	0.0047	0.0055	0.0041	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0059	0.00766	0.00692	

ABBREVIATIONS AND NOTES:

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ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1
Sample Name	MW-7-20140918	MW-7-20141208	MW-7-20150318	MW-7-20150610	MW-7-20150903	MW-7-20151214	MW-7-20160316	MW-7-20160609	MW-7-20160906	MW-7-20161202	MW-7-20170307	MW-7-20170607	MW-7-20170907	MW-7-20171206	MW-7-20180318	MW-7-20180605	PZ-1-20130701	PZ-1-20140711	PZ-1-20140825	PZ-1-20140917	PZ-1-20141014	PZ-1-20141114	PZ-1-20141208
Sample Date	09/18/2014	12/08/2014	03/18/2015	06/10/2015	09/03/2015	12/14/2015	03/16/2016	06/09/2016	09/06/2016	12/02/2016	03/07/2017	06/07/2017	09/07/2017	12/06/2017	03/18/2018	06/05/2018	07/01/2013	07/11/2014	08/25/2014	09/17/2014	10/14/2014	11/14/2014	12/08/2014
Lab Sample ID	MW-7-20140918	MW-7-20141208	MW-7-20150318	MW-7-20150610	MW-7-20150903	MW-7-20151214	MW-7-20160316	MW-7-20160609	MW-7-20160906	MW-7-20161202	MW-7-20170307	MW-7-20170607	MW-7-20170907	MW-7-20171206	MW-7-20180318	MW-7-20180605	PZ-1-20130701	PZ-1-20140711	PZ-1-20140825	PZ-1-20140917	PZ-1-20141014	PZ-1-20141114	PZ-1-20141208
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0496	0.0528	0.0587	0.0278	0.0221	0.0168	0.0154	0.023	0.034	0.0251	0.0425	0.0293	0.0065	0.0034 J	0.0037 J	0.0016 J	ND (0)	0.0078	0.0595	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	-	-	-	-	-	-	-
Vinyl chloride	0.0036	0.0046	0.0034	0.0032	0.0025	0.0027	0.0018	0.0031	0.011	0.0053	0.006	0.0048	0.0006 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0033	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1	PZ-1
Sample Name	PZ-1-20150114	PZ-1-20150210	PZ-1-20150310	PZ-1-20150414	PZ-1-20150521	PZ-1-20150605	PZ-1-20150715	PZ-1-20150812	PZ-1-20150903	PZ-1-20151014	PZ-1-20151118	PZ-1-20151216	PZ-1-20160113	PZ-1-20160215	PZ-1-20160317	PZ-1-20160414	PZ-1-20160523	PZ-1-20160621	PZ-1-20160715	PZ-1-20160810	PZ-1-20160912	PZ-1-20161201	PZ-1-20170307	PZ-1-20170606	PZ-1-20170907
Sample Date	01/14/2015	02/10/2015	03/10/2015	04/14/2015	05/21/2015	06/05/2015	07/15/2015	08/12/2015	09/03/2015	10/14/2015	11/18/2015	12/16/2015	01/13/2016	02/15/2016	03/17/2016	04/14/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/07/2017	06/06/2017	09/07/2017
Lab Sample ID	PZ-1-20150114	PZ-1-20150210	PZ-1-20150310	PZ-1-20150414	PZ-1-20150521	PZ-1-20150605	PZ-1-20150715	PZ-1-20150812	PZ-1-20150903	PZ-1-20151014	PZ-1-20151118	PZ-1-20151216	PZ-1-20160113	PZ-1-20160215	PZ-1-20160317	PZ-1-20160414	PZ-1-20160523	PZ-1-20160621	PZ-1-20160715	PZ-1-20160810	PZ-1-20160912	PZ-1-20161201	PZ-1-20170307	PZ-1-20170606	PZ-1-20170907
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)
cis-1,2-Dichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0038 J	0.0012 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0012 J	ND (0.005)	ND (0.005)
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0012 J
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0011 J
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-1	PZ-1	PZ-1	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10
Sample Name	PZ-1-20171205	PZ-1-20180314	PZ-1-20180605	PZ-10-20141027	PZ-10-20150114	PZ-10-20150210	PZ-10-20150309	PZ-10-20150414	PZ-10-20150513	PZ-10-20150610	PZ-10-20150715	PZ-10-20150813	PZ-10-20150909	PZ-10-20151015	PZ-10-20151118	PZ-10-20151214	PZ-10-20160113	PZ-10-20160212	PZ-10-20160314	PZ-10-20160412	PZ-10-20160523	PZ-10-20160621	PZ-10-20160715
Sample Date	12/05/2017	03/14/2018	06/05/2018	10/27/2014	01/14/2015	02/10/2015	03/09/2015	04/14/2015	05/13/2015	06/10/2015	07/15/2015	08/13/2015	09/09/2015	10/15/2015	11/18/2015	12/14/2015	01/13/2016	02/12/2016	03/14/2016	04/12/2016	05/23/2016	06/21/2016	07/15/2016
Lab Sample ID	PZ-1-20171205	PZ-1-20180314	PZ-1-20180605	PZ-10-20141027	PZ-10-20150114	PZ-10-20150210	PZ-10-20150309	PZ-10-20150414	PZ-10-20150513	PZ-10-20150610	PZ-10-20150715	PZ-10-20150813	PZ-10-20150909	PZ-10-20151015	PZ-10-20151118	PZ-10-20151214	PZ-10-20160113	PZ-10-20160212	PZ-10-20160314	PZ-10-20160412	PZ-10-20160523	PZ-10-20160621	PZ-10-20160715
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	0.22	0.134	0.142	0.122	0.0833	0.0749	0.0805	0.0744	0.0565	0.037	0.02	0.0108	0.006	0.0059	0.0111	0.011	0.0068	0.0042 J	0.0056	0.0034 J
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	0.0002 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	0.0204	0.0096	-	0.0069	0.0076	0.0114	0.0129	0.0079	0.0039	0.0023	0.002 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-10	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11
Sample Name	PZ-10-20160810	PZ-10-20160907	PZ-10-20161201	PZ-10-20170306	PZ-10-20170606	PZ 10-20170906	PZ-10-20171206	PZ-10-20180314	PZ-10-20180606	PZ-11-20141208	PZ-11-20150115	PZ-11-20150210	PZ-11-20150312	PZ-11-20150414	PZ-11-20150521	PZ-11-20150605	PZ-11-20150715	PZ-11-20150812	PZ-11-20150901	PZ-11-20151014	PZ-11-20151118	PZ-11-20151216	PZ-11-20160113
Sample Date	08/10/2016	09/07/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	12/06/2017	03/14/2018	06/06/2018	12/08/2014	01/15/2015	02/10/2015	03/12/2015	04/14/2015	05/21/2015	06/05/2015	07/15/2015	08/12/2015	09/01/2015	10/14/2015	11/18/2015	12/16/2015	01/13/2016
Lab Sample ID	PZ-10-20160810	PZ-10-20160907	PZ-10-20161201	PZ-10-20170306	PZ-10-20170606	PZ 10-20170906	PZ-10-20171206	PZ-10-20180314	PZ-10-20180606	PZ-11-20141208	PZ-11-20150115	PZ-11-20150210	PZ-11-20150312	PZ-11-20150414	PZ-11-20150521	PZ-11-20150605	PZ-11-20150715	PZ-11-20150812	PZ-11-20150901	PZ-11-20151014	PZ-11-20151118	PZ-11-20151216	PZ-11-20160113
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0042 J	ND (0.005)	0.0046 J	0.0027 J	0.0012 J	0.0239	0.022	0.018	0.0053	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
m,p-Xylenes	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0008 J	0.0007 J	0.002 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-11	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12
Sample Name	PZ-11-20160215	PZ-11-20160317	PZ-11-20160414	PZ-11-20160523	PZ-11-20160621	PZ-11-20160715	PZ-11-20160810	PZ-11-20160912	PZ-11-20161201	PZ-11-20170306	PZ-11-20170606	PZ-11-20170906	PZ-11-20171205	PZ-11-20180314	PZ-11-20180605	PZ-12-20141208	PZ-12-20150115	PZ-12-20150210	PZ-12-20150312	PZ-12-20150414	PZ-12-20150521	PZ-12-20150605	PZ-12-20150715
Sample Date	02/15/2016	03/17/2016	04/14/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	12/05/2017	03/14/2018	06/05/2018	12/08/2014	01/15/2015	02/10/2015	03/12/2015	04/14/2015	05/21/2015	06/05/2015	07/15/2015
Lab Sample ID	PZ-11-20160215	PZ-11-20160317	PZ-11-20160414	PZ-11-20160523	PZ-11-20160621	PZ-11-20160715	PZ-11-20160810	PZ-11-20160912	PZ-11-20161201	PZ-11-20170306	PZ-11-20170606	PZ-11-20170906	PZ-11-20171205	PZ-11-20180314	PZ-11-20180605	PZ-12-20141208	PZ-12-20150115	PZ-12-20150210	PZ-12-20150312	PZ-12-20150414	PZ-12-20150521	PZ-12-20150605	PZ-12-20150715
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0003 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	0.0013 J	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	0.0004 J	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

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GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-12	PZ-2	PZ-2
Sample Name	PZ-12-20150812	PZ-12-20150903	PZ-12-20151018	PZ-12-20151114	PZ-12-20151216	PZ-12-20160113	PZ-12-20160215	PZ-12-20160317	PZ-12-20160414	PZ-12-20160523	PZ-12-20160621	PZ-12-20160715	PZ-12-20160810	PZ-12-20160912	PZ-12-20161201	PZ-12-20170307	PZ-12-20170607	PZ-12-20170906	PZ-12-20171205	PZ-12-20180314	PZ-12-20180605	PZ-2-20140917	PZ-2-20141014
Sample Date	08/12/2015	09/03/2015	10/18/2015	11/14/2015	12/16/2015	01/13/2016	02/15/2016	03/17/2016	04/14/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/07/2017	06/07/2017	09/06/2017	12/05/2017	03/14/2018	06/05/2018	09/17/2014	10/14/2014
Lab Sample ID	PZ-12-20150812	PZ-12-20150903	PZ-12-20151018	PZ-12-20151114	PZ-12-20151216	PZ-12-20160113	PZ-12-20160215	PZ-12-20160317	PZ-12-20160414	PZ-12-20160523	PZ-12-20160621	PZ-12-20160715	PZ-12-20160810	PZ-12-20160912	PZ-12-20161201	PZ-12-20170307	PZ-12-20170607	PZ-12-20170906	PZ-12-20171205	PZ-12-20180314	PZ-12-20180605	PZ-2-20140917	PZ-2-20141014
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-
cis-1,2-Dichloroethene	ND (0.005)	0.0012 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0023	0.0057
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	0.0004 J	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2
Sample Name	PZ-2-20141120	PZ-2-20141208	PZ-2-20150114	PZ-2-20150210	PZ-2-20150312	PZ-2-20150414	PZ-2-20150521	PZ-2-20150605	PZ-2-20150715	PZ-2-20150812	PZ-2-20150901	PZ-2-20151014	PZ-2-20151118	PZ-2-20151216	PZ-2-20160113	PZ-2-20160215	PZ-2-20160317	PZ-2-20160414	PZ-2-20160523	PZ-2-20160621	PZ-2-20160715	PZ-2-20160810	PZ-2-20160912	PZ-2-20161201	PZ-2-20170306
Sample Date	11/20/2014	12/08/2014	01/14/2015	02/10/2015	03/12/2015	04/14/2015	05/21/2015	06/05/2015	07/15/2015	08/12/2015	09/01/2015	10/14/2015	11/18/2015	12/16/2015	01/13/2016	02/15/2016	03/17/2016	04/14/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/06/2017
Lab Sample ID	PZ-2-20141120	PZ-2-20141208	PZ-2-20150114	PZ-2-20150210	PZ-2-20150312	PZ-2-20150414	PZ-2-20150521	PZ-2-20150605	PZ-2-20150715	PZ-2-20150812	PZ-2-20150901	PZ-2-20151014	PZ-2-20151118	PZ-2-20151216	PZ-2-20160113	PZ-2-20160215	PZ-2-20160317	PZ-2-20160414	PZ-2-20160523	PZ-2-20160621	PZ-2-20160715	PZ-2-20160810	PZ-2-20160912	PZ-2-20161201	PZ-2-20170306
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0293	0.0798	0.132	0.127	0.0159	0.0037	0.15	0.255	0.22	0.196	0.19	0.0903	0.0535	0.0367	0.0271	0.0265	0.0302	0.0484	0.0255	0.0229	0.0168	0.0184	0.0199	0.0176	0.0117
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.0018	0.0075	0.0107	0.0093	0.001	ND (0.002)	0.0097	0.0153	0.0125	0.0118	0.0126	0.0067	0.0022	0.0013 J	0.0009 J	0.0008 J	0.001 J	0.0021	0.0012 J	ND (0.002)	0.0006	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3
Sample Name	PZ-2-20170606	PZ-2-20170907	PZ-2-20171205	PZ-2-20180313	PZ-2-20180605	PZ-3-20130701	PZ-3-20140711	PZ-3-20140825	PZ-3-20140917	PZ-3-20141014	PZ-3-20141120	PZ-3-20141208	PZ-3-20150114	PZ-3-20150210	PZ-3-20150312	PZ-3-20150414	PZ-3-20150521	PZ-3-20150605	PZ-3-20150715	PZ-3-20150812	PZ-3-20150901	PZ-3-20151014	PZ-3-20151118	PZ-3-20151216	PZ-3-20160113
Sample Date	06/06/2017	09/07/2017	12/05/2017	03/13/2018	06/05/2018	07/01/2013	07/11/2014	08/25/2014	09/17/2014	10/14/2014	11/20/2014	12/08/2014	01/14/2015	02/10/2015	03/12/2015	04/14/2015	05/21/2015	06/05/2015	07/15/2015	08/12/2015	09/01/2015	10/14/2015	11/18/2015	12/16/2015	01/13/2016
Lab Sample ID	PZ-2-20170606	PZ-2-20170907	PZ-2-20171205	PZ-2-20180313	PZ-2-20180605	PZ-3-20130701	PZ-3-20140711	PZ-3-20140825	PZ-3-20140917	PZ-3-20141014	PZ-3-20141120	PZ-3-20141208	PZ-3-20150114	PZ-3-20150210	PZ-3-20150312	PZ-3-20150414	PZ-3-20150521	PZ-3-20150605	PZ-3-20150715	PZ-3-20150812	PZ-3-20150901	PZ-3-20151014	PZ-3-20151118	PZ-3-20151216	PZ-3-20160113
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0082	0.0188	0.0176	0.0214	0.0142	ND (0)	ND (0.005)	ND (0.005)	0.203	0.144	0.013	0.0112	0.0101	0.006	0.0039	0.005	0.0032 J	0.005 J	0.0018 J	0.0024 J	0.0033 J	0.0011 J	ND (0.005)	ND (0.005)	0.0026 J
m,p-Xylenes	-	0.0012 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	0.0042	0.0009 J	0.0006 J	ND (0.002)	ND (0.002)	ND (0.002)	0.0125	0.0094	0.0007	0.0015	0.0006	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4
Sample Name	PZ-3-20160215	PZ-3-20160317	PZ-3-20160414	PZ-3-20160523	PZ-3-20160621	PZ-3-20160715	PZ-3-20160810	PZ-3-20160912	PZ-3-20161201	PZ-3-20170306	PZ-3-20170606	PZ-3-20170907	PZ-3-20171205	PZ-3-20180313	PZ-3-20180605	PZ-4-20130701	PZ-4-20140528	PZ-4-20140711	PZ-4-20140825	PZ-4-20140918	PZ-4-20141014	PZ-4-20141027	PZ-4-20141120	PZ-4-20141208	PZ-4-20150114
Sample Date	02/15/2016	03/17/2016	04/14/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/06/2017	06/06/2017	09/07/2017	12/05/2017	03/13/2018	06/05/2018	07/01/2013	05/28/2014	07/11/2014	08/25/2014	09/18/2014	10/14/2014	10/27/2014	11/20/2014	12/08/2014	01/14/2015
Lab Sample ID	PZ-3-20160215	PZ-3-20160317	PZ-3-20160414	PZ-3-20160523	PZ-3-20160621	PZ-3-20160715	PZ-3-20160810	PZ-3-20160912	PZ-3-20161201	PZ-3-20170306	PZ-3-20170606	PZ-3-20170907	PZ-3-20171205	PZ-3-20180313	PZ-3-20180605	PZ-4-20130701	PZ-4-20140528	PZ-4-20140711	PZ-4-20140825	PZ-4-20140918	PZ-4-20141014	PZ-4-20141027	PZ-4-20141120	PZ-4-20141208	PZ-4-20150114
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0022 J	0.0012 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0023 J	0.124	0.0164	0.223	0.223	0.301	0.137	0.224	0.237	0.2	0.141
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0001 J	0.0074	ND (0.002)	0.0183	0.0207	0.018	0.0072	0.02	-	0.018	0.0082

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4
Sample Name	PZ-4-20150211	PZ-4-20150312	PZ-4-20150414	PZ-4-20150513	PZ-4-20150610	PZ-4-20150715	PZ-4-20150812	PZ-4-20150909	PZ-4-20151014	PZ-4-20151118	PZ-4-20151214	PZ-4-20160114	PZ-4-20160212	PZ-4-20160314	PZ-4-20160412	PZ-4-20160523	PZ-4-20160621	PZ-4-20160715	PZ-4-20160810	PZ-4-20160912	PZ-4-20161201	PZ-4-20170306	PZ-4-20170606	PZ 4-20170906	PZ-4-20171206
Sample Date	02/11/2015	03/12/2015	04/14/2015	05/13/2015	06/10/2015	07/15/2015	08/12/2015	09/09/2015	10/14/2015	11/18/2015	12/14/2015	01/14/2016	02/12/2016	03/14/2016	04/12/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	12/06/2017
Lab Sample ID	PZ-4-20150211	PZ-4-20150312	PZ-4-20150414	PZ-4-20150513	PZ-4-20150610	PZ-4-20150715	PZ-4-20150812	PZ-4-20150909	PZ-4-20151014	PZ-4-20151118	PZ-4-20151214	PZ-4-20160114	PZ-4-20160212	PZ-4-20160314	PZ-4-20160412	PZ-4-20160523	PZ-4-20160621	PZ-4-20160715	PZ-4-20160810	PZ-4-20160912	PZ-4-20161201	PZ-4-20170306	PZ-4-20170606	PZ 4-20170906	PZ-4-20171206
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-
cis-1,2-Dichloroethene	0.123	0.0246	0.0292	0.0455	0.078	0.0338	0.0411	0.0104	0.0263	0.0118	0.008	0.0026 J	0.0148	0.0094	0.0058	0.0042 J	0.0046 J	0.0031 J	0.0049 J	0.0052	0.005 J	0.0032 J	0.0029 J	0.0252	0.0217
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Vinyl chloride	0.0117	0.0012	0.0023	0.006	0.01	0.0034	0.0054	0.0009 J	0.0014 J	ND (0.002)	ND (0.002)	ND (0.002)	0.0008 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0008 J	0.0007 J

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-4	PZ-4	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5
Sample Name	PZ-4-20180314	PZ-4-20180606	PZ-5-20130701	PZ-5-20140528	PZ-5-20140711	PZ-5-20140825	PZ-5-20140918	PZ-5-20141014	PZ-5-20141027	PZ-5-20141120	PZ-5-20141208	PZ-5-20150114	PZ-5-20150211	PZ-5-20150312	PZ-5-20150414	PZ-5-20150513	PZ-5-20150610	PZ-5-20150715	PZ-5-20150812	PZ-5-20150909	PZ-5-20151014	PZ-5-20151118	PZ-5-20151218	PZ-5-20160114	PZ-5-20160212
Sample Date	03/14/2018	06/06/2018	07/01/2013	05/28/2014	07/11/2014	08/25/2014	09/18/2014	10/14/2014	10/27/2014	11/20/2014	12/08/2014	01/14/2015	02/11/2015	03/12/2015	04/14/2015	05/13/2015	06/10/2015	07/15/2015	08/12/2015	09/09/2015	10/14/2015	11/18/2015	12/18/2015	01/14/2016	02/12/2016
Lab Sample ID	PZ-4-20180314	PZ-4-20180606	PZ-5-20130701	PZ-5-20140528	PZ-5-20140711	PZ-5-20140825	PZ-5-20140918	PZ-5-20141014	PZ-5-20141027	PZ-5-20141120	PZ-5-20141208	PZ-5-20150114	PZ-5-20150211	PZ-5-20150312	PZ-5-20150414	PZ-5-20150513	PZ-5-20150610	PZ-5-20150715	PZ-5-20150812	PZ-5-20150909	PZ-5-20151014	PZ-5-20151118	PZ-5-20151218	PZ-5-20160114	PZ-5-20160212
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.02	0.0132	0.198	0.324	0.324	0.182	0.208	0.156	0.297	0.152	0.212	0.207	0.161	0.13	0.111	0.113	0.123	0.111	0.0941	0.0936	0.107	0.0858	0.0836	0.0118	0.0722
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.0006 J	ND (0.002)	0.0144	0.0062	0.011	0.0034	0.0085	0.0065	0.016	0.0062	0.017	0.012	0.013	0.011	0.0085	0.003	0.0063	0.0031	0.0032	0.0079	0.0122	0.0063	0.0056	0.0008 J	0.0048

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-5	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6
Sample Name	PZ-5-20160314	PZ-5-20160412	PZ-5-20160523	PZ-5-20160621	PZ-5-20160715	PZ-5-20160810	PZ-5-20160912	PZ-5-20161201	PZ-5-20170306	PZ-5-20170606	PZ 5-20170906	PZ-5-20171206	PZ-5-20180314	PZ-5-20180606	PZ-6-20130701	PZ-6-20140528	PZ-6-20140711	PZ-6-20140825	PZ-6-20140918	PZ-6-20141014	PZ-6-20141027	PZ-6-20141120	PZ-6-20141208	PZ-6-20150115	PZ-6-20150211
Sample Date	03/14/2016	04/12/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	12/06/2017	03/14/2018	06/06/2018	07/01/2013	05/28/2014	07/11/2014	08/25/2014	09/18/2014	10/14/2014	10/27/2014	11/20/2014	12/08/2014	01/15/2015	02/11/2015
Lab Sample ID	PZ-5-20160314	PZ-5-20160412	PZ-5-20160523	PZ-5-20160621	PZ-5-20160715	PZ-5-20160810	PZ-5-20160912	PZ-5-20161201	PZ-5-20170306	PZ-5-20170606	PZ 5-20170906	PZ-5-20171206	PZ-5-20180314	PZ-5-20180606	PZ-6-20130701	PZ-6-20140528	PZ-6-20140711	PZ-6-20140825	PZ-6-20140918	PZ-6-20141014	PZ-6-20141027	PZ-6-20141120	PZ-6-20141208	PZ-6-20150115	PZ-6-20150211
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0488	0.0408	0.0274	0.0304	0.0423	0.0553	0.0446	0.031	0.0237	0.0278	0.0188	0.0102	0.0099	0.0055	0.34	0.00247	0.0174	0.0045	0.0041	ND (0)	0.0105	0.0047	0.009	0.011	0.0116
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.0021	0.0016 J	ND (0.002)	0.0008 J	0.0022	0.002 J	0.0015 J	0.0006 J	0.0006 J	0.0007 J	0.0006 J	ND (0.002)	ND (0.002)	ND (0.002)	0.017	ND (0.002)	0.0008	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6	PZ-6
Sample Name	PZ-6-20150312	PZ-6-20150414	PZ-6-20150513	PZ-6-20150610	PZ-6-20150715	PZ-6-20150812	PZ-6-20150909	PZ-6-20151014	PZ-6-20151120	PZ-6-20151218	PZ-6-20160114	PZ-6-20160212	PZ-6-20160314	PZ-6-20160412	PZ-6-20160523	PZ-6-20160621	PZ-6-20160715	PZ-6-20160810	PZ-6-20160907	PZ-6-20161201	PZ-6-20170306	PZ-6-20170606	PZ 6-20170906	PZ-6-20171206	PZ-6-20180314
Sample Date	03/12/2015	04/14/2015	05/13/2015	06/10/2015	07/15/2015	08/12/2015	09/09/2015	10/14/2015	11/20/2015	12/18/2015	01/14/2016	02/12/2016	03/14/2016	04/12/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/07/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	12/06/2017	03/14/2018
Lab Sample ID	PZ-6-20150312	PZ-6-20150414	PZ-6-20150513	PZ-6-20150610	PZ-6-20150715	PZ-6-20150812	PZ-6-20150909	PZ-6-20151014	PZ-6-20151120	PZ-6-20151218	PZ-6-20160114	PZ-6-20160212	PZ-6-20160314	PZ-6-20160412	PZ-6-20160523	PZ-6-20160621	PZ-6-20160715	PZ-6-20160810	PZ-6-20160907	PZ-6-20161201	PZ-6-20170306	PZ-6-20170606	PZ 6-20170906	PZ-6-20171206	PZ-6-20180314
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-
cis-1,2-Dichloroethene	ND (0.005)	0.0084	0.0057	0.0082	0.0074	0.0052	0.0052	0.0039 J	0.0036 J	0.0042 J	0.0044	0.0032	0.0036	0.0036	0.0026	0.0029 J	ND (0.005)	ND (0.005)	ND (0.005)	0.0037 J	0.0036 J	0.0018 J	ND (0.005)	ND (0.005)	0.0011 J
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0008 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-6	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7
Sample Name	PZ-6-20180606	PZ-7-20141027	PZ-7-20150115	PZ-7-20150211	PZ-7-20150311	PZ-7-20150414	PZ-7-20150512	PZ-7-20150609	PZ-7-20150715	PZ-7-20150813	PZ-7-20150909	PZ-7-20151015	PZ-7-20151120	PZ-7-20151218	PZ-7-20160113	PZ-7-20160212	PZ-7-20160314	PZ-7-20160412	PZ-7-20160523	PZ-7-20160621	PZ-7-20160715	PZ-7-20160810	PZ-7-20160912	PZ-7-20161201	PZ-7-20170306
Sample Date	06/06/2018	10/27/2014	01/15/2015	02/11/2015	03/11/2015	04/14/2015	05/12/2015	06/09/2015	07/15/2015	08/13/2015	09/09/2015	10/15/2015	11/20/2015	12/18/2015	01/13/2016	02/12/2016	03/14/2016	04/12/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/12/2016	12/01/2016	03/06/2017
Lab Sample ID	PZ-6-20180606	PZ-7-20141027	PZ-7-20150115	PZ-7-20150211	PZ-7-20150311	PZ-7-20150414	PZ-7-20150512	PZ-7-20150609	PZ-7-20150715	PZ-7-20150813	PZ-7-20150909	PZ-7-20151015	PZ-7-20151120	PZ-7-20151218	PZ-7-20160113	PZ-7-20160212	PZ-7-20160314	PZ-7-20160412	PZ-7-20160523	PZ-7-20160621	PZ-7-20160715	PZ-7-20160810	PZ-7-20160912	PZ-7-20161201	PZ-7-20170306
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ND (0.002)	0.0267	0.0183	0.0119	0.0117	0.0111	0.011	0.0245	0.0085	0.0086	0.009	0.0076	0.0106	0.0082	0.0041 J	0.0035 J	0.004 J	0.0042 J	0.0052	0.0058	0.0038 J	0.0034 J	0.0029 J	0.0022 J	0.0018 J
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	0.0003 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	0.0005	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0008 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-7	PZ-7	PZ-7	PZ-7	PZ-7	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8
Sample Name	PZ-7-20170606	PZ 7-20170906	PZ-7-20171206	PZ-7-20180314	PZ-7-20180606	PZ-8-20141027	PZ-8-20150115	PZ-8-20150210	PZ-8-20150309	PZ-8-20150414	PZ-8-20150513	PZ-8-20150609	PZ-8-20150715	PZ-8-20150812	PZ-8-20150909	PZ-8-20151015	PZ-8-20151120	PZ-8-20151218	PZ-8-20160114	PZ-8-20160212	PZ-8-20160314	PZ-8-20160412	PZ-8-20160523	PZ-8-20160621	PZ-8-20160715
Sample Date	06/06/2017	09/06/2017	12/06/2017	03/14/2018	06/06/2018	10/27/2014	01/15/2015	02/10/2015	03/09/2015	04/14/2015	05/13/2015	06/09/2015	07/15/2015	08/12/2015	09/09/2015	10/15/2015	11/20/2015	12/18/2015	01/14/2016	02/12/2016	03/14/2016	04/12/2016	05/23/2016	06/21/2016	07/15/2016
Lab Sample ID	PZ-7-20170606	PZ 7-20170906	PZ-7-20171206	PZ-7-20180314	PZ-7-20180606	PZ-8-20141027	PZ-8-20150115	PZ-8-20150210	PZ-8-20150309	PZ-8-20150414	PZ-8-20150513	PZ-8-20150609	PZ-8-20150715	PZ-8-20150812	PZ-8-20150909	PZ-8-20151015	PZ-8-20151120	PZ-8-20151218	PZ-8-20160114	PZ-8-20160212	PZ-8-20160314	PZ-8-20160412	PZ-8-20160523	PZ-8-20160621	PZ-8-20160715
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0013 J	0.0029 J	0.0025 J	0.0025 J	0.002	0.113	0.025	0.0323	0.0545	0.03	0.014	0.0158	0.0099	0.0108	0.0062	0.0042 J	0.0035 J	0.0068	0.0086	0.0022 J	0.002 J	0.0022 J	0.0013 J	0.0017 J	0.0014 J
m,p-Xylenes	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0105	0.004	0.0094	0.0104	0.0025	ND (0.002)	ND (0.002)	0.0008 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-8	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9
Sample Name	PZ-8-20160810	PZ-8-20160912	PZ-8-20161201	PZ-8-20170306	PZ-8-20170606	PZ 8-20170906	PZ-8-20171206	PZ-8-20180314	PZ-8-20180606	PZ-9-20141027	PZ-9-20150114	PZ-9-20150210	PZ-9-20150309	PZ-9-20150414	PZ-9-20150513	PZ-9-20150610	PZ-9-20150715	PZ-9-20150813	PZ-9-20150909	PZ-9-20151015	PZ-9-20151118	PZ-9-20151218	PZ-9-20160114	PZ-9-20160212	PZ-9-20160314
Sample Date	08/10/2016	09/12/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	12/06/2017	03/14/2018	06/06/2018	10/27/2014	01/14/2015	02/10/2015	03/09/2015	04/14/2015	05/13/2015	06/10/2015	07/15/2015	08/13/2015	09/09/2015	10/15/2015	11/18/2015	12/18/2015	01/14/2016	02/12/2016	03/14/2016
Lab Sample ID	PZ-8-20160810	PZ-8-20160912	PZ-8-20161201	PZ-8-20170306	PZ-8-20170606	PZ 8-20170906	PZ-8-20171206	PZ-8-20180314	PZ-8-20180606	PZ-9-20141027	PZ-9-20150114	PZ-9-20150210	PZ-9-20150309	PZ-9-20150414	PZ-9-20150513	PZ-9-20150610	PZ-9-20150715	PZ-9-20150813	PZ-9-20150909	PZ-9-20151015	PZ-9-20151118	PZ-9-20151218	PZ-9-20160114	PZ-9-20160212	PZ-9-20160314
Volatile Organic Compounds (mg/L)																									
1,1-Dichloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0019 J	0.0017 J	0.002 J	0.0018 J	0.0015 J	0.0051	0.0045 J	0.0025 J	0.0013 J	0.219	0.324	0.273	0.266	0.203	0.172	0.124	0.097	0.0915	0.124	0.0806	0.0179	0.0028 J	0.0326	0.0651	0.0579
m,p-Xylenes	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0134	0.018	0.0211	0.017	0.0114	0.0083	0.0051 J	0.0043	0.0043	0.011	0.0071	ND (0.002)	ND (0.002)	0.0022	0.004	0.0034

ABBREVIATIONS AND NOTES:
mg/L: milligram per liter
NA: Not Applicable
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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	PZ-9	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample Name	PZ-9-20160412	PZ-9-20160523	PZ-9-20160621	PZ-9-20160715	PZ-9-20160810	PZ-9-20160907	PZ-9-20161201	PZ-9-20170306	PZ-9-20170606	PZ 9-20170906	DUP #2-20170906	PZ-9-20171206	PZ-9-20180314	PZ-9-20180606	MW-1-20121203	MW-1-20140401	MW-1-20140401-DUP	MW-1-20140417	MW-1-20140528	MW-1-20140917	MW-1-20141208	MW-1-20150311	MW-1-20150610
Sample Date	04/12/2016	05/23/2016	06/21/2016	07/15/2016	08/10/2016	09/07/2016	12/01/2016	03/06/2017	06/06/2017	09/06/2017	09/06/2017	12/06/2017	03/14/2018	06/06/2018	12/03/2012	04/01/2014	04/01/2014	04/17/2014	05/28/2014	09/17/2014	12/08/2014	03/11/2015	06/10/2015
Lab Sample ID	PZ-9-20160412	PZ-9-20160523	PZ-9-20160621	PZ-9-20160715	PZ-9-20160810	PZ-9-20160907	PZ-9-20161201	PZ-9-20170306	PZ-9-20170606	PZ-9-20170906	DUP #2-20170906	PZ-9-20171206	PZ-9-20180314	PZ-9-20180606	MW-1-20121203	MW-1-20140401	MW-1-20140401_DUP	MW-1-20140417	MW-1-20140528	MW-1-20140917	MW-1-20141208	MW-1-20150311	MW-1-20150610
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	ND (0.025)	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0528	0.0364	0.028	0.0272	0.029	0.0278	0.0278	0.0276	ND (0.005)	0.008	0.0083	0.005	0.0047 J	0.0016 J	0.015	0.188	0.182	0.175	0.173	0.214	0.21	0.0126	0.175
m,p-Xylenes	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-	-	0.00049 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0025)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-	-	0.0012 J	0.0042 J	0.0042 J	0.0034 J	0.004 J	0.0033 J	0.002	ND (0.005)	0.0016 J
Vinyl chloride	0.0019 J	0.0018 J	0.0005 J	0.0011 J	0.001 J	ND (0.002)	ND (0.002)	0.0007 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0097	0.01	0.0099	0.0143	0.014	0.0127	0.0009	0.0102

ABBREVIATIONS AND NOTES:

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Sample Name	MW-1-20150901	MW-1-20151216	MW-1-20160316	MW-1-20160608	MW-1-20160906	MW-1-20161202	MW-1-20170307	MW-1-20170608	MW 1-20170905	MW-1-20170905	MW-1-20171205	MW-1-20180313	MW-1-20180605	MW-10-20140313	MW-10-20140425	MW-10-20140520	MW-10-20140627	MW-10-20140724	MW-10-20140827	MW-10-20140930	MW-10-20141208	MW-10-20150318
Sample Date	09/01/2015	12/16/2015	03/16/2016	06/08/2016	09/06/2016	12/02/2016	03/07/2017	06/08/2017	09/05/2017	09/05/2017	12/05/2017	03/13/2018	06/05/2018	03/13/2014	04/25/2014	05/20/2014	06/27/2014	07/24/2014	08/27/2014	09/30/2014	12/08/2014	03/18/2015
Lab Sample ID	MW-1-20150901	MW-1-20151216	MW-1-20160316	MW-1-20160608	MW-1-20160906	MW-1-20161202	MW-1-20170307	MW-1-20170608	MW 1-20170905	MW-1-20170905	MW-1-20171205	MW-1-20180313	MW-1-20180605	MW-10-20140313	MW-10-20140425	MW-10-20140520	MW-10-20140627	MW-10-20140724	MW-10-20140827	MW-10-20140930	MW-10-20141208	MW-10-20150318
Volatile Organic Compounds (mg/L)																						
1,1-Dichloroethene	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.174	0.0884	0.0615	0.0902	0.0629	0.0491	0.0206	0.0498	0.0014 J	0.0014 J	0.0013 J	0.0086	0.0289	0.17	0.049	0.189	2.62	1.54	1.6	0.149	ND (0.005)	0.0129
m,p-Xylenes	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	0.0461	0.0018	ND (0.005)	-	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	0.001 J	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	0.0002 J	-	-	-	-	-	-	-	-	-
Trichloroethene	0.0016 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	0.0471	0.0016	ND (0.005)	ND (0.25)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)
Vinyl chloride	0.008	0.0028	0.0029	0.0044	0.0027	0.0021	ND (0.002)	0.0019	ND (0.002)	ND (0.002)	ND (0.002)	0.0177	0.0169	0.0113	0.0048	0.0172	0.172	0.0998	0.0781	ND (0.005)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Sample Name	MW-10-20150629	MW-10-20150901	MW-10-20151215	MW-10-20160316	MW-10-20160608	MW-10-20160907	MW-10-20161202	MW-10-20170307	MW-10-20170607	MW 10-20170906	MW-10-20170906	MW-10-20171205	MW-10-20180313	MW-10-20180605	MW-11-20140425	MW-11-20140520	MW-11-20140627	MW-11-20140724	MW-11-20140827	MW-11-20140930	MW-11-20141210
Sample Date	06/29/2015	09/01/2015	12/15/2015	03/16/2016	06/08/2016	09/07/2016	12/02/2016	03/07/2017	06/07/2017	09/06/2017	09/06/2017	12/05/2017	03/13/2018	06/05/2018	04/25/2014	05/20/2014	06/27/2014	07/24/2014	08/27/2014	09/30/2014	12/10/2014
Lab Sample ID	MW-10-20150629	MW-10-20150901	MW-10-20151215	MW-10-20160316	MW-10-20160608	MW-10-20160907	MW-10-20161202	MW-10-20170307	MW-10-20170607	MW 10-20170906	MW-10-20170906	MW-10-20171205	MW-10-20180313	MW-10-20180605	MW-11-20140425	MW-11-20140520	MW-11-20140627	MW-11-20140724	MW-11-20140827	MW-11-20140930	MW-11-20141210
Volatile Organic Compounds (mg/L)																					
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.038	0.0053	ND (0.005)	0.0774	0.0769	0.0074	0.0323	0.0019 J	ND (0.005)	0.0012 J	0.0012 J	ND (0.005)	ND (0.005)	0.0105	0.0503	0.551	0.126	0.237	0.143	0.213	0.0013
m,p-Xylenes	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.005)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	0.0125	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.005)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	0.0045	ND (0.005)
Vinyl chloride	0.0219	0.0027	ND (0.002)	0.0121	0.0046	0.0136	0.0641	0.0009 J	0.0006 J	0.0005 J	0.0005 J	ND (0.002)	0.0111	0.0017 J	0.0044	0.0541	0.0116	0.0236	0.0164	0.0173	0.0034

ABBREVIATIONS AND NOTES:
mg/L: milligram per liter
NA: Not Applicable
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-12
Sample Name	MW-11-20150318	MW-11-20150629	MW-11-20150903	MW-11-20151216	MW-11-20160316	MW-11-20160608	MW-11-20160907	MW-11-20161129	MW-11-20161202	MW-11-20161220	MW-11-20170111	MW-11-20170307	MW-11-20170607	MW 11-20170906	MW-11-20170906	MW-11-20171206	MW-11-20180314	MW-11-20180606	MW-11-20180919	MW-11-20181016	MW-12-20140320
Sample Date	03/18/2015	06/29/2015	09/03/2015	12/16/2015	03/16/2016	06/08/2016	09/07/2016	11/29/2016	12/02/2016	12/20/2016	01/11/2017	03/07/2017	06/07/2017	09/06/2017	09/06/2017	12/06/2017	03/14/2018	06/06/2018	09/19/2018	10/16/2018	03/20/2014
Lab Sample ID	MW-11-20150318	MW-11-20150629	MW-11-20150903	MW-11-20151216	MW-11-20160316	MW-11-20160608	MW-11-20160907	MW-11-20161129	MW-11-20161202	MW-11-20161220	MW-11-20170111	MW-11-20170307	MW-11-20170607	MW 11-20170906	MW-11-20170906	MW-11-20171206	MW-11-20180314	MW-11-20180606	MW-11-20180919	MW-11-20181016	MW-12-20140320
Volatile Organic Compounds (mg/L)																					
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0402	0.005 J	0.123	0.0064	0.0037 J	0.0023 J	0.0178	0.488	0.361	0.191	0.172	0.0109	0.0012 J	0.0016 J	0.0016 J	0.0013 J	0.0038 J	0.0016 J	0.0034	0.0011 J	0.319
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-	-
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0028 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.01)
Vinyl chloride	0.0233	0.0053	0.0626	0.0179	0.007	ND (0.002)	0.0404	0.176	0.363	0.156	0.174	0.019	0.002 J	0.0038	0.0038	0.0023	0.011	ND (0.002)	0.0013 J	0.001 J	0.0218

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
Sample Name	MW-12-20140425	MW-12-20140520	MW-12-20140627	MW-12-20140724	MW-12-20140827	MW-12-20140930	MW-12-20141210	MW-12-20150318	MW-12-20150629	MW-12-20150903	MW-12-20151215	MW-12-20160316	MW-12-20160608	MW-12-20160907	MW-12-20161129	MW-12-20161202	MW-12-20161220	MW-12-20170111	MW-12-20170307	MW-12-20170607	MW 12-20170906
Sample Date	04/25/2014	05/20/2014	06/27/2014	07/24/2014	08/27/2014	09/30/2014	12/10/2014	03/18/2015	06/29/2015	09/03/2015	12/15/2015	03/16/2016	06/08/2016	09/07/2016	11/29/2016	12/02/2016	12/20/2016	01/11/2017	03/07/2017	06/07/2017	09/06/2017
Lab Sample ID	MW-12-20140425	MW-12-20140520	MW-12-20140627	MW-12-20140724	MW-12-20140827	MW-12-20140930	MW-12-20141210	MW-12-20150318	MW-12-20150629	MW-12-20150903	MW-12-20151215	MW-12-20160316	MW-12-20160608	MW-12-20160907	MW-12-20161129	MW-12-20161202	MW-12-20161220	MW-12-20170111	MW-12-20170307	MW-12-20170607	MW 12-20170906
Volatile Organic Compounds (mg/L)																					
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.014 J
cis-1,2-Dichloroethene	0.0288	0.0261	0.0568	0.141	0.503	0.0654	0.0069	0.0319	0.0031 J	0.0076	0.0123	0.002 J	ND (0.005)	ND (0.005)	0.0158	0.0515	0.0048 J	0.0191	ND (0.005)	0.003 J	0.002 J
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	0.0014 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	0.0013 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0036 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	0.002	0.0082	0.0136	0.0202	0.0514	0.0099	0.018	0.162	0.0156	0.125	0.0045	ND (0.002)	ND (0.002)	0.0078	0.323	0.0799	0.0704	0.0885	ND (0.002)	0.0006 J	0.0007 J

ABBREVIATIONS AND NOTES:

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Name	MW-12-20170906	MW-12-20171206	MW-12-20180314	MW-12-20180606	MW-12-20180919	MW-12-20181016	MW-13-20140425	MW-13-20140520	MW-13-20140627	MW-13-20140724	MW-13-20140827	MW-13-20140930	MW-13-20140930-DUP	MW-13-20141210	MW-13-20150318	MW-13-20150513	MW-13-20150610	MW-13-20150715	MW-13-20150812	MW-13-20150903	MW-13-20151216
Sample Date	09/06/2017	12/06/2017	03/14/2018	06/06/2018	09/19/2018	10/16/2018	04/25/2014	05/20/2014	06/27/2014	07/24/2014	08/27/2014	09/30/2014	09/30/2014	12/10/2014	03/18/2015	05/13/2015	06/10/2015	07/15/2015	08/12/2015	09/03/2015	12/16/2015
Lab Sample ID	MW-12-20170906	MW-12-20171206	MW-12-20180314	MW-12-20180606	MW-12-20180919	MW-12-20181016	MW-13-20140425	MW-13-20140520	MW-13-20140627	MW-13-20140724	MW-13-20140827	MW-13-20140930	MW-13-20140930-DUP	MW-13-20141210	MW-13-20150318	MW-13-20150513	MW-13-20150610	MW-13-20150715	MW-13-20150812	MW-13-20150903	MW-13-20151216
Volatile Organic Compounds (mg/L)																					
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.002 J	0.0022 J	0.0025 J	0.001 J	0.001 J	0.0008 J	10.9	11	31.9	31.4	33.4	27.3	35.1	18.7	34.1	39.6	38.2	32.3	38.2	33.2	31.3
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	1.68	1.72	ND (1)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.5)	ND (4)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.005)	ND (2.5)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	0.28	0.28	ND (1)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.5)	ND (1)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	0.0037 J	ND (2.5)
Vinyl chloride	0.0007 J	0.0088	0.0052	ND (0.002)	0.0005 J	0.0004 J	0.377	0.385	1.12	1.46	2.11	1.52	3	2.01	1.36	2.7	2.11	1.93	2.12	1.36	1.86

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-14	MW-14	MW-14	MW-14
Sample Name	MW-13-20160316	MW-13-20160608	MW-13-20160907	MW-13-20161129	MW-13-20161202	MW-13-20161220	MW-13-20170111	MW-13-20170307	MW-13-20170307-DUP	MW-13-20170607	MW 13-20170905	MW-13-20170905	MW-13-20171206	MW-13-20180314	MW-13-20180606	MW-13-20180919	MW-13-20181016	MW-14-20140314	MW-14-20140520	MW-14-20140627	MW-14-20140724
Sample Date	03/16/2016	06/08/2016	09/07/2016	11/29/2016	12/02/2016	12/20/2016	01/11/2017	03/07/2017	03/07/2017	06/07/2017	09/05/2017	09/05/2017	12/06/2017	03/14/2018	06/06/2018	09/19/2018	10/16/2018	03/14/2014	05/20/2014	06/27/2014	07/24/2014
Lab Sample ID	MW-13-20160316	MW-13-20160608	MW-13-20160907	MW-13-20161129	MW-13-20161202	MW-13-20161220	MW-13-20170111	MW-13-20170307	MW-13-20170307-DUP	MW-13-20170607	MW 13-20170905	MW-13-20170905	MW-13-20171206	MW-13-20180314	MW-13-20180606	MW-13-20180919	MW-13-20181016	MW-14-20140314	MW-14-20140520	MW-14-20140627	MW-14-20140724
Volatile Organic Compounds (mg/L)																					
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	ND (2.5)	-	0.0419	0.16 J	0.0969	0.0548	0.024 J	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	ND (12.5)	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	34.8	27.1	39.7	34.3	34.9	31.6	31	19.8	19.2	23.5	28	28	21	27	32.4	23.4	12.8	2.78	5.86	6.05	5
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	ND (2.5)	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.005)	ND (0.5)	ND (0.0005)	ND (0.005)	ND (0.05)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	-	-	-	-	-	-	-	-	-	-	ND (2.5)	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	ND (2.5)	-	0.216	-	0.18 J	0.169	0.11 J	-	-	-	-
Trichloroethene	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.005)	ND (0.5)	0.0002 J	ND (0.02)	ND (0.2)	ND (0.1)	ND (0.5)	ND (0.5)	ND (0.5)
Vinyl chloride	1.45	0.76 J	2.08	1.68	2.56	1.6	1.6	1.82	1.66	2.42	1.86	1.86	2.1	1.87	1.97	10.2	7.07	0.198	0.636	0.516	0.518

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Name	MW-14-20140827	MW-14-20140930	MW-14-20141210	MW-14-20150311	MW-14-20150610	MW-14-20150715	MW-14-20150812	MW-14-20150903	MW-14-20151215	MW-14-20160316	MW-14-20160608	MW-14-20160907	MW-14-20161202	MW-14-20170307	MW-14-20170607	MW 14-20170905	MW-14-20170905	MW-14-20171205	MW-14-20171218	MW-14-20180313	MW-14-20180605
Sample Date	08/27/2014	09/30/2014	12/10/2014	03/11/2015	06/10/2015	07/15/2015	08/12/2015	09/03/2015	12/15/2015	03/16/2016	06/08/2016	09/07/2016	12/02/2016	03/07/2017	06/07/2017	09/05/2017	09/05/2017	12/05/2017	12/18/2017	03/13/2018	06/05/2018
Lab Sample ID	MW-14-20140827	MW-14-20140930	MW-14-20141210	MW-14-20150311	MW-14-20150610	MW-14-20150715	MW-14-20150812	MW-14-20150903	MW-14-20151215	MW-14-20160316	MW-14-20160608	MW-14-20160907	MW-14-20161202	MW-14-20170307	MW-14-20170607	MW 14-20170905	MW-14-20170905	MW-14-20171205	MW-14-20171218	MW-14-20180313	MW-14-20180605
Volatile Organic Compounds (mg/L)																					
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	0.0051	ND (0.005)	-	0.0037 J
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0051 J	-	-	-	-	-
cis-1,2-Dichloroethene	0.978	0.2	0.125	ND (0.05)	0.0325	0.0353	0.0018 J	0.0014 J	ND (0.005)	0.0014 J	0.0027 J	ND (0.005)	ND (0.005)	0.0024 J	0.0122	0.0015 J	0.0015 J	1.62	0.93	0.452	1.34
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-
Tetrachloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0018 J	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0011 J	-	0.0189	0.0097	-	0.014 J
Trichloroethene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.02)
Vinyl chloride	1.55	1.43	1.21	ND (0.02)	0.0393	0.059	0.0141	0.0021	ND (0.002)	0.0011 J	0.0006 J	ND (0.005)	ND (0.005)	0.0008 J	0.0703	0.0386	0.0386	1.34	1.23	0.254	0.878

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-14	MW-14	MW-14	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
Sample Name	MW-14-20180916	MW-14-20181016	MW-14-20181016-dupe	MW-2-20121203	MW-2-20140401	MW-2-20140414	MW-2-20140528	MW-2-20140711	MW-2-20140917	MW-2-20141208	MW-2-20150311	MW-2-20150610	MW-2-20150901	MW-2-20151215	MW-2-20160316	MW-2-20160608	MW-2-20160906	MW-2-20161202	MW-2-20170307	MW-2-20170607	MW 2-20170905	MW-2-20170905
Sample Date	09/16/2018	10/16/2018	10/16/2018	12/03/2012	04/01/2014	04/14/2014	05/28/2014	07/11/2014	09/17/2014	12/08/2014	03/11/2015	06/10/2015	09/01/2015	12/15/2015	03/16/2016	06/08/2016	09/06/2016	12/02/2016	03/07/2017	06/07/2017	09/05/2017	09/05/2017
Lab Sample ID	MW-14-20180916	MW-14-20181016	MW-14-20181016	MW-2-20121203	MW-2-20140401	MW-2-20140414	MW-2-20140528	MW-2-20140711	MW-2-20140917	MW-2-20141208	MW-2-20150311	MW-2-20150610	MW-2-20150901	MW-2-20151215	MW-2-20160316	MW-2-20160608	MW-2-20160906	MW-2-20161202	MW-2-20170307	MW-2-20170607	MW 2-20170905	MW-2-20170905
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	ND (0.002)	ND (0.002)	ND (0.002)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-
cis-1,2-Dichloroethene	0.0092	0.0033	0.0026	0.46	0.032	0.0014 J	0.004	0.0045 J	0.0084	ND (0.005)	ND (0.005)	0.0036 J	0.0017 J	0.0011 J	ND (0.005)	ND (0.005)	0.0012 J	0.001 J	0.0178	0.0011 J	ND (0.005)	ND (0.005)
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Tetrachloroethene	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.00043 J	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.005)	ND (0.005)	ND (0.005)	-	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0012 J	-
trans-1,2-Dichloroethene	0.001 J	0.0005 J	0.0005 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Trichloroethene	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.00029)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	0.0282	0.0181	0.0147	0.019	0.0013	ND (0.002)	0.00031 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0011 J	ND (0.002)	ND (0.002)	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-2	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
Sample Name	MW-2-20171205	MW-2-20180313	MW-2-20180605	MW-2-20181016	MW-3-20121203	MW-3-20140401	MW-3-20140528	MW-3-20140711	MW-3-20140917	MW-3-20141208	MW-3-20150311	MW-3-20150610	MW-3-20150901	MW-3-20151203	MW-3-20151208	MW-3-20151215	MW-3-20151222	MW-3-20151229	MW-3-20160316	MW-3-20160608	MW-3-20160906	MW-3-20161202	MW-3-20170111
Sample Date	12/05/2017	03/13/2018	06/05/2018	10/16/2018	12/03/2012	04/01/2014	05/28/2014	07/11/2014	09/17/2014	12/08/2014	03/11/2015	06/10/2015	09/01/2015	12/03/2015	12/08/2015	12/15/2015	12/22/2015	12/29/2015	03/16/2016	06/08/2016	09/06/2016	12/02/2016	01/11/2017
Lab Sample ID	MW-2-20171205	MW-2-20180313	MW-2-20180605	MW-2-20181016	MW-3-20121203	MW-3-20140401	MW-3-20140528	MW-3-20140711	MW-3-20140917	MW-3-20141208	MW-3-20150311	MW-3-20150610	MW-3-20150901	MW-3-20151203	MW-3-20151208	MW-3-20151215	MW-3-20151222	MW-3-20151229	MW-3-20160316	MW-3-20160608	MW-3-20160906	MW-3-20161202	MW-3-20170111
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ND (0.005)	ND (0.005)	0.0003 J	0.0007 J	0.14	0.221	0.218	0.193	0.217	0.19	0.127	0.103	0.0527	0.0422	0.0378	0.0384	0.0399	0.009	0.0155	0.0172	0.019	0.0255	0.0273
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.0005)	0.00056	ND (0.005)	ND (0.005)	ND (0.005)	0.0011	ND (0.05)	ND (0.05)	ND (0.005)	0.0031 J	0.0029 J	0.0019 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0042 J	ND (0.0018) J	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.00029)	ND (0.01)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	0.0002 J	0.0064	0.0051	0.0078	0.0056	0.0052	0.0053	ND (0.02)	0.0021	0.001 J	ND (0.002)	ND (0.002)	0.0008 J	0.001	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0094	0.0036

ABBREVIATIONS AND NOTES:
mg/L: milligram per liter
NA: Not Applicable
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39	MW-39
Sample Name	MW-3-20170307	MW-3-20170607	MW 3-20170905	MW-3-20170905	MW-3-20171205	MW-3-20180313	MW-3-20180605	MW-39-20140827	MW-39-20140930	MW-39-20150114	MW-39-20150813	MW-39-20150910	MW-39-20151222	MW-39-20160322	MW-39-20160608	MW-39-20160906	MW-39-20161202	MW-39-20170307	MW-39-20170608	MW-39-20170907	MW-39-20171206	MW-39-20180314
Sample Date	03/07/2017	06/07/2017	09/05/2017	09/05/2017	12/05/2017	03/13/2018	06/05/2018	08/27/2014	09/30/2014	01/14/2015	08/13/2015	09/10/2015	12/22/2015	03/22/2016	06/08/2016	09/06/2016	12/02/2016	03/07/2017	06/08/2017	09/07/2017	12/06/2017	03/14/2018
Lab Sample ID	MW-3-20170307	MW-3-20170607	MW 3-20170905	MW-3-20170905	MW-3-20171205	MW-3-20180313	MW-3-20180605	MW-39-20140827	MW-39-20140930	MW-39-20150114	MW-39-20150813	MW-39-20150910	MW-39-20151222	MW-39-20160322	MW-39-20160608	MW-39-20160906	MW-39-20161202	MW-39-20170307	MW-39-20170608	MW-39-20170907	MW-39-20171206	MW-39-20180314
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0159	-	0.0151
Acetone	-	-	ND (0.025)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0064 J	-	-
cis-1,2-Dichloroethene	0.0233	0.0157	0.0107	0.0107	0.0033 J	0.0022 J	0.001 J	0.31	5.43	4.74	4.86	7.38	1.46	0.095	1.77	1.22	3.98	2.82	4.05	5.23	2.76	4.07
m,p-Xylenes	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
Tetrachloroethene	ND (0.005)	0.0018 J	0.0016 J	0.0016 J	0.0016 J	ND (0.005)	ND (0.0005)	2.39	0.125	0.042	0.147	0.23 J	0.0015 J	ND (0.005)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.125)	ND (0.5)	0.046	0.084 J	0.0359
Toluene	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-
trans-1,2-Dichloroethene	-	-	ND (0.005)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0703	-	0.0472
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.25)	ND (0.125)	0.092	0.211	0.31	ND (0.005)	ND (0.005)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.125)	ND (0.5)	0.0535	0.083 J	0.0269
Vinyl chloride	0.0034	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0001 J	ND (0.1)	0.288	0.272	0.496	0.569	0.0624	0.0035	0.0722	0.0618	0.264	0.0832	0.241	0.456	0.323	0.557

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-39	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample Name	MW-39-20180314-dupe	MW-4-20121203	MW-4-20140401	MW-4-20140528	MW-4-20140711	MW-4-20140917	MW-4-20141208	MW-4-20150311	MW-4-20150610	MW-4-20150901	MW-4-20151203	MW-4-20151208	MW-4-20151215	MW-4-20151222	MW-4-20151229	MW-4-20160322	MW-4-20160608	MW-4-20160906	MW-4-20161202	MW-4-20170307	MW-4-20170608	MW 4-20170905
Sample Date	03/14/2018	12/03/2012	04/01/2014	05/28/2014	07/11/2014	09/17/2014	12/08/2014	03/11/2015	06/10/2015	09/01/2015	12/03/2015	12/08/2015	12/15/2015	12/22/2015	12/29/2015	03/22/2016	06/08/2016	09/06/2016	12/02/2016	03/07/2017	06/08/2017	09/05/2017
Lab Sample ID	MW-39-20180314	MW-4-20121203	MW-4-20140401	MW-4-20140528	MW-4-20140711	MW-4-20140917	MW-4-20141208	MW-4-20150311	MW-4-20150610	MW-4-20150901	MW-4-20151203	MW-4-20151208	MW-4-20151215	MW-4-20151222	MW-4-20151229	MW-4-20160322	MW-4-20160608	MW-4-20160906	MW-4-20161202	MW-4-20170307	MW-4-20170608	MW 4-20170905
Volatile Organic Compounds (mg/L)																						
1,1-Dichloroethene	ND (0.2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0099 J
cis-1,2-Dichloroethene	4.36	0.00035	ND (0.002)	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0049 J	ND (0.005)
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Tetrachloroethene	0.09	0.00045	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
trans-1,2-Dichloroethene	0.04 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)
Trichloroethene	0.096 J	ND (0.00029)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	1.11	ND (0.00043)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0009 J	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-4	MW-4	MW-4	MW-4	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40	MW-40
Sample Name	MW-4-20170905	MW-4-20171205	MW-4-20180313	MW-4-20180605	MW-40-20140827	MW-40-20140930	MW-40-20150114	MW-40-20150610	MW-40-20150812	MW-40-20150910	MW-40-20151203	MW-40-20151215	MW-40-20151222	MW-40-20151229	MW-40-20160322	MW-40-20160608	MW-40-20160906	MW-40-20161202	MW-40-20170307	MW-40-20170608	MW-40-20170907	MW-40-20171206
Sample Date	09/05/2017	12/05/2017	03/13/2018	06/05/2018	08/27/2014	09/30/2014	01/14/2015	06/10/2015	08/12/2015	09/10/2015	12/03/2015	12/15/2015	12/22/2015	12/29/2015	03/22/2016	06/08/2016	09/06/2016	12/02/2016	03/07/2017	06/08/2017	09/07/2017	12/06/2017
Lab Sample ID	MW-4-20170905	MW-4-20171205	MW-4-20180313	MW-4-20180605	MW-40-20140827	MW-40-20140930	MW-40-20150114	MW-40-20150610	MW-40-20150812	MW-40-20150910	MW-40-20151203	MW-40-20151215	MW-40-20151222	MW-40-20151229	MW-40-20160322	MW-40-20160608	MW-40-20160906	MW-40-20161202	MW-40-20170307	MW-40-20170608	MW-40-20170907	MW-40-20171206
Volatile Organic Compounds (mg/L)																						
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.007 J	-
cis-1,2-Dichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	0.0003 J	ND (0.5)	ND (0.5)	ND (0.5)	0.0057	0.0472	0.0272	0.0013 J	0.0022 J	0.0089	0.0028 J	0.0011 J	0.0031 J	0.002 J	0.0015 J	0.0016 J	0.0057	0.0034 J	0.0116
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.2)	ND (0.2)	ND (0.2)	0.0081	0.0616	0.0401	0.0011 J	0.0062	0.004	0.0037	ND (0.002)	0.0017 J	0.0028	0.0029	0.001 J	0.0299	0.018	0.0175

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-40	MW-40	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-41	MW-5
Sample Name	MW-40-20180314	MW-40-20180606	MW-41-20140827	MW-41-20140930	MW-41-20150114	MW-41-20150610	MW 41-20150812	MW 41-20150910	MW 41-20151208	MW 41-20160322	MW 41-20160608	MW 41-20160906	MW 41-20161202	MW 41-20170307	MW 41-20170607	MW 41-20170907	MW-41-20170907	MW 41-20171206	MW 41-20180314	MW 41-20180606	MW-5-20121207
Sample Date	03/14/2018	06/06/2018	08/27/2014	09/30/2014	01/14/2015	06/10/2015	08/12/2015	09/10/2015	12/08/2015	03/22/2016	06/08/2016	09/06/2016	12/02/2016	03/07/2017	06/07/2017	09/07/2017	09/07/2017	12/06/2017	03/14/2018	06/06/2018	12/07/2012
Lab Sample ID	MW-40-20180314	MW-40-20180606	MW-41-20140827	MW-41-20140930	MW-41-20150114	MW-41-20150610	MW 41-20150812	MW 41-20150910	MW 41-20151208	MW 41-20160322	MW 41-20160608	MW 41-20160906	MW 41-20161202	MW 41-20170307	MW 41-20170607	MW 41-20170907	MW-41-20170907	MW 41-20171206	MW 41-20180314	MW 41-20180606	MW-5-20121207
Volatile Organic Compounds (mg/L)																						
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12 J	-	-	0.11 J	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (2.5)	-	-	-	-
cis-1,2-Dichloroethene	0.194	0.159	27.9	33.1	14.9	70.6	ND (0.25)	49.7	93	ND (0.5)	63.7	74.6	56.1	54.8	57.8	51.5	51.5	47.4	88	75.6	0.38
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.5)	-	-	-	-
Tetrachloroethene	ND (0.005)	0.0016 J	0.31	ND (1)	ND (1)	ND (1)	ND (0.25)	ND (2.5)	ND (0.5)	ND (0.5)	ND (0.005)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.005)	ND (0.5)	ND (0.5)	ND (2.5)	ND (2.5)	0.519	ND (0.00028)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.5)	-	-	-	-
trans-1,2-Dichloroethene	0.0041 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	0.96 J	1.5 J	1.42	-
Trichloroethene	ND (0.005)	ND (0.02)	0.49	ND (1)	ND (1)	ND (1)	ND (0.25)	ND (2.5)	ND (0.5)	ND (0.5)	0.0088 J	ND (2.5)	ND (2.5)	ND (2.5)	0.0046 J	ND (0.5)	ND (0.5)	ND (2.5)	ND (2.5)	0.36	ND (0.00029)
Vinyl chloride	0.433	0.202	0.882	2.71	ND (0.4)	1.03	ND (0.1)	ND (1)	3.01	ND (0.2)	ND (0.002)	9.43	12.1	11.3	11.4	10.9	10.9	11.5	8.32	6.6	0.021

ABBREVIATIONS AND NOTES:

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Name	MW-5-20140425	MW-5-20140520	MW-5-20140528	MW-5-20140627	MW-5-20140724	MW-5-20140827	MW-5-20140917	MW-5-20140930	MW-5-20141208	MW-5-20150318	MW-5-20150610	MW-5-20150903	MW-5-20151214	MW-5-20160316	MW-5-20160609	MW-5-20160907	MW-5-20161202	MW-5-20170307	MW-5-20170608	MW-5-20170907	DUP #3-20170907	MW-5-20171013	MW-5-20171206
Sample Date	04/25/2014	05/20/2014	05/28/2014	06/27/2014	07/24/2014	08/27/2014	09/17/2014	09/30/2014	12/08/2014	03/18/2015	06/10/2015	09/03/2015	12/14/2015	03/16/2016	06/09/2016	09/07/2016	12/02/2016	03/07/2017	06/08/2017	09/07/2017	09/07/2017	10/13/2017	12/06/2017
Lab Sample ID	MW-5-20140425	MW-5-20140520	MW-5-20140528	MW-5-20140627	MW-5-20140724	MW-5-20140827	MW-5-20140917	MW-5-20140930	MW-5-20141208	MW-5-20150318	MW-5-20150610	MW-5-20150903	MW-5-20151214	MW-5-20160316	MW-5-20160609	MW-5-20160907	MW-5-20161202	MW-5-20170307	MW-5-20170608	MW-5-20170907	DUP #3-20170907	MW-5-20171013	MW-5-20171206
Volatile Organic Compounds (mg/L)																							
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	ND (0.025)	-	-
cis-1,2-Dichloroethene	0.16	0.136	0.144	0.191	0.234	0.221	0.217	0.137	0.101	0.123	0.087	0.0751	0.0464	0.042	0.0533	0.0463	0.0544	0.0583	0.0346	0.0037 J	0.0039 J	ND (0.005)	0.0215
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-
Tetrachloroethene	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	ND (0.005)	-	-
Trichloroethene	ND (0.005)	ND (0.005)	0.00029 J	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	0.0128	0.0125	0.012	0.013	0.019	0.0209	0.0373	0.019	0.0382	0.0846	0.0319	0.0287	0.0121	0.0189	0.0301	0.0851	0.0279	0.017	0.0162	0.0079	0.008	ND (0.002)	0.0088

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-5	MW-5	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Sample Name	MW-5-20180314	MW-5-20180605	MW-8-20140313	MW-8-20140425	MW-8-20140520	MW-8-20140520-DUP	MW-8-20140627	MW-8-20140627-DUP	MW-8-20140724	MW-8-20140724-DUP	MW-8-20140827	MW-8-20140827-DUP	MW-8-20140917	MW-8-20140930	MW-8-20141210	MW-8-20150318	MW-8-20150513	MW-8-20150610	MW-8-20150903	MW-8-20151216	MW-8-20160316	MW-8-20160608
Sample Date	03/14/2018	06/05/2018	03/13/2014	04/25/2014	05/20/2014	05/20/2014	06/27/2014	06/27/2014	07/24/2014	07/24/2014	08/27/2014	08/27/2014	09/17/2014	09/30/2014	12/10/2014	03/18/2015	05/13/2015	06/10/2015	09/03/2015	12/16/2015	03/16/2016	06/08/2016
Lab Sample ID	MW-5-20180314	MW-5-20180605	MW-8-20140313	MW-8-20140425	MW-8-20140520	MW-8-20140520-DUP	MW-8-20140627	MW-8-20140627-DUP	MW-8-20140724	MW-8-20140724-DUP	MW-8-20140827	MW-8-20140827-DUP	MW-8-20140917	MW-8-20140930	MW-8-20141210	MW-8-20150318	MW-8-20150513	MW-8-20150610	MW-8-20150903	MW-8-20151216	MW-8-20160316	MW-8-20160608
Volatile Organic Compounds (mg/L)																						
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0146	0.0061	8.21	17.6	24.3	23.5	22.2	23.4	17	16.3	12.6	12.3	14.8	13.1	18.5	18.4	14.3	0.996	20.2	18.3	16.6	16.5
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (0.005)	ND (0.0005)	1.04	2.01	0.74	0.97	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	0.28	ND (2.5)	ND (1)	ND (4)	ND (0.5)	ND (0.05)	0.132	ND (1)	ND (1)	ND (1.25)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (0.005)	ND (0.002)	1.27	2.48	0.83	1.04	ND (2.5)	ND (2.5)	0.62	0.6	0.58	0.51	0.45	ND (2.5)	ND (1)	0.27	ND (0.5)	ND (0.05)	0.198	ND (1)	ND (1)	0.32 J
Vinyl chloride	0.0151	0.0074	0.39	0.971	1.21	1.17	1.14	1.18	1.02	0.94	0.64	0.58	0.588	0.84	1.84	2.28	1.73	0.108	2.75	2.44	3.31	1.88

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

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ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sample Name	MW-8-20160907	MW-8-20161129	MW-8-20161202	MW-8-20161220	MW-8-20170111	MW-8-20170307	MW-8-20170607	MW 8-20170905	MW-8-20170905	DUP #1-20170905	MW-8-20171206	MW-8-20180313	MW-8-20180605	MW-9-20140312	MW-9-20140313-DUP	MW-9-20140425	MW-9-20140520	MW-9-20140627	MW-9-20140724	MW-9-20140827	MW-9-20140930	MW-9-20141210
Sample Date	09/07/2016	11/29/2016	12/02/2016	12/20/2016	01/11/2017	03/07/2017	06/07/2017	09/05/2017	09/05/2017	09/05/2017	12/06/2017	03/13/2018	06/05/2018	03/12/2014	03/13/2014	04/25/2014	05/20/2014	06/27/2014	07/24/2014	08/27/2014	09/30/2014	12/10/2014
Lab Sample ID	MW-8-20160907	MW-8-20161129	MW-8-20161202	MW-8-20161220	MW-8-20170111	MW-8-20170307	MW-8-20170607	MW 8-20170905	MW-8-20170905	DUP #1-20170905	MW-8-20171206	MW-8-20180313	MW-8-20180605	MW-9-20140312	MW-9-20140313-DUP	MW-9-20140425	MW-9-20140520	MW-9-20140627	MW-9-20140724	MW-9-20140827	MW-9-20140930	MW-9-20141210
Volatile Organic Compounds (mg/L)																						
1,1-Dichloroethene	-	-	-	-	-	-	-	ND (0.5)	-	ND (0.5)	0.0211	0.0211	0.029 J	-	-	-	-	-	-	-	-	-
Acetone	-	-	-	-	-	-	-	ND (2.5)	-	ND (2.5)	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	13.2	16.1	15.4	13.1	14	21.4	10.8	10.4	10.4	10.5	7.41	11.7	9.68	0.0099	0.0078	0.242	0.222	0.11	0.0276	0.0211	0.011	0.0551
m,p-Xylenes	-	-	-	-	-	-	-	ND (0.5)	-	ND (0.5)	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ND (1)	ND (0.5)	0.23 J	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.005)	ND (0.5)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0118
Toluene	-	-	-	-	-	-	-	ND (0.5)	-	ND (0.5)	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	0.1 J	-	0.1 J	0.0855	0.0855	0.097 J	-	-	-	-	-	-	-	-	-
Trichloroethene	ND (1)	ND (0.5)	0.46 J	ND (0.5)	ND (0.5)	ND (1)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.005)	ND (0.5)	ND (0.2)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Vinyl chloride	1.57	2.41	2.96	2.06	2.34	1.77	2.63	3.24	3.24	3.2	3.97	3.78	2.98	0.0008	0.0008	0.014	0.015	0.0082	0.0021	0.0015	0.001	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
GROUNDWATER QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Location Group	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sample Name	MW-9-20150311	MW-9-20150903	MW-9-20151203	MW-9-20151208	MW-9-20151215	MW-9-20151222	MW-9-20151229	MW-9-20160316	MW-9-20160608	MW-9-20160907	MW-9-20161202	MW-9-20170307	MW-9-20170607	MW 9-20170905	MW-9-20170905	MW-9-20171205	MW-9-20180313	MW-9-20180605	MW-9-20180919	MW-9-20181016
Sample Date	03/11/2015	09/03/2015	12/03/2015	12/08/2015	12/15/2015	12/22/2015	12/29/2015	03/16/2016	06/08/2016	09/07/2016	12/02/2016	03/07/2017	06/07/2017	09/05/2017	09/05/2017	12/05/2017	03/13/2018	06/05/2018	09/19/2018	10/16/2018
Lab Sample ID	MW-9-20150311	MW-9-20150903	MW-9-20151203	MW-9-20151208	MW-9-20151215	MW-9-20151222	MW-9-20151229	MW-9-20160316	MW-9-20160608	MW-9-20160907	MW-9-20161202	MW-9-20170307	MW-9-20170607	MW 9-20170905	MW-9-20170905	MW-9-20171205	MW-9-20180313	MW-9-20180605	MW-9-20180919	MW-9-20181016
Volatile Organic Compounds (mg/L)																				
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	0.0006 J	ND (0.002)
Acetone	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.025)	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0102	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0018 J	0.0029 J	0.0012 J	ND (0.005)	ND (0.005)	ND (0.005)	0.0023 J	0.0014 J	0.0014 J	0.0027 J	ND (0.005)	0.0012 J	0.116	0.0038
m,p-Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	-	-
Tetrachloroethene	0.003	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0013 J	ND (0.005)	0.0012 J	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0011 J	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	ND (0.005)	-	-	-	-	0.0011 J	0.0001 J
Trichloroethene	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.002)
Vinyl chloride	0.0006	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0007 J	0.0005 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0005 J	ND (0.002)	ND (0.002)	0.0015 J	ND (0.002)	0.0002 J	0.0115	ND (0.002)

ABBREVIATIONS AND NOTES:

mg/L: milligram per liter

NA: Not Applicable

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	SB-17	SB-17	SB-17	SB-18	SB-18	SB-18	SB-19	SB-19	SB-19	SB-20	SB-20	SB-20	SB-20A	SB-21	SB-21	SB-21
Sample Name	SB-17 (4-5 ft)	SB-17 (8-9 ft)	SB-17 (14-15 ft)	SB-18 (4-5 ft)	SB-18 (9-10 ft)	SB-18 (14-15 ft)	SB-19 (4-5 ft)	SB-19 (9-10 ft)	SB-19 (14-15 ft)	SB-20 (1-2 ft)	SB-20 (6-7 ft)	SB-20 (14-15 ft)	SB-20A (1-2 ft)	SB-21 (1-2 ft)	SB-21 (7-8 ft)	SB-21 (14-15 ft)
Sample Date	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/25/2012	04/25/2012	04/25/2012	04/25/2012	04/25/2012	04/25/2012	04/25/2012
Lab Sample ID	SB-17 (4-5 ft)	SB-17 (8-9 ft)	SB-17 (14-15 ft)	SB-18 (4-5 ft)	SB-18 (9-10 ft)	SB-18 (14-15 ft)	SB-19 (4-5 ft)	SB-19 (9-10 ft)	SB-19 (14-15 ft)	SB-20 (1-2 ft)	SB-20 (6-7 ft)	SB-20 (14-15 ft)	SB-20A (1-2 ft)	SB-21 (1-2 ft)	SB-21 (7-8 ft)	SB-21 (14-15 ft)
Sample Depth (bgs)	4 - 5 (ft)	8 - 9 (ft)	14 - 15 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	1 - 2 (ft)	6 - 7 (ft)	14 - 15 (ft)	1 - 2 (ft)	1 - 2 (ft)	7 - 8 (ft)	14 - 15 (ft)
Volatile Organic Compounds (mg/kg)																
1,1-Dichloroethene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
1,2,3-Trimethylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
1,2,4-Trimethylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
1,3,5-Trimethylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0541)	ND (0.0521)	ND (0.0611)	ND (0.0566)	ND (0.0568)	ND (0.0456)	ND (0.0562)	ND (0.0581)	ND (0.0488)	ND (0.0595)	ND (0.0531)	ND (0.045)	ND (0.0589)	ND (0.0534)	ND (0.0731)	ND (0.0479)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Acetone	ND (0.0541)	ND (0.0521)	0.016 J	ND (0.0566)	ND (0.0568)	ND (0.0456)	0.0573	0.013 J	0.014 J	ND (0.0595)	ND (0.0531)	ND (0.045)	ND (0.0589)	ND (0.0534)	0.029 J	ND (0.0479)
Benzene	ND (0.0011)	ND (0.001)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0009)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0012)	ND (0.0011)	ND (0.0009)	ND (0.0012)	ND (0.0011)	ND (0.00146)	ND (0.001)
Bromodichloromethane	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Carbon disulfide	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Chlorobenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Chloroethane	ND (0.0108)	ND (0.0104)	ND (0.0122)	ND (0.0113)	ND (0.0114)	ND (0.0091)	ND (0.0112)	ND (0.0116)	ND (0.0098)	ND (0.0119)	ND (0.0106)	ND (0.009)	ND (0.0118)	ND (0.0107)	ND (0.0146)	ND (0.0096)
Chloroform (Trichloromethane)	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Chloromethane (Methyl Chloride)	ND (0.0108)	ND (0.0104)	ND (0.0122)	ND (0.0113)	ND (0.0114)	ND (0.0091)	ND (0.0112)	ND (0.0116)	ND (0.0098)	ND (0.0119)	ND (0.0106)	ND (0.009)	ND (0.0118)	ND (0.0107)	ND (0.0146)	ND (0.0096)
cis-1,2-Dichloroethene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Cymene (p-Isopropyltoluene)	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Dibromochloromethane	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Ethyl Ether	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Ethylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Hexane	ND (0.0216)	ND (0.0208)	ND (0.0244)	ND (0.0226)	ND (0.0227)	ND (0.0183)	ND (0.0225)	ND (0.0232)	ND (0.0195)	ND (0.0238)	ND (0.0212)	ND (0.018)	ND (0.0236)	ND (0.0214)	ND (0.0292)	ND (0.0192)
Isopropylbenzene (Cumene)	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
m,p-Xylenes	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Methyl acrylate	ND (0.0108)	ND (0.0104)	ND (0.0122)	ND (0.0113)	ND (0.0114)	ND (0.0091)	ND (0.0112)	ND (0.0116)	ND (0.0098)	ND (0.0119)	ND (0.0106)	ND (0.009)	ND (0.0118)	ND (0.0107)	ND (0.0146)	ND (0.0096)
Methylene chloride	ND (0.0054)	ND (0.0052)	0.002 J	0.0014 J	0.0017 J	0.0013 J	0.0012 J	0.0014 J	0.0024 J	ND (0.0059)	ND (0.0053)	0.0014 J	ND (0.0059)	0.0018 J	0.0024 J	0.0013 J
Naphthalene	ND (0.0108)	ND (0.0104)	ND (0.0122)	ND (0.0113)	ND (0.0114)	ND (0.0091)	ND (0.0112)	ND (0.0116)	ND (0.0098)	ND (0.0119)	ND (0.0106)	ND (0.009)	ND (0.0118)	ND (0.0107)	ND (0.0146)	ND (0.0096)
n-Butylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
N-Heptane	ND (0.0216)	ND (0.0208)	ND (0.0244)	ND (0.0226)	ND (0.0227)	ND (0.0183)	ND (0.0225)	ND (0.0232)	ND (0.0195)	ND (0.0238)	ND (0.0212)	ND (0.018)	ND (0.0236)	ND (0.0214)	ND (0.0292)	ND (0.0192)
n-Propylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
o-Xylene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
tert-Butylbenzene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Tetrachloroethene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	0.0016 J	ND (0.0048)
Tetrahydrofuran	ND (0.0541)	ND (0.0521)	ND (0.0611)	ND (0.0566)	ND (0.0568)	ND (0.0456)	ND (0.0562)	ND (0.0581)	ND (0.0488)	ND (0.0595)	ND (0.0531)	ND (0.045)	ND (0.0589)	ND (0.0534)	ND (0.0731)	ND (0.0479)
Toluene	ND (0.0054)	ND (0.0052)	0.0029 J	ND (0.0057)	0.0012 J	0.001 J	ND (0.0056)	ND (0.0058)	0.0052	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	0.0016 J	ND (0.00731)	0.001 J
trans-1,2-Dichloroethene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Trichloroethene	ND (0.0054)	ND (0.0052)	ND (0.0061)	ND (0.0057)	ND (0.0057)	ND (0.0046)	ND (0.0056)	ND (0.0058)	ND (0.0049)	ND (0.0059)	ND (0.0053)	ND (0.0045)	ND (0.0059)	ND (0.0053)	ND (0.00731)	ND (0.0048)
Vinyl chloride	ND (0.0022)	ND (0.0021)	ND (0.0024)	ND (0.0023)	ND (0.0023)	ND (0.0018)	ND (0.0022)	ND (0.0023)	ND (0.002)	ND (0.0024)	ND (0.0021)	ND (0.0018)	ND (0.0024)	ND (0.0021)	ND (0.00292)	ND (0.0019)
PCBs (mg/kg)																
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other																
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.58
Percent Moisture (%)	26.7	25.1	32.6	28.8	28.5	20.2	29.4	28.2	23.6	25.6	28.2	21.4	31.6	26.8	27.4	22.4

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	SB-21	SB-21	SB-21	SB-21	SB-21	SB-21	SB-21	SB-22	SB-22	SB-22	SB-22	SB-22	SB-22	SB-22
Sample Name	SB-21 (18-19 ft)	SB-21 (22-23 ft)	SB-21 dup (22-23 ft)	SB-21 (26-27 ft)	SB-21 (30-31 ft)	SB-21 (34-35 ft)	SB-21 (37-38 ft)	SB-22 (4-5 ft)	SB-22 (8-9 ft)	SB-22 (14-15 ft)	SB-22 (18-19 ft)	SB-22 dup (18-19 ft)	SB-22 (22-23 ft)	SB-22 (26-27 ft)
Sample Date	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	04/25/2012	04/25/2012	04/25/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012
Lab Sample ID	SB-21 (18-19 ft)	SB-21 (22-23 ft)	SB-21 dup (22-23 ft)	SB-21 (26-27 ft)	SB-21 (30-31 ft)	SB-21 (34-35 ft)	SB-21 (37-38 ft)	SB-22 (4-5 ft)	SB-22 (8-9 ft)	SB-22 (14-15 ft)	12070196-001	12070196-002	12070196-003	12070196-004
Sample Depth (bgs)	18 - 19 (ft)	22 - 23 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)	37 - 38 (ft)	4 - 5 (ft)	8 - 9 (ft)	14 - 15 (ft)	18 - 19 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
1,2,3-Trimethylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
1,2,4-Trimethylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
1,3,5-Trimethylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0488)	ND (0.0765)	ND (0.0714)	ND (0.053)	ND (0.0604)	ND (0.0456)	ND (0.0498)	ND (0.0578)	ND (0.0554)	ND (0.0538)	ND (0.0499)	ND (0.0503)	ND (0.0452)	ND (0.0604)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Acetone	0.018 J	0.02 J	0.018 J	0.014 J	0.025 J	0.019 J	0.018 J	ND (0.0578)	ND (0.0554)	ND (0.0538)	ND (0.0499)	ND (0.0503)	0.01 J	0.03 J
Benzene	ND (0.001)	ND (0.0015)	ND (0.0014)	ND (0.0011)	ND (0.0012)	ND (0.0009)	ND (0.001)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.001)	ND (0.001)	ND (0.0009)	ND (0.0012)
Bromodichloromethane	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Carbon disulfide	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Chlorobenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Chloroethane	ND (0.0098)	ND (0.0153)	ND (0.0143)	ND (0.0106)	ND (0.0121)	ND (0.0091)	ND (0.01)	ND (0.0116)	ND (0.0111)	ND (0.0108)	ND (0.01)	ND (0.0101)	ND (0.009)	ND (0.0121)
Chloroform (Trichloromethane)	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Chloromethane (Methyl Chloride)	ND (0.0098)	ND (0.0153)	ND (0.0143)	ND (0.0106)	ND (0.0121)	ND (0.0091)	ND (0.01)	ND (0.0116)	ND (0.0111)	ND (0.0108)	ND (0.01)	ND (0.0101)	ND (0.009)	ND (0.0121)
cis-1,2-Dichloroethene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	0.0361	0.0039 J	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Cymene (p-Isopropyltoluene)	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Dibromochloromethane	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Ethyl Ether	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Ethylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Hexane	ND (0.0195)	ND (0.0306)	ND (0.0286)	ND (0.0212)	ND (0.0242)	ND (0.0182)	ND (0.0199)	ND (0.0231)	ND (0.0222)	ND (0.0215)	ND (0.02)	ND (0.0201)	ND (0.0181)	ND (0.0242)
Isopropylbenzene (Cumene)	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
m,p-Xylenes	0.0011 J	0.0015 J	ND (0.0071)	0.0013 J	ND (0.006)	0.0019 J	0.0012 J	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Methyl acrylate	ND (0.0098)	ND (0.0153)	ND (0.0143)	ND (0.0106)	ND (0.0121)	ND (0.0091)	ND (0.01)	ND (0.0116)	ND (0.0111)	ND (0.0108)	ND (0.01)	ND (0.0101)	ND (0.009)	ND (0.0121)
Methylene chloride	ND (0.0049)	0.0044 J	0.0018 J	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	0.0012 J	ND (0.005)	ND (0.005)	0.0011 J	0.0025 J
Naphthalene	ND (0.0098)	ND (0.0153)	ND (0.0143)	ND (0.0106)	ND (0.0121)	ND (0.0091)	ND (0.01)	ND (0.0116)	ND (0.0111)	ND (0.0108)	ND (0.01)	ND (0.0101)	ND (0.009)	ND (0.0121)
n-Butylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
N-Heptane	ND (0.0195)	ND (0.0306)	ND (0.0286)	ND (0.0212)	ND (0.0242)	ND (0.0182)	ND (0.0199)	ND (0.0231)	ND (0.0222)	ND (0.0215)	ND (0.02)	ND (0.0201)	ND (0.0181)	ND (0.0242)
n-Propylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
o-Xylene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
tert-Butylbenzene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Tetrachloroethene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Tetrahydrofuran	ND (0.0488)	ND (0.0765)	ND (0.0714)	ND (0.053)	ND (0.0604)	ND (0.0456)	ND (0.0498)	ND (0.0578)	ND (0.0554)	ND (0.0538)	ND (0.0499)	ND (0.0503)	ND (0.0452)	ND (0.0604)
Toluene	0.0026 J	ND (0.0076)	ND (0.0071)	ND (0.0053)	0.0014 J	0.0026 J	0.0011 J	ND (0.0058)	ND (0.0055)	0.0016 J	ND (0.005)	0.0012 J	ND (0.0045)	ND (0.006)
trans-1,2-Dichloroethene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Trichloroethene	ND (0.0049)	ND (0.0076)	ND (0.0071)	ND (0.0053)	ND (0.006)	ND (0.0046)	ND (0.005)	ND (0.0058)	ND (0.0055)	ND (0.0054)	ND (0.005)	ND (0.005)	ND (0.0045)	ND (0.006)
Vinyl chloride	ND (0.002)	ND (0.0031)	ND (0.0029)	ND (0.0021)	ND (0.0024)	0.0013 J	ND (0.002)	ND (0.0023)	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.002)	ND (0.0018)	ND (0.0024)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	1.61	-	-	-	-
Percent Moisture (%)	23.2	39.9	43.9	26.6	29.2	15.4	10.8	29.5	27.2	24.8	23.6	24.1	20.9	33.1

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	SB-22	SB-22	SB-22	SB-23	SB-23	SB-23	SB-24	SB-24	SB-24	SB-24	SB-24	SB-24	SB-24	SB-24	SB-24
Sample Name	SB-22 (30-31 ft)	SB-22 (34-35 ft)	SB-22 (39-40 ft)	SB-23 (4-5 ft)	SB-23 (9-10 ft)	SB-23 (13-14 ft)	SB-24 (0-3 ft)	SB-24 (6-7 ft)	SB-24 (11-12 ft)	SB-24 (15-16 ft)	SB-24 (18-19 ft)	SB-24 (22-23 ft)	SB-24 (26-27 ft)	SB-24 (30-31 ft)	SB-24 (34-35 ft)
Sample Date	07/06/2012	07/06/2012	07/06/2012	04/25/2012	04/25/2012	04/25/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012
Lab Sample ID	12070196-005	12070196-006	12070196-007	SB-23 (4-5 ft)	SB-23 (9-10 ft)	SB-23 (13-14 ft)	12070096-001	12070096-002	12070096-003	12070096-004	12070096-005	12070096-006	12070096-007	12070096-008	12070096-009
Sample Depth (bgs)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	4 - 5 (ft)	9 - 1014 (ft)	13 - 3 (ft)	0 - 7 (ft)	6 - 12 (ft)	11 - 12 (ft)	15 - 16 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (0.005)	ND (0.0052)	0.0011 J	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
1,2,3-Trimethylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
1,2,4-Trimethylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
1,3,5-Trimethylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0504)	ND (0.0519)	ND (0.0404)	ND (0.0525)	ND (0.0543)	ND (0.0458)	ND (0.0457)	ND (0.0629)	ND (0.0592)	ND (0.0512)	ND (0.0528)	ND (0.0535)	ND (0.0465)	ND (0.0505)	ND (0.0455)
2-Phenylbutane (sec-Butylbenzene)	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Acetone	0.018 J	0.029 J	ND (0.0404)	ND (0.0525)	ND (0.0543)	ND (0.0458)	ND (0.0457)	ND (0.0629)	0.013 J	ND (0.0512)	0.011 J	ND (0.0535)	0.0099 J	0.025 J	0.025 J
Benzene	ND (0.001)	ND (0.001)	ND (0.0008)	ND (0.0011)	ND (0.0011)	ND (0.0009)	ND (0.0009)	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.0009)	ND (0.001)	ND (0.0009)
Bromodichloromethane	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Carbon disulfide	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Chlorobenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Chloroethane	ND (0.0101)	ND (0.0104)	ND (0.0081)	ND (0.0105)	ND (0.0109)	ND (0.0092)	ND (0.0092)	ND (0.0126)	ND (0.0118)	ND (0.0102)	ND (0.0106)	ND (0.0107)	ND (0.0093)	ND (0.0101)	ND (0.0091)
Chloroform (Trichloromethane)	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Chloromethane (Methyl Chloride)	ND (0.0101)	ND (0.0104)	ND (0.0081)	ND (0.0105)	ND (0.0109)	ND (0.0092)	ND (0.0092)	ND (0.0126)	ND (0.0118)	ND (0.0102)	ND (0.0106)	ND (0.0107)	ND (0.0093)	ND (0.0101)	ND (0.0091)
cis-1,2-Dichloroethene	ND (0.005)	ND (0.0052)	0.153	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Cymene (p-Isopropyltoluene)	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Dibromochloromethane	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Ethyl Ether	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Ethylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Hexane	ND (0.0202)	ND (0.0208)	ND (0.0162)	ND (0.021)	ND (0.0217)	ND (0.0183)	ND (0.0183)	ND (0.0252)	ND (0.0237)	ND (0.0205)	ND (0.0211)	ND (0.0214)	ND (0.0186)	ND (0.0202)	ND (0.0182)
Isopropylbenzene (Cumene)	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
m,p-Xylenes	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Methyl acrylate	ND (0.0101)	ND (0.0104)	ND (0.0081)	ND (0.0105)	ND (0.0109)	ND (0.0092)	ND (0.0092)	ND (0.0126)	ND (0.0118)	ND (0.0102)	ND (0.0106)	ND (0.0107)	ND (0.0093)	ND (0.0101)	ND (0.0091)
Methylene chloride	ND (0.005)	0.0021 J	0.0009 J	ND (0.0053)	ND (0.0054)	0.001 J	0.0012 J	0.0018 J	ND (0.0059)	0.0018 J	ND (0.0053)	ND (0.0054)	ND (0.0046)	0.0017 J	ND (0.0046)
Naphthalene	ND (0.0101)	ND (0.0104)	ND (0.0081)	ND (0.0105)	ND (0.0109)	ND (0.0092)	ND (0.0092)	ND (0.0126)	ND (0.0118)	ND (0.0102)	ND (0.0106)	ND (0.0107)	ND (0.0093)	ND (0.0101)	ND (0.0091)
n-Butylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
N-Heptane	ND (0.0202)	ND (0.0208)	ND (0.0162)	ND (0.021)	ND (0.0217)	ND (0.0183)	ND (0.0183)	ND (0.0252)	ND (0.0237)	ND (0.0205)	ND (0.0211)	ND (0.0214)	ND (0.0186)	ND (0.0202)	ND (0.0182)
n-Propylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
o-Xylene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
tert-Butylbenzene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Tetrachloroethene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Tetrahydrofuran	ND (0.0504)	ND (0.0519)	ND (0.0404)	ND (0.0525)	ND (0.0543)	ND (0.0458)	ND (0.0457)	ND (0.0629)	ND (0.0592)	ND (0.0512)	ND (0.0528)	ND (0.0535)	ND (0.0465)	ND (0.0505)	ND (0.0455)
Toluene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	0.0009 J	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	0.001 J	0.0015 J	ND (0.0046)
trans-1,2-Dichloroethene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Trichloroethene	ND (0.005)	ND (0.0052)	ND (0.004)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.0046)	ND (0.0063)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0054)	ND (0.0046)	ND (0.005)	ND (0.0046)
Vinyl chloride	ND (0.002)	ND (0.0021)	0.012	ND (0.0021)	ND (0.0022)	ND (0.0018)	ND (0.0018)	ND (0.0025)	ND (0.0024)	ND (0.002)	ND (0.0021)	ND (0.0021)	ND (0.0019)	ND (0.002)	ND (0.0018)
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	21.7	23.3	13.7	28	25.9	21.7	16.8	28.5	32	26.4	29.6	28.4	20.3	12.9	13.9

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	SB-24	SB-24	SB-25	SB-25	SB-25	SB-25	SB-25	SB-25	SB-25	SB-25	SB-25	SB-25	SB-25	SB-26
Sample Name	SB-24 (39-40 ft)	SB-24 dup (39-40 ft)	SB-25 (0-3 ft)	SB-25 (6-7 ft)	SB-25 dup (6-7 ft)	SB-25 (11-12 ft)	SB-25 (18-19 ft)	SB-25 (22-23 ft)	SB-25 (26-27 ft)	SB-25 (30-31 ft)	SB-25 (34-35 ft)	SB-25 (39-40 ft)	SB-25 dup (39-40 ft)	SB-26 (0-3 ft)
Sample Date	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/03/2012	07/05/2012
Lab Sample ID	12070096-010	12070096-011	12070096-012	12070096-013	12070096-014	12070105-003	12070096-015	12070096-016	12070105-004	12070096-019	12070105-005	12070105-001	12070105-002	12070139-001
Sample Depth (bgs)	39 - 40 (ft)	39 - 40 (ft)	0 - 3 (ft)	6 - 7 (ft)	6 - 7 (ft)	11 - 12 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	39 - 40 (ft)	0 - 3 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
1,2,3-Trimethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
1,2,4-Trimethylbenzene	ND (0.0048)	0.0014 J	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	0.001 J	ND (0.0044)	ND (0.0053)
1,3,5-Trimethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0482)	ND (0.046)	ND (0.0572)	ND (0.0578)	ND (0.0594)	ND (0.0628)	ND (0.0606)	ND (0.0611)	ND (0.0525)	ND (0.0441)	ND (0.0522)	ND (0.0478)	ND (0.0444)	ND (0.0532)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Acetone	0.0505	0.011 J	ND (0.0572)	0.017 J	ND (0.0594)	ND (0.0628)	0.013 J	0.024 J	0.019 J	0.028 J	0.023 J	0.029 J	0.018 J	0.016 J
Benzene	ND (0.001)	ND (0.0009)	ND (0.0011)	ND (0.0012)	ND (0.0012)	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0009)	ND (0.001)	ND (0.001)	ND (0.0009)	ND (0.0011)
Bromodichloromethane	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Carbon disulfide	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Chlorobenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Chloroethane	ND (0.0096)	ND (0.0092)	ND (0.0114)	ND (0.0116)	ND (0.0119)	ND (0.0126)	ND (0.0121)	ND (0.0122)	ND (0.0105)	ND (0.0088)	ND (0.0104)	ND (0.0096)	ND (0.0089)	ND (0.0106)
Chloroform (Trichloromethane)	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Chloromethane (Methyl Chloride)	ND (0.0096)	ND (0.0092)	ND (0.0114)	ND (0.0116)	ND (0.0119)	ND (0.0126)	ND (0.0121)	ND (0.0122)	ND (0.0105)	ND (0.0088)	ND (0.0104)	ND (0.0096)	ND (0.0089)	ND (0.0106)
cis-1,2-Dichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	0.0062	ND (0.0052)	0.0055	0.0066	ND (0.0053)
Cymene (p-Isopropyltoluene)	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Dibromochloromethane	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Ethyl Ether	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Ethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Hexane	ND (0.0193)	ND (0.0184)	ND (0.0229)	ND (0.0231)	ND (0.0237)	ND (0.0251)	ND (0.0242)	ND (0.0244)	ND (0.021)	ND (0.0176)	ND (0.0209)	ND (0.0191)	ND (0.0178)	ND (0.0213)
Isopropylbenzene (Cumene)	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
m,p-Xylenes	ND (0.0048)	0.0029 J	ND (0.0057)	ND (0.0058)	ND (0.0059)	0.002 J	ND (0.0061)	ND (0.0061)	0.0016 J	0.0018 J	0.0013 J	0.0021 J	0.0013 J	ND (0.0053)
Methyl acrylate	ND (0.0096)	ND (0.0092)	ND (0.0114)	ND (0.0116)	ND (0.0119)	ND (0.0126)	ND (0.0121)	ND (0.0122)	ND (0.0105)	ND (0.0088)	ND (0.0104)	ND (0.0096)	ND (0.0089)	ND (0.0106)
Methylene chloride	ND (0.0048)	ND (0.0046)	ND (0.0057)	0.0015 J	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	0.0012 J	0.0013 J	ND (0.0048)	ND (0.0044)	0.0011 J
Naphthalene	ND (0.0096)	ND (0.0092)	ND (0.0114)	ND (0.0116)	ND (0.0119)	ND (0.0126)	ND (0.0121)	ND (0.0122)	ND (0.0105)	ND (0.0088)	ND (0.0104)	ND (0.0096)	ND (0.0089)	ND (0.0106)
n-Butylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
N-Heptane	ND (0.0193)	ND (0.0184)	ND (0.0229)	ND (0.0231)	ND (0.0237)	ND (0.0251)	ND (0.0242)	ND (0.0244)	ND (0.021)	ND (0.0176)	ND (0.0209)	ND (0.0191)	ND (0.0178)	ND (0.0213)
n-Propylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
o-Xylene	ND (0.0048)	0.001 J	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
tert-Butylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Tetrachloroethene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Tetrahydrofuran	ND (0.0482)	ND (0.046)	ND (0.0572)	ND (0.0578)	ND (0.0594)	ND (0.0628)	ND (0.0606)	ND (0.0611)	ND (0.0525)	ND (0.0441)	ND (0.0522)	ND (0.0478)	ND (0.0444)	ND (0.0532)
Toluene	ND (0.0048)	0.0023 J	0.0032 J	ND (0.0058)	ND (0.0059)	0.0014 J	ND (0.0061)	0.0012 J	0.0015 J	0.0022 J	0.0011 J	0.0036 J	0.0018 J	ND (0.0053)
trans-1,2-Dichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Trichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0057)	ND (0.0058)	ND (0.0059)	ND (0.0063)	ND (0.0061)	ND (0.0061)	ND (0.0053)	ND (0.0044)	ND (0.0052)	ND (0.0048)	ND (0.0044)	ND (0.0053)
Vinyl chloride	ND (0.0019)	ND (0.0018)	ND (0.0023)	ND (0.0023)	ND (0.0024)	ND (0.0025)	ND (0.0024)	ND (0.0024)	ND (0.0021)	ND (0.0018)	ND (0.0021)	ND (0.0019)	ND (0.0018)	ND (0.0021)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	19	17.6	27.6	29	29.2	30.6	28	28.9	21.6	15	26.2	22.2	17.6	17.7

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	SB-26	SB-26	SB-26	SB-26	SB-26	SB-26	SB-26	SB-26	SB-26	SB-26	SB-27	SB-27	SB-27	SB-27
Sample Name	SB-26 (6-7 ft)	SB-26 (11-12 ft)	SB-26 (15-16 ft)	SB-26 (18-19 ft)	SB-26 (22-23 ft)	SB-26 dup (22-23 ft)	SB-26 (26-27 ft)	SB-26 (30-31 ft)	SB-26 (34-35 ft)	SB-26 (39-40 ft)	SB-27 (0-3 ft)	SB-27 (6-7 ft)	SB-27 (11-12 ft)	SB-27 (15-16 ft)
Sample Date	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Lab Sample ID	12070139-002	12070139-003	12070139-004	12070139-005	12070139-006	12070139-007	12070139-008	12070139-009	12070139-010	12070139-011	12070139-012	12070139-013	412070139-014	12070139-015
Sample Depth (bgs)	6 - 7 (ft)	11 - 12 (ft)	15 - 16 (ft)	18 - 19 (ft)	22 - 23 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	0 - 3 (ft)	6 - 7 (ft)	11 - 12 (ft)	15 - 16 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0059)	ND (0.0054) R	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
1,2,3-Trimethylbenzene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
1,2,4-Trimethylbenzene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
1,3,5-Trimethylbenzene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0594)	ND (0.0535)	ND (0.0576)	ND (0.0714)	ND (0.0623)	ND (0.069)	ND (0.045)	ND (0.0583)	ND (0.046)	ND (0.0456)	ND (0.0551)	ND (0.0602)	ND (0.0542)	ND (0.0482)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Acetone	0.014 J	0.014 J	0.014 J	0.025 J	0.017 J	0.016 J	0.026 J	0.018 J	0.013 J	0.025 J	ND (0.0551)	ND (0.0602)	ND (0.0542)	0.011 J
Benzene	ND (0.0012)	ND (0.0011) SR	ND (0.0012)	ND (0.0014)	ND (0.0012)	ND (0.0014)	ND (0.0009)	ND (0.0012)	ND (0.0009)	ND (0.0009)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.001)
Bromodichloromethane	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Carbon disulfide	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Chlorobenzene	ND (0.0059)	ND (0.0054) SR	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Chloroethane	ND (0.0119)	ND (0.0107)	ND (0.0115)	ND (0.0143)	ND (0.0125)	ND (0.0138)	ND (0.009)	ND (0.0117)	ND (0.0092)	ND (0.0091)	ND (0.011)	ND (0.012)	ND (0.0108)	ND (0.0096)
Chloroform (Trichloromethane)	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Chloromethane (Methyl Chloride)	ND (0.0119)	ND (0.0107)	ND (0.0115)	ND (0.0143)	ND (0.0125)	ND (0.0138)	ND (0.009)	ND (0.0117)	ND (0.0092)	ND (0.0091)	ND (0.011)	ND (0.012)	ND (0.0108)	ND (0.0096)
cis-1,2-Dichloroethene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	0.0337	0.0427	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Cymene (p-Isopropyltoluene)	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Dibromochloromethane	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Ethyl Ether	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Ethylbenzene	ND (0.0059)	ND (0.0054) SR	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Hexane	ND (0.0238)	ND (0.0214)	ND (0.023)	ND (0.0286)	ND (0.0249)	ND (0.0276)	ND (0.018)	ND (0.0233)	ND (0.0184)	ND (0.0182)	ND (0.022)	ND (0.0241)	ND (0.0217)	ND (0.0193)
Isopropylbenzene (Cumene)	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
m,p-Xylenes	ND (0.0059)	ND (0.0054) SR	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	0.0015 J	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Methyl acrylate	ND (0.0119)	ND (0.0107)	ND (0.0115)	ND (0.0143)	ND (0.0125)	ND (0.0138)	ND (0.009)	ND (0.0117)	ND (0.0092)	ND (0.0091)	ND (0.011)	ND (0.012)	ND (0.0108)	ND (0.0096)
Methylene chloride	ND (0.0059)	0.0011 J	0.0015 J	0.0044 J	ND (0.0062)	ND (0.0069)	0.0015 J	ND (0.0058)	ND (0.0046)	0.0011 J	ND (0.0055)	0.0012 J	0.0014 J	ND (0.0048)
Naphthalene	ND (0.0119)	ND (0.0107)	ND (0.0115)	ND (0.0143)	ND (0.0125)	ND (0.0138)	ND (0.009)	ND (0.0117)	ND (0.0092)	ND (0.0091)	ND (0.011)	ND (0.012)	ND (0.0108)	ND (0.0096)
n-Butylbenzene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
N-Heptane	ND (0.0238)	ND (0.0214)	ND (0.023)	ND (0.0286)	ND (0.0249)	ND (0.0276)	ND (0.018)	ND (0.0233)	ND (0.0184)	ND (0.0182)	ND (0.022)	ND (0.0241)	ND (0.0217)	ND (0.0193)
n-Propylbenzene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
o-Xylene	ND (0.0059)	ND (0.0054) SR	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
tert-Butylbenzene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Tetrachloroethene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Tetrahydrofuran	ND (0.0594)	ND (0.0535)	ND (0.0576)	ND (0.0714)	ND (0.0623)	ND (0.069)	ND (0.045)	ND (0.0583)	ND (0.046)	ND (0.0456)	ND (0.0551)	ND (0.0602)	ND (0.0542)	ND (0.0482)
Toluene	ND (0.0059)	ND (0.0054) SR	0.0012 J	0.0016 J	ND (0.0062)	ND (0.0069)	0.0019 J	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
trans-1,2-Dichloroethene	ND (0.0059)	ND (0.0054)	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Trichloroethene	ND (0.0059)	ND (0.0054) SR	ND (0.0058)	ND (0.0071)	ND (0.0062)	ND (0.0069)	ND (0.0045)	ND (0.0058)	ND (0.0046)	ND (0.0046)	ND (0.0055)	ND (0.006)	ND (0.0054)	ND (0.0048)
Vinyl chloride	ND (0.0024)	ND (0.0021)	ND (0.0023)	ND (0.0029)	ND (0.0025)	ND (0.0028)	ND (0.0018)	ND (0.0023)	0.0016 J	0.0021	ND (0.0022)	ND (0.0024)	ND (0.0022)	ND (0.0019)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	30	27.4	29.3	29.8	32.1	34.6	16	30.2	15.9	19	24.2	29.2	26.5	22.8

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee
Location Name	SB-27	SB-27	SB-27	SB-27	SB-27	SB-27	SB-27	SB-31	SB-31	SB-31	SB-31	SB-31	SB-31	SB-31
Sample Name	SB-27 (18-19 ft)	SB-27 (22-23 ft)	SB-27 (26-27 ft)	SB-27 dup (26-27 ft)	SB-27 (30-31 ft)	SB-27 (34-35 ft)	SB-27 (39-40 ft)	SB-31 (0-3 ft)	SB-31 (6-7 ft)	SB-31 (10-11 ft)	SB-31 dup (10-11 ft)	SB-31 (14-15 ft)	SB-31 (18-19 ft)	SB-31 (22-23 ft)
Sample Date	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012	08/16/2012	08/16/2012	08/16/2012	08/16/2012	08/16/2012	08/16/2012	08/16/2012
Lab Sample ID	12070139-016	12070139-017	12070139-018	12070139-019	12070139-020	12070139-021	12070139-022	SB-31 (0-3 ft)	SB-31 (6-7 ft)	SB-31 (10-11 ft)	SB-31 dup (10-11 ft)	SB-31 (14-15 ft)	SB-31 (18-19 ft)	SB-31 (22-23 ft)
Sample Depth (bgs)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051) R	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
1,2,3-Trimethylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
1,2,4-Trimethylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
1,3,5-Trimethylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0496)	ND (0.0413)	ND (0.0629)	ND (0.053)	ND (0.0508)	ND (0.0422)	ND (0.0441)	ND (0.058)	ND (0.057)	ND (0.0522)	ND (0.0549)	ND (0.0517)	ND (0.0526)	ND (0.0589)
2-Phenylbutane (sec-Butylbenzene)	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Acetone	0.018 J	0.013 J	0.029 J	0.038 J	0.028 J	0.025 J	0.026 J	ND (0.058)	ND (0.057)	ND (0.0522)	ND (0.0549)	ND (0.0517)	ND (0.0526)	0.015 J
Benzene	ND (0.001)	ND (0.0008)	ND (0.0013)	ND (0.0011)	ND (0.001) SR	ND (0.0008)	ND (0.0009)	ND (0.0012)	ND (0.0011)	ND (0.001) R	ND (0.0011)	ND (0.001)	ND (0.0011)	ND (0.0012)
Bromodichloromethane	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Carbon disulfide	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Chlorobenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051) SR	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052) SR	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Chloroethane	ND (0.0099)	ND (0.0083)	ND (0.0126)	ND (0.0106)	ND (0.0102)	ND (0.0084)	ND (0.0088)	ND (0.0116)	ND (0.0114)	ND (0.0104)	ND (0.011)	ND (0.0103)	ND (0.0105)	ND (0.0118)
Chloroform (Trichloromethane)	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Chloromethane (Methyl Chloride)	ND (0.0099)	ND (0.0083)	ND (0.0126)	ND (0.0106)	ND (0.0102)	ND (0.0084)	ND (0.0088)	ND (0.0116)	ND (0.0114)	ND (0.0104)	ND (0.011)	ND (0.0103)	ND (0.0105)	ND (0.0118)
cis-1,2-Dichloroethene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	0.0266	0.0303	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Cymene (p-Isopropyltoluene)	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Dibromochloromethane	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Ethyl Ether	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Ethylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051) SR	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052) R	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Hexane	ND (0.0198)	ND (0.0165)	ND (0.0252)	ND (0.0212)	ND (0.0203)	ND (0.0169)	ND (0.0176)	ND (0.0232)	ND (0.0228)	ND (0.0209)	ND (0.0219)	ND (0.0207)	ND (0.021)	ND (0.0235)
Isopropylbenzene (Cumene)	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
m,p-Xylenes	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051) SR	0.0019 J	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052) R	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Methyl acrylate	ND (0.0099)	ND (0.0083)	ND (0.0126)	ND (0.0106)	ND (0.0102)	ND (0.0084)	ND (0.0088)	ND (0.0116)	ND (0.0114)	ND (0.0104)	ND (0.011)	ND (0.0103)	ND (0.0105)	ND (0.0118)
Methylene chloride	ND (0.005)	ND (0.0041)	0.0013 J	0.0014 J	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	0.0015 J	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Naphthalene	ND (0.0099)	ND (0.0083)	ND (0.0126)	ND (0.0106)	ND (0.0102)	ND (0.0084)	ND (0.0088)	ND (0.0116)	ND (0.0114)	ND (0.0104)	ND (0.011)	ND (0.0103)	ND (0.0105)	ND (0.0118)
n-Butylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
N-Heptane	ND (0.0198)	ND (0.0165)	ND (0.0252)	ND (0.0212)	ND (0.0203)	ND (0.0169)	ND (0.0176)	ND (0.0232)	ND (0.0228)	ND (0.0209)	ND (0.0219)	ND (0.0207)	ND (0.021)	ND (0.0235)
n-Propylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
o-Xylene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051) SR	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052) SR	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
tert-Butylbenzene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Tetrachloroethene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Tetrahydrofuran	ND (0.0496)	ND (0.0413)	ND (0.0629)	ND (0.053)	ND (0.0508)	ND (0.0422)	ND (0.0441)	ND (0.058)	ND (0.057)	ND (0.0522)	ND (0.0549)	ND (0.0517)	ND (0.0526)	ND (0.0589)
Toluene	0.0013 J	ND (0.0041)	ND (0.0063)	0.0013 J	ND (0.0051) SR	0.0023 J	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052) SR	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
trans-1,2-Dichloroethene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051)	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052)	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Trichloroethene	ND (0.005)	ND (0.0041)	ND (0.0063)	ND (0.0053)	ND (0.0051) SR	ND (0.0042)	ND (0.0044)	ND (0.0058)	ND (0.0057)	ND (0.0052) R	ND (0.0055)	ND (0.0052)	ND (0.0053)	ND (0.0059)
Vinyl chloride	ND (0.002)	ND (0.0016)	ND (0.0025)	ND (0.0021)	ND (0.002)	ND (0.0017)	0.001 J	ND (0.0023)	ND (0.0023)	ND (0.0021)	ND (0.0022)	ND (0.0021)	ND (0.0021)	ND (0.0024)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	22.2	15.6	24.8	22.9	23.3	15.4	14.1	28.3	29	27	26.8	25.5	23	29.6

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	North of Levee	Substation	Substation	Substation	Substation
Location Name	SB-31	SB-31	SB-32	SB-32	SB-32	SB-32	SB-32	SB-32	SB-32	SB-32	SB-32	IP-27	IP-27	IP-28	IP-28
Sample Name	SB-31 (26-27 ft)	SB-31 (31-32 ft)	SB-32 (0-3 ft)	SB-32 (6-7 ft)	SB-32 (10-11 ft)	SB-32 (14-15 ft)	SB-32 (18-19 ft)	SB-32 (22-23 ft)	SB-32 (26-27 ft)	SB-32 (30-31 ft)	SB-32 dup (30-31 ft)	IP-27-25	IP-27-26	IP-28-6	IP-28-15
Sample Date	08/16/2012	08/16/2012	08/17/2012	08/17/2012	08/17/2012	08/17/2012	08/17/2012	08/17/2012	08/17/2012	08/17/2012	08/17/2012	07/09/2018	07/09/2018	07/09/2018	07/09/2018
Lab Sample ID	SB-31 (26-27 ft)	SB-31 (31-32 ft)	SB-32 (0-3 ft)	SB-32 (6-7 ft)	SB-32 (10-11 ft)	SB-32 (14-15 ft)	SB-32 (18-19 ft)	SB-32 (22-23 ft)	SB-32 (26-27 ft)	SB-32 (30-31 ft)	SB-32 dup (30-31 ft)	IP-27-25	IP-27-26	IP-28-6	IP-28-15
Sample Depth (bgs)	26 - 27 (ft)	31 - 32 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	30 - 31 (ft)	25 (ft)	26 (ft)	6 (ft)	15 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0031	ND (0.0036)	0.0024
1,2,3-Trimethylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
1,2,4-Trimethylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
1,3,5-Trimethylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0551)	ND (0.0526)	ND (0.0559)	ND (0.0577)	ND (0.0531)	ND (0.0513)	ND (0.0486)	ND (0.0471)	ND (0.0484)	ND (0.0703)	ND (0.0477)	ND (0.0376)	ND (0.0295)	ND (0.0456)	ND (0.0213)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0019 J	ND (0.0036)	ND (0.0017)
Acetone	ND (0.0551)	0.015 J	ND (0.0559)	ND (0.0577)	ND (0.0531)	ND (0.0513)	ND (0.0486)	ND (0.0471)	ND (0.0484)	ND (0.0703)	0.014 J	0.0434	0.0318	0.0568	0.0245
Benzene	0.002	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.001)	ND (0.0009)	ND (0.001)	ND (0.0014)	ND (0.001)	ND (0.0015)	ND (0.0012)	ND (0.0018)	ND (0.0009)
Bromodichloromethane	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
Carbon disulfide	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	0.0043 J	0.0023 J	ND (0.0091)	0.0011 J
Chlorobenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0016 J	ND (0.0036)	ND (0.0017)
Chloroethane	ND (0.011)	ND (0.0105)	ND (0.0112)	ND (0.0115)	ND (0.0106)	ND (0.0103)	ND (0.0097)	ND (0.0094)	ND (0.0097)	ND (0.0141)	ND (0.0095)	ND (0.0151)	ND (0.0118)	ND (0.0182)	ND (0.0085)
Chloroform (Trichloromethane)	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
Chloromethane (Methyl Chloride)	ND (0.011)	ND (0.0105)	ND (0.0112)	ND (0.0115)	ND (0.0106)	ND (0.0103)	ND (0.0097)	ND (0.0094)	ND (0.0097)	ND (0.0141)	ND (0.0095)	ND (0.0151)	ND (0.0118)	ND (0.0182)	ND (0.0085)
cis-1,2-Dichloroethene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	0.002 J	0.127	1.53	ND (0.0036)	0.759
Cymene (p-Isopropyltoluene)	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0011 J	ND (0.0036)	ND (0.0017)
Dibromochloromethane	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
Ethyl Ether	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
Ethylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
Hexane	ND (0.022)	ND (0.021)	ND (0.0224)	ND (0.0231)	ND (0.0212)	ND (0.0205)	ND (0.0194)	ND (0.0188)	ND (0.0193)	ND (0.0281)	ND (0.0191)	0.0015 BJ	0.0023 BJ	0.0033 BJ	0.0022 BJ
Isopropylbenzene (Cumene)	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
m,p-Xylenes	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.006)	ND (0.0047)	ND (0.0073)	ND (0.0034)
Methyl acrylate	ND (0.011)	ND (0.0105)	ND (0.0112)	ND (0.0115)	ND (0.0106)	ND (0.0103)	ND (0.0097)	ND (0.0094)	ND (0.0097)	ND (0.0141)	ND (0.0095)	ND (0.0075)	ND (0.0059)	ND (0.0091)	ND (0.0043)
Methylene chloride	ND (0.0055)	ND (0.0053)	0.0013 J	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	0.0012 J	ND (0.0048)	0.0016 J	0.0033 J	0.006 J	0.0046 J	0.0085 J	ND (0.0085)
Naphthalene	ND (0.011)	ND (0.0105)	ND (0.0112)	ND (0.0115)	ND (0.0106)	ND (0.0103)	ND (0.0097)	ND (0.0094)	ND (0.0097)	ND (0.0141)	ND (0.0095)	ND (0.0075)	ND (0.0059)	ND (0.0091)	ND (0.0043)
n-Butylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
N-Heptane	ND (0.022)	ND (0.021)	ND (0.0224)	ND (0.0231)	ND (0.0212)	ND (0.0205)	ND (0.0194)	ND (0.0188)	ND (0.0193)	ND (0.0281)	ND (0.0191)	ND (0.0301)	ND (0.0236)	ND (0.0365)	ND (0.017)
n-Propylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
o-Xylene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.006)	0.0008 J	ND (0.0073)	ND (0.0034)
tert-Butylbenzene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0007 J	ND (0.0036)	ND (0.0017)
Tetrachloroethene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0008 J	0.003 J	0.0368
Tetrahydrofuran	ND (0.0551)	ND (0.0526)	ND (0.0559)	ND (0.0577)	ND (0.0531)	ND (0.0513)	ND (0.0486)	ND (0.0471)	ND (0.0484)	ND (0.0703)	ND (0.0477)	ND (0.0151)	ND (0.0118)	ND (0.0182)	ND (0.0085)
Toluene	0.002 J	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	ND (0.0024)	ND (0.0036)	ND (0.0017)
trans-1,2-Dichloroethene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	0.0028 J	0.0351	ND (0.0036)	0.0062
Trichloroethene	ND (0.0055)	ND (0.0053)	ND (0.0056)	ND (0.0058)	ND (0.0053)	ND (0.0051)	ND (0.0049)	ND (0.0047)	ND (0.0048)	ND (0.007)	ND (0.0048)	ND (0.003)	0.0004 J	0.0006 J	0.0019
Vinyl chloride	ND (0.0022)	ND (0.0021)	ND (0.0022)	ND (0.0023)	ND (0.0021)	ND (0.002)	ND (0.0019)	ND (0.0019)	ND (0.0019)	ND (0.0028)	ND (0.0019)	0.126	1.17	ND (0.0036)	0.026
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	25.6	23.1	26.7	29.3	26.4	24.8	21.5	20.7	16.4	29	17.6	-	-	-	-

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	IP-29	IP-29	IP-30	IP-30	IP-31	IP-32	IP-32	IP-33	IP-33	IP-34	IP-34	IP-35	IP-36	IP-36	IP-37	IP-37	IP-38	IP-38
Sample Name	IP-29-10.5	IP-29-24.5	IP-30-24.5	IP-30-27	IP-31-24.5	IP-32-5.0	IP-32-6.5	IP-33-5.0	IP-33-10	IP-34-24.5	IP-34-26.5	IP-35-24.5	IP-36-20.5	IP-36-25	IP-37-25	IP-37-28	IP-38-14	IP-38-17
Sample Date	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/10/2018	07/09/2018	07/09/2018	07/09/2018	07/09/2018	07/09/2018	07/09/2018
Lab Sample ID	IP-29-10.5	IP-29-24.5	IP-30-24.5	IP-30-27	IP-31-24.5	IP-32-5.0	IP-32-6.5	IP-33-5.0	IP-33-10	IP-34-24.5	IP-34-26.5	IP-35-24.5	IP-36-20.5	IP-36-25	IP-37-25	IP-37-28	IP-38-14	IP-38-17
Sample Depth (bgs)	10.5 (ft)	24.5 (ft)	24.5 (ft)	27 (ft)	24.5 (ft)	5 (ft)	6.5 (ft)	5 (ft)	10 (ft)	24.5 (ft)	26.5 (ft)	24.5 (ft)	20.5 (ft)	25 (ft)	25 (ft)	28 (ft)	14 (ft)	17 (ft)
Volatile Organic Compounds (mg/kg)																		
1,1-Dichloroethene	ND (0.0028)	0.0005 J	ND (0.0021)	0.0033	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	0.0007 J	0.0019 J	0.0027	ND (0.0953)	ND (0.0044)	ND (0.0023)
1,2,3-Trimethylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	0.0023 J	ND (0.0461)	ND (0.0786)	0.0065	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	0.047	ND (0.0953)	ND (0.0044)	ND (0.0023)
1,2,4-Trimethylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	0.0009 J	ND (0.0461)	ND (0.0786)	0.0019 J	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
1,3,5-Trimethylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	0.0015 J	ND (0.0461)	ND (0.0786)	0.0111	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
2-Butanone (Methyl Ethyl Ketone)	0.0091 J	ND (0.0316)	ND (0.0261)	ND (0.0296)	ND (0.0271)	0.013 J	ND (0.576)	ND (0.983)	0.0081 J	ND (0.0272)	ND (0.0296)	ND (0.0343)	ND (0.027)	ND (0.0357)	ND (0.0317)	ND (1.19)	ND (0.0544)	0.008 J
2-Phenylbutane (sec-Butylbenzene)	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	0.0007 J	ND (0.0461)	ND (0.0786)	0.0241	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	0.0787	0.027 J	ND (0.0044)	ND (0.0023)
Acetone	0.0581	0.026 J	0.018 J	0.0454	0.018 J	0.0809	ND (0.576)	ND (0.983)	0.0534	0.0299	0.0315	ND (0.0343)	ND (0.027)	0.033 J	0.0325	ND (1.19)	ND (0.0544)	0.0389
Benzene	ND (0.0014)	ND (0.0013)	ND (0.001)	ND (0.0012)	ND (0.0011)	0.0004 J	ND (0.0231)	ND (0.0393)	ND (0.0013)	ND (0.0011)	ND (0.0012)	ND (0.0014)	ND (0.0011)	ND (0.0014)	ND (0.0013)	ND (0.0477)	ND (0.0022)	ND (0.0011)
Bromodichloromethane	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
Carbon disulfide	0.0041 J	ND (0.0063)	ND (0.0052)	0.0023 J	ND (0.0054)	ND (0.006)	ND (0.115)	0.064 J	0.0023 J	0.0017 BJ	0.0049 J	0.0028 BJ	ND (0.0054) B	0.0039 BJ	0.0021 BJ	ND (0.238)	ND (0.0109)	ND (0.0057)
Chlorobenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	0.0007 J	ND (0.0027)	ND (0.0022)	0.0007 J	0.0011 J	ND (0.0953)	ND (0.0044)	ND (0.0023)
Chloroethane	ND (0.0141)	ND (0.0126)	ND (0.0104)	ND (0.0118)	ND (0.0109)	ND (0.0121)	ND (0.231)	ND (0.393)	ND (0.0128)	ND (0.0109)	ND (0.0118)	ND (0.0137)	ND (0.0108)	ND (0.0143)	ND (0.0127)	ND (0.477)	ND (0.0218)	ND (0.0114)
Chloroform (Trichloromethane)	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
Chloromethane (Methyl Chloride)	ND (0.0141)	ND (0.0126)	ND (0.0104)	ND (0.0118)	ND (0.0109)	ND (0.0121)	0.13 J	0.14 J	ND (0.0128)	ND (0.0109)	ND (0.0118)	ND (0.0137)	ND (0.0108)	ND (0.0143)	ND (0.0127)	0.19 J	ND (0.0218)	ND (0.0114)
cis-1,2-Dichloroethene	0.0017 J	0.147	0.218	1.39	0.0212	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	0.0035	0.0028	0.598	3.86	2.43	1.79	2.6	0.0024 J	0.0138
Cymene (p-Isopropyltoluene)	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	0.0009 J	ND (0.0461)	ND (0.0786)	0.0037	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
Dibromochloromethane	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
Ethyl Ether	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
Ethylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	0.0021 J	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
Hexane	0.0028 BJ	0.0032 BJ	0.0025 BJ	0.0031 BJ	0.0025 BJ	0.0023 BJ	0.039 BJ	0.072 BJ	0.0014 BJ	0.0025 BJ	0.0031 BJ	0.0032 BJ	0.0028 BJ	0.0047 BJ	0.0049 BJ	0.09 BJ	0.0054 BJ	0.0033 BJ
Isopropylbenzene (Cumene)	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	0.0009 J	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	0.0047	ND (0.0953)	ND (0.0044)	ND (0.0023)
m,p-Xylenes	ND (0.0056)	ND (0.0051)	ND (0.0042)	ND (0.0047)	ND (0.0043)	ND (0.0048)	ND (0.0922)	ND (0.157)	0.0039 J	ND (0.0044)	ND (0.0047)	ND (0.0055)	ND (0.0043)	ND (0.0057)	ND (0.0051)	ND (0.191)	ND (0.0087)	ND (0.0046)
Methyl acrylate	ND (0.007)	ND (0.0063)	ND (0.0052)	ND (0.0059)	ND (0.0054)	ND (0.006)	ND (0.115)	ND (0.197)	ND (0.0064)	ND (0.0054)	ND (0.0059)	ND (0.0068)	ND (0.0054)	ND (0.0071)	ND (0.0063)	ND (0.238)	ND (0.0109)	ND (0.0057)
Methylene chloride	0.0068 J	0.005 J	0.0048 J	0.0084 J	ND (0.0109)	0.0062 J	0.093 J	0.18 J	0.0063 J	0.0055 J	0.0068 J	0.006 J	ND (0.0108)	0.0087 J	0.0057 J	0.2 J	0.012 J	0.005 J
Naphthalene	ND (0.007)	ND (0.0063)	ND (0.0052)	ND (0.0059)	ND (0.0054)	ND (0.006)	ND (0.115)	ND (0.197)	ND (0.0064)	ND (0.0054)	ND (0.0059)	ND (0.0068)	ND (0.0054)	ND (0.0071)	ND (0.0063)	ND (0.238)	ND (0.0109)	ND (0.0057)
n-Butylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	0.0322	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
N-Heptane	ND (0.0282)	ND (0.0253)	ND (0.0209)	ND (0.0237)	ND (0.0217)	ND (0.0242)	ND (0.461)	ND (0.786)	ND (0.0255)	ND (0.0217)	ND (0.0237)	ND (0.0274)	ND (0.0216)	ND (0.0286)	0.0026 J	ND (0.953)	ND (0.0435)	ND (0.0228)
n-Propylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	0.0074	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	ND (0.0025)	ND (0.0953)	ND (0.0044)	ND (0.0023)
o-Xylene	ND (0.0056)	ND (0.0051)	0.0012 J	0.0011 J	ND (0.0043)	0.0007 J	ND (0.0922)	ND (0.157)	0.0014 J	ND (0.0044)	ND (0.0047)	ND (0.0055)	ND (0.0043)	ND (0.0057)	ND (0.0051)	ND (0.191)	ND (0.0087)	ND (0.0046)
tert-Butylbenzene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	0.0052	ND (0.0953)	ND (0.0044)	ND (0.0023)
Tetrachloroethene	0.0007 J	ND (0.0025)	0.0004 J	ND (0.0024)	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	ND (0.0029)	0.0173	0.094 J	0.0014 J	ND (0.0023)
Tetrahydrofuran	ND (0.0141)	ND (0.0126)	ND (0.0104)	ND (0.0118)	ND (0.0109)	ND (0.0121)	ND (0.231)	ND (0.393)	ND (0.0128)	ND (0.0109)	ND (0.0118)	ND (0.0137)	ND (0.0108)	ND (0.0143)	ND (0.0127)	ND (0.477)	ND (0.0218)	ND (0.0114)
Toluene	ND (0.0028)	ND (0.0025)	ND (0.0021)	ND (0.0024)	ND (0.0022)	0.0005 J	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022) B	0.0006 J	0.0007 BJ	0.0005 BJ	0.0016 BJ	0.0007 BJ	ND (0.0953)	ND (0.0044)	ND (0.0023)
trans-1,2-Dichloroethene	ND (0.0028)	0.0049	0.0036	0.0175	0.0013 J	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	0.0041	0.0583	0.0149	0.014	0.035 J	ND (0.0044)	0.0015 J
Trichloroethene	0.0009 J	ND (0.0025)	ND (0.0021)	0.0009 J	ND (0.0022)	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	ND (0.0022)	ND (0.0024)	ND (0.0027)	ND (0.0022)	0.0005 J	0.0098	0.028 J	ND (0.0044)	ND (0.0023)
Vinyl chloride	0.0011 J	0.0467	0.0673	0.614	0.0006 J	ND (0.0024)	ND (0.0461)	ND (0.0786)	ND (0.0026)	0.005	0.0132	0.677	0.295	0.946	0.286	0.208	ND (0.0044)	0.0136
PCBs (mg/kg)																		
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other																		
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	IP-39	IP-40	IP-41	IP-42	IP-44	IP-45	IP-46	IP-46	SB-01	SB-01	SB-01	SB-01	SB-01	SB-02	SB-02	SB-02	SB-03
Sample Name	IP-39-25	IP-40-24.5	IP-41-27	IP-42-31	IP-44-27.5	IP-45-29.5	IP-46-29.5	IP-46-32	SB-01 (0-3 ft)	SB-01 (0-3 ft) Dup	SB-01 (3-4 ft)	SB-01 (7-8 ft)	SB-01 (14-15 ft)	SB-02 (0-3 ft)	SB-02 (4-5 ft)	SB-02 (7-8 ft)	SB-03 (0-3 ft)
Sample Date	07/09/2018	07/09/2018	07/11/2018	07/11/2018	07/11/2018	07/11/2018	07/11/2018	07/11/2018	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012
Lab Sample ID	IP-39-25	IP-40-24.5	IP-41-27	IP-42-31	IP-44-27.5	IP-45-29.5	IP-46-29.5	IP-46-32	SB-01 (0-3 ft)	SB-01 (0-3 ft) Dup	SB-01 (3-4 ft)	SB-01 (7-8 ft)	SB-01 (14-15 ft)	SB-02 (0-3 ft)	SB-02 (4-5 ft)	SB-02 (7-8 ft)	SB-03 (0-3 ft)
Sample Depth (bgs)	25 (ft)	24.5 (ft)	27 (ft)	31 (ft)	27.5 (ft)	29.5 (ft)	29.5 (ft)	32 (ft)	0 - 3 (ft)	0 - 3 (ft)	3 - 4 (ft)	7 - 8 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	7 - 8 (ft)	0 - 3 (ft)
Volatile Organic Compounds (mg/kg)																	
1,1-Dichloroethene	ND (0.0025)	0.0006 J	0.0005 J	ND (0.0575)	ND (0.0023)	ND (0.051)	0.0079 J	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
1,2,3-Trimethylbenzene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
1,2,4-Trimethylbenzene	ND (0.0025)	0.0008 J	0.0009 J	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
1,3,5-Trimethylbenzene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
2-Butanone (Methyl Ethyl Ketone)	ND (0.0311)	ND (0.027)	ND (0.0266)	ND (0.719)	ND (0.0283)	ND (0.638)	ND (0.681)	ND (0.0236)	-	-	ND (0.0593)	ND (0.0585)	ND (0.0452)	-	ND (0.0481)	ND (0.0662)	-
2-Phenylbutane (sec-Butylbenzene)	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Acetone	0.016 J	0.023 J	0.0325	ND (0.719)	0.021 J	ND (0.638)	ND (0.681)	0.02 J	-	-	ND (0.0593)	0.013 J	0.012 J	-	0.025 J	0.03 J	-
Benzene	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0288)	ND (0.0011)	ND (0.0255)	ND (0.0273)	ND (0.0009)	-	-	ND (0.0012)	ND (0.0012)	ND (0.0009)	-	ND (0.001)	ND (0.0013)	-
Bromodichloromethane	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Carbon disulfide	ND (0.0062)	0.0015 J	0.0016 J	ND (0.144)	ND (0.0057)	ND (0.128)	ND (0.136)	0.0015 J	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Chlorobenzene	ND (0.0025)	0.0006 J	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Chloroethane	0.0031 J	ND (0.0108)	ND (0.0106)	ND (0.288)	ND (0.0113)	ND (0.255)	ND (0.273)	ND (0.0094)	-	-	ND (0.0119)	ND (0.0117)	ND (0.009)	-	ND (0.0096)	ND (0.0132)	-
Chloroform (Trichloromethane)	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Chloromethane (Methyl Chloride)	ND (0.0124)	ND (0.0108)	ND (0.0106)	0.13 J	ND (0.0113)	0.026 J	0.035 J	ND (0.0094)	-	-	ND (0.0119)	ND (0.0117)	ND (0.009)	-	ND (0.0096)	ND (0.0132)	-
cis-1,2-Dichloroethene	0.0251	0.311	0.11	1.22	0.0167	0.804	2.55	0.127	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Cymene (p-Isopropyltoluene)	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Dibromochloromethane	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Ethyl Ether	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Ethylbenzene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Hexane	0.0034 BJ	0.0016 BJ	0.0021 BJ	0.055 BJ	0.0019 BJ	0.06 BJ	0.067 BJ	0.002 BJ	-	-	ND (0.0237)	ND (0.0234)	ND (0.0181)	-	ND (0.0193)	ND (0.0265)	-
Isopropylbenzene (Cumene)	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
m,p-Xylenes	ND (0.005)	ND (0.0043)	ND (0.0043)	ND (0.115)	ND (0.0045)	ND (0.102)	ND (0.109)	ND (0.0038)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Methyl acrylate	ND (0.0062)	ND (0.0054)	ND (0.0053)	ND (0.144)	ND (0.0057)	ND (0.128)	ND (0.136)	ND (0.0047)	-	-	ND (0.0119)	ND (0.0117)	ND (0.009)	-	ND (0.0096)	ND (0.0132)	-
Methylene chloride	ND (0.0124)	0.009 J	0.0048 J	0.13 J	ND (0.0113)	ND (0.255)	0.14 J	0.0042 J	-	-	0.0013 J	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	0.0014 J	-
Naphthalene	ND (0.0062)	ND (0.0054)	ND (0.0053)	ND (0.144)	ND (0.0057)	ND (0.128)	ND (0.136)	ND (0.0047)	-	-	ND (0.0119)	ND (0.0117)	ND (0.009)	-	ND (0.0096)	ND (0.0132)	-
n-Butylbenzene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
N-Heptane	ND (0.0249)	ND (0.0216)	ND (0.0213)	ND (0.575)	ND (0.0226)	ND (0.51)	ND (0.545)	ND (0.0188)	-	-	ND (0.0237)	ND (0.0234)	ND (0.0181)	-	ND (0.0193)	ND (0.0265)	-
n-Propylbenzene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
o-Xylene	ND (0.005)	ND (0.0043)	ND (0.0043)	ND (0.115)	ND (0.0045)	ND (0.102)	ND (0.109)	ND (0.0038)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
tert-Butylbenzene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Tetrachloroethene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	0.0011 J	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Tetrahydrofuran	ND (0.0124)	ND (0.0108)	ND (0.0106)	ND (0.288)	ND (0.0113)	ND (0.255)	ND (0.273)	ND (0.0094)	-	-	ND (0.0593)	ND (0.0585)	ND (0.0452)	-	ND (0.0481)	ND (0.0662)	-
Toluene	ND (0.0025)	0.0006 J	0.0004 J	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	0.0019 J	0.0015 J	0.0022 J	-	0.0018 J	ND (0.0066)	-
trans-1,2-Dichloroethene	ND (0.0025)	0.0022	0.0103	ND (0.0575)	0.001 J	ND (0.051)	0.035 J	0.0007 J	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Trichloroethene	ND (0.0025)	ND (0.0022)	ND (0.0021)	ND (0.0575)	ND (0.0023)	ND (0.051)	ND (0.0545)	ND (0.0019)	-	-	ND (0.0059)	ND (0.0058)	ND (0.0045)	-	ND (0.0048)	ND (0.0066)	-
Vinyl chloride	0.0507	0.188	0.265	0.028 J	0.003	0.014 J	0.0714	0.0014 J	-	-	ND (0.0024)	ND (0.0023)	ND (0.0018)	-	ND (0.0019)	ND (0.0026)	-
PCBs (mg/kg)																	
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
SUM of PCBs	-	-	-	-	-	-	-	-	ND (0.0407)	ND (0.0404)	-	-	-	ND (0.0451)	-	-	ND (0.0448)
Other																	
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	-	-	-	-	-	-	-	-	8.2	7.6	15.7	23	19.1	17	16.2	21.6	16.3

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-03	SB-03	SB-03	SB-04	SB-04	SB-04	SB-04	SB-05	SB-05	SB-05	SB-05	SB-06	SB-06	SB-06	SB-06	SB-07
Sample Name	SB-03 (4-5 ft)	SB-03 (8-9 ft)	SB-03 (13-14 ft)	SB-04 (0-3 ft)	SB-04 (4-5 ft)	SB-04 (5-6 ft)	SB-04 (14-15 ft)	SB-05 (0-3 ft)	SB-05 (4-5 ft)	SB-05 (9-10 ft)	SB-05 (14-15 ft)	SB-06 (0-3 ft)	SB-06 (4-5 ft)	SB-06 (9-10 ft)	SB-06 (14-15 ft)	SB-07 (0-3 ft)
Sample Date	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012
Lab Sample ID	SB-03 (4-5 ft)	SB-03 (8-9 ft)	SB-03 (13-14 ft)	SB-04 (0-3 ft)	SB-04 (4-5 ft)	SB-04 (5-6 ft)	SB-04 (14-15 ft)	SB-05 (0-3 ft)	SB-05 (4-5 ft)	SB-05 (9-10 ft)	SB-05 (14-15 ft)	SB-06 (0-3 ft)	SB-06 (4-5 ft)	SB-06 (9-10 ft)	SB-06 (14-15 ft)	SB-07 (0-3 ft)
Sample Depth (bgs)	4 - 5 (ft)	8 - 9 (ft)	13 - 14 (ft)	0 - 3 (ft)	4 - 5 (ft)	5 - 6 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	0 - 3 (ft)
Volatile Organic Compounds (mg/kg)																
1,1-Dichloroethene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
1,2,3-Trimethylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
1,2,4-Trimethylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
1,3,5-Trimethylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
2-Butanone (Methyl Ethyl Ketone)	ND (0.0438)	ND (0.0447)	ND (0.0484)	-	ND (0.0432)	ND (0.047)	ND (0.0436)	-	ND (0.0532)	ND (0.0586)	ND (0.0497)	-	ND (0.0529)	ND (0.0542)	ND (0.0517)	-
2-Phenylbutane (sec-Butylbenzene)	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Acetone	ND (0.0438)	0.027 J	ND (0.0484)	-	0.026 J	0.025 J	0.016 J	-	ND (0.0532)	ND (0.0586)	ND (0.0497)	-	0.029 J	ND (0.0542)	ND (0.0517)	-
Benzene	ND (0.0009)	ND (0.0009)	ND (0.001)	-	ND (0.0009)	ND (0.0009)	ND (0.0009)	-	ND (0.0011)	ND (0.0012)	ND (0.001)	-	ND (0.0011)	ND (0.0011)	ND (0.001)	-
Bromodichloromethane	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Carbon disulfide	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Chlorobenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Chloroethane	ND (0.0088)	ND (0.0089)	ND (0.0097)	-	ND (0.0086)	ND (0.0094)	ND (0.0087)	-	ND (0.0106)	ND (0.0117)	ND (0.0099)	-	ND (0.0106)	ND (0.0108)	ND (0.0103)	-
Chloroform (Trichloromethane)	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Chloromethane (Methyl Chloride)	ND (0.0088)	ND (0.0089)	ND (0.0097)	-	ND (0.0086)	ND (0.0094)	ND (0.0087)	-	ND (0.0106)	ND (0.0117)	ND (0.0099)	-	ND (0.0106)	ND (0.0108)	ND (0.0103)	-
cis-1,2-Dichloroethene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Cymene (p-Isopropyltoluene)	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Dibromochloromethane	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Ethyl Ether	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Ethylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Hexane	ND (0.0175)	ND (0.0179)	ND (0.0194)	-	ND (0.0173)	ND (0.0188)	ND (0.0174)	-	ND (0.0213)	ND (0.0234)	ND (0.0199)	-	ND (0.0212)	ND (0.0217)	ND (0.0207)	-
Isopropylbenzene (Cumene)	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
m,p-Xylenes	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Methyl acrylate	ND (0.0088)	ND (0.0089)	ND (0.0097)	-	ND (0.0086)	ND (0.0094)	ND (0.0087)	-	ND (0.0106)	ND (0.0117)	ND (0.0099)	-	ND (0.0106)	ND (0.0108)	ND (0.0103)	-
Methylene chloride	ND (0.0044)	0.0016 J	ND (0.0048)	-	0.0012 J	0.001 J	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	0.0014 J	ND (0.0054)	ND (0.0052)	-
Naphthalene	ND (0.0088)	ND (0.0089)	ND (0.0097)	-	ND (0.0086)	ND (0.0094)	ND (0.0087)	-	ND (0.0106)	ND (0.0117)	ND (0.0099)	-	ND (0.0106)	ND (0.0108)	ND (0.0103)	-
n-Butylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
N-Heptane	ND (0.0175)	ND (0.0179)	ND (0.0194)	-	ND (0.0173)	ND (0.0188)	ND (0.0174)	-	ND (0.0213)	ND (0.0234)	ND (0.0199)	-	ND (0.0212)	ND (0.0217)	ND (0.0207)	-
n-Propylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
o-Xylene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
tert-Butylbenzene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Tetrachloroethene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Tetrahydrofuran	ND (0.0438)	ND (0.0447)	ND (0.0484)	-	ND (0.0432)	ND (0.047)	ND (0.0436)	-	ND (0.0532)	ND (0.0586)	ND (0.0497)	-	ND (0.0529)	ND (0.0542)	ND (0.0517)	-
Toluene	ND (0.0044)	0.0017 J	0.001 J	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	0.0015 J	ND (0.0054)	ND (0.0052)	-
trans-1,2-Dichloroethene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Trichloroethene	ND (0.0044)	ND (0.0045)	ND (0.0048)	-	ND (0.0043)	ND (0.0047)	ND (0.0044)	-	ND (0.0053)	ND (0.0059)	ND (0.005)	-	ND (0.0053)	ND (0.0054)	ND (0.0052)	-
Vinyl chloride	ND (0.0018)	ND (0.0018)	ND (0.0019)	-	ND (0.0017)	ND (0.0019)	ND (0.0017)	-	ND (0.0021)	ND (0.0023)	ND (0.002)	-	ND (0.0021)	ND (0.0022)	ND (0.0021)	-
PCBs (mg/kg)																
Aroclor-1016 (PCB-1016)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Aroclor-1221 (PCB-1221)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Aroclor-1232 (PCB-1232)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Aroclor-1242 (PCB-1242)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Aroclor-1248 (PCB-1248)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Aroclor-1254 (PCB-1254)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Aroclor-1260 (PCB-1260)	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
SUM of PCBs	-	-	-	ND (0.0432)	-	-	-	ND (0.0512)	-	-	-	ND (0.0509)	-	-	-	ND (0.0455)
Other																
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	15.8	13.9	21.2	13.4	14.1	13.5	18.7	27.1	29.4	30.1	23.8	26.2	28.5	28.8	25.7	18.2

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-07	SB-07	SB-07	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08	SB-08
Sample Name	SB-07 (4-5 ft)	SB-07 (9-10 ft)	SB-07 (14-15 ft)	SB-08 (0-3 ft)	SB-08 (4-5 ft)	SB-08 (4-5 ft) Dup	SB-08 (8-9 ft)	SB-08 (14-15 ft)	SB-08 (17-18 ft)	SB-08 dup (17-18 ft)	SB-08 (21-22 ft)	SB-08 (25-26 ft)	SB-08 (29-30 ft)	SB-08 (33-34 ft)	SB-08 (37-38 ft)
Sample Date	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012
Lab Sample ID	SB-07 (4-5 ft)	SB-07 (9-10 ft)	SB-07 (14-15 ft)	SB-08 (0-3 ft)	SB-08 (4-5 ft)	SB-08 (4-5 ft) Dup	SB-08 (8-9 ft)	SB-08 (14-15 ft)	SB-08 (17-18 ft)	SB-08 dup (17-18 ft)	SB-08 (21-22 ft)	SB-08 (25-26 ft)	SB-08 (29-30 ft)	SB-08 (33-34 ft)	SB-08 (37-38 ft)
Sample Depth (bgs)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	4 - 5 (ft)	8 - 9 (ft)	14 - 15 (ft)	17 - 18 (ft)	17 - 18 (ft)	21 - 22 (ft)	25 - 26 (ft)	29 - 30 (ft)	33 - 34 (ft)	37 - 38 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
1,2,3-Trimethylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
1,2,4-Trimethylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
1,3,5-Trimethylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0648)	ND (0.0607)	ND (0.0647)	-	ND (0.0616)	ND (0.059)	ND (0.062)	ND (0.0622)	ND (0.0514)	ND (0.0469)	ND (0.0577)	ND (0.053)	ND (0.0702)	ND (0.0436)	ND (0.0462)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Acetone	0.061 J	ND (0.0607)	0.036 J	-	0.046 J	0.038 J	0.038 J	ND (0.0622)	0.013 J	0.012 J	0.02 J	0.045 J	0.043 J	0.04	0.016 J
Benzene	ND (0.0013)	ND (0.0012)	ND (0.0013)	-	ND (0.0012)	ND (0.0012)	ND (0.0012)	ND (0.0012)	ND (0.001)	ND (0.0009)	ND (0.0012)	ND (0.0011)	ND (0.0014)	ND (0.0009)	ND (0.0009)
Bromodichloromethane	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Carbon disulfide	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Chlorobenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Chloroethane	ND (0.013)	ND (0.0121)	ND (0.0129)	-	ND (0.0123)	ND (0.0118)	ND (0.0124)	ND (0.0124)	ND (0.0103)	ND (0.0094)	ND (0.0115)	ND (0.0106)	ND (0.014)	ND (0.0087)	ND (0.0092)
Chloroform (Trichloromethane)	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Chloromethane (Methyl Chloride)	ND (0.013)	ND (0.0121)	ND (0.0129)	-	ND (0.0123)	ND (0.0118)	ND (0.0124)	ND (0.0124)	ND (0.0103)	ND (0.0094)	ND (0.0115)	ND (0.0106)	ND (0.014)	ND (0.0087)	ND (0.0092)
cis-1,2-Dichloroethene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	0.0355	0.344	0.375	0.966	0.848	0.436	0.0278	ND (0.0046)
Cymene (p-Isopropyltoluene)	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Dibromochloromethane	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Ethyl Ether	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Ethylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Hexane	ND (0.0259)	ND (0.0243)	ND (0.0259)	-	ND (0.0246)	ND (0.0236)	ND (0.0248)	ND (0.0249)	ND (0.0205)	ND (0.0188)	ND (0.0231)	ND (0.0212)	ND (0.0281)	ND (0.0174)	ND (0.0185)
Isopropylbenzene (Cumene)	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
m,p-Xylenes	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	0.0021 J	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Methyl acrylate	ND (0.013)	ND (0.0121)	ND (0.0129)	-	ND (0.0123)	ND (0.0118)	ND (0.0124)	ND (0.0124)	ND (0.0103)	ND (0.0094)	ND (0.0115)	ND (0.0106)	ND (0.014)	ND (0.0087)	ND (0.0092)
Methylene chloride	0.0016 J	0.0013 J	ND (0.0065)	-	0.0015 J	ND (0.0059)	0.0015 J	ND (0.0062)	0.0022 J	0.002 J	0.0016 J	0.002 J	0.0028 J	0.0051	0.0018 J
Naphthalene	ND (0.013)	ND (0.0121)	ND (0.0129)	-	ND (0.0123)	ND (0.0118)	ND (0.0124)	ND (0.0124)	ND (0.0103)	ND (0.0094)	ND (0.0115)	ND (0.0106)	ND (0.014)	ND (0.0087)	ND (0.0092)
n-Butylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
N-Heptane	ND (0.0259)	ND (0.0243)	ND (0.0259)	-	ND (0.0246)	ND (0.0236)	ND (0.0248)	ND (0.0249)	ND (0.0205)	ND (0.0188)	ND (0.0231)	ND (0.0212)	ND (0.0281)	ND (0.0174)	ND (0.0185)
n-Propylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
o-Xylene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
tert-Butylbenzene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Tetrachloroethene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	ND (0.0053)	ND (0.007)	ND (0.0044)	ND (0.0046)
Tetrahydrofuran	ND (0.0648)	ND (0.0607)	ND (0.0647)	-	ND (0.0616)	ND (0.059)	ND (0.062)	ND (0.0622)	ND (0.0514)	ND (0.0469)	ND (0.0577)	ND (0.053)	ND (0.0702)	ND (0.0436)	ND (0.0462)
Toluene	ND (0.0065)	0.005 J	ND (0.0065)	-	ND (0.0062)	0.0015 J	0.0018 J	0.0015 J	0.0039 J	0.0012 J	0.0015 J	ND (0.0053)	0.0025 J	0.0012	0.001 J
trans-1,2-Dichloroethene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	0.0031 J	0.0093	0.008	0.0088	0.0064	ND (0.007)	ND (0.0044)	ND (0.0046)
Trichloroethene	ND (0.0065)	ND (0.0061)	ND (0.0065)	-	ND (0.0062)	ND (0.0059)	ND (0.0062)	ND (0.0062)	ND (0.0051)	ND (0.0047)	ND (0.0058)	0.0023 J	ND (0.007)	ND (0.0044)	ND (0.0046)
Vinyl chloride	ND (0.0026)	ND (0.0024)	ND (0.0026)	-	ND (0.0025)	ND (0.0024)	ND (0.0025)	0.0014 J	0.0065	0.0057	0.0053	0.0063	0.0072	ND (0.0017)	ND (0.0018)
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	ND (0.0405)	-	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	0.67	0.42	ND (0.1)	-
Percent Moisture (%)	30.4	30	26.7	7.6	30.2	30.5	30.9	29.4	28.8	20.9	29.6	25.4	25.8	14.5	19

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-08	SB-08	SB-08	SB-08	SB-08	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09
Sample Name	SB-08 (41-42 ft)	SB-08 (45-46 ft)	SB-08 (49-50 ft)	SB-08 (53-54 ft)	SB-08 (59-60 ft)	SB-09 (0-3 ft)	SB-09 (4-5 ft)	SB-09 (4-5 ft) Dup	SB-09 (8-9 ft)	SB-09 (14-15 ft)	SB-09 (18-19 ft)	SB-09 (22-23 ft)	SB-09 (26-27 ft)	SB-09 (32-33 ft)	SB-09 (35-36 ft)
Sample Date	06/12/2012	06/12/2012	06/12/2012	06/12/2012	06/12/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012
Lab Sample ID	SB-08 (41-42 ft)	SB-08 (45-46 ft)	SB-08 (49-50 ft)	SB-08 (53-54 ft)	SB-08 (59-60 ft)	SB-09 (0-3 ft)	SB-09 (4-5 ft)	SB-09 (4-5 ft) Dup	SB-09 (8-9 ft)	SB-09 (14-15 ft)	12070196-011	12070196-012	12070196-014	12070196-015	12070196-016
Sample Depth (bgs)	41 - 42 (ft)	45 - 46 (ft)	49 - 50 (ft)	53 - 54 (ft)	59 - 60 (ft)	0 - 3 (ft)	4 - 5 (ft)	4 - 5 (ft)	8 - 9 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	32 - 33 (ft)	35 - 36 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
1,2,3-Trimethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
1,2,4-Trimethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
1,3,5-Trimethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0475)	ND (0.0462)	ND (0.046)	ND (0.0518)	ND (0.0401)	-	ND (0.0697)	ND (0.0582)	ND (0.0557)	ND (0.0565)	ND (0.0502)	ND (0.046)	ND (0.0721)	ND (0.0491)	ND (0.0467)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Acetone	0.019 J	0.022 J	0.024 J	0.026 J	0.016 J	-	ND (0.0697)	ND (0.0582)	ND (0.0557)	ND (0.0565)	0.024 J	0.014 J	0.033 J	0.018 J	0.018 J
Benzene	ND (0.001)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.0008)	-	ND (0.0014)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.001)	ND (0.0009)	ND (0.0014)	ND (0.001)	ND (0.0009)
Bromodichloromethane	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Carbon disulfide	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Chlorobenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Chloroethane	ND (0.0095)	ND (0.0092)	ND (0.0092)	ND (0.0104)	ND (0.008)	-	ND (0.0139)	ND (0.0116)	ND (0.0111)	ND (0.0113)	ND (0.01)	ND (0.0092)	ND (0.0144)	ND (0.0098)	ND (0.0093)
Chloroform (Trichloromethane)	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Chloromethane (Methyl Chloride)	ND (0.0095)	ND (0.0092)	ND (0.0092)	ND (0.0104)	ND (0.008)	-	ND (0.0139)	ND (0.0116)	ND (0.0111)	ND (0.0113)	ND (0.01)	ND (0.0092)	ND (0.0144)	ND (0.0098)	ND (0.0093)
cis-1,2-Dichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0046)	0.0015 J	0.0012 J	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	0.0956	0.107
Cymene (p-Isopropyltoluene)	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Dibromochloromethane	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Ethyl Ether	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Ethylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Hexane	ND (0.019)	ND (0.0185)	ND (0.0184)	ND (0.0207)	ND (0.016)	-	ND (0.0279)	ND (0.0233)	ND (0.0223)	ND (0.0226)	ND (0.0201)	ND (0.0184)	ND (0.0288)	ND (0.0196)	ND (0.0187)
Isopropylbenzene (Cumene)	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
m,p-Xylenes	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Methyl acrylate	ND (0.0095)	ND (0.0092)	ND (0.0092)	ND (0.0104)	ND (0.008)	-	ND (0.0139)	ND (0.0116)	ND (0.0111)	ND (0.0113)	ND (0.01)	ND (0.0092)	ND (0.0144)	ND (0.0098)	ND (0.0093)
Methylene chloride	0.004 J	0.0026 J	0.0025 J	0.007	0.0033 J	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	0.0016 J	0.0015 J	0.001 J
Naphthalene	ND (0.0095)	ND (0.0092)	ND (0.0092)	ND (0.0104)	ND (0.008)	-	ND (0.0139)	ND (0.0116)	ND (0.0111)	ND (0.0113)	ND (0.01)	ND (0.0092)	ND (0.0144)	ND (0.0098)	ND (0.0093)
n-Butylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
N-Heptane	ND (0.019)	ND (0.0185)	ND (0.0184)	ND (0.0207)	ND (0.016)	-	ND (0.0279)	ND (0.0233)	ND (0.0223)	ND (0.0226)	ND (0.0201)	ND (0.0184)	ND (0.0288)	ND (0.0196)	ND (0.0187)
n-Propylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
o-Xylene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
tert-Butylbenzene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Tetrachloroethene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Tetrahydrofuran	ND (0.0475)	ND (0.0462)	ND (0.046)	ND (0.0518)	ND (0.0401)	-	ND (0.0697)	ND (0.0582)	ND (0.0557)	ND (0.0565)	ND (0.0502)	ND (0.046)	ND (0.0721)	ND (0.0491)	ND (0.0467)
Toluene	0.0014 J	0.0017 J	0.0014 J	0.0014 J	0.0008 J	-	ND (0.007)	0.0012 J	ND (0.0056)	ND (0.0056)	0.0013 J	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
trans-1,2-Dichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Trichloroethene	ND (0.0048)	ND (0.0046)	ND (0.0046)	ND (0.0052)	ND (0.004)	-	ND (0.007)	ND (0.0058)	ND (0.0056)	ND (0.0056)	ND (0.005)	ND (0.0046)	ND (0.0072)	ND (0.0049)	ND (0.0047)
Vinyl chloride	ND (0.0019)	ND (0.0018)	ND (0.0018)	ND (0.0021)	ND (0.0016)	-	ND (0.0028)	ND (0.0023)	ND (0.0022)	ND (0.0023)	ND (0.002)	ND (0.0018)	ND (0.0029)	0.002	0.0086
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	ND (0.0427)	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	ND (0.1)	-	ND (0.1)	-	0.19	-	2.61	-	2.37	1.63	-	-	-	-	-
Percent Moisture (%)	9.4	15.6	8.8	18.1	12.1	12.6	29.8	29.8	28.2	27.6	24.7	20.8	31.6	11.9	14.3

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-09	SB-09	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10
Sample Name	SB-09 dup (35-36 ft)	SB-09 (39-40 ft)	SB-10 (0-3 ft)	SB-10 (4-5 ft)	SB-10 (9-10 ft)	SB-10 (14-15 ft)	SB-10 (17-18 ft)	SB-10 (25-26 ft)	SB-10 dup (25-26 ft)	SB-10 (29-30 ft)	SB-10 (33-34 ft)	SB-10 (37-38 ft)	SB-10 (41-42 ft)	SB-10 (45-46 ft)
Sample Date	07/06/2012	07/06/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	06/08/2012	06/08/2012	06/08/2012	06/08/2012	06/08/2012	06/08/2012	06/08/2012	06/08/2012
Lab Sample ID	12070196-017	12070196-018	SB-10 (0-3 ft)	SB-10 (4-5 ft)	SB-10 (9-10 ft)	SB-10 (14-15 ft)	SB-10 (17-18 ft)	SB-10 (25-26 ft)	SB-10 dup (25-26 ft)	SB-10 (29-30 ft)	SB-10 (33-34 ft)	SB-10 (37-38 ft)	SB-10 (41-42 ft)	SB-10 (45-46 ft)
Sample Depth (bgs)	35 - 36 (ft)	39 - 40 (ft)	0 - 3 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	17 - 18 (ft)	25 - 26 (ft)	25 - 26 (ft)	29 - 30 (ft)	33 - 34 (ft)	37 - 38 (ft)	41 - 42 (ft)	45 - 46 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	0.0041 J	0.0091	0.0359	0.0347	0.0051 J	0.0039 J	ND (0.0039)	ND (0.0047)	ND (0.0048)
1,2,3-Trimethylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.0685	0.0687	ND (0.0063)	ND (0.0051)	ND (0.0039)	0.001 J	ND (0.0048)
1,2,4-Trimethylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	0.0021 J	0.126	0.129	ND (0.0063)	0.0022 J	ND (0.0039)	0.0011 J	ND (0.0048)
1,3,5-Trimethylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.0384	0.0403	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0638)	ND (0.0442)	-	0.014 J	ND (0.0562)	ND (0.0527)	ND (0.047)	ND (0.0526)	ND (0.057)	ND (0.0633)	ND (0.051)	ND (0.0394)	ND (0.0467)	ND (0.0484)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.0045 J	0.0042 J	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Acetone	0.032 J	0.022 J	-	0.0775	0.016 J	ND (0.0527)	0.019 J	0.027 J	0.049 J	0.022 J	0.03 J	0.025 J	0.024 J	0.036 J
Benzene	ND (0.0013)	ND (0.0009)	-	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0009)	ND (0.0011)	ND (0.0011)	ND (0.0013)	ND (0.001)	ND (0.0008)	ND (0.0009)	ND (0.001)
Bromodichloromethane	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Carbon disulfide	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Chlorobenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Chloroethane	ND (0.0128)	ND (0.0088)	-	ND (0.0118)	ND (0.0112)	ND (0.0105)	ND (0.0094)	ND (0.0105)	ND (0.0114)	ND (0.0127)	ND (0.0102)	ND (0.0079)	ND (0.0093)	ND (0.0097)
Chloroform (Trichloromethane)	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Chloromethane (Methyl Chloride)	ND (0.0128)	ND (0.0088)	-	ND (0.0118)	ND (0.0112)	ND (0.0105)	ND (0.0094)	ND (0.0105)	ND (0.0114)	ND (0.0127)	ND (0.0102)	ND (0.0079)	ND (0.0093)	ND (0.0097)
cis-1,2-Dichloroethene	0.0474	0.004 J	-	ND (0.0059)	0.0176	1.08	2.91	8.85	8.84	15.8	1.09	0.0089	0.0019 J	0.002 J
Cymene (p-Isopropyltoluene)	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.0031 J	0.003 J	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Dibromochloromethane	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Ethyl Ether	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Ethylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.005 J	0.0049 J	0.0013 J	ND (0.0051)	0.0013 J	0.0012 J	ND (0.0048)
Hexane	ND (0.0255)	ND (0.0177)	-	ND (0.0237)	ND (0.0225)	ND (0.0211)	ND (0.0188)	ND (0.021)	ND (0.0228)	ND (0.0253)	ND (0.0204)	ND (0.0157)	ND (0.0187)	ND (0.0193)
Isopropylbenzene (Cumene)	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.0097	0.0097	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
m,p-Xylenes	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	0.0029 J	0.0074	0.0069	0.0029 J	0.0016 J	0.004	0.004 J	0.0028 J
Methyl acrylate	ND (0.0128)	ND (0.0088)	-	ND (0.0118)	ND (0.0112)	ND (0.0105)	ND (0.0094)	ND (0.0105)	ND (0.0114)	ND (0.0127)	ND (0.0102)	ND (0.0079)	ND (0.0093)	ND (0.0097)
Methylene chloride	ND (0.0064)	ND (0.0044)	-	0.0015 J	0.0019 J	ND (0.0053)	ND (0.0047)	0.0041 J	0.0067	0.0025 J	0.0061	0.0055	0.0047	0.0084
Naphthalene	ND (0.0128)	ND (0.0088)	-	ND (0.0118)	ND (0.0112)	ND (0.0105)	ND (0.0094)	0.0022 J	0.0024 J	ND (0.0127)	ND (0.0102)	0.0018 J	ND (0.0093)	ND (0.0097)
n-Butylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
N-Heptane	ND (0.0255)	ND (0.0177)	-	ND (0.0237)	ND (0.0225)	ND (0.0211)	ND (0.0188)	ND (0.021)	ND (0.0228)	ND (0.0253)	ND (0.0204)	ND (0.0157)	ND (0.0187)	ND (0.0193)
n-Propylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	0.0237	0.0234	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
o-Xylene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	0.0015 J	0.0096	0.0096	0.0032 J	ND (0.0051)	0.0013 J	0.0015 J	0.0011 J
tert-Butylbenzene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	ND (0.0047)	ND (0.0053)	ND (0.0057)	ND (0.0063)	ND (0.0051)	ND (0.0039)	ND (0.0047)	ND (0.0048)
Tetrachloroethene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	ND (0.0053)	1.02	14.6	15.6	0.0189	0.0804	0.0084	0.0034 J	0.0027 J
Tetrahydrofuran	ND (0.0638)	ND (0.0442)	-	ND (0.0591)	ND (0.0562)	ND (0.0527)	ND (0.047)	ND (0.0526)	ND (0.057)	ND (0.0633)	ND (0.051)	ND (0.0394)	ND (0.0467)	ND (0.0484)
Toluene	0.002 J	ND (0.0044)	-	0.0034 J	0.0052 J	0.0026 J	0.0025 J	0.0042 J	0.004 J	0.0042 J	0.0023 J	0.003 J	0.0025 J	0.0023 J
trans-1,2-Dichloroethene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	0.0017 J	0.0169	0.0207	0.0787	0.071	ND (0.0063)	0.0038 J	ND (0.0039)	ND (0.0047)	ND (0.0048)
Trichloroethene	ND (0.0064)	ND (0.0044)	-	ND (0.0059)	ND (0.0056)	0.0038 J	0.86	3.13	3.47	0.007	0.0068	0.0014 J	ND (0.0047)	ND (0.0048)
Vinyl chloride	0.0028	ND (0.0018)	-	ND (0.0024)	0.0073	0.0464	0.169	0.12 J	0.209	0.0108	0.0502	ND (0.0016)	ND (0.0019)	ND (0.0019)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	ND (0.0423)	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	13.9	15.7	11	29.5	29.2	24.2	20.8	23.4	23.6	24.1	16.2	6.9	7.7	6.2

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-10	SB-10	SB-10	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11
Sample Name	SB-10 (49-50 ft)	SB-10 (53-54 ft)	SB-10 (59-60 ft)	SB-11 (0-3 ft)	SB-11 (4-5 ft)	SB-11 (8-9 ft)	SB-11 (14-15 ft)	SB-11 (17-18 ft)	SB-11 (23-24 ft)	SB-11 dup (23-24 ft)	SB-11 (25-26 ft)	SB-11 (29-30 ft)	SB-11 (33-34 ft)	SB-11 (37-38 ft)
Sample Date	06/08/2012	06/11/2012	06/11/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	06/11/2012	06/11/2012	06/11/2012	06/11/2012	06/11/2012	06/11/2012	06/11/2012
Lab Sample ID	SB-10 (49-50 ft)	SB-10 (53-54 ft)	SB-10 (59-60 ft)	SB-11 (0-3 ft)	SB-11 (4-5 ft)	SB-11 (8-9 ft)	SB-11 (14-15 ft)	SB-11 (17-18 ft)	SB-11 (23-24 ft)	SB-11 dup (23-24 ft)	SB-11 (25-26 ft)	SB-11 (29-30 ft)	SB-11 (33-34 ft)	SB-11 (37-38 ft)
Sample Depth (bgs)	49 - 50 (ft)	53 - 54 (ft)	59 - 60 (ft)	0 - 3 (ft)	4 - 5 (ft)	8 - 9 (ft)	14 - 15 (ft)	17 - 18 (ft)	23 - 24 (ft)	23 - 24 (ft)	25 - 26 (ft)	29 - 30 (ft)	33 - 34 (ft)	37 - 38 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	0.0012 J	ND (0.136)	ND (0.635)	ND (0.646)	0.0012 J	0.0125	0.0013 J	ND (0.0045)
1,2,3-Trimethylbenzene	0.0011 J	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
1,2,4-Trimethylbenzene	0.0037 J	0.0011 J	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
1,3,5-Trimethylbenzene	0.001 J	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0444)	ND (0.0435)	ND (0.0473)	-	ND (0.0581)	ND (0.0583)	ND (0.0548)	ND (1.36)	ND (6.35)	ND (6.46)	ND (0.0527)	ND (0.0524)	ND (0.0411)	ND (0.0451)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Acetone	0.04 J	0.043 J	0.026 J	-	0.041 J	0.028 J	ND (0.0548)	0.4 J	ND (6.35)	ND (6.46)	0.037 J	0.033 J	0.022 J	0.0521
Benzene	ND (0.0009)	ND (0.0009)	ND (0.0009)	-	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0273)	ND (0.127)	ND (0.129)	ND (0.0011)	ND (0.001)	ND (0.0008)	ND (0.0009)
Bromodichloromethane	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Carbon disulfide	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Chlorobenzene	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Chloroethane	ND (0.0089)	ND (0.0087)	ND (0.0095)	-	ND (0.0116)	ND (0.0117)	ND (0.011)	ND (0.273)	ND (1.27)	ND (1.29)	ND (0.0105)	ND (0.0105)	ND (0.0082)	ND (0.009)
Chloroform (Trichloromethane)	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Chloromethane (Methyl Chloride)	ND (0.0089)	ND (0.0087)	ND (0.0095)	-	ND (0.0116)	ND (0.0117)	ND (0.011)	ND (0.273)	ND (1.27)	ND (1.29)	ND (0.0105)	ND (0.0105)	ND (0.0082)	ND (0.009)
cis-1,2-Dichloroethene	0.0104	0.115	0.0015 J	-	0.0017 J	0.0956	0.461	0.239	1.22	1.07	0.679	4.48	1.32	0.005
Cymene (p-Isopropyltoluene)	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Dibromochloromethane	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Ethyl Ether	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Ethylbenzene	0.0013 J	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Hexane	ND (0.0178)	ND (0.0174)	ND (0.0189)	-	ND (0.0232)	ND (0.0233)	ND (0.0219)	ND (0.545)	ND (2.54)	ND (2.58)	ND (0.0211)	ND (0.021)	ND (0.0164)	ND (0.018)
Isopropylbenzene (Cumene)	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
m,p-Xylenes	0.0037 J	0.0011 J	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	0.001 J	ND (0.0045)
Methyl acrylate	ND (0.0089)	ND (0.0087)	ND (0.0095)	-	ND (0.0116)	ND (0.0117)	ND (0.011)	ND (0.273)	ND (1.27)	ND (1.29)	ND (0.0105)	ND (0.0105)	ND (0.0082)	ND (0.009)
Methylene chloride	0.005	0.0051	0.0061	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	0.0038 J	0.0026 J	0.0052	0.0058
Naphthalene	ND (0.0089)	ND (0.0087)	ND (0.0095)	-	ND (0.0116)	ND (0.0117)	ND (0.011)	ND (0.273)	ND (1.27)	ND (1.29)	ND (0.0105)	ND (0.0105)	ND (0.0082)	ND (0.009)
n-Butylbenzene	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
N-Heptane	ND (0.0178)	ND (0.0174)	ND (0.0189)	-	ND (0.0232)	ND (0.0233)	ND (0.0219)	ND (0.545)	ND (2.54)	ND (2.58)	ND (0.0211)	ND (0.021)	ND (0.0164)	ND (0.018)
n-Propylbenzene	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
o-Xylene	0.0013 J	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
tert-Butylbenzene	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	ND (0.0052)	ND (0.0041)	ND (0.0045)
Tetrachloroethene	0.0111	0.0321	0.0034 J	-	ND (0.0058)	ND (0.0058)	0.0668	ND (0.136)	0.14 J	0.17 J	0.0345	ND (0.0052)	ND (0.0041)	ND (0.0045)
Tetrahydrofuran	ND (0.0444)	ND (0.0435)	ND (0.0473)	-	ND (0.0581)	ND (0.0583)	ND (0.0548)	ND (1.36)	ND (6.35)	ND (6.46)	ND (0.0527)	ND (0.0524)	ND (0.0411)	ND (0.0451)
Toluene	0.0029 J	0.0016 J	0.0016 J	-	ND (0.0058)	ND (0.0058)	ND (0.0055)	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	0.0022 J	0.0017 J	0.001 J
trans-1,2-Dichloroethene	ND (0.0044)	ND (0.0043)	ND (0.0047)	-	ND (0.0058)	0.0058 J	0.0069	ND (0.136)	ND (0.635)	ND (0.646)	ND (0.0053)	0.0391	ND (0.0041)	ND (0.0045)
Trichloroethene	0.002 J	0.0216	ND (0.0047)	-	ND (0.0058)	ND (0.0058)	0.0393	ND (0.136)	0.31 J	0.29 J	0.05	0.0021 J	ND (0.0041)	ND (0.0045)
Vinyl chloride	ND (0.0018)	0.0026	ND (0.0019)	-	ND (0.0023)	0.0223	0.0055	ND (0.0545)	ND (0.254)	ND (0.258)	0.0174	0.22 J	0.0362	ND (0.0018)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	ND (0.046)	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	0.88	1.28	0.74	0.1
Percent Moisture (%)	19.4	15.8	14.5	18.6	30.5	29.8	30.5	23.8	32	32.4	27.3	24.6	20.7	10.7

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-11	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-13	SB-13	SB-13	SB-13	SB-14	SB-14	SB-14
Sample Name	SB-11 (41-42 ft)	SB-11 (45-46 ft)	SB-11 (49-50 ft)	SB-11 (53-54 ft)	SB-11 (59-60 ft)	SB-12 (0-3 ft)	SB-12 (4-5 ft)	SB-12 (9-10 ft)	SB-12 (14-15 ft)	SB-13 (0-3 ft)	SB-13 (4-5 ft)	SB-13 (9-10 ft)	SB-13 (14-15 ft)	SB-14 (0-3 ft)	SB-14 (4-5 ft)	SB-14 (8-9 ft)
Sample Date	06/11/2012	06/11/2012	06/11/2012	06/11/2012	06/12/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012
Lab Sample ID	SB-11 (41-42 ft)	SB-11 (45-46 ft)	SB-11 (49-50 ft)	SB-11 (53-54 ft)	SB-11 (59-60 ft)	SB-12 (0-3 ft)	SB-12 (4-5 ft)	SB-12 (9-10 ft)	SB-12 (14-15 ft)	SB-13 (0-3 ft)	SB-13 (4-5 ft)	SB-13 (9-10 ft)	SB-13 (14-15 ft)	SB-14 (0-3 ft)	SB-14 (4-5 ft)	SB-14 (8-9 ft)
Sample Depth (bgs)	41 - 42 (ft)	45 - 46 (ft)	49 - 50 (ft)	53 - 54 (ft)	59 - 60 (ft)	0 - 3 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	8 - 9 (ft)
Volatile Organic Compounds (mg/kg)																
1,1-Dichloroethene	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	0.0012 J
1,2,3-Trimethylbenzene	ND (0.0042)	ND (0.0047)	0.0011 J	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
1,2,4-Trimethylbenzene	ND (0.0042)	ND (0.0047)	0.0037 J	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
1,3,5-Trimethylbenzene	ND (0.0042)	ND (0.0047)	0.001 J	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0419)	ND (0.0469)	ND (0.0444)	ND (0.0441)	ND (0.0636)	-	ND (0.056)	ND (0.0533)	ND (0.0489)	-	ND (0.0553)	ND (0.0537)	ND (0.0583)	-	ND (0.0588)	ND (0.0551)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Acetone	0.01 J	ND (0.0469)	0.04 J	0.0464	0.029 J	-	0.05 J	0.011 J	ND (0.0489)	-	0.051 J	ND (0.0537)	ND (0.0583)	-	0.018 J	ND (0.0551)
Benzene	ND (0.0008)	ND (0.0009)	ND (0.0009)	ND (0.0009)	ND (0.0013)	-	ND (0.0011)	ND (0.0011)	ND (0.001)	-	ND (0.0011)	ND (0.0011)	ND (0.0012)	-	ND (0.0012)	ND (0.0011)
Bromodichloromethane	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Carbon disulfide	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Chlorobenzene	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Chloroethane	ND (0.0084)	ND (0.0094)	ND (0.0089)	ND (0.0088)	ND (0.0127)	-	ND (0.0112)	ND (0.0107)	ND (0.0098)	-	ND (0.0111)	ND (0.0107)	ND (0.0117)	-	ND (0.0118)	ND (0.011)
Chloroform (Trichloromethane)	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Chloromethane (Methyl Chloride)	ND (0.0084)	ND (0.0094)	ND (0.0089)	ND (0.0088)	ND (0.0127)	-	ND (0.0112)	ND (0.0107)	ND (0.0098)	-	ND (0.0111)	ND (0.0107)	ND (0.0117)	-	ND (0.0118)	ND (0.011)
cis-1,2-Dichloroethene	ND (0.0042)	ND (0.0047)	0.0104	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	0.0822	0.11
Cymene (p-Isopropyltoluene)	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Dibromochloromethane	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Ethyl Ether	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Ethylbenzene	ND (0.0042)	ND (0.0047)	0.0013 J	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Hexane	ND (0.0168)	ND (0.0188)	ND (0.0178)	ND (0.0176)	ND (0.0254)	-	ND (0.0224)	ND (0.0213)	ND (0.0196)	-	ND (0.0221)	ND (0.0215)	ND (0.0233)	-	ND (0.0235)	ND (0.022)
Isopropylbenzene (Cumene)	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
m,p-Xylenes	ND (0.0042)	ND (0.0047)	0.0037 J	ND (0.0044)	0.0019 J	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Methyl acrylate	ND (0.0084)	ND (0.0094)	ND (0.0089)	ND (0.0088)	ND (0.0127)	-	ND (0.0112)	ND (0.0107)	ND (0.0098)	-	ND (0.0111)	ND (0.0107)	ND (0.0117)	-	ND (0.0118)	ND (0.011)
Methylene chloride	0.0019 J	0.003 J	0.005	0.0051	0.0067	-	0.002 J	0.0017 J	0.0015 J	-	ND (0.0055)	ND (0.0054)	0.0013 J	-	ND (0.0059)	ND (0.0055)
Naphthalene	ND (0.0084)	ND (0.0094)	ND (0.0089)	ND (0.0088)	ND (0.0127)	-	ND (0.0112)	ND (0.0107)	ND (0.0098)	-	ND (0.0111)	ND (0.0107)	ND (0.0117)	-	ND (0.0118)	ND (0.011)
n-Butylbenzene	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
N-Heptane	ND (0.0168)	ND (0.0188)	ND (0.0178)	ND (0.0176)	ND (0.0254)	-	ND (0.0224)	ND (0.0213)	ND (0.0196)	-	ND (0.0221)	ND (0.0215)	ND (0.0233)	-	ND (0.0235)	ND (0.022)
n-Propylbenzene	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
o-Xylene	ND (0.0042)	ND (0.0047)	0.0013 J	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
tert-Butylbenzene	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Tetrachloroethene	ND (0.0042)	ND (0.0047)	0.0111	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	0.0012 J	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	ND (0.0055)
Tetrahydrofuran	ND (0.0419)	ND (0.0469)	ND (0.0444)	ND (0.0441)	ND (0.0636)	-	ND (0.056)	ND (0.0533)	ND (0.0489)	-	ND (0.0553)	ND (0.0537)	ND (0.0583)	-	ND (0.0588)	ND (0.0551)
Toluene	0.0012 J	ND (0.0047)	0.0029 J	0.0022 J	0.0027 J	-	0.0053 J	0.0114	0.0053	-	0.0017 J	ND (0.0054)	0.0031 J	-	ND (0.0059)	0.0038 J
trans-1,2-Dichloroethene	ND (0.0042)	ND (0.0047)	ND (0.0044)	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	0.0012 J	ND (0.0055)
Trichloroethene	ND (0.0042)	ND (0.0047)	0.002 J	ND (0.0044)	ND (0.0064)	-	ND (0.0056)	ND (0.0053)	ND (0.0049)	-	ND (0.0055)	ND (0.0054)	ND (0.0058)	-	ND (0.0059)	0.0026 J
Vinyl chloride	ND (0.0017)	ND (0.0019)	ND (0.0018)	ND (0.0018)	ND (0.0025)	-	ND (0.0022)	ND (0.0021)	ND (0.002)	-	ND (0.0022)	ND (0.0022)	ND (0.0023)	-	ND (0.0024)	ND (0.0022)
PCBs (mg/kg)																
Aroclor-1016 (PCB-1016)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
SUM of PCBs	-	-	-	-	-	ND (0.0397)	-	-	-	ND (0.0417)	-	-	-	ND (0.0551)	-	-
Other																
Fraction Organic Carbon (FOC) (%)	-	0.1	-	-	-	-	-	-	-	-	-	-	-	1.97	-	-
Percent Moisture (%)	13.4	8.8	19.4	11.2	9.6	5.4	28.1	28.4	26.3	10.3	27.5	27.4	28	32.3	28.4	27.7

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14
Sample Name	SB-14 (9-10 ft)	SB-14 (14-15 ft)	SB-14 (17-18 ft)	SB-14 (21-22 ft)	SB-14 (25-26 ft)	SB-14 (29-30 ft)	SB-14 (33-34 ft)	SB-14 dup (33-34 ft)	SB-14 (37-38 ft)	SB-14 (41-42 ft)	SB-14 (45-46 ft)	SB-14 (49-50 ft)	SB-14 (53-54 ft)	SB-14 (59-60 ft)
Sample Date	04/24/2012	04/24/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/05/2012	06/08/2012	06/08/2012
Lab Sample ID	SB-14 (9-10 ft)	SB-14 (14-15 ft)	SB-14 (17-18 ft)	SB-14 (21-22 ft)	SB-14 (25-26 ft)	SB-14 (29-30 ft)	SB-14 (33-34 ft)	SB-14 dup (33-34 ft)	SB-14 (37-38 ft)	SB-14 (41-42 ft)	SB-14 (45-46 ft)	SB-14 (49-50 ft)	SB-14 (53-54 ft)	SB-14 (59-60 ft)
Sample Depth (bgs)	9 - 10 (ft)	14 - 15 (ft)	17 - 18 (ft)	21 - 22 (ft)	25 - 26 (ft)	29 - 30 (ft)	33 - 34 (ft)	33 - 34 (ft)	37 - 38 (ft)	41 - 42 (ft)	45 - 46 (ft)	49 - 50 (ft)	53 - 54 (ft)	59 - 60 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
1,2,3-Trimethylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	0.0012 J
1,2,4-Trimethylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	0.0033 J	0.0046 J
1,3,5-Trimethylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	0.001 J	0.0013 J
2-Butanone (Methyl Ethyl Ketone)	-	ND (0.0483)	ND (0.0529)	ND (0.0661)	ND (0.0629)	ND (0.0536)	ND (0.0402)	ND (0.0405)	ND (0.0384)	ND (0.0477)	ND (0.0468)	ND (0.0444)	ND (0.0465)	ND (0.0466)
2-Phenylbutane (sec-Butylbenzene)	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Acetone	-	ND (0.0483)	0.024 J	0.055 J	0.053 J	0.043 J	0.029 J	0.018 J	0.028 J	0.02 J	0.015 J	0.025 J	0.044 J	0.017 J
Benzene	-	ND (0.001)	ND (0.0011)	ND (0.0013)	ND (0.0013)	ND (0.0011)	ND (0.0008)	ND (0.0008)	ND (0.0008)	ND (0.001)	ND (0.0009)	ND (0.0009)	ND (0.0009)	ND (0.0009)
Bromodichloromethane	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Carbon disulfide	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Chlorobenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Chloroethane	-	ND (0.0097)	ND (0.0106)	ND (0.0132)	ND (0.0126)	ND (0.0107)	ND (0.008)	ND (0.0081)	ND (0.0077)	ND (0.0096)	ND (0.0094)	ND (0.0089)	ND (0.0093)	ND (0.0093)
Chloroform (Trichloromethane)	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Chloromethane (Methyl Chloride)	-	ND (0.0097)	ND (0.0106)	ND (0.0132)	ND (0.0126)	ND (0.0107)	ND (0.008)	ND (0.0081)	ND (0.0077)	ND (0.0096)	ND (0.0094)	ND (0.0089)	ND (0.0093)	ND (0.0093)
cis-1,2-Dichloroethene	-	0.0088	0.0177	0.0116	0.0014 J	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Cymene (p-Isopropyltoluene)	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Dibromochloromethane	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Ethyl Ether	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Ethylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	0.0013 J	0.0017 J
Hexane	-	ND (0.0193)	ND (0.0212)	ND (0.0264)	ND (0.0252)	ND (0.0215)	ND (0.0161)	ND (0.0162)	ND (0.0153)	ND (0.0191)	ND (0.0187)	ND (0.0178)	ND (0.0186)	ND (0.0187)
Isopropylbenzene (Cumene)	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
m,p-Xylenes	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	0.0017 J	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	0.0015 J	ND (0.0044)	0.0042 J	0.006
Methyl acrylate	-	ND (0.0097)	ND (0.0106)	ND (0.0132)	ND (0.0126)	ND (0.0107)	ND (0.008)	ND (0.0081)	ND (0.0077)	ND (0.0096)	ND (0.0094)	ND (0.0089)	ND (0.0093)	ND (0.0093)
Methylene chloride	-	ND (0.0048)	0.0066	0.0079	0.0075	0.0072	0.0055	0.0041	0.006	0.0053	0.0022 J	0.0018 J	0.0045 J	0.0021 J
Naphthalene	-	ND (0.0097)	ND (0.0106)	ND (0.0132)	ND (0.0126)	ND (0.0107)	ND (0.008)	ND (0.0081)	ND (0.0077)	ND (0.0096)	ND (0.0094)	ND (0.0089)	ND (0.0093)	ND (0.0093)
n-Butylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
N-Heptane	-	ND (0.0193)	ND (0.0212)	ND (0.0264)	ND (0.0252)	ND (0.0215)	ND (0.0161)	ND (0.0162)	ND (0.0153)	ND (0.0191)	ND (0.0187)	ND (0.0178)	ND (0.0186)	ND (0.0187)
n-Propylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
o-Xylene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	0.0014 J	0.002 J
tert-Butylbenzene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Tetrachloroethene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Tetrahydrofuran	-	ND (0.0483)	ND (0.0529)	ND (0.0661)	ND (0.0629)	ND (0.0536)	ND (0.0402)	ND (0.0405)	ND (0.0384)	ND (0.0477)	ND (0.0468)	ND (0.0444)	ND (0.0465)	ND (0.0466)
Toluene	-	0.0101	0.0024 J	0.0018 J	0.0023 J	0.0016 J	0.0014 J	0.0013 J	0.0018 J	0.0011 J	0.0019 J	0.0011 J	0.003 J	0.0028 J
trans-1,2-Dichloroethene	-	ND (0.0048)	ND (0.0053)	ND (0.0066)	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Trichloroethene	-	0.003 J	0.0029 J	0.0038 J	ND (0.0063)	ND (0.0054)	ND (0.004)	ND (0.004)	ND (0.0038)	ND (0.0048)	ND (0.0047)	ND (0.0044)	ND (0.0046)	ND (0.0047)
Vinyl chloride	-	ND (0.0019)	ND (0.0021)	ND (0.0026)	ND (0.0025)	ND (0.0021)	ND (0.0016)	ND (0.0016)	ND (0.0015)	ND (0.0019)	ND (0.0019)	ND (0.0018)	ND (0.0019)	ND (0.0019)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	2.07	1.48	-	-	1.25	1.34	-	-	-	ND (0.1)	-	-	-	-
Percent Moisture (%)	-	23.8	27.2	33.4	25.6	26.3	11.2	12.6	7.5	11.1	21.8	10.9	21.2	15.3

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-15	SB-15	SB-15	SB-15	SB-16	SB-16	SB-16	SB-16	SB-16	SB-16	SB-28	SB-28	SB-28	SB-28	SB-28
Sample Name	SB-15 (0-3 ft)	SB-15 (4-5 ft)	SB-15 (9-10 ft)	SB-15 (14-15 ft)	SB-16 (0-3 ft)	SB-16 (4-5 ft)	SB-16 (4-5 ft) DUP	SB-16 (8-9 ft)	SB-16 (14-15 ft)	SB-16 DUP (14-15 ft)	SB-28 (0-3 ft)	SB-28 (6-7 ft)	SB-28 dup (6-7 ft)	SB-28 (11-12 ft)	SB-28 (15-16 ft)
Sample Date	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012	07/06/2012
Lab Sample ID	SB-15 (0-3 ft)	SB-15 (4-5 ft)	SB-15 (9-10 ft)	SB-15 (14-15 ft)	SB-16 (0-3 ft)	SB-16 (4-5 ft)	SB-16 (4-5 ft) DUP	SB-16 (8-9 ft)	SB-16 (14-15 ft)	SB-16 DUP (14-15 ft)	12070218-001	12070218-002	12070218-003	12070218-004	12070218-005
Sample Depth (bgs)	0 - 3 (ft)	4 - 5 (ft)	9 - 10 (ft)	14 - 15 (ft)	0 - 3 (ft)	4 - 5 (ft)	4 - 5 (ft)	8 - 9 (ft)	14 - 15 (ft)	14 - 15 (ft)	0 - 3 (ft)	6 - 7 (ft)	6 - 7 (ft)	11 - 12 (ft)	15 - 16 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
1,2,3-Trimethylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
1,2,4-Trimethylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	0.0021 J	ND (0.0056)	ND (0.005)
1,3,5-Trimethylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
2-Butanone (Methyl Ethyl Ketone)	-	ND (0.0577)	ND (0.0531)	ND (0.0539)	-	ND (0.0583)	ND (0.0562)	ND (0.0501)	ND (0.0507)	ND (0.049)	ND (0.0429)	ND (0.0543)	ND (0.0571)	ND (0.0557)	ND (0.0502)
2-Phenylbutane (sec-Butylbenzene)	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Acetone	-	0.021 J	ND (0.0531)	ND (0.0539)	-	0.032 J	0.03 J	ND (0.0501)	ND (0.0507)	ND (0.049)	0.012 J	0.037 J	0.02 J	ND (0.0557)	ND (0.0502)
Benzene	-	ND (0.0012)	ND (0.0011)	ND (0.0011)	-	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0009)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.001)
Bromodichloromethane	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Carbon disulfide	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Chlorobenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Chloroethane	-	ND (0.0115)	ND (0.0106)	ND (0.0108)	-	ND (0.0117)	ND (0.0112)	ND (0.01)	ND (0.0101)	ND (0.0098)	ND (0.0086)	ND (0.0109)	ND (0.0114)	ND (0.0111)	ND (0.01)
Chloroform (Trichloromethane)	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Chloromethane (Methyl Chloride)	-	ND (0.0115)	ND (0.0106)	ND (0.0108)	-	ND (0.0117)	ND (0.0112)	ND (0.01)	ND (0.0101)	ND (0.0098)	ND (0.0086)	ND (0.0109)	ND (0.0114)	ND (0.0111)	ND (0.01)
cis-1,2-Dichloroethene	-	0.0059	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Cymene (p-Isopropyltoluene)	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Dibromochloromethane	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Ethyl Ether	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Ethylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	0.0012 J	ND (0.0056)	ND (0.005)
Hexane	-	ND (0.0231)	ND (0.0212)	ND (0.0215)	-	ND (0.0233)	ND (0.0225)	ND (0.02)	ND (0.0203)	ND (0.0196)	ND (0.0172)	ND (0.0217)	ND (0.0228)	ND (0.0223)	ND (0.0201)
Isopropylbenzene (Cumene)	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
m,p-Xylenes	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	0.0012 J	0.001 J	ND (0.0049)	0.0024 J	0.0029 J	0.0044 J	0.0016 J	0.0017 J
Methyl acrylate	-	ND (0.0115)	ND (0.0106)	ND (0.0108)	-	ND (0.0117)	ND (0.0112)	ND (0.01)	ND (0.0101)	ND (0.0098)	ND (0.0086)	ND (0.0109)	ND (0.0114)	ND (0.0111)	ND (0.01)
Methylene chloride	-	ND (0.0058)	ND (0.0053)	0.0017 J	-	0.0013 J	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Naphthalene	-	ND (0.0115)	ND (0.0106)	ND (0.0108)	-	ND (0.0117)	ND (0.0112)	ND (0.01)	ND (0.0101)	ND (0.0098)	ND (0.0086)	ND (0.0109)	ND (0.0114)	ND (0.0111)	ND (0.01)
n-Butylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
N-Heptane	-	ND (0.0231)	ND (0.0212)	ND (0.0215)	-	ND (0.0233)	ND (0.0225)	ND (0.02)	ND (0.0203)	ND (0.0196)	ND (0.0172)	ND (0.0217)	ND (0.0228)	ND (0.0223)	ND (0.0201)
n-Propylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
o-Xylene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	0.0014 J	ND (0.0056)	ND (0.005)
tert-Butylbenzene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Tetrachloroethene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Tetrahydrofuran	-	ND (0.0577)	ND (0.0531)	ND (0.0539)	-	ND (0.0583)	ND (0.0562)	ND (0.0501)	ND (0.0507)	ND (0.049)	ND (0.0429)	ND (0.0543)	ND (0.0571)	ND (0.0557)	ND (0.0502)
Toluene	-	0.0062	ND (0.0053)	0.0103	-	ND (0.0058)	0.0014 J	0.0014 J	ND (0.0051)	0.0038 J	0.0015 J	0.0022 J	0.0032 J	ND (0.0056)	0.0012 J
trans-1,2-Dichloroethene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Trichloroethene	-	ND (0.0058)	ND (0.0053)	ND (0.0054)	-	ND (0.0058)	ND (0.0056)	ND (0.005)	ND (0.0051)	ND (0.0049)	ND (0.0043)	ND (0.0054)	ND (0.0057)	ND (0.0056)	ND (0.005)
Vinyl chloride	-	ND (0.0023)	ND (0.0021)	ND (0.0022)	-	ND (0.0023)	ND (0.0022)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0017)	ND (0.0022)	ND (0.0023)	ND (0.0022)	ND (0.002)
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	ND (0.0484)	-	-	-	ND (0.0467)	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	23.1	27.9	27.4	25.3	20.2	30.2	30	27.6	25.9	24.7	17.3	28.3	28.2	28.4	24.2

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-28	SB-28	SB-28	SB-28	SB-28	SB-28	SB-29	SB-29	SB-29	SB-29	SB-29	SB-29	SB-29	SB-29
Sample Name	SB-28 (18-19 ft)	SB-28 (22-23 ft)	SB-28 (26-27 ft)	SB-28 (30-31 ft)	SB-28 (34-35 ft)	SB-28 (39-40 ft)	SB-29 (0-3 ft)	SB-29 (6-7 ft)	SB-29 (11-12 ft)	SB-29 (15-16 ft)	SB-29 dup (15-16 ft)	SB-29 (18-19 ft)	SB-29 (22-23 ft)	SB-29 (26-27 ft)
Sample Date	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012
Lab Sample ID	12070280-003	12070280-004	12070280-005	12070280-006	12070280-007	12070280-008	12070280-009	12070280-010	12070280-011	12070280-012	12070280-013	12070280-014	12070280-015	12070280-016
Sample Depth (bgs)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	0 - 3 (ft)	6 - 7 (ft)	11 - 12 (ft)	15 - 16 (ft)	15 - 16 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0048) R	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
1,2,3-Trimethylbenzene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
1,2,4-Trimethylbenzene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
1,3,5-Trimethylbenzene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0483)	ND (0.0606)	ND (0.0539)	ND (0.0496)	ND (0.0561)	ND (0.0488)	ND (0.0423)	ND (0.0592)	ND (0.118)	ND (0.0615)	ND (0.0538)	ND (0.0472)	ND (0.074)	ND (0.0523)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Acetone	0.014 J	0.018 J	0.021 J	0.018 J	ND (0.0561)	0.024 J	0.023 J	0.044 J	0.032 J	0.022 J	ND (0.0538)	0.022 J	0.05 J	0.029 J
Benzene	ND (0.001) R	ND (0.0012)	ND (0.0011)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0008)	ND (0.0012)	ND (0.0024)	ND (0.0012)	ND (0.0011)	ND (0.0009)	ND (0.0015)	ND (0.001)
Bromodichloromethane	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Carbon disulfide	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Chlorobenzene	ND (0.0048) SR	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Chloroethane	ND (0.0097)	ND (0.0121)	ND (0.0108)	ND (0.0099)	ND (0.0112)	ND (0.0098)	ND (0.0085)	ND (0.0118)	ND (0.0236)	ND (0.0123)	ND (0.0108)	ND (0.0094)	ND (0.0148)	ND (0.0105)
Chloroform (Trichloromethane)	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Chloromethane (Methyl Chloride)	ND (0.0097)	ND (0.0121)	ND (0.0108)	ND (0.0099)	ND (0.0112)	ND (0.0098)	ND (0.0085)	ND (0.0118)	ND (0.0236)	ND (0.0123)	ND (0.0108)	ND (0.0094)	ND (0.0148)	ND (0.0105)
cis-1,2-Dichloroethene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	0.0248	0.0353	ND (0.0042)	ND (0.0059)	0.0491	0.0391	0.0233	0.0019 J	0.0021 J	0.0692
Cymene (p-Isopropyltoluene)	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Dibromochloromethane	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Ethyl Ether	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Ethylbenzene	ND (0.0048) R	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Hexane	ND (0.0193)	ND (0.0242)	ND (0.0216)	ND (0.0198)	ND (0.0224)	ND (0.0195)	ND (0.0169)	ND (0.0237)	ND (0.0471)	ND (0.0246)	ND (0.0215)	ND (0.0189)	ND (0.0296)	ND (0.0209)
Isopropylbenzene (Cumene)	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
m,p-Xylenes	0.0026 JR	0.0015 J	0.0011 J	ND (0.005)	0.0012 J	0.0014 J	ND (0.0042)	0.0013 J	ND (0.0118)	0.0013 J	0.0015 J	0.0012 J	0.0016 J	0.0012 J
Methyl acrylate	ND (0.0097)	ND (0.0121)	ND (0.0108)	ND (0.0099)	ND (0.0112)	ND (0.0098)	ND (0.0085)	ND (0.0118)	ND (0.0236)	ND (0.0123)	ND (0.0108)	ND (0.0094)	ND (0.0148)	ND (0.0105)
Methylene chloride	ND (0.0048)	ND (0.0061)	ND (0.0054)	0.0015 J	0.0035 J	0.001 J	ND (0.0042)	ND (0.0059)	0.0034 J	ND (0.0062)	ND (0.0054)	0.0018 J	ND (0.0074)	0.0013 J
Naphthalene	ND (0.0097)	ND (0.0121)	ND (0.0108)	ND (0.0099)	ND (0.0112)	ND (0.0098)	ND (0.0085)	ND (0.0118)	ND (0.0236)	ND (0.0123)	ND (0.0108)	ND (0.0094)	ND (0.0148)	ND (0.0105)
n-Butylbenzene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
N-Heptane	ND (0.0193)	ND (0.0242)	ND (0.0216)	ND (0.0198)	ND (0.0224)	ND (0.0195)	ND (0.0169)	ND (0.0237)	ND (0.0471)	ND (0.0246)	ND (0.0215)	ND (0.0189)	ND (0.0296)	ND (0.0209)
n-Propylbenzene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
o-Xylene	ND (0.0048) R	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
tert-Butylbenzene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Tetrachloroethene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Tetrahydrofuran	ND (0.0483)	ND (0.0606)	ND (0.0539)	ND (0.0496)	ND (0.0561)	ND (0.0488)	ND (0.0423)	ND (0.0592)	ND (0.118)	ND (0.0615)	ND (0.0538)	ND (0.0472)	ND (0.074)	ND (0.0523)
Toluene	0.0022 JSR	0.0018 J	0.0014 J	ND (0.005)	0.0017 J	0.0021 J	0.0009 J	0.0013 J	0.0024 J	0.0018 J	0.0017 J	0.0015 J	0.0023 J	0.0028 J
trans-1,2-Dichloroethene	ND (0.0048)	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	0.0027 J	0.0022 J	0.0011 J	ND (0.0047)	ND (0.0074)	ND (0.0052)
Trichloroethene	ND (0.0048) R	ND (0.0061)	ND (0.0054)	ND (0.005)	ND (0.0056)	ND (0.0049)	ND (0.0042)	ND (0.0059)	ND (0.0118)	ND (0.0062)	ND (0.0054)	ND (0.0047)	ND (0.0074)	ND (0.0052)
Vinyl chloride	ND (0.0019)	ND (0.0024)	ND (0.0022)	ND (0.002)	ND (0.0022)	0.0013 J	ND (0.0017)	ND (0.0024)	0.0107	0.0056	0.0044	0.0078	0.0164	0.0652
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	22	29.6	25.2	23.3	15.3	18.4	12.1	30	29.6	28.5	26.4	22.9	38.4	22.7

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-29	SB-29	SB-29	SB-30	SB-30	SB-30	SB-30	SB-30	SB-30	SB-30	SB-30	SB-30	SB-30	SB-33	SB-33
Sample Name	SB-29 (30-31 ft)	SB-29 (34-35 ft)	SB-29 (39-40 ft)	SB-30 (0-3 ft)	SB-30 (6-7 ft)	SB-30 (11-12 ft)	SB-30 (15-16 ft)	SB-30 (18-19 ft)	SB-30 (22-23 ft)	SB-30 (26-27 ft)	SB-30 (30-31 ft)	SB-30 (34-35 ft)	SB-30 (39-40 ft)	SB-33 (0-3 ft)	SB-33 (6-7 ft)
Sample Date	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	07/09/2012	08/21/2012	08/21/2012
Lab Sample ID	12070280-017	12070280-018	12070280-019	12070280-020	12070280-021	12070280-022	12070280-023	12070280-024	12070280-025	12070280-026	12070280-027	12070280-028	12070280-029	SB-33 (0-3 ft)	SB-33 (6-7 ft)
Sample Depth (bgs)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	0 - 3 (ft)	6 - 7 (ft)	11 - 12 (ft)	15 - 16 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	30 - 31 (ft)	34 - 35 (ft)	39 - 40 (ft)	0 - 3 (ft)	6 - 7 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (0.0054)	0.0009 J	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	0.0036 J	ND (0.0045)	0.0085	0.0059	0.0096	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
1,2,3-Trimethylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
1,2,4-Trimethylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
1,3,5-Trimethylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0542)	ND (0.0423)	ND (0.045)	ND (1.02)	ND (0.0606)	ND (0.0547)	ND (0.0532)	ND (0.0446)	ND (0.0737)	ND (0.0543)	ND (0.0504)	ND (0.0451)	ND (0.0491)	ND (0.0423)	ND (0.0561)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Acetone	0.02 J	0.013 J	0.014 J	0.41 J	0.023 J	0.012 J	0.02 J	0.017 J	0.062 J	0.026 J	0.021 J	0.024 J	0.017 J	ND (0.0423)	0.042 J
Benzene	ND (0.0011)	ND (0.0008)	ND (0.0009)	ND (0.0204)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.0009)	ND (0.0015)	ND (0.0011)	ND (0.001)	ND (0.0009)	ND (0.001)	ND (0.0008)	ND (0.0011)
Bromodichloromethane	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Carbon disulfide	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Chlorobenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Chloroethane	ND (0.0108)	ND (0.0085)	ND (0.009)	ND (0.204)	ND (0.0121)	ND (0.0109)	ND (0.0106)	ND (0.0089)	ND (0.0147)	ND (0.0109)	ND (0.0101)	ND (0.009)	ND (0.0098)	ND (0.0085)	ND (0.0112)
Chloroform (Trichloromethane)	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Chloromethane (Methyl Chloride)	ND (0.0108)	ND (0.0085)	ND (0.009)	ND (0.204)	ND (0.0121)	ND (0.0109)	ND (0.0106)	ND (0.0089)	ND (0.0147)	ND (0.0109)	ND (0.0101)	ND (0.009)	ND (0.0098)	ND (0.0085)	ND (0.0112)
cis-1,2-Dichloroethene	0.0652	0.144	0.0029 J	ND (0.102)	0.0073	0.0403	0.891	0.234	0.889	5.24	3.24	0.266	0.0095	ND (0.0042)	ND (0.0056)
Cymene (p-Isopropyltoluene)	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Dibromochloromethane	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Ethyl Ether	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Ethylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Hexane	ND (0.0217)	ND (0.0169)	ND (0.018)	ND (0.409)	ND (0.0242)	ND (0.0219)	ND (0.0213)	ND (0.0178)	ND (0.0295)	ND (0.0217)	ND (0.0202)	ND (0.018)	ND (0.0196)	ND (0.0169)	ND (0.0224)
Isopropylbenzene (Cumene)	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
m,p-Xylenes	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	0.0015 J	0.002 J	ND (0.0045)	0.0021 J	0.0021 J	0.0019 J	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Methyl acrylate	ND (0.0108)	ND (0.0085)	ND (0.009)	ND (0.204)	ND (0.0121)	ND (0.0109)	ND (0.0106)	ND (0.0089)	ND (0.0147)	ND (0.0109)	ND (0.0101)	ND (0.009)	ND (0.0098)	ND (0.0085)	ND (0.0112)
Methylene chloride	0.0012 J	0.0013 J	ND (0.0045)	0.098 J	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	0.0015 J	ND (0.005)	0.002 J	0.0015 J	ND (0.0042)	ND (0.0056)
Naphthalene	ND (0.0108)	ND (0.0085)	ND (0.009)	ND (0.204)	ND (0.0121)	ND (0.0109)	ND (0.0106)	ND (0.0089)	ND (0.0147)	ND (0.0109)	ND (0.0101)	ND (0.009)	ND (0.0098)	ND (0.0085)	ND (0.0112)
n-Butylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
N-Heptane	ND (0.0217)	ND (0.0169)	ND (0.018)	ND (0.409)	ND (0.0242)	ND (0.0219)	ND (0.0213)	ND (0.0178)	ND (0.0295)	ND (0.0217)	ND (0.0202)	ND (0.018)	ND (0.0196)	ND (0.0169)	ND (0.0224)
n-Propylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
o-Xylene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	0.0015 J	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
tert-Butylbenzene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	ND (0.0053)	ND (0.0045)	ND (0.0074)	ND (0.0054)	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Tetrachloroethene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	0.149	0.0065	0.213	0.0203	0.0013 J	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Tetrahydrofuran	ND (0.0542)	ND (0.0423)	ND (0.045)	ND (1.02)	ND (0.0606)	ND (0.0547)	ND (0.0532)	ND (0.0446)	ND (0.0737)	ND (0.0543)	ND (0.0504)	ND (0.0451)	ND (0.0491)	ND (0.0423)	ND (0.0561)
Toluene	ND (0.0054)	0.0009 J	0.0011 J	ND (0.102)	0.0014 J	0.0015 J	0.0022 J	0.0009 J	0.0035 J	0.0024 J	0.0018 J	0.0013 J	ND (0.0049)	ND (0.0042)	ND (0.0056)
trans-1,2-Dichloroethene	0.0026 J	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	0.002 J	0.0085	0.0032 J	0.0181	0.0114	ND (0.005)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Trichloroethene	ND (0.0054)	ND (0.0042)	ND (0.0045)	ND (0.102)	ND (0.0061)	ND (0.0055)	0.147	0.0081	0.278	0.0789	0.0019 J	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0056)
Vinyl chloride	0.018	0.0089	0.0019	ND (0.0409)	0.0024 J	0.0107	0.0664	0.0206	0.136	0.122	0.144	0.0066	ND (0.002)	ND (0.0017)	ND (0.0022)
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	26.1	13.3	16.4	12.9	29.4	28.2	26.6	21.3	30.6	21.2	23.1	14.6	16.3	14.9	25.4

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-33	SB-33	SB-33	SB-33	SB-33	SB-33	SB-33	SB-34	SB-34	SB-34	SB-34	SB-34	SB-34	SB-34
Sample Name	SB-33 (10-11 ft)	SB-33 (14-15 ft)	SB-33 (18-19 ft)	SB-33 (22-23 ft)	SB-33 dup (22-23 ft)	SB-33 (26-27 ft)	SB-33 (31-32 ft)	SB-34 (0-3 ft)	SB-34 (6-7 ft)	SB-34 (10-11 ft)	SB-34 (14-15 ft)	SB-34 (18-19 ft)	SB-34 (22-23 ft)	SB-34 (26-27 ft)
Sample Date	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012
Lab Sample ID	SB-33 (10-11 ft)	SB-33 (14-15 ft)	SB-33 (18-19 ft)	SB-33 (22-23 ft)	SB-33 dup (22-23 ft)	SB-33 (26-27 ft)	SB-33 (31-32 ft)	SB-34 (0-3 ft)	SB-34 (6-7 ft)	SB-34 (10-11 ft)	SB-34 (14-15 ft)	SB-34 (18-19 ft)	SB-34 (22-23 ft)	SB-34 (26-27 ft)
Sample Depth (bgs)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	22 - 23 (ft)	26 - 27 (ft)	31 - 32 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
1,2,3-Trimethylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
1,2,4-Trimethylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
1,3,5-Trimethylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0574)	ND (0.0528)	ND (0.0461)	ND (0.0519)	ND (0.0576)	ND (0.0609)	ND (0.0608)	ND (0.0417)	ND (0.0553)	ND (0.0559)	ND (0.055)	ND (0.0519)	ND (0.0486)	ND (0.0686)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Acetone	ND (0.0574)	ND (0.0528)	ND (0.0461)	ND (0.0519)	ND (0.0576)	ND (0.0609)	0.023 J	ND (0.0417)	ND (0.0553)	ND (0.0559)	ND (0.055)	ND (0.0519)	ND (0.0486)	ND (0.0686)
Benzene	ND (0.0011)	ND (0.0011)	ND (0.0009)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.0012)	ND (0.0008)	ND (0.0011)	ND (0.0011)	ND (0.0011)	ND (0.001)	ND (0.001)	ND (0.0014)
Bromodichloromethane	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Carbon disulfide	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Chlorobenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Chloroethane	ND (0.0115)	ND (0.0106)	ND (0.0092)	ND (0.0104)	ND (0.0115)	ND (0.0122)	ND (0.0122)	ND (0.0083)	ND (0.0111)	ND (0.0112)	ND (0.011)	ND (0.0104)	ND (0.0097)	ND (0.0137)
Chloroform (Trichloromethane)	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Chloromethane (Methyl Chloride)	ND (0.0115)	ND (0.0106)	ND (0.0092)	ND (0.0104)	ND (0.0115)	ND (0.0122)	ND (0.0122)	ND (0.0083)	ND (0.0111)	ND (0.0112)	ND (0.011)	ND (0.0104)	ND (0.0097)	ND (0.0137)
cis-1,2-Dichloroethene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Cymene (p-Isopropyltoluene)	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Dibromochloromethane	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Ethyl Ether	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Ethylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Hexane	ND (0.023)	ND (0.0211)	ND (0.0184)	ND (0.0208)	ND (0.0231)	ND (0.0244)	ND (0.0243)	ND (0.0167)	ND (0.0221)	ND (0.0223)	ND (0.022)	ND (0.0207)	ND (0.0195)	ND (0.0274)
Isopropylbenzene (Cumene)	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
m,p-Xylenes	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Methyl acrylate	ND (0.0115)	ND (0.0106)	ND (0.0092)	ND (0.0104)	ND (0.0115)	ND (0.0122)	ND (0.0122)	ND (0.0083)	ND (0.0111)	ND (0.0112)	ND (0.011)	ND (0.0104)	ND (0.0097)	ND (0.0137)
Methylene chloride	ND (0.0057)	ND (0.0053)	ND (0.0046)	0.0011 J	ND (0.0058)	ND (0.0061)	0.0013 J	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Naphthalene	ND (0.0115)	ND (0.0106)	ND (0.0092)	ND (0.0104)	ND (0.0115)	ND (0.0122)	ND (0.0122)	ND (0.0083)	ND (0.0111)	ND (0.0112)	ND (0.011)	ND (0.0104)	ND (0.0097)	ND (0.0137)
n-Butylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
N-Heptane	ND (0.023)	ND (0.0211)	ND (0.0184)	ND (0.0208)	ND (0.0231)	ND (0.0244)	ND (0.0243)	ND (0.0167)	ND (0.0221)	ND (0.0223)	ND (0.022)	ND (0.0207)	ND (0.0195)	ND (0.0274)
n-Propylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
o-Xylene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
tert-Butylbenzene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Tetrachloroethene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	0.0033 J
Tetrahydrofuran	ND (0.0574)	ND (0.0528)	ND (0.0461)	ND (0.0519)	ND (0.0576)	ND (0.0609)	ND (0.0608)	ND (0.0417)	ND (0.0553)	ND (0.0559)	ND (0.055)	ND (0.0519)	ND (0.0486)	ND (0.0686)
Toluene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
trans-1,2-Dichloroethene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Trichloroethene	ND (0.0057)	ND (0.0053)	ND (0.0046)	ND (0.0052)	ND (0.0058)	ND (0.0061)	ND (0.0061)	ND (0.0042)	ND (0.0055)	ND (0.0056)	ND (0.0055)	ND (0.0052)	ND (0.0049)	ND (0.0069)
Vinyl chloride	ND (0.0023)	ND (0.0021)	ND (0.0018)	ND (0.0021)	ND (0.0023)	ND (0.0024)	0.0012 J	ND (0.0017)	ND (0.0022)	ND (0.0022)	ND (0.0022)	ND (0.0021)	ND (0.0019)	ND (0.0027)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	28.7	25.6	18.8	27	26.2	29.7	28.6	14.7	26.4	27.4	24.2	23.8	22.2	31.1

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-34	SB-34	SB-35	SB-35	SB-35	SB-35	SB-35	SB-35	SB-35	SB-35	SB-35	SB-36	SB-36	SB-36
Sample Name	SB-34 dup (26-27 ft)	SB-34 (31-32 ft)	SB-35 (0-3 ft)	SB-35 (6-7 ft)	SB-35 (10-11 ft)	SB-35 (14-15 ft)	SB-35 (18-19 ft)	SB-35 (22-23 ft)	SB-35 (26-27 ft)	SB-35 dup (26-27 ft)	SB-35 (30-31 ft)	SB-36 (0-3 ft)	SB-36 (6-7 ft)	SB-36 (10-11 ft)
Sample Date	08/21/2012	08/21/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012
Lab Sample ID	SB-34 dup (26-27 ft)	SB-34 (31-32 ft)	SB-35 (0-3 ft)	SB-35 (6-7 ft)	SB-35 (10-11 ft)	SB-35 (14-15 ft)	SB-35 (18-19 ft)	SB-35 (22-23 ft)	SB-35 (26-27 ft)	SB-35 dup (26-27 ft)	SB-35 (30-31 ft)	SB-36 (0-3 ft)	SB-36 (6-7 ft)	SB-36 (10-11 ft)
Sample Depth (bgs)	26 - 27 (ft)	31 - 32 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	26 - 27 (ft)	30 - 31 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
1,2,3-Trimethylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
1,2,4-Trimethylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
1,3,5-Trimethylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0649)	ND (0.0541)	ND (0.0553)	ND (0.0578)	ND (0.0573)	ND (0.0533)	ND (0.0499)	ND (0.0617)	ND (0.0536)	ND (0.063)	ND (0.0546)	ND (0.0572)	ND (0.0605)	ND (0.0544)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Acetone	ND (0.0649)	0.016 J	ND (0.0553)	ND (0.0578)	ND (0.0573)	ND (0.0533)	ND (0.0499)	ND (0.0617)	0.019 J	ND (0.063)	0.011 J	0.023 J	ND (0.0605)	ND (0.0544)
Benzene	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.001)	ND (0.0012)	ND (0.0011)	ND (0.0013)	ND (0.0011)	ND (0.0011)	ND (0.0012)	ND (0.0011)
Bromodichloromethane	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Carbon disulfide	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Chlorobenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054) S
Chloroethane	ND (0.013)	ND (0.0108)	ND (0.0111)	ND (0.0116)	ND (0.0115)	ND (0.0107)	ND (0.01)	ND (0.0123)	ND (0.0107)	ND (0.0126)	ND (0.0109)	ND (0.0114)	ND (0.0121)	ND (0.0109)
Chloroform (Trichloromethane)	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Chloromethane (Methyl Chloride)	ND (0.013)	ND (0.0108)	ND (0.0111)	ND (0.0116)	ND (0.0115)	ND (0.0107)	ND (0.01)	ND (0.0123)	ND (0.0107)	ND (0.0126)	ND (0.0109)	0.0062 J	ND (0.0121)	ND (0.0109)
cis-1,2-Dichloroethene	ND (0.0065)	ND (0.0054)	0.0058	0.0435	0.0203	0.0047 J	0.0066	0.0018 J	0.0054	0.0042 J	0.151	ND (0.0057)	0.0229	0.108
Cymene (p-Isopropyltoluene)	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Dibromochloromethane	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Ethyl Ether	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Ethylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Hexane	ND (0.0259)	ND (0.0216)	ND (0.0221)	ND (0.0231)	ND (0.0229)	ND (0.0213)	ND (0.02)	ND (0.0247)	ND (0.0214)	ND (0.0252)	ND (0.0218)	ND (0.0229)	ND (0.0242)	ND (0.0218)
Isopropylbenzene (Cumene)	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
m,p-Xylenes	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Methyl acrylate	ND (0.013)	ND (0.0108)	ND (0.0111)	ND (0.0116)	ND (0.0115)	ND (0.0107)	ND (0.01)	ND (0.0123)	ND (0.0107)	ND (0.0126)	ND (0.0109)	ND (0.0114)	ND (0.0121)	ND (0.0109)
Methylene chloride	ND (0.0065)	0.0017 J	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	0.0012 J	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Naphthalene	ND (0.013)	ND (0.0108)	ND (0.0111)	ND (0.0116)	ND (0.0115)	ND (0.0107)	ND (0.01)	ND (0.0123)	ND (0.0107)	ND (0.0126)	ND (0.0109)	ND (0.0114)	ND (0.0121)	ND (0.0109)
n-Butylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
N-Heptane	ND (0.0259)	ND (0.0216)	ND (0.0221)	ND (0.0231)	ND (0.0229)	ND (0.0213)	ND (0.02)	ND (0.0247)	ND (0.0214)	ND (0.0252)	ND (0.0218)	ND (0.0229)	ND (0.0242)	ND (0.0218)
n-Propylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
o-Xylene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
tert-Butylbenzene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Tetrachloroethene	ND (0.0065)	ND (0.0054)	0.0916	0.0012 J	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Tetrahydrofuran	ND (0.0649)	ND (0.0541)	ND (0.0553)	ND (0.0578)	ND (0.0573)	ND (0.0533)	ND (0.0499)	ND (0.0617)	ND (0.0536)	ND (0.063)	ND (0.0546)	ND (0.0572)	ND (0.0605)	ND (0.0544)
Toluene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
trans-1,2-Dichloroethene	ND (0.0065)	ND (0.0054)	ND (0.0055)	ND (0.0058)	0.0013 J	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	0.0013 J	ND (0.0057)	0.0018 J	0.0049 J
Trichloroethene	ND (0.0065)	ND (0.0054)	0.0173	0.0034 J	ND (0.0057)	ND (0.0053)	ND (0.005)	ND (0.0062)	ND (0.0054)	ND (0.0063)	ND (0.0055)	ND (0.0057)	ND (0.0061)	ND (0.0054)
Vinyl chloride	ND (0.0026)	ND (0.0022)	ND (0.0022)	0.0014 J	0.0013 J	0.0011 J	0.0019 J	ND (0.0025)	ND (0.0021)	ND (0.0025)	0.0067	ND (0.0023)	ND (0.0024)	ND (0.0022)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	31.8	21.4	26.1	30.2	27.5	26.2	21.8	32.4	25.5	23.5	29.3	26.7	29.7	27.6

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-36	SB-36	SB-36	SB-36	SB-36	SB-36	SB-37	SB-37	SB-37	SB-37	SB-37	SB-37	SB-37	SB-37
Sample Name	SB-36 (14-15 ft)	SB-36 dup (14-15 ft)	SB-36 (18-19 ft)	SB-36 (22-23 ft)	SB-36 (26-27 ft)	SB-36 (32-33 ft)	SB-37 (0-3 ft)	SB-37 (6-7 ft)	SB-37 (10-11ft)	SB-37 (14-15ft)	SB-37 (18-19ft)	SB-37 (22-23ft)	SB-37 dup (22-23ft)	SB-37 (26-27ft)
Sample Date	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012	08/15/2012
Lab Sample ID	SB-36 (14-15 ft)	SB-36 dup (14-15 ft)	SB-36 (18-19 ft)	SB-36 (22-23 ft)	SB-36 (26-27 ft)	SB-36 (32-33 ft)	SB-37 (0-3 ft)	SB-37 (6-7 ft)	SB-37 (10-11ft)	SB-37 (14-15ft)	SB-37 (18-19ft)	SB-37 (22-23ft)	SB-37 dup (22-23ft)	SB-37 (26-27ft)
Sample Depth (bgs)	14 - 15 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	32 - 33 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	22 - 23 (ft)	26 - 27 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	0.0023 J	0.0013 J	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
1,2,3-Trimethylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
1,2,4-Trimethylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
1,3,5-Trimethylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0534)	ND (0.0511)	ND (0.0472)	ND (0.0591)	ND (0.0506)	ND (0.0525)	ND (0.0441)	ND (0.0573)	ND (0.0608)	ND (0.0588)	ND (0.0455)	ND (0.0543)	ND (0.0584)	ND (0.0621)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Acetone	ND (0.0534)	ND (0.0511)	ND (0.0472)	ND (0.0591)	0.014 J	0.011 J	ND (0.0441)	ND (0.0573)	ND (0.0608)	ND (0.0588)	ND (0.0455)	ND (0.0543)	ND (0.0584)	0.014 J
Benzene	ND (0.0011)	ND (0.001)	ND (0.0009)	ND (0.0012)	ND (0.001)	ND (0.0011)	ND (0.0009)	ND (0.0011)	ND (0.0012)	ND (0.0012)	ND (0.0009)	ND (0.0011)	ND (0.0012)	ND (0.0012)
Bromodichloromethane	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Carbon disulfide	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Chlorobenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Chloroethane	ND (0.0107)	ND (0.0102)	ND (0.0094)	ND (0.0118)	ND (0.0101)	ND (0.0105)	ND (0.0088)	ND (0.0115)	ND (0.0122)	ND (0.0118)	ND (0.0091)	ND (0.0109)	ND (0.0117)	ND (0.0124)
Chloroform (Trichloromethane)	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Chloromethane (Methyl Chloride)	ND (0.0107)	ND (0.0102)	ND (0.0094)	ND (0.0118)	ND (0.0101)	ND (0.0105)	ND (0.0088)	ND (0.0115)	ND (0.0122)	ND (0.0118)	ND (0.0091)	ND (0.0109)	ND (0.0117)	ND (0.0124)
cis-1,2-Dichloroethene	0.0588	0.0483	0.0457	0.0701	0.826	0.821	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Cymene (p-Isopropyltoluene)	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Dibromochloromethane	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Ethyl Ether	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Ethylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Hexane	ND (0.0214)	ND (0.0204)	ND (0.0189)	ND (0.0236)	ND (0.0203)	ND (0.021)	ND (0.0176)	ND (0.0229)	ND (0.0243)	ND (0.0235)	ND (0.0182)	ND (0.0217)	ND (0.0234)	ND (0.0248)
Isopropylbenzene (Cumene)	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
m,p-Xylenes	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Methyl acrylate	ND (0.0107)	ND (0.0102)	ND (0.0094)	ND (0.0118)	ND (0.0101)	ND (0.0105)	ND (0.0088)	ND (0.0115)	ND (0.0122)	ND (0.0118)	ND (0.0091)	ND (0.0109)	ND (0.0117)	ND (0.0124)
Methylene chloride	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	0.0011 J	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Naphthalene	ND (0.0107)	ND (0.0102)	ND (0.0094)	ND (0.0118)	ND (0.0101)	ND (0.0105)	ND (0.0088)	ND (0.0115)	ND (0.0122)	ND (0.0118)	ND (0.0091)	ND (0.0109)	ND (0.0117)	ND (0.0124)
n-Butylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
N-Heptane	ND (0.0214)	ND (0.0204)	ND (0.0189)	ND (0.0236)	ND (0.0203)	ND (0.021)	ND (0.0176)	ND (0.0229)	ND (0.0243)	ND (0.0235)	ND (0.0182)	ND (0.0217)	ND (0.0234)	ND (0.0248)
n-Propylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
o-Xylene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
tert-Butylbenzene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Tetrachloroethene	ND (0.0053)	ND (0.0051)	ND (0.0047)	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Tetrahydrofuran	ND (0.0534)	ND (0.0511)	ND (0.0472)	ND (0.0591)	ND (0.0506)	ND (0.0525)	ND (0.0441)	ND (0.0573)	ND (0.0608)	ND (0.0588)	ND (0.0455)	ND (0.0543)	ND (0.0584)	ND (0.0621)
Toluene	ND (0.0053)	ND (0.0051)	0.0012 J	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
trans-1,2-Dichloroethene	0.0028 J	0.0022 J	0.001 J	0.0013 J	0.0097	0.0055	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Trichloroethene	ND (0.0053)	ND (0.0051)	0.0016 J	ND (0.0059)	ND (0.0051)	ND (0.0053)	ND (0.0044)	ND (0.0057)	ND (0.0061)	ND (0.0059)	ND (0.0045)	ND (0.0054)	ND (0.0058)	ND (0.0062)
Vinyl chloride	ND (0.0021)	ND (0.002)	0.0048	ND (0.0024)	0.0049	0.003	ND (0.0018)	ND (0.0023)	ND (0.0024)	ND (0.0024)	ND (0.0018)	ND (0.0022)	ND (0.0023)	ND (0.0025)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	26.4	23.7	20.6	28	23.2	25.7	11.9	28.7	31	30.5	20.7	22.8	27.2	30

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-37	SB-38	SB-38	SB-38	SB-38	SB-38	SB-38	SB-38	SB-38	SB-39	SB-39	SB-39	SB-39	SB-39	SB-39
Sample Name	SB-37 (32-33ft)	SB-38 (0-3 ft)	SB-38 (6-7 ft)	SB-38 (10-11 ft)	SB-38 (14-15 ft)	SB-38 (18-19 ft)	SB-38 (22-23 ft)	SB-38 (26-27 ft)	SB-38 (32-33 ft)	SB-39 (3-4 ft)	SB-39 (7-8 ft)	SB-39 (14-15 ft)	SB-39 (18-19 ft)	SB-39 (23-24 ft)	SB-39 (29-30 ft)
Sample Date	08/15/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	08/21/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Lab Sample ID	SB-37 (32-33ft)	SB-38 (0-3 ft)	SB-38 (6-7 ft)	SB-38 (10-11 ft)	SB-38 (14-15 ft)	SB-38 (18-19 ft)	SB-38 (22-23 ft)	SB-38 (26-27 ft)	SB-38 (32-33 ft)	SB-39 (3-4 ft)	SB-39 (7-8 ft)	SB-39 (14-15 ft)	SB-39 (18-19 ft)	SB-39 (23-24 ft)	SB-39 (29-30 ft)
Sample Depth (bgs)	32 - 33 (ft)	0 - 3 (ft)	6 - 7 (ft)	10 - 11 (ft)	14 - 15 (ft)	18 - 19 (ft)	22 - 23 (ft)	26 - 27 (ft)	32 - 33 (ft)	3 - 4 (ft)	7 - 8 (ft)	14 - 15 (ft)	18 - 19 (ft)	23 - 24 (ft)	29 - 30 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	0.0011 J	0.0019 J	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
1,2,3-Trimethylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	0.059 J	ND (0.161)	ND (0.157)	ND (0.129)
1,2,4-Trimethylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	0.048 J	ND (0.161)	ND (0.157)	ND (0.129)
1,3,5-Trimethylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	0.1 J	ND (0.15)	ND (0.16)	ND (0.161)	0.056 J	ND (0.129)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0546)	ND (0.0559)	ND (0.0488)	ND (0.0524)	ND (0.0541)	ND (0.0484)	ND (0.052)	ND (0.0554)	ND (0.0496)	ND (1.25)	ND (1.5)	ND (1.6)	ND (1.61)	ND (1.57)	0.28 J
2-Phenylbutane (sec-Butylbenzene)	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	0.036 J	0.074 J	0.15 J	ND (0.161)	0.045 J	ND (0.129)
Acetone	0.012 J	ND (0.0559)	0.015 J	ND (0.0524)	ND (0.0541)	ND (0.0484)	ND (0.052)	0.019 J	ND (0.0496)	0.3 J	0.66 J	0.67 J	0.71 J	0.69 J	0.64 J
Benzene	ND (0.0011)	ND (0.0011)	ND (0.001)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.001)	0.0021	ND (0.001)	ND (0.0249)	ND (0.03)	ND (0.0319)	ND (0.0323)	ND (0.0314)	ND (0.0257)
Bromodichloromethane	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Carbon disulfide	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Chlorobenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Chloroethane	ND (0.0109)	ND (0.0112)	ND (0.0098)	ND (0.0105)	ND (0.0108)	ND (0.0097)	ND (0.0104)	ND (0.0111)	ND (0.0099)	ND (0.249)	ND (0.3)	ND (0.319)	ND (0.323)	ND (0.314)	ND (0.257)
Chloroform (Trichloromethane)	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Chloromethane (Methyl Chloride)	ND (0.0109)	ND (0.0112)	ND (0.0098)	ND (0.0105)	ND (0.0108)	ND (0.0097)	ND (0.0104)	ND (0.0111)	ND (0.0099)	ND (0.249)	ND (0.3)	ND (0.319)	ND (0.323)	ND (0.314)	ND (0.257)
cis-1,2-Dichloroethene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	0.002 J	0.0456	0.131	0.0684	0.0257	ND (0.125)	1.34	0.487	2.31	3.72	0.35
Cymene (p-Isopropyltoluene)	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Dibromochloromethane	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	1.18	ND (0.129)
Ethyl Ether	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Ethylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Hexane	ND (0.0218)	ND (0.0224)	ND (0.0195)	ND (0.021)	ND (0.0216)	ND (0.0193)	ND (0.0208)	ND (0.0221)	ND (0.0198)	ND (0.499)	ND (0.599)	ND (0.639)	ND (0.646)	ND (0.628)	ND (0.514)
Isopropylbenzene (Cumene)	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	0.059 J	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
m,p-Xylenes	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	0.034 J	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Methyl acrylate	ND (0.0109)	ND (0.0112)	ND (0.0098)	ND (0.0105)	ND (0.0108)	ND (0.0097)	ND (0.0104)	ND (0.0111)	ND (0.0099)	ND (0.249)	ND (0.3)	ND (0.319)	ND (0.323)	ND (0.314)	ND (0.257)
Methylene chloride	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	0.0012 J	ND (0.0048)	0.0013 J	ND (0.0055)	ND (0.005)	0.025 J	0.031 J	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Naphthalene	ND (0.0109)	ND (0.0112)	ND (0.0098)	ND (0.0105)	ND (0.0108)	ND (0.0097)	ND (0.0104)	ND (0.0111)	ND (0.0099)	ND (0.249)	ND (0.3)	ND (0.319)	ND (0.323)	ND (0.314)	ND (0.257)
n-Butylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	0.063 J	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
N-Heptane	ND (0.0218)	ND (0.0224)	ND (0.0195)	ND (0.021)	ND (0.0216)	ND (0.0193)	ND (0.0208)	ND (0.0221)	ND (0.0198)	ND (0.499)	ND (0.599)	ND (0.639)	ND (0.646)	ND (0.628)	ND (0.514)
n-Propylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	0.03 J	0.04 J	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
o-Xylene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
tert-Butylbenzene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Tetrachloroethene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	0.33	1.61	0.363
Tetrahydrofuran	ND (0.0546)	ND (0.0559)	ND (0.0488)	ND (0.0524)	ND (0.0541)	ND (0.0484)	ND (0.052)	ND (0.0554)	ND (0.0496)	ND (1.25)	ND (1.5)	ND (1.6)	ND (1.61)	ND (1.57)	ND (1.29)
Toluene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	ND (0.0048)	ND (0.0052)	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
trans-1,2-Dichloroethene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	0.0012 J	0.0027 J	ND (0.0055)	ND (0.005)	ND (0.125)	ND (0.15)	ND (0.16)	ND (0.161)	ND (0.157)	ND (0.129)
Trichloroethene	ND (0.0055)	ND (0.0056)	ND (0.0049)	ND (0.0052)	ND (0.0054)	0.0069	0.0208	ND (0.0055)	0.0032 J	ND (0.125)	ND (0.15)	ND (0.16)	0.13 J	0.606	0.038 J
Vinyl chloride	ND (0.0022)	ND (0.0022)	ND (0.002)	ND (0.0021)	ND (0.0022)	0.003	0.0044	0.0021 J	0.0015 J	ND (0.0499)	0.314	0.103	0.166	0.158	0.222
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	24.8	26.4 R	20.6	26.5	26.7	23.9	22.9	26.7	22	18.1	30.8	31	29.6	30.8	23.4

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-39	SB-40	SB-40	SB-40	SB-40	SB-40	SB-40	SB-40	SB-41	SB-41	SB-41	SB-41	SB-41	SB-41
Sample Name	SB-39 (31-32 ft)	SB-40 (1-2 ft)	SB-40 (8-9 ft)	SB-40 (14-15 ft)	SB-40 (18-19 ft)	SB-40 (29-30 ft)	SB-40 dup (29-30 ft)	SB-40 (36-37 ft)	SB-41 (5-6 ft)	SB-41 (14-15 ft)	SB-41 (15-16 ft)	SB-41 (22-23 ft)	SB-41 (25-26 ft)	SB-41 dup (25-26 ft)
Sample Date	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Lab Sample ID	SB-39 (31-32 ft)	SB-40 (1-2 ft)	SB-40 (8-9 ft)	SB-40 (14-15 ft)	SB-40 (18-19 ft)	SB-40 (29-30 ft)	SB-40 dup (29-30 ft)	SB-40 (36-37 ft)	SB-41 (5-6 ft)	SB-41 (14-15 ft)	SB-41 (15-16 ft)	SB-41 (22-23 ft)	SB-41 (25-26 ft)	SB-41 dup (25-26 ft)
Sample Depth (bgs)	31 - 32 (ft)	1 - 2 (ft)	8 - 9 (ft)	14 - 15 (ft)	18 - 19 (ft)	29 - 30 (ft)	29 - 30 (ft)	36 - 37 (ft)	5 - 6 (ft)	14 - 15 (ft)	15 - 16 (ft)	22 - 23 (ft)	25 - 26 (ft)	25 - 26 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
1,2,3-Trimethylbenzene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
1,2,4-Trimethylbenzene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
1,3,5-Trimethylbenzene	ND (0.112)	0.0035 J	ND (0.006)	ND (0.0063)	ND (0.0048)	0.0016 J	ND (0.0062)	ND (0.526)	0.18	ND (0.507)	ND (1.25)	0.13 J	ND (0.495)	ND (0.522)
2-Butanone (Methyl Ethyl Ketone)	ND (1.12)	0.018 J	ND (0.0596)	ND (0.0633)	ND (0.048)	ND (0.0624)	ND (0.0615)	ND (5.26)	ND (5.65)	ND (5.07)	ND (12.5)	ND (5.95)	1.1 J	ND (5.22)
2-Phenylbutane (sec-Butylbenzene)	ND (0.112)	ND (0.0046)	0.0043 J	ND (0.0063)	0.0016 J	ND (0.0062)	ND (0.0062)	ND (0.526)	0.18	0.11 J	ND (1.25)	ND (0.595)	0.16 J	0.18 J
Acetone	0.5 J	0.107	0.03 J	0.031 J	0.033 J	0.044 J	0.0666	ND (5.26)	ND (5.65)	ND (5.07)	ND (12.5)	ND (5.95)	1.1 J	1.1 J
Benzene	ND (0.0223)	ND (0.0009)	ND (0.0012)	ND (0.0013)	ND (0.001)	ND (0.0012)	ND (0.0012)	ND (0.105)	ND (0.113)	ND (0.101)	ND (0.251)	ND (0.119)	ND (0.0991)	ND (0.104)
Bromodichloromethane	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Carbon disulfide	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Chlorobenzene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Chloroethane	ND (0.223)	ND (0.0092)	ND (0.0119)	ND (0.0127)	ND (0.0096)	ND (0.0125)	ND (0.0123)	ND (1.05)	ND (1.13)	ND (1.01)	ND (2.51)	ND (1.19)	ND (0.991)	ND (1.04)
Chloroform (Trichloromethane)	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	0.003 J	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Chloromethane (Methyl Chloride)	ND (0.223)	ND (0.0092)	ND (0.0119)	ND (0.0127)	ND (0.0096)	ND (0.0125)	ND (0.0123)	ND (1.05)	ND (1.13)	ND (1.01)	ND (2.51)	ND (1.19)	ND (0.991)	ND (1.04)
cis-1,2-Dichloroethene	0.362	ND (0.0046)	ND (0.006)	0.024	0.0168	0.0367	0.0401	3.28	10.7	4.33	11.4	10.6	9.54	7.56
Cymene (p-Isopropyltoluene)	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Dibromochloromethane	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Ethyl Ether	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Ethylbenzene	ND (0.112)	0.0015 J	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	0.17	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	0.11 J
Hexane	ND (0.446)	ND (0.0183)	ND (0.0239)	ND (0.0253)	ND (0.0192)	ND (0.025)	ND (0.0246)	ND (2.1)	ND (2.26)	ND (2.03)	ND (5.02)	ND (2.38)	ND (1.98)	ND (2.09)
Isopropylbenzene (Cumene)	ND (0.112)	0.001 J	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	0.3	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
m,p-Xylenes	ND (0.112)	0.0045 J	ND (0.006)	ND (0.0063)	ND (0.0048)	0.0017 J	0.0013 J	ND (0.526)	0.12	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Methyl acrylate	ND (0.223)	ND (0.0092)	ND (0.0119)	ND (0.0127)	ND (0.0096)	ND (0.0125)	ND (0.0123)	ND (1.05)	ND (1.13)	ND (1.01)	ND (2.51)	ND (1.19)	ND (0.991)	ND (1.04)
Methylene chloride	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	0.11 J
Naphthalene	ND (0.223)	ND (0.0092)	ND (0.0119)	ND (0.0127)	ND (0.0096)	ND (0.0125)	ND (0.0123)	ND (1.05)	ND (1.13) J	ND (1.01)	ND (2.51)	ND (1.19)	ND (0.991)	ND (1.04)
n-Butylbenzene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565) J	0.23 J	ND (1.25)	ND (0.595)	0.22 J	0.37 J
N-Heptane	ND (0.446)	ND (0.0183)	ND (0.0239)	ND (0.0253)	ND (0.0192)	ND (0.025)	ND (0.0246)	ND (2.1)	ND (2.26)	ND (2.03)	ND (5.02)	ND (2.38)	ND (1.98)	ND (2.09)
n-Propylbenzene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	0.23	0.1 J	ND (1.25)	ND (0.595)	0.1 J	0.16 J
o-Xylene	ND (0.112)	0.002 J	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
tert-Butylbenzene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565) J	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Tetrachloroethene	0.029 J	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	35	195	147	47.5	159	114
Tetrahydrofuran	ND (1.12)	ND (0.0458)	ND (0.0596)	ND (0.0633)	ND (0.048)	ND (0.0624)	ND (0.0615)	ND (5.26)	ND (5.65)	ND (5.07)	ND (12.5)	ND (5.95)	ND (4.95)	ND (5.22)
Toluene	ND (0.112)	0.0015 J	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
trans-1,2-Dichloroethene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	ND (0.565)	ND (0.507)	ND (1.25)	ND (0.595)	ND (0.495)	ND (0.522)
Trichloroethene	ND (0.112)	ND (0.0046)	ND (0.006)	ND (0.0063)	ND (0.0048)	ND (0.0062)	ND (0.0062)	ND (0.526)	6.78	5.44	14.4	8.28	14.2	11.5
Vinyl chloride	0.0705	ND (0.0018)	0.0029	0.0724	0.0311	0.0279	0.0443	0.255	0.45	0.11 J	0.28 J	0.525	0.21	0.229
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	19.6	22.1	31.5	32.4	23.7	23.9	30.2	26	30.5	26.1	23.4	32.8	24.9	25.7

ABBREVIATIONS AND NOTES:

-: Not Analyzed

ft bgs: feet below ground surface

mg/kg: milligram per kilogram

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-41	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-42	SB-43
Sample Name	SB-41 (31-32 ft)	SB-42 (2-3 ft)	SB-42 (6-7 ft)	SB-42 (11-12 ft)	SB-42 (16-17 ft)	SB-42 (21-22 ft)	SB-42 (28-29 ft)	SB-42 (31-32 ft)	SB-42 (54-56 ft)	SB-42 (84-86 ft)	SB-42 DUP (84-86 ft)	SB-42 (94-96 ft)	SB-42 (102-104 ft)	SB-43 (3-4 ft)
Sample Date	11/15/2012	12/02/2013	12/02/2013	12/02/2013	12/02/2013	12/02/2013	12/02/2013	12/02/2013	12/03/2013	12/03/2013	12/03/2013	12/03/2013	12/03/2013	12/04/2013
Lab Sample ID	SB-41 (31-32 ft)	SB-42 (2-3 ft)	SB-42 (6-7 ft)	SB-42 (11-12 ft)	SB-42 (16-17 ft)	SB-42 (21-22 ft)	SB-42 (28-29 ft)	SB-42 (31-32 ft)	SB-42 (54-56 ft)	SB-42 (84-86 ft)	SB-42 DUP (84-86 ft)	SB-42 (94-96 ft)	SB-42 (102-104 ft)	SB-43 (3-4 ft)
Sample Depth (bgs)	31 - 32 (ft)	2 - 3 (ft)	6 - 7 (ft)	11 - 12 (ft)	16 - 17 (ft)	21 - 22 (ft)	28 - 29 (ft)	31 - 32 (ft)	54 - 56 (ft)	84 - 86 (ft)	84 - 86 (ft)	94 - 96 (ft)	102 - 104 (ft)	3 - 4 (ft)
Volatile Organic Compounds (mg/kg)															
1,1-Dichloroethene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	0.002 J	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
1,2,3-Trimethylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
1,2,4-Trimethylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
1,3,5-Trimethylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
2-Butanone (Methyl Ethyl Ketone)	ND (10.2)	ND (1.12)	ND (0.0601)	ND (0.052)	ND (0.0427)	ND (0.0526)	ND (0.0496)	ND (0.0494)	ND (0.0487)	ND (0.0441)	ND (0.0441)	ND (0.0518)	ND (0.0551)	ND (0.057)
2-Phenylbutane (sec-Butylbenzene)	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Acetone	ND (10.2)	ND (1.12)	ND (0.0601)	ND (0.052)	ND (0.0427)	ND (0.0526)	0.017 J	ND (0.0494)	ND (0.0487)	ND (0.0441)	ND (0.0441)	ND (0.0518)	ND (0.0551)	0.039 J
Benzene	ND (0.203)	ND (0.0224)	ND (0.0012)	ND (0.001)	ND (0.0009)	ND (0.0011)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.0011)	ND (0.0011)
Bromodichloromethane	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	0.0009 J	0.0013 J	ND (0.0052)	0.0012 J	ND (0.0057)
Carbon disulfide	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Chlorobenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Chloroethane	ND (2.03)	ND (0.224)	ND (0.012)	ND (0.0104)	ND (0.0085)	ND (0.0105)	ND (0.0099)	ND (0.0099)	ND (0.0097)	ND (0.0088)	ND (0.0088)	ND (0.0104)	ND (0.011)	ND (0.0114)
Chloroform (Trichloromethane)	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	0.001 J	ND (0.0052)	0.0012 J	ND (0.0057)
Chloromethane (Methyl Chloride)	ND (2.03)	ND (0.224)	ND (0.012)	ND (0.0104)	ND (0.0085)	ND (0.0105)	ND (0.0099)	ND (0.0099)	ND (0.0097)	ND (0.0088)	ND (0.0088)	ND (0.0104)	ND (0.011)	ND (0.0114)
cis-1,2-Dichloroethene	8.68	ND (0.112)	ND (0.006)	0.0014 J	0.0412	0.171	0.738	0.364	ND (0.0049)	0.0019 J	0.0022 J	ND (0.0052)	0.0019 J	0.0092
Cymene (p-Isopropyltoluene)	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Dibromochloromethane	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	0.001 J	0.0013 J	ND (0.0052)	0.0014 J	ND (0.0057)
Ethyl Ether	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	0.0015 J	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Ethylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Hexane	ND (4.06)	ND (0.447)	ND (0.024)	ND (0.0208)	ND (0.0171)	ND (0.021)	ND (0.0198)	ND (0.0197)	ND (0.0195)	ND (0.0176)	ND (0.0176)	ND (0.0207)	ND (0.022)	ND (0.0228)
Isopropylbenzene (Cumene)	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
m,p-Xylenes	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Methyl acrylate	ND (2.03)	ND (0.224)	ND (0.012)	ND (0.0104)	ND (0.0085)	ND (0.0105)	ND (0.0099)	ND (0.0099)	ND (0.0097)	ND (0.0088)	ND (0.0088)	ND (0.0104)	ND (0.011)	ND (0.0114)
Methylene chloride	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	0.0017 J	0.0016 J	0.0019 J	0.0022 J	0.0018 J	0.0018 J	0.0017 J	0.0017 J	0.0017 J	0.0015 J
Naphthalene	ND (2.03)	ND (0.224)	ND (0.012)	ND (0.0104)	ND (0.0085)	ND (0.0105)	ND (0.0099)	ND (0.0099)	ND (0.0097)	ND (0.0088)	ND (0.0088)	ND (0.0104)	ND (0.011)	ND (0.0114)
n-Butylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
N-Heptane	ND (4.06)	ND (0.447)	ND (0.024)	ND (0.0208)	ND (0.0171)	ND (0.021)	ND (0.0198)	ND (0.0197)	ND (0.0195)	ND (0.0176)	ND (0.0176)	ND (0.0207)	ND (0.022)	ND (0.0228)
n-Propylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
o-Xylene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
tert-Butylbenzene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Tetrachloroethene	0.67 J	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Tetrahydrofuran	ND (10.2)	0.13 J	ND (0.0601)	ND (0.052)	ND (0.0427)	ND (0.0526)	ND (0.0496)	ND (0.0494)	ND (0.0487)	ND (0.0441)	ND (0.0441)	ND (0.0518)	ND (0.0551)	ND (0.057)
Toluene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	ND (0.0053)	ND (0.005)	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
trans-1,2-Dichloroethene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	0.0017 J	0.0061	0.0064	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Trichloroethene	ND (1.02)	ND (0.112)	ND (0.006)	ND (0.0052)	ND (0.0043)	0.0051 J	0.0014 J	ND (0.0049)	ND (0.0049)	ND (0.0044)	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0057)
Vinyl chloride	0.455	ND (0.0447)	ND (0.0024)	0.0026	0.0054	0.0304	0.0916	0.0362	ND (0.0019)	ND (0.0018)	ND (0.0018)	ND (0.0021)	ND (0.0022)	ND (0.0023)
PCBs (mg/kg)															
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other															
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	24.1	18.8	29.4	24.9	17.4	22.4	23	17.1	17	12.5	16.5	16.1	19.2	26.1

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-43	SB-43	SB-43	SB-43	SB-43	SB-43	SB-43	SB-43	SB-44	SB-44	SB-44	SB-44	SB-44	SB-44
Sample Name	SB-43 (7-8 ft)	SB-43 (12-13 ft)	SB-43 (16-17 ft)	SB-43 (19-20 ft)	SB-43 (27-28 ft)	SB-43 (31-32 ft)	SB-43 (75-76 ft)	SB-43 (95-96 ft)	SB-44 (3-4 ft)	SB-44 (6-7 ft)	SB-44 (11-12 ft)	SB-44 DUP (11-12 ft)	SB-44 (17-18 ft)	SB-44 (22-23 ft)
Sample Date	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013	12/04/2013
Lab Sample ID	SB-43 (7-8 ft)	SB-43 (12-13 ft)	SB-43 (16-17 ft)	SB-43 (19-20 ft)	SB-43 (27-28 ft)	SB-43 (31-32 ft)	SB-43 (75-76 ft)	SB-43 (95-96 ft)	SB-44 (3-4 ft)	SB-44 (6-7 ft)	SB-44 (11-12 ft)	SB-44 DUP (11-12 ft)	SB-44 (17-18 ft)	SB-44 (22-23 ft)
Sample Depth (bgs)	7 - 8 (ft)	12 - 13 (ft)	16 - 17 (ft)	19 - 20 (ft)	27 - 28 (ft)	31 - 32 (ft)	75 - 76 (ft)	95 - 96 (ft)	3 - 4 (ft)	6 - 7 (ft)	11 - 12 (ft)	11 - 12 (ft)	17 - 18 (ft)	22 - 23 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0061)	ND (0.0061)	ND (0.0049)	0.0009 J	0.0032 J	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
1,2,3-Trimethylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
1,2,4-Trimethylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
1,3,5-Trimethylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
2-Butanone (Methyl Ethyl Ketone)	ND (0.061)	ND (0.0614)	ND (0.0492)	ND (0.0448)	ND (0.0494)	ND (0.042)	ND (0.0445)	ND (0.0433)	0.02 J	ND (0.059)	ND (0.0547)	ND (0.053)	ND (0.0479)	ND (0.0481)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Acetone	ND (0.061)	ND (0.0614)	ND (0.0492)	ND (0.0448)	0.013 J	0.0093 J	ND (0.0445)	ND (0.0433)	0.0867	0.017 J	ND (0.0547)	ND (0.053)	ND (0.0479)	ND (0.0481)
Benzene	ND (0.0012)	ND (0.0012)	ND (0.001)	ND (0.0009)	ND (0.001)	ND (0.0008)	ND (0.0009)	ND (0.0009)	ND (0.0012)	ND (0.0012)	ND (0.0011)	ND (0.0011)	ND (0.001)	ND (0.001)
Bromodichloromethane	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Carbon disulfide	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Chlorobenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Chloroethane	ND (0.0122)	ND (0.0123)	ND (0.0098)	ND (0.009)	ND (0.0099)	ND (0.0084)	ND (0.0089)	ND (0.0087)	ND (0.0121)	ND (0.0118)	ND (0.0109)	ND (0.0106)	ND (0.0096)	ND (0.0096)
Chloroform (Trichloromethane)	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Chloromethane (Methyl Chloride)	ND (0.0122)	ND (0.0123)	ND (0.0098)	ND (0.009)	ND (0.0099)	ND (0.0084)	ND (0.0089)	ND (0.0087)	ND (0.0121)	ND (0.0118)	ND (0.0109)	ND (0.0106)	ND (0.0096)	ND (0.0096)
cis-1,2-Dichloroethene	ND (0.0061)	0.0023 J	0.164	0.163	0.872	0.195	0.001 J	ND (0.0043)	0.0026 J	0.0202	0.141	0.154	0.159	0.1
Cymene (p-Isopropyltoluene)	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Dibromochloromethane	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Ethyl Ether	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Ethylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Hexane	ND (0.0244)	ND (0.0246)	ND (0.0197)	ND (0.0179)	ND (0.0198)	ND (0.0168)	ND (0.0178)	ND (0.0173)	ND (0.0241)	ND (0.0236)	ND (0.0219)	ND (0.0212)	ND (0.0192)	ND (0.0192)
Isopropylbenzene (Cumene)	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
m,p-Xylenes	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Methyl acrylate	ND (0.0122)	ND (0.0123)	ND (0.0098)	ND (0.009)	ND (0.0099)	ND (0.0084)	ND (0.0089)	ND (0.0087)	ND (0.0121)	ND (0.0118)	ND (0.0109)	ND (0.0106)	ND (0.0096)	ND (0.0096)
Methylene chloride	0.0014 J	0.0013 J	0.0015 J	0.0013 J	0.0016 J	0.0013 J	0.0015 J	0.0012 J	0.0013 J	ND (0.0059)	ND (0.0055)	ND (0.0053)	0.0011 J	0.0012 J
Naphthalene	ND (0.0122)	ND (0.0123)	ND (0.0098)	ND (0.009)	ND (0.0099)	ND (0.0084)	ND (0.0089)	ND (0.0087)	ND (0.0121)	ND (0.0118)	ND (0.0109)	ND (0.0106)	ND (0.0096)	ND (0.0096)
n-Butylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
N-Heptane	ND (0.0244)	ND (0.0246)	ND (0.0197)	ND (0.0179)	ND (0.0198)	ND (0.0168)	ND (0.0178)	ND (0.0173)	ND (0.0241)	ND (0.0236)	ND (0.0219)	ND (0.0212)	ND (0.0192)	ND (0.0192)
n-Propylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
o-Xylene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
tert-Butylbenzene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
Tetrachloroethene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	0.0023 J	0.0627	0.0367	0.077	0.114
Tetrahydrofuran	ND (0.061)	ND (0.0614)	ND (0.0492)	ND (0.0448)	ND (0.0494)	ND (0.042)	ND (0.0445)	ND (0.0433)	ND (0.0603)	ND (0.059)	ND (0.0547)	ND (0.053)	ND (0.0479)	ND (0.0481)
Toluene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	ND (0.0059)	ND (0.0055)	ND (0.0053)	ND (0.0048)	ND (0.0048)
trans-1,2-Dichloroethene	ND (0.0061)	ND (0.0061)	0.0037 J	0.0039 J	0.0065	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	0.0012 J	0.0034 J	0.0033 J	0.0035 J	0.0031 J
Trichloroethene	ND (0.0061)	ND (0.0061)	ND (0.0049)	ND (0.0045)	ND (0.0049)	ND (0.0042)	ND (0.0045)	ND (0.0043)	ND (0.006)	0.0173	0.0215	0.0158	0.0302	0.0325
Vinyl chloride	ND (0.0024)	ND (0.0025)	0.0079	0.0105	0.0203	0.0253	ND (0.0018)	ND (0.0017)	0.0018 J	ND (0.0024)	0.0044	0.0041	0.0057	0.0019 J
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of PCBs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	32	30.2	25.8	20.1	21.6	14.9	16.2	11.9	31.3	29.9	26.9	27.4	22.5	22

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SB-44	SB-44	SB-44	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-07	SS-08	SS-08	SS-09	SS-09	SS-10
Sample Name	SB-44 (26-27 ft)	SB-44 (30-31 ft)	SB-44 (94-96 ft)	SS-01 0-3 ft	SS-02 0-3 ft	SS-03 0-3 ft	SS-04 0-3 ft	SS-05 0-3 ft	SS-06 0-3 ft	SS-07 0-3 ft	SS-07 0-3 ft Dup	SS-08 (0-3 ft)	SS-08 (0-3 ft) Dup	SS-09 (0-3 ft)	SS-09 (0-3 ft) Dup	SS-10 (0-3 ft)
Sample Date	12/04/2013	12/04/2013	12/04/2013	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/23/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012
Lab Sample ID	SB-44 (26-27 ft)	SB-44 (30-31 ft)	SB-44 (94-96 ft)	SS-01 0-3 ft	SS-02 0-3 ft	SS-03 0-3 ft	SS-04 0-3 ft	SS-05 0-3 ft	SS-06 0-3 ft	SS-07 0-3 ft	SS-07 0-3 ft Dup	SS-08 (0-3 ft)	SS-08 (0-3 ft) Dup	SS-09 (0-3 ft)	SS-09 (0-3 ft) Dup	SS-10 (0-3 ft)
Sample Depth (bgs)	26 - 27 (ft)	30 - 31 (ft)	94 - 96 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)
Volatile Organic Compounds (mg/kg)																	
1,1-Dichloroethene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
1,2,3-Trimethylbenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
1,2,4-Trimethylbenzene	0.0012 J	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
1,3,5-Trimethylbenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
2-Butanone (Methyl Ethyl Ketone)	ND (0.057)	ND (0.0547)	ND (0.044)	ND (0.0379)	ND (0.0386)	ND (0.0376)	ND (0.0514)	ND (0.0479)	ND (0.0451)	ND (0.0412)	ND (0.0394)	ND (0.042)	ND (0.0405)	ND (0.0481)	ND (0.0451)	ND (0.0425)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Acetone	0.02 J	0.019 J	ND (0.044)	ND (0.0379)	0.0085 J	ND (0.0376)	ND (0.0514)	ND (0.0479)	0.013 J	ND (0.0412)	ND (0.0394)	ND (0.042)	0.015 J	ND (0.0481)	ND (0.0451)	ND (0.0425)
Benzene	ND (0.0011)	ND (0.0011)	ND (0.0009)	ND (0.0008)	ND (0.0008)	ND (0.0008)	ND (0.001)	ND (0.001)	ND (0.0009)	ND (0.0008)	ND (0.0008)	ND (0.0008)	ND (0.0008)	ND (0.001)	ND (0.0009)	ND (0.0009)
Bromodichloromethane	ND (0.0057)	ND (0.0055)	0.0012 J	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Carbon disulfide	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Chlorobenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Chloroethane	ND (0.0114)	ND (0.0109)	ND (0.0088)	ND (0.0076)	ND (0.0077)	ND (0.0075)	ND (0.0103)	ND (0.0096)	ND (0.009)	ND (0.0082)	ND (0.0079)	ND (0.0084)	ND (0.0081)	ND (0.0096)	ND (0.009)	ND (0.0085)
Chloroform (Trichloromethane)	ND (0.0057)	ND (0.0055)	0.0015 J	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Chloromethane (Methyl Chloride)	ND (0.0114)	ND (0.0109)	ND (0.0088)	ND (0.0076)	ND (0.0077)	ND (0.0075)	ND (0.0103)	ND (0.0096)	ND (0.009)	ND (0.0082)	ND (0.0079)	ND (0.0084)	ND (0.0081)	ND (0.0096)	ND (0.009)	ND (0.0085)
cis-1,2-Dichloroethene	0.0213	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	0.0059	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	0.0079	0.0032 J	ND (0.0043)
Cymene (p-Isopropyltoluene)	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Dibromochloromethane	ND (0.0057)	ND (0.0055)	0.0012 J	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Ethyl Ether	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Ethylbenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Hexane	ND (0.0228)	ND (0.0219)	ND (0.0176)	ND (0.0151)	ND (0.0155)	ND (0.0151)	ND (0.0206)	ND (0.0192)	ND (0.018)	ND (0.0165)	ND (0.0158)	ND (0.0168)	ND (0.0162)	ND (0.0192)	ND (0.0181)	ND (0.017)
Isopropylbenzene (Cumene)	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
m,p-Xylenes	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	0.0011 J	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Methyl acrylate	ND (0.0114)	ND (0.0109)	ND (0.0088)	ND (0.0076)	ND (0.0077)	ND (0.0075)	ND (0.0103)	ND (0.0096)	ND (0.009)	ND (0.0082)	ND (0.0079)	ND (0.0084)	ND (0.0081)	ND (0.0096)	ND (0.009)	ND (0.0085)
Methylene chloride	ND (0.0057)	0.0016 J	0.0016 J	0.001 J	ND (0.0039)	0.0009 J	0.0011 J	0.0011 J	0.0012 J	0.0011 J	0.0018 J	ND (0.0042)	0.0015 J	0.0013 J	0.0011 J	0.0011 J
Naphthalene	ND (0.0114)	ND (0.0109)	ND (0.0088)	ND (0.0076)	ND (0.0077)	ND (0.0075)	ND (0.0103)	ND (0.0096)	ND (0.009)	ND (0.0082)	ND (0.0079)	ND (0.0084)	ND (0.0081)	ND (0.0096)	ND (0.009)	ND (0.0085)
n-Butylbenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
N-Heptane	ND (0.0228)	ND (0.0219)	ND (0.0176)	ND (0.0151)	ND (0.0155)	ND (0.0151)	ND (0.0206)	ND (0.0192)	ND (0.018)	ND (0.0165)	ND (0.0158)	ND (0.0168)	ND (0.0162)	ND (0.0192)	ND (0.0181)	ND (0.017)
n-Propylbenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
o-Xylene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
tert-Butylbenzene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Tetrachloroethene	ND (0.0057)	ND (0.0055)	ND (0.0044)	0.0009 J	ND (0.0039)	ND (0.0038)	0.203	0.004 J	0.0035 J	0.0483	0.0302	0.0013 J	0.0015 J	1.86	2	ND (0.0043)
Tetrahydrofuran	ND (0.057)	ND (0.0547)	ND (0.044)	ND (0.0379)	ND (0.0386)	ND (0.0376)	ND (0.0514)	ND (0.0479)	ND (0.0451)	ND (0.0412)	ND (0.0394)	ND (0.042)	ND (0.0405)	ND (0.0481)	ND (0.0451)	ND (0.0425)
Toluene	ND (0.0057)	ND (0.0055)	ND (0.0044)	0.0008 J	0.0017 J	0.0009 J	ND (0.0051)	0.004 J	0.0038 J	ND (0.0041)	0.0039 J	ND (0.0042)	0.0026 J	0.0015 J	ND (0.0045)	0.0011 J
trans-1,2-Dichloroethene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	ND (0.0051)	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	ND (0.0048)	ND (0.0045)	ND (0.0043)
Trichloroethene	ND (0.0057)	ND (0.0055)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0038)	0.0273	ND (0.0048)	ND (0.0045)	ND (0.0041)	ND (0.0039)	ND (0.0042)	ND (0.004)	0.107	0.0541	ND (0.0043)
Vinyl chloride	ND (0.0023)	ND (0.0022)	ND (0.0018)	ND (0.0015)	ND (0.0015)	ND (0.0015)	ND (0.0021)	ND (0.0019)	ND (0.0018)	ND (0.0016)	ND (0.0016)	ND (0.0017)	ND (0.0016)	ND (0.0019)	ND (0.0018)	ND (0.0017)
PCBs (mg/kg)																	
Aroclor-1016 (PCB-1016)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Aroclor-1221 (PCB-1221)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Aroclor-1232 (PCB-1232)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Aroclor-1242 (PCB-1242)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Aroclor-1248 (PCB-1248)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Aroclor-1254 (PCB-1254)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Aroclor-1260 (PCB-1260)	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
SUM of PCBs	-	-	-	ND (0.0393)	ND (0.0409)	ND (0.0408)	ND (0.0457)	ND (0.0482)	ND (0.0432)	ND (0.0432)	ND (0.043)	ND (0.0447)	ND (0.0407)	ND (0.0466)	ND (0.0451)	ND (0.0431)
Other																	
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	0.88	-	-	-	-
Percent Moisture (%)	24.7	23.4	13.8	4.8	8.8	8.4	18.3	22.4	13.4	13.5	12.7	15.3	8.6	19.6	17	12.2

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT A
SOIL QUALITY DATA
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI
FILE NO. 130500

Precharacterization Grid	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation	Substation
Location Name	SS-10	SS-11	SS-11	SS-12	SS-13	SS-13	SS-14	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20
Sample Name	SS-10 (0-3 ft) DUP	SS-11 (0-3 ft)	SS-11 (0-3 ft) DUP	SS-12 (0-3 ft)	SS-13 (0-3 ft)	SS-13 (0-3 ft) DUP	SS-14 (0-3 ft)	SS-14 (0-3 ft) DUP	SS-15 (0-3 ft)	SS-16 (0-3 ft)	SS-17 (0-3 ft)	SS-18 (0-3 ft)	SS-19 (0-3 ft)	SS-20 (0-3 ft)
Sample Date	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/24/2012	04/25/2012
Lab Sample ID	SS-10 (0-3 ft) DUP	SS-11 (0-3 ft)	SS-11 (0-3 ft) DUP	SS-12 (0-3 ft)	SS-13 (0-3 ft)	SS-13 (0-3 ft) DUP	SS-14 (0-3 ft)	SS-14 (0-3 ft) DUP	SS-15 (0-3 ft)	SS-16 (0-3 ft)	SS-17 (0-3 ft)	SS-18 (0-3 ft)	SS-19 (0-3 ft)	SS-20 (0-3 ft)
Sample Depth (bgs)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)	0 - 3 (ft)
Volatile Organic Compounds (mg/kg)														
1,1-Dichloroethene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
1,2,3-Trimethylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	0.0719	ND (0.0041)	ND (0.0057)
1,2,4-Trimethylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	0.0482	ND (0.0041)	ND (0.0057)
1,3,5-Trimethylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
2-Butanone (Methyl Ethyl Ketone)	ND (0.0475)	ND (0.0422)	ND (0.0464)	ND (0.0612)	ND (0.0446)	ND (0.0429)	ND (0.0452)	ND (0.0488)	ND (0.0438)	ND (0.0386)	ND (0.0406)	ND (0.0513)	ND (0.0406)	ND (0.0571)
2-Phenylbutane (sec-Butylbenzene)	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	0.0137	ND (0.0041)	ND (0.0057)
Acetone	ND (0.0475)	ND (0.0422)	ND (0.0464)	ND (0.0612)	ND (0.0446)	ND (0.0429)	ND (0.0452)	ND (0.0488)	ND (0.0438)	0.0095 J	0.0098 J	0.037 J	0.038 J	0.019 J
Benzene	ND (0.001)	ND (0.0008)	ND (0.0009)	ND (0.0012)	ND (0.0009)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.0009)	ND (0.0008)	ND (0.0008)	ND (0.001)	ND (0.0008)	ND (0.0011)
Bromodichloromethane	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Carbon disulfide	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Chlorobenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Chloroethane	ND (0.0095)	ND (0.0084)	ND (0.0046)	ND (0.0122)	ND (0.0089)	ND (0.0043)	ND (0.009)	ND (0.0098)	ND (0.0088)	ND (0.0077)	ND (0.0081)	ND (0.0103)	ND (0.0081)	ND (0.0114)
Chloroform (Trichloromethane)	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Chloromethane (Methyl Chloride)	ND (0.0095)	ND (0.0084)	ND (0.0093)	ND (0.0122)	ND (0.0089)	ND (0.0086)	ND (0.009)	ND (0.0098)	ND (0.0088)	ND (0.0077)	ND (0.0081)	ND (0.0103)	ND (0.0081)	ND (0.0114)
cis-1,2-Dichloroethene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Cymene (p-Isopropyltoluene)	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	0.0035 J	ND (0.0041)	ND (0.0057)
Dibromochloromethane	ND (0.0048)	ND (0.0042)	ND (0.0464)	ND (0.0061)	ND (0.0045)	ND (0.0429)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Ethyl Ether	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Ethylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	0.0014 J	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Hexane	ND (0.019)	ND (0.0169)	ND (0.0093)	ND (0.0245)	ND (0.0178)	ND (0.0086)	ND (0.0181)	ND (0.0195)	ND (0.0175)	ND (0.0155)	ND (0.0162)	ND (0.0205)	ND (0.0162)	ND (0.0228)
Isopropylbenzene (Cumene)	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	0.0011 J	ND (0.0041)	ND (0.0057)
m,p-Xylenes	ND (0.0048)	ND (0.0042)	ND (0.0046)	0.0039 J	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Methyl acrylate	ND (0.0095)	ND (0.0084)	ND (0.0464)	ND (0.0122)	ND (0.0089)	ND (0.0429)	ND (0.009)	ND (0.0098)	ND (0.0088)	ND (0.0077)	ND (0.0081)	ND (0.0103)	ND (0.0081)	ND (0.0114)
Methylene chloride	0.001 J	ND (0.0042)	ND (0.0093)	ND (0.0061)	0.0009 J	ND (0.0086)	0.0012 J	0.001 J	0.0011 J	ND (0.0039)	0.0009 J	ND (0.0051)	0.0009 J	0.0014 J
Naphthalene	ND (0.0095)	ND (0.0084)	ND (0.0093)	ND (0.0122)	ND (0.0089)	ND (0.0086)	ND (0.009)	ND (0.0098)	ND (0.0088)	ND (0.0077)	ND (0.0081)	ND (0.0103)	ND (0.0081)	ND (0.0114)
n-Butylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
N-Heptane	ND (0.019)	ND (0.0169)	ND (0.0186)	ND (0.0245)	ND (0.0178)	ND (0.0172)	ND (0.0181)	ND (0.0195)	ND (0.0175)	ND (0.0155)	ND (0.0162)	ND (0.0205)	ND (0.0162)	ND (0.0228)
n-Propylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
o-Xylene	ND (0.0048)	ND (0.0042)	ND (0.0046)	0.0014 J	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
tert-Butylbenzene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Tetrachloroethene	ND (0.0048)	ND (0.0042)	ND (0.0046)	0.0034 J	0.0026 J	0.0016 J	0.0033 J	0.0059	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	0.0047	ND (0.0057)
Tetrahydrofuran	ND (0.0475)	ND (0.0422)	ND (0.0464)	ND (0.0612)	ND (0.0446)	ND (0.0429)	ND (0.0452)	ND (0.0488)	ND (0.0438)	ND (0.0386)	ND (0.0406)	ND (0.0513)	ND (0.0406)	ND (0.0571)
Toluene	0.0022 J	0.0018 J	ND (0.0046)	0.0022 J	0.0009 J	ND (0.0043)	ND (0.0045)	0.0011 J	0.0024 J	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	0.0014 J
trans-1,2-Dichloroethene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Trichloroethene	ND (0.0048)	ND (0.0042)	ND (0.0046)	ND (0.0061)	ND (0.0045)	ND (0.0043)	ND (0.0045)	ND (0.0049)	ND (0.0044)	ND (0.0039)	ND (0.0041)	ND (0.0051)	ND (0.0041)	ND (0.0057)
Vinyl chloride	ND (0.0019)	ND (0.0017)	ND (0.0019)	ND (0.0024)	ND (0.0018)	ND (0.0017)	ND (0.0018)	ND (0.002)	ND (0.0018)	ND (0.0016)	ND (0.0016)	ND (0.0021)	ND (0.0016)	ND (0.0023)
PCBs (mg/kg)														
Aroclor-1016 (PCB-1016)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	ND (0.0444)	-
Aroclor-1221 (PCB-1221)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	ND (0.0444)	-
Aroclor-1232 (PCB-1232)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	ND (0.0444)	-
Aroclor-1242 (PCB-1242)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	ND (0.0444)	-
Aroclor-1248 (PCB-1248)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	ND (0.0444)	-
Aroclor-1254 (PCB-1254)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	ND (0.0444)	-
Aroclor-1260 (PCB-1260)	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	0.022 J	-
SUM of PCBs	ND (0.0436)	ND (0.0459)	-	ND (0.0452)	ND (0.0438)	-	ND (0.0434)	-	ND (0.0432)	ND (0.0407)	ND (0.0407)	ND (0.0514)	0.022 J	-
Other														
Fraction Organic Carbon (FOC) (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Moisture (%)	14.6	17.8	16.8	17.3	14.9	11.6	13.4	14.6	13.3	8.4	7.6	26.6	16	-

ABBREVIATIONS AND NOTES:

-: Not Analyzed
ft bgs: feet below ground surface
mg/kg: milligram per kilogram
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Volatile Organic analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.

ATTACHMENT B

VISL Calculator

Default VISL Results

Resident Equation Inputs

Variable	Value
Exposure Scenario	Resident
Temperature for Groundwater Vapor Concentration C	17
ED_{res} (exposure duration) years	26
TR (target risk) unitless	0.00001
THQ (target hazard quotient) unitless	1
LT (lifetime) years	70
EF_{res} (exposure frequency) days/yea	350
ED_{0-2} (mutagenic exposure duration first phase) year	2
ED_{2-6} (mutagenic exposure duration second phase) year	4
ED_{6-16} (mutagenic exposure duration third phase) year	10
ED_{16-26} (mutagenic exposure duration fourth phase) year	10
EF_{0-2} (mutagenic exposure frequency first phase) days/yea	350
EF_{2-6} (mutagenic exposure frequency second phase) days/yea	350
EF_{6-16} (mutagenic exposure frequency third phase) days/yea	350
EF_{16-26} (mutagenic exposure frequency fourth phase) days/yea	350
ET_{res} (exposure time) hours/day	24
ET_{0-2} (mutagenic exposure time first phase) hours/da	24
ET_{2-6} (mutagenic exposure time second phase) hours/da	24
ET_{6-16} (mutagenic exposure time third phase) hours/da	24
ET_{16-26} (mutagenic exposure time fourth phase) hours/da	24
AF_{gw} (Attenuation Factor Groundwater) unitles	0.001
AF_{ss} (Attenuation Factor Sub-Slab) unitles	0.03

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Default VISL Results

Resident Vapor Intrusion Screening Levels (VISL)

Key: I = IRIS; P = PPRTV; D = DWSHA; O = OPP; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #29); H = HEAST; F = See FAQ; E = see user guide Section 2.3.5; W = see user guide Section 2.3.6; L = see user guide on lead; M = mutagen; S = see user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic notice) ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); U = User-provided

Chemical	CAS Number	Does the chemical meet the definition for volatility? (HLC>1E-5 or VP>1)	Does the chemical have inhalation toxicity data? (IUR and/or RfC)	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Soil Source? (C_{vp} > $C_{i,a}$,Target?)	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source? (C_{hc} > $C_{i,a}$,Target?)	Target Indoor Air Concentration (TCR=1E-05 or THQ=1) MIN($C_{ia,c}$,$C_{ia,nc}$) ($\mu g/m^3$)	Toxicity Basis	Target Sub-Slab and Near-source Soil Gas Concentration (TCR=1E-05 or THQ=1) C_{sg},Target ($\mu g/m^3$)	Target Groundwater Concentration (TCR=1E-05 or THQ=1) C_{gw},Target ($\mu g/L$)	Is Target Groundwater Concentration < MCL? (C_{gw} < MCL?)	Pure Phase Vapor Concentration C_{vp} (17 ℃) ($\mu g/m^3$)	Maximum Groundwater Vapor Concentration C_{hc} ($\mu g/m^3$)	Temperature for Maximum Groundwater Vapor Concentration (℃)	Lower Explosive Limit LEL (% by volume)	LEL Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	RfC (mg/m^3)	RfC Ref	Mutagenic Indicator	Carcinogenic VISL TCR=1E-05 $C_{ia,c}$($\mu g/m^3$)	Noncarcinogenic VISL THQ=1 $C_{ia,nc}$($\mu g/m^3$)
Acetone	67-64-1	Yes	Yes	Yes	Yes	32200	NC	1070000	31000000	--	723000000	1040000000	17	2.50	CRC89	-		31	A	No	-	32200
Dichloroethylene, 1,1-	75-35-4	Yes	Yes	Yes	Yes	209	NC	6950	257	No (7)	3130000000	1970000000	17	6.50	CRC89	-		0	I	No	-	209
Dichloroethylene, 1,2-trans-	156-60-5	Yes	No	No Inhal. Tox.	No Inhal. Tox. Info	-		-	-		1730000000	1270000000	17	6.00	CRC89	-		-		No	-	-
Tetrachloroethylene	127-18-4	Yes	Yes	Yes	Yes	42	NC	1390	87	No (5)	165000000	98500000	17	-		0	I	0	I	No	108	42
Toluene	108-88-3	Yes	Yes	Yes	Yes	5210	NC	174000	28500	No (1000)	141000000	96200000	17	1.10	CRC89	-		5	I	No	-	5210
Trichloroethylene	79-01-6	Yes	Yes	Yes	Yes	2	NC	70	7	No (5)	488000000	360000000	17	8.00	CRC89	0	I	0	I	Mut	5	2
Vinyl Chloride	75-01-4	Yes	Yes	Yes	Yes	2	CA	56	2	Yes (2)	10000000000	8280000000	17	3.60	CRC89	0	I	0	I	Mut	2	104
Xylenes	1330-20-7	Yes	Yes	Yes	Yes	104	NC	3480	600	Yes (10000)	45600000	18400000	17	-		-		0	I	No	-	104

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Default VISL Results

Chemical Properties

Chemical	CAS Number	Does the chemical meet the definition for volatility? (HLC>1E-5 or VP>1)	Does the chemical have inhalation toxicity data? (IUR and/or RfC)	MW	MW Ref	Vapor Pressure VP (mm Hg)	VP Ref	S (mg/L)	S Ref	MCL (ug/L)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	Henry's Law Constant (17 °C)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Enthalpy of vaporization @ groundwater temperature $\Delta H_{v,gw}$ (cal/mol)	Exponent for $\Delta H_{v,gw}$
Dichloroethylene, 1,1-	75-35-4	Yes	Yes	96.944	PHYSPROP	600	PHYSPROP	2420	PHYSPROP	7	0	1	1	1	PHYSPROP	6430	0.352026971
Dichloroethylene, 1,2-trans-	156-60-5	Yes	No	96.944	PHYSPROP	331	EPI	4520	PHYSPROP	100	0	0	0	0	PHYSPROP	7280	0.3460155189
Tetrachloroethylene	127-18-4	Yes	Yes	165.83	PHYSPROP	19	PHYSPROP	206	PHYSPROP	5	0	1	0	0	PHYSPROP	9480	0.3547951613
Trichloroethylene	79-01-6	Yes	Yes	131.39	PHYSPROP	69	PHYSPROP	1280	PHYSPROP	5	0	0	0	0	PHYSPROP	8300	0.3510035026
Vinyl Chloride	75-01-4	Yes	Yes	62.499	PHYSPROP	2980	EPI	8800	PHYSPROP	2	0	1	1	1	PHYSPROP	4640	0.3364447059

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Default VISL Results

Chemical Properties

Chemical	Vapor Pressure VP (17 ℃) (mm Hg)	D_{ia} (cm^2/s)	D_{ia} (17 ℃) (cm^2/s)	D_{ia} Used inCalcs (cm^2/s)	D_{ia} Ref	D_{iw} (cm^2/s)	D_{iw} (17 ℃) (cm^2/s)	D_{iw} Used inCalcs (cm^2/s)	D_{iw} Ref	Normal Boiling Point T_{boil} (K)	BP Ref	Critical Temperature T_{crit} (K)	T_{crit} Ref	Enthalpy of vaporization at the normal boiling point $\Delta H_{v,b}$ (cal/mol)	$\Delta H_{v,b}$ Ref	K_{oc} (cm^3/g)	K_{oc} Ref	Lower Explosive Limit LEL (% by volume)	LEL Ref
Dichloroethylene, 1,1-	2380000000	0	0.0828561	0.0828561	WATER9 (U.S. EPA, 2001)	0	0.0000107	0.0000107	WATER9 (U.S. EPA, 2001)	304.85	PHYSPROP	482	YAWS	6250	CRC89	31.82	EPI	6.5	CRC89
Dichloroethylene, 1,2-trans-	1260000000	0	0.0841028	0.0841028	WATER9 (U.S. EPA, 2001)	0	0.0000109	0.0000109	WATER9 (U.S. EPA, 2001)	321.85	PHYSPROP	516	CRC89	6910	CRC89	39.6	EPI	6	CRC89
Tetrachloroethylene	109000000	0	0.0484464	0.0484464	WATER9 (U.S. EPA, 2001)	0	0	0	WATER9 (U.S. EPA, 2001)	394.45	PHYSPROP	620	YAWS	8290	Weast	94.94	EPI	-	
Trichloroethylene	340000000	0	0.0659136	0.0659136	WATER9 (U.S. EPA, 2001)	0	0	0	WATER9 (U.S. EPA, 2001)	360.35	PHYSPROP	571	YAWS	7510	Weast	60.7	EPI	8	CRC89
Vinyl Chloride	8290000000	0	0.1028326	0.1028326	WATER9 (U.S. EPA, 2001)	0	0.0000117	0.0000117	WATER9 (U.S. EPA, 2001)	259.85	PHYSPROP	425	CRC89	4970	CRC89	21.73	EPI	3.6	CRC89

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ATTACHMENT C

ProUCL Calculations

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.13/11/2019 2:46:34 PM
From File	2019-0311-HAI-GW-OnSite-ProUCL-Input.xls
Full Precision	OFF
Confidence Coefficient	95%
mber of Bootstrap Operations	2000

1,1-Dichloroethene

General Statistics

Total Number of Observations	21	Number of Distinct Observations	17
		Number of Missing Observations	26
Number of Detects	14	Number of Non-Detects	7
Number of Distinct Detects	13	Number of Distinct Non-Detects	4
Minimum Detect	0.0037	Minimum Non-Detect	0.002
Maximum Detect	0.16	Maximum Non-Detect	2.5
Variance Detects	0.00248	Percent Non-Detects	33.33%
Mean Detects	0.0513	SD Detects	0.0498
Median Detects	0.0265	CV Detects	0.969
Skewness Detects	1.105	Kurtosis Detects	0.0181
Mean of Logged Detects	-3.484	SD of Logged Detects	1.142

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.835	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.245	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0384	KM Standard Error of Mean	0.0111
KM SD	0.0465	95% KM (BCA) UCL	0.0585
95% KM (t) UCL	0.0575	95% KM (Percentile Bootstrap) UCL	0.0575
95% KM (z) UCL	0.0566	95% KM Bootstrap t UCL	0.0647
90% KM Chebyshev UCL	0.0716	95% KM Chebyshev UCL	0.0867
97.5% KM Chebyshev UCL	0.108	99% KM Chebyshev UCL	0.149

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.368	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.758	)etected data appear Gamma Distributed at 5% Significance Lev
K-S Test Statistic	0.158	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.235	)etected data appear Gamma Distributed at 5% Significance Lev

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.11	k star (bias corrected MLE)	0.919
Theta hat (MLE)	0.0463	Theta star (bias corrected MLE)	0.0558
nu hat (MLE)	31.07	nu star (bias corrected)	25.74
Mean (detects)	0.0513		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0037	Mean	0.0384
Maximum	0.16	Median	0.0189
SD	0.0443	CV	1.155
k hat (MLE)	1.066	k star (bias corrected MLE)	0.946
Theta hat (MLE)	0.036	Theta star (bias corrected MLE)	0.0406
nu hat (MLE)	44.79	nu star (bias corrected)	39.73
Adjusted Level of Significance (β)	0.0383		
Approximate Chi Square Value (39.73, α)	26.29	Adjusted Chi Square Value (39.73, β)	25.45
95% Gamma Approximate UCL (use when n>=50)	0.058	95% Gamma Adjusted UCL (use when n<50)	0.0599

68												
69	**Estimates of Gamma Parameters using KM Estimates**											
70						Mean (KM)	0.0384			SD (KM)	0.0465	
71						Variance (KM)	0.00216			SE of Mean (KM)	0.0111	
72						k hat (KM)	0.684			k star (KM)	0.618	
73						nu hat (KM)	28.73			nu star (KM)	25.96	
74						theta hat (KM)	0.0562			theta star (KM)	0.0622	
75						80% gamma percentile (KM)	0.0633			90% gamma percentile (KM)	0.0993	
76						95% gamma percentile (KM)	0.137			99% gamma percentile (KM)	0.227	
77												
78	**Gamma Kaplan-Meier (KM) Statistics**											
79						Approximate Chi Square Value (25.96, α)	15.35			Adjusted Chi Square Value (25.96, β)	14.72	
80					5% Gamma Approximate KM-UCL (use when n>=50)		0.065			95% Gamma Adjusted KM-UCL (use when n<50)	0.0678	
81												
82	**Lognormal GOF Test on Detected Observations Only**											
83						Shapiro Wilk Test Statistic	0.95			**Shapiro Wilk GOF Test**		
84						5% Shapiro Wilk Critical Value	0.874			Detected Data appear Lognormal at 5% Significance Level		
85						Lilliefors Test Statistic	0.129			**Lilliefors GOF Test**		
86						5% Lilliefors Critical Value	0.226			Detected Data appear Lognormal at 5% Significance Level		
87	**Detected Data appear Lognormal at 5% Significance Level**											
88												
89	**Lognormal ROS Statistics Using Imputed Non-Detects**											
90						Mean in Original Scale	0.0363			Mean in Log Scale	-4.168	
91						SD in Original Scale	0.0458			SD in Log Scale	1.466	
92						95% t UCL (assumes normality of ROS data)	0.0535			95% Percentile Bootstrap UCL	0.0534	
93						95% BCA Bootstrap UCL	0.0567			95% Bootstrap t UCL	0.0619	
94						95% H-UCL (Log ROS)	0.132					
95												
96	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
97						KM Mean (logged)	-4.17			KM Geo Mean	0.0155	
98						KM SD (logged)	1.492			95% Critical H Value (KM-Log)	3.299	
99						KM Standard Error of Mean (logged)	0.357			95% H-UCL (KM -Log)	0.141	
100						KM SD (logged)	1.492			95% Critical H Value (KM-Log)	3.299	
101						KM Standard Error of Mean (logged)	0.357					
102												
103	**DL/2 Statistics**											
104						**DL/2 Normal**				**DL/2 Log-Transformed**		
105						Mean in Original Scale	0.106			Mean in Log Scale	-3.892	
106						SD in Original Scale	0.27			SD in Log Scale	1.922	
107						95% t UCL (Assumes normality)	0.208			95% H-Stat UCL	0.726	
108	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
109												
110	**Nonparametric Distribution Free UCL Statistics**											
111	**Detected Data appear Gamma Distributed at 5% Significance Level**											
112												
113	**Suggested UCL to Use**											
114	d KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)						0.0678					
115												
116	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
117	Recommendations are based upon data size, data distribution, and skewness.											
118	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
119	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statisticia											
120												
121												
122	**cis-1,2-Dichloroethene**											
123												
124	**General Statistics**											
125						Total Number of Observations	45			Number of Distinct Observations	42	
126										Number of Missing Observations	2	
127						Minimum	0.0015			Mean	17.4	
128						Maximum	88			Median	9.68	
129						SD	22.05			Std. Error of Mean	3.287	
130						Coefficient of Variation	1.267			Skewness	1.527	
131												
132	**Normal GOF Test**											
133						Shapiro Wilk Test Statistic	0.786			**Shapiro Wilk GOF Test**		
134						5% Shapiro Wilk Critical Value	0.945			Data Not Normal at 5% Significance Level		

135					Lilliefors Test Statistic	0.215	**Lilliefors GOF Test**					
136					5% Lilliefors Critical Value	0.131	Data Not Normal at 5% Significance Level					
137	**Data Not Normal at 5% Significance Level**											
138												
139	**Assuming Normal Distribution**											
140	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
141					95% Student's-t UCL	22.92	95% Adjusted-CLT UCL (Chen-1995)	23.6				
142							95% Modified-t UCL (Johnson-1978)	23.05				
143												
144	**Gamma GOF Test**											
145					A-D Test Statistic	1.319	**Anderson-Darling Gamma GOF Test**					
146					5% A-D Critical Value	0.862	Data Not Gamma Distributed at 5% Significance Level					
147					K-S Test Statistic	0.139	**Kolmogorov-Smirnov Gamma GOF Test**					
148					5% K-S Critical Value	0.143	Detected data appear Gamma Distributed at 5% Significance Lev					
149	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
150												
151	**Gamma Statistics**											
152					k hat (MLE)	0.3	k star (bias corrected MLE)	0.294				
153					Theta hat (MLE)	58.07	Theta star (bias corrected MLE)	59.09				
154					nu hat (MLE)	26.97	nu star (bias corrected)	26.5				
155					MLE Mean (bias corrected)	17.4	MLE Sd (bias corrected)	32.06				
156							Approximate Chi Square Value (0.05)	15.77				
157					Adjusted Level of Significance	0.0447	Adjusted Chi Square Value	15.49				
158												
159	**Assuming Gamma Distribution**											
160	95% Approximate Gamma UCL (use when n>=50)					29.25	95% Adjusted Gamma UCL (use when n<50)	29.77				
161												
162	**Lognormal GOF Test**											
163					Shapiro Wilk Test Statistic	0.812	**Shapiro Wilk Lognormal GOF Test**					
164					5% Shapiro Wilk Critical Value	0.945	Data Not Lognormal at 5% Significance Level					
165					Lilliefors Test Statistic	0.195	**Lilliefors Lognormal GOF Test**					
166					5% Lilliefors Critical Value	0.131	Data Not Lognormal at 5% Significance Level					
167	**Data Not Lognormal at 5% Significance Level**											
168												
169	**Lognormal Statistics**											
170					Minimum of Logged Data	-6.502	Mean of logged Data	0.554				
171					Maximum of Logged Data	4.477	SD of logged Data	3.627				
172												
173	**Assuming Lognormal Distribution**											
174					95% H-UCL	36584	90% Chebyshev (MVUE) UCL	1890				
175					95% Chebyshev (MVUE) UCL	2497	97.5% Chebyshev (MVUE) UCL	3340				
176					99% Chebyshev (MVUE) UCL	4995						
177												
178	**Nonparametric Distribution Free UCL Statistics**											
179	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
180												
181	**Nonparametric Distribution Free UCLs**											
182					95% CLT UCL	22.8	95% Jackknife UCL	22.92				
183					95% Standard Bootstrap UCL	22.58	95% Bootstrap-t UCL	24.2				
184					95% Hall's Bootstrap UCL	23.87	95% Percentile Bootstrap UCL	22.83				
185					95% BCA Bootstrap UCL	23.63						
186					90% Chebyshev(Mean, Sd) UCL	27.26	95% Chebyshev(Mean, Sd) UCL	31.72				
187					97.5% Chebyshev(Mean, Sd) UCL	37.92	99% Chebyshev(Mean, Sd) UCL	50.1				
188												
189	**Suggested UCL to Use**											
190					95% Adjusted Gamma UCL	29.77						
191												
192	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
193	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
194												
195	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
196	Recommendations are based upon data size, data distribution, and skewness.											
197	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
198	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician											
199												
200	**Tetrachloroethene**											
201												

202	**General Statistics**											
203					Total Number of Observations	45			Number of Distinct Observations	12		
204									Number of Missing Observations	2		
205					Number of Detects	5			Number of Non-Detects	40		
206					Number of Distinct Detects	5			Number of Distinct Non-Detects	7		
207					Minimum Detect	0.0016			Minimum Non-Detect	5.0000E-4		
208					Maximum Detect	0.519			Maximum Non-Detect	2.5		
209					Variance Detects	0.0442			Percent Non-Detects	88.89%		
210					Mean Detects	0.148			SD Detects	0.21		
211					Median Detects	0.084			CV Detects	1.42		
212					Skewness Detects	2.076			Kurtosis Detects	4.469		
213					Mean of Logged Detects	-3.012			SD of Logged Detects	2.118		
214												
215	**Normal GOF Test on Detects Only**											
216					Shapiro Wilk Test Statistic	0.71			**Shapiro Wilk GOF Test**			
217					5% Shapiro Wilk Critical Value	0.762			Detected Data Not Normal at 5% Significance Level			
218					Lilliefors Test Statistic	0.409			**Lilliefors GOF Test**			
219					5% Lilliefors Critical Value	0.343			Detected Data Not Normal at 5% Significance Level			
220	**Detected Data Not Normal at 5% Significance Level**											
221												
222	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
223					KM Mean	0.0235			KM Standard Error of Mean	0.0165		
224					KM SD	0.0871			95% KM (BCA) UCL	0.0531		
225					95% KM (t) UCL	0.0511			95% KM (Percentile Bootstrap) UCL	0.0514		
226					95% KM (z) UCL	0.0505			95% KM Bootstrap t UCL	0.0794		
227					90% KM Chebyshev UCL	0.0728			95% KM Chebyshev UCL	0.0952		
228					97.5% KM Chebyshev UCL	0.126			99% KM Chebyshev UCL	0.187		
229												
230	**Gamma GOF Tests on Detected Observations Only**											
231					A-D Test Statistic	0.323			**Anderson-Darling GOF Test**			
232					5% A-D Critical Value	0.708			)etected data appear Gamma Distributed at 5% Significance Lev			
233					K-S Test Statistic	0.255			**Kolmogorov-Smirnov GOF**			
234					5% K-S Critical Value	0.37			)etected data appear Gamma Distributed at 5% Significance Lev			
235	**Detected data appear Gamma Distributed at 5% Significance Level**											
236												
237	**Gamma Statistics on Detected Data Only**											
238					k hat (MLE)	0.566			k star (bias corrected MLE)	0.36		
239					Theta hat (MLE)	0.262			Theta star (bias corrected MLE)	0.412		
240					nu hat (MLE)	5.657			nu star (bias corrected)	3.596		
241					Mean (detects)	0.148						
242												
243	**Gamma ROS Statistics using Imputed Non-Detects**											
244	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
245	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
246	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
247	This is especially true when the sample size is small.											
248	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
249					Minimum	0.0016			Mean	0.0269		
250					Maximum	0.519			Median	0.01		
251					SD	0.0772			CV	2.872		
252					k hat (MLE)	0.793			k star (bias corrected MLE)	0.755		
253					Theta hat (MLE)	0.0339			Theta star (bias corrected MLE)	0.0356		
254					nu hat (MLE)	71.37			nu star (bias corrected)	67.95		
255					Adjusted Level of Significance (β)	0.0447						
256					Approximate Chi Square Value (67.95, α)	49.97			Adjusted Chi Square Value (67.95, β)	49.46		
257					95% Gamma Approximate UCL (use when n>=50)	0.0366			95% Gamma Adjusted UCL (use when n<50)	0.0369		
258												
259	**Estimates of Gamma Parameters using KM Estimates**											
260					Mean (KM)	0.0235			SD (KM)	0.0871		
261					Variance (KM)	0.00759			SE of Mean (KM)	0.0165		
262					k hat (KM)	0.0726			k star (KM)	0.0826		
263					nu hat (KM)	6.532			nu star (KM)	7.43		
264					theta hat (KM)	0.323			theta star (KM)	0.284		
265					80% gamma percentile (KM)	0.0119			90% gamma percentile (KM)	0.0567		
266					95% gamma percentile (KM)	0.137			99% gamma percentile (KM)	0.409		
267												
268	**Gamma Kaplan-Meier (KM) Statistics**											

269	Approximate Chi Square Value (7.43, α)					2.409	Adjusted Chi Square Value (7.43, β)					2.316
270	5% Gamma Approximate KM-UCL (use when n>=50)					0.0724	95% Gamma Adjusted KM-UCL (use when n<50)					0.0753
271	95% Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50)											
272												
273	**Lognormal GOF Test on Detected Observations Only**											
274	Shapiro Wilk Test Statistic					0.894	**Shapiro Wilk GOF Test**					
275	5% Shapiro Wilk Critical Value					0.762	Detected Data appear Lognormal at 5% Significance Level					
276	Lilliefors Test Statistic					0.287	**Lilliefors GOF Test**					
277	5% Lilliefors Critical Value					0.343	Detected Data appear Lognormal at 5% Significance Level					
278	**Detected Data appear Lognormal at 5% Significance Level**											
279												
280	**Lognormal ROS Statistics Using Imputed Non-Detects**											
281	Mean in Original Scale					0.0181	Mean in Log Scale					-7.984
282	SD in Original Scale					0.0788	SD in Log Scale					2.998
283	95% t UCL (assumes normality of ROS data)					0.0378	95% Percentile Bootstrap UCL					0.0402
284	95% BCA Bootstrap UCL					0.0539	95% Bootstrap t UCL					0.104
285	95% H-UCL (Log ROS)					0.318						
286												
287	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
288	KM Mean (logged)					-6.589	KM Geo Mean					0.00138
289	KM SD (logged)					1.852	95% Critical H Value (KM-Log)					3.476
290	KM Standard Error of Mean (logged)					0.446	95% H-UCL (KM -Log)					0.0202
291	KM SD (logged)					1.852	95% Critical H Value (KM-Log)					3.476
292	KM Standard Error of Mean (logged)					0.446						
293												
294	**DL/2 Statistics**											
295	**DL/2 Normal**						**DL/2 Log-Transformed**					
296	Mean in Original Scale					0.298	Mean in Log Scale					-3.599
297	SD in Original Scale					0.466	SD in Log Scale					2.813
298	95% t UCL (Assumes normality)					0.414	95% H-Stat UCL					11.47
299	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
300												
301	**Nonparametric Distribution Free UCL Statistics**											
302	**Detected Data appear Gamma Distributed at 5% Significance Level**											
303												
304	**Suggested UCL to Use**											
305	d KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)					0.0753						
306												
307	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
308	Recommendations are based upon data size, data distribution, and skewness.											
309	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
310	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statisticia											
311												
312	**trans-1,2-Dichloroethene**											
313												
314	**General Statistics**											
315	Total Number of Observations					23	Number of Distinct Observations					22
316							Number of Missing Observations					24
317	Number of Detects					21	Number of Non-Detects					2
318	Number of Distinct Detects					20	Number of Distinct Non-Detects					2
319	Minimum Detect					5.0000E-4	Minimum Non-Detect					0.005
320	Maximum Detect					1.5	Maximum Non-Detect					2.5
321	Variance Detects					0.255	Percent Non-Detects					8.696%
322	Mean Detects					0.304	SD Detects					0.505
323	Median Detects					0.0855	CV Detects					1.659
324	Skewness Detects					1.763	Kurtosis Detects					1.522
325	Mean of Logged Detects					-2.915	SD of Logged Detects					2.367
326												
327	**Normal GOF Test on Detects Only**											
328	Shapiro Wilk Test Statistic					0.613	**Shapiro Wilk GOF Test**					
329	5% Shapiro Wilk Critical Value					0.908	Detected Data Not Normal at 5% Significance Level					
330	Lilliefors Test Statistic					0.379	**Lilliefors GOF Test**					
331	5% Lilliefors Critical Value					0.188	Detected Data Not Normal at 5% Significance Level					
332	**Detected Data Not Normal at 5% Significance Level**											
333												
334	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
335	KM Mean					0.291	KM Standard Error of Mean					0.106

336				KM SD	0.485				95% KM (BCA) UCL			0.463
337				95% KM (t) UCL	0.473				95% KM (Percentile Bootstrap) UCL			0.479
338				95% KM (z) UCL	0.465				95% KM Bootstrap t UCL			0.562
339				90% KM Chebyshev UCL	0.609				95% KM Chebyshev UCL			0.753
340				97.5% KM Chebyshev UCL	0.953				99% KM Chebyshev UCL			1.346
341												
342				**Gamma GOF Tests on Detected Observations Only**								
343				A-D Test Statistic	0.658				**Anderson-Darling GOF Test**			
344				5% A-D Critical Value	0.829				Detected data appear Gamma Distributed at 5% Significance Lev			
345				K-S Test Statistic	0.174				**Kolmogorov-Smirnov GOF**			
346				5% K-S Critical Value	0.203				Detected data appear Gamma Distributed at 5% Significance Lev			
347				**Detected data appear Gamma Distributed at 5% Significance Level**								
348												
349				**Gamma Statistics on Detected Data Only**								
350				k hat (MLE)	0.384				k star (bias corrected MLE)			0.361
351				Theta hat (MLE)	0.792				Theta star (bias corrected MLE)			0.843
352				nu hat (MLE)	16.13				nu star (bias corrected)			15.16
353				Mean (detects)	0.304							
354												
355				**Gamma ROS Statistics using Imputed Non-Detects**								
356				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs								
357				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)								
358				For such situations, GROS method may yield incorrect values of UCLs and BTVs								
359				This is especially true when the sample size is small.								
360				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates								
361				Minimum	5.0000E-4				Mean			0.282
362				Maximum	1.5				Median			0.0855
363				SD	0.487				CV			1.728
364				k hat (MLE)	0.388				k star (bias corrected MLE)			0.367
365				Theta hat (MLE)	0.726				Theta star (bias corrected MLE)			0.769
366				nu hat (MLE)	17.86				nu star (bias corrected)			16.86
367				Adjusted Level of Significance (β)	0.0389							
368				Approximate Chi Square Value (16.86, α)	8.573				Adjusted Chi Square Value (16.86, β)			8.146
369				95% Gamma Approximate UCL (use when n>=50)	0.554				95% Gamma Adjusted UCL (use when n<50)			0.583
370												
371				**Estimates of Gamma Parameters using KM Estimates**								
372				Mean (KM)	0.291				SD (KM)			0.485
373				Variance (KM)	0.236				SE of Mean (KM)			0.106
374				k hat (KM)	0.358				k star (KM)			0.341
375				nu hat (KM)	16.48				nu star (KM)			15.66
376				theta hat (KM)	0.811				theta star (KM)			0.853
377				80% gamma percentile (KM)	0.458				90% gamma percentile (KM)			0.842
378				95% gamma percentile (KM)	1.275				99% gamma percentile (KM)			2.382
379												
380				**Gamma Kaplan-Meier (KM) Statistics**								
381				Approximate Chi Square Value (15.66, α)	7.726				Adjusted Chi Square Value (15.66, β)			7.323
382				5% Gamma Approximate KM-UCL (use when n>=50)	0.589				95% Gamma Adjusted KM-UCL (use when n<50)			0.621
383												
384				**Lognormal GOF Test on Detected Observations Only**								
385				Shapiro Wilk Test Statistic	0.935				**Shapiro Wilk GOF Test**			
386				5% Shapiro Wilk Critical Value	0.908				Detected Data appear Lognormal at 5% Significance Level			
387				Lilliefors Test Statistic	0.163				**Lilliefors GOF Test**			
388				5% Lilliefors Critical Value	0.188				Detected Data appear Lognormal at 5% Significance Level			
389				**Detected Data appear Lognormal at 5% Significance Level**								
390												
391				**Lognormal ROS Statistics Using Imputed Non-Detects**								
392				Mean in Original Scale	0.28				Mean in Log Scale			-3.063
393				SD in Original Scale	0.488				SD in Log Scale			2.357
394				95% t UCL (assumes normality of ROS data)	0.455				95% Percentile Bootstrap UCL			0.453
395				95% BCA Bootstrap UCL	0.469				95% Bootstrap t UCL			0.546
396				95% H-UCL (Log ROS)	7.793							
397												
398				**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**								
399				KM Mean (logged)	-3.087				KM Geo Mean			0.0456
400				KM SD (logged)	2.397				95% Critical H Value (KM-Log)			4.72
401				KM Standard Error of Mean (logged)	0.525				95% H-UCL (KM -Log)			8.992
402				KM SD (logged)	2.397				95% Critical H Value (KM-Log)			4.72

403				KM Standard Error of Mean (logged)		0.525						
404												
405						DL/2 Statistics						
406					DL/2 Normal				DL/2 Log-Transformed			
407					Mean in Original Scale	0.332			Mean in Log Scale		-2.912	
408					SD in Original Scale	0.525			SD in Log Scale		2.444	
409					95% t UCL (Assumes normality)	0.52			95% H-Stat UCL		13.13	
410					DL/2 is not a recommended method, provided for comparisons and historical reasons							
411												
412						Nonparametric Distribution Free UCL Statistics						
413						Detected Data appear Gamma Distributed at 5% Significance Level						
414												
415						Suggested UCL to Use						
416	d KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)					0.621						
417												
418	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
419	Recommendations are based upon data size, data distribution, and skewness.											
420	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
421	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician											
422												
423	**Trichloroethene**											
424												
425						General Statistics						
426					Total Number of Observations	45			Number of Distinct Observations		14	
427									Number of Missing Observations		2	
428					Number of Detects	6			Number of Non-Detects		39	
429					Number of Distinct Detects	6			Number of Distinct Non-Detects		8	
430					Minimum Detect	2.0000E-4			Minimum Non-Detect		0.002	
431					Maximum Detect	0.36			Maximum Non-Detect		2.5	
432					Variance Detects	0.0178			Percent Non-Detects		86.67%	
433					Mean Detects	0.0996			SD Detects		0.134	
434					Median Detects	0.0683			CV Detects		1.341	
435					Skewness Detects	1.983			Kurtosis Detects		4.291	
436					Mean of Logged Detects	-3.78			SD of Logged Detects		2.723	
437												
438						Normal GOF Test on Detects Only						
439					Shapiro Wilk Test Statistic	0.756			Shapiro Wilk GOF Test			
440					5% Shapiro Wilk Critical Value	0.788			Detected Data Not Normal at 5% Significance Level			
441					Lilliefors Test Statistic	0.344			Lilliefors GOF Test			
442					5% Lilliefors Critical Value	0.325			Detected Data Not Normal at 5% Significance Level			
443						Detected Data Not Normal at 5% Significance Level						
444												
445						Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs						
446					KM Mean	0.0233			KM Standard Error of Mean		0.0146	
447					KM SD	0.0697			95% KM (BCA) UCL		0.05	
448					95% KM (t) UCL	0.0478			95% KM (Percentile Bootstrap) UCL		0.0473	
449					95% KM (z) UCL	0.0473			95% KM Bootstrap t UCL		0.0725	
450					90% KM Chebyshev UCL	0.067			95% KM Chebyshev UCL		0.0868	
451					97.5% KM Chebyshev UCL	0.114			99% KM Chebyshev UCL		0.168	
452												
453						Gamma GOF Tests on Detected Observations Only						
454					A-D Test Statistic	0.273			Anderson-Darling GOF Test			
455					5% A-D Critical Value	0.745			Detected data appear Gamma Distributed at 5% Significance Lev			
456					K-S Test Statistic	0.225			Kolmogorov-Smirnov GOF			
457					5% K-S Critical Value	0.351			Detected data appear Gamma Distributed at 5% Significance Lev			
458						Detected data appear Gamma Distributed at 5% Significance Level						
459												
460						Gamma Statistics on Detected Data Only						
461					k hat (MLE)	0.44			k star (bias corrected MLE)		0.331	
462					Theta hat (MLE)	0.226			Theta star (bias corrected MLE)		0.301	
463					nu hat (MLE)	5.279			nu star (bias corrected)		3.973	
464					Mean (detects)	0.0996						
465												
466						Gamma ROS Statistics using Imputed Non-Detects						
467	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
468	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
469	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

470	This is especially true when the sample size is small.											
471	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
472					Minimum	2.0000E-4			Mean	0.0267		
473					Maximum	0.36			Median	0.01		
474					SD	0.0563			CV	2.106		
475					k hat (MLE)	0.831			k star (bias corrected MLE)	0.79		
476					Theta hat (MLE)	0.0322			Theta star (bias corrected MLE)	0.0338		
477					nu hat (MLE)	74.78			nu star (bias corrected)	71.12		
478					Adjusted Level of Significance (β)	0.0447						
479					Approximate Chi Square Value (71.12, α)	52.71			Adjusted Chi Square Value (71.12, β)	52.18		
480					95% Gamma Approximate UCL (use when n>=50)	0.0361			95% Gamma Adjusted UCL (use when n<50)	0.0365		
481												
482	**Estimates of Gamma Parameters using KM Estimates**											
483					Mean (KM)	0.0233			SD (KM)	0.0697		
484					Variance (KM)	0.00485			SE of Mean (KM)	0.0146		
485					k hat (KM)	0.112			k star (KM)	0.119		
486					nu hat (KM)	10.07			nu star (KM)	10.73		
487					theta hat (KM)	0.208			theta star (KM)	0.195		
488					80% gamma percentile (KM)	0.0203			90% gamma percentile (KM)	0.0659		
489					95% gamma percentile (KM)	0.133			99% gamma percentile (KM)	0.338		
490												
491	**Gamma Kaplan-Meier (KM) Statistics**											
492					Approximate Chi Square Value (10.73, α)	4.401			Adjusted Chi Square Value (10.73, β)	4.267		
493	5% Gamma Approximate KM-UCL (use when n>=50)					0.0568			95% Gamma Adjusted KM-UCL (use when n<50)	0.0586		
494												
495	**Lognormal GOF Test on Detected Observations Only**											
496					Shapiro Wilk Test Statistic	0.88			**Shapiro Wilk GOF Test**			
497					5% Shapiro Wilk Critical Value	0.788			Detected Data appear Lognormal at 5% Significance Level			
498					Lilliefors Test Statistic	0.289			**Lilliefors GOF Test**			
499					5% Lilliefors Critical Value	0.325			Detected Data appear Lognormal at 5% Significance Level			
500	**Detected Data appear Lognormal at 5% Significance Level**											
501												
502	**Lognormal ROS Statistics Using Imputed Non-Detects**											
503					Mean in Original Scale	0.0166			Mean in Log Scale	-6.883		
504					SD in Original Scale	0.0564			SD in Log Scale	2.467		
505					95% t UCL (assumes normality of ROS data)	0.0307			95% Percentile Bootstrap UCL	0.0316		
506					95% BCA Bootstrap UCL	0.04			95% Bootstrap t UCL	0.0591		
507					95% H-UCL (Log ROS)	0.109						
508												
509	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
510					KM Mean (logged)	-6.873			KM Geo Mean	0.00104		
511					KM SD (logged)	2.372			95% Critical H Value (KM-Log)	4.234		
512					KM Standard Error of Mean (logged)	0.764			95% H-UCL (KM -Log)	0.0783		
513					KM SD (logged)	2.372			95% Critical H Value (KM-Log)	4.234		
514					KM Standard Error of Mean (logged)	0.764						
515												
516	**DL/2 Statistics**											
517	**DL/2 Normal**								**DL/2 Log-Transformed**			
518					Mean in Original Scale	0.298			Mean in Log Scale	-3.368		
519					SD in Original Scale	0.463			SD in Log Scale	2.648		
520					95% t UCL (Assumes normality)	0.414			95% H-Stat UCL	7.345		
521	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
522												
523	**Nonparametric Distribution Free UCL Statistics**											
524	**Detected Data appear Gamma Distributed at 5% Significance Level**											
525												
526	**Suggested UCL to Use**											
527	d KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)					0.0586						
528												
529	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
530	Recommendations are based upon data size, data distribution, and skewness.											
531	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
532	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician											
533												
534												
535	**Vinyl chloride**											
536												

537	**General Statistics**											
538					Total Number of Observations	45			Number of Distinct Observations			42
539									Number of Missing Observations			2
540					Minimum	8.0000E-4			Mean			2.916
541					Maximum	11.5			Median			1.77
542					SD	3.733			Std. Error of Mean			0.556
543					Coefficient of Variation	1.28			Skewness			1.425
544												
545	**Normal GOF Test**											
546					Shapiro Wilk Test Statistic	0.73	**Shapiro Wilk GOF Test**					
547					5% Shapiro Wilk Critical Value	0.945	Data Not Normal at 5% Significance Level					
548					Lilliefors Test Statistic	0.242	**Lilliefors GOF Test**					
549					5% Lilliefors Critical Value	0.131	Data Not Normal at 5% Significance Level					
550	**Data Not Normal at 5% Significance Level**											
551												
552	**Assuming Normal Distribution**											
553	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
554					95% Student's-t UCL	3.851	95% Adjusted-CLT UCL (Chen-1995)					3.957
555							95% Modified-t UCL (Johnson-1978)					3.87
556												
557	**Gamma GOF Test**											
558					A-D Test Statistic	0.584	**Anderson-Darling Gamma GOF Test**					
559					5% A-D Critical Value	0.829	Detected data appear Gamma Distributed at 5% Significance Lev					
560					K-S Test Statistic	0.0968	**Kolmogorov-Smirnov Gamma GOF Test**					
561					5% K-S Critical Value	0.141	Detected data appear Gamma Distributed at 5% Significance Lev					
562	**Detected data appear Gamma Distributed at 5% Significance Level**											
563												
564	**Gamma Statistics**											
565					k hat (MLE)	0.438	k star (bias corrected MLE)					0.423
566					Theta hat (MLE)	6.663	Theta star (bias corrected MLE)					6.889
567					nu hat (MLE)	39.38	nu star (bias corrected)					38.09
568					MLE Mean (bias corrected)	2.916	MLE Sd (bias corrected)					4.482
569							Approximate Chi Square Value (0.05)					24.96
570					Adjusted Level of Significance	0.0447	Adjusted Chi Square Value					24.6
571												
572	**Assuming Gamma Distribution**											
573	95% Approximate Gamma UCL (use when n>=50)					4.45	95% Adjusted Gamma UCL (use when n<50)					4.514
574												
575	**Lognormal GOF Test**											
576					Shapiro Wilk Test Statistic	0.885	**Shapiro Wilk Lognormal GOF Test**					
577					5% Shapiro Wilk Critical Value	0.945	Data Not Lognormal at 5% Significance Level					
578					Lilliefors Test Statistic	0.183	**Lilliefors Lognormal GOF Test**					
579					5% Lilliefors Critical Value	0.131	Data Not Lognormal at 5% Significance Level					
580	**Data Not Lognormal at 5% Significance Level**											
581												
582	**Lognormal Statistics**											
583					Minimum of Logged Data	-7.131	Mean of logged Data					-0.412
584					Maximum of Logged Data	2.442	SD of logged Data					2.461
585												
586	**Assuming Lognormal Distribution**											
587					95% H-UCL	69.11	90% Chebyshev (MVUE) UCL					28.87
588					95% Chebyshev (MVUE) UCL	37.04	97.5% Chebyshev (MVUE) UCL					48.38
589					99% Chebyshev (MVUE) UCL	70.65						
590												
591	**Nonparametric Distribution Free UCL Statistics**											
592	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
593												
594	**Nonparametric Distribution Free UCLs**											
595					95% CLT UCL	3.831	95% Jackknife UCL					3.851
596					95% Standard Bootstrap UCL	3.829	95% Bootstrap-t UCL					4.021
597					95% Hall's Bootstrap UCL	3.964	95% Percentile Bootstrap UCL					3.861
598					95% BCA Bootstrap UCL	4.026						
599					90% Chebyshev(Mean, Sd) UCL	4.585	95% Chebyshev(Mean, Sd) UCL					5.341
600					97.5% Chebyshev(Mean, Sd) UCL	6.391	99% Chebyshev(Mean, Sd) UCL					8.453
601												
602	**Suggested UCL to Use**											
603					95% Adjusted Gamma UCL	4.514						

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statisticia

Acetone

General Statistics

Total Number of Observations	6	Number of Distinct Observations	5
		Number of Missing Observations	35
Number of Detects	3	Number of Non-Detects	3
Number of Distinct Detects	3	Number of Distinct Non-Detects	2
Minimum Detect	0.0051	Minimum Non-Detect	2.5
Maximum Detect	0.007	Maximum Non-Detect	12.5
Variance Detects	9.4333E-7	Percent Non-Detects	50%
Mean Detects	0.00617	SD Detects	9.7125E-4
Median Detects	0.0064	CV Detects	0.158
Skewness Detects	-1.019	Kurtosis Detects	N/A
Mean of Logged Detects	-5.097	SD of Logged Detects	0.163

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.262	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00617	KM Standard Error of Mean	5.6075E-4
KM SD	7.9303E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0073	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00709	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00785	95% KM Chebyshev UCL	0.00861
97.5% KM Chebyshev UCL	0.00967	99% KM Chebyshev UCL	0.0117

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	57.8	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.0669E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	346.8	nu star (bias corrected)	N/A
Mean (detects)	0.00617		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0051	Mean	0.00808
Maximum	0.01	Median	0.0085
SD	0.00219	CV	0.271
k hat (MLE)	15.19	k star (bias corrected MLE)	7.708
Theta hat (MLE)	5.3204E-4	Theta star (bias corrected MLE)	0.00105
nu hat (MLE)	182.3	nu star (bias corrected)	92.49
Adjusted Level of Significance (β)	0.0122		

671	Approximate Chi Square Value (92.49, α)					71.31	Adjusted Chi Square Value (92.49, β)					64.63
672	95% Gamma Approximate UCL (use when n>=50)					0.0105	95% Gamma Adjusted UCL (use when n<50)					N/A
673												
674	**Estimates of Gamma Parameters using KM Estimates**											
675	Mean (KM)					0.00617	SD (KM)					7.9303E-4
676	Variance (KM)					6.2889E-7	SE of Mean (KM)					5.6075E-4
677	k hat (KM)					60.47	k star (KM)					30.35
678	nu hat (KM)					725.6	nu star (KM)					364.1
679	theta hat (KM)					1.0198E-4	theta star (KM)					2.0322E-4
680	80% gamma percentile (KM)					0.00708	90% gamma percentile (KM)					0.00764
681	95% gamma percentile (KM)					0.00812	99% gamma percentile (KM)					0.00907
682												
683	**Gamma Kaplan-Meier (KM) Statistics**											
684	Approximate Chi Square Value (364.14, α)					320.9	Adjusted Chi Square Value (364.14, β)					306.1
685	5% Gamma Approximate KM-UCL (use when n>=50)					0.007	95% Gamma Adjusted KM-UCL (use when n<50)					0.00733
686												
687	**Lognormal GOF Test on Detected Observations Only**											
688	Shapiro Wilk Test Statistic					0.941	**Shapiro Wilk GOF Test**					
689	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
690	Lilliefors Test Statistic					0.277	**Lilliefors GOF Test**					
691	5% Lilliefors Critical Value					0.425	Detected Data appear Lognormal at 5% Significance Level					
692	**Detected Data appear Lognormal at 5% Significance Level**											
693												
694	**Lognormal ROS Statistics Using Imputed Non-Detects**											
695	Mean in Original Scale					0.00615	Mean in Log Scale					-5.097
696	SD in Original Scale					7.2879E-4	SD in Log Scale					0.121
697	95% t UCL (assumes normality of ROS data)					0.00675	95% Percentile Bootstrap UCL					0.00658
698	95% BCA Bootstrap UCL					0.00658	95% Bootstrap t UCL					0.0067
699	95% H-UCL (Log ROS)					0.00685						
700												
701	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
702	KM Mean (logged)					-5.097	KM Geo Mean					0.00611
703	KM SD (logged)					0.133	95% Critical H Value (KM-Log)					1.981
704	KM Standard Error of Mean (logged)					0.0942	95% H-UCL (KM -Log)					0.00694
705	KM SD (logged)					0.133	95% Critical H Value (KM-Log)					1.981
706	KM Standard Error of Mean (logged)					0.0942						
707												
708	**DL/2 Statistics**											
709	**DL/2 Normal**						**DL/2 Log-Transformed**					
710	Mean in Original Scale					1.461	Mean in Log Scale					-2.169
711	SD in Original Scale					2.424	SD in Log Scale					3.263
712	95% t UCL (Assumes normality)					3.455	95% H-Stat UCL					1.647E+9
713	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
714												
715	**Nonparametric Distribution Free UCL Statistics**											
716	**Detected Data appear Normal Distributed at 5% Significance Level**											
717												
718	**Suggested UCL to Use**											
719	95% KM (t) UCL					0.0073						
720	**Warning: Recommended UCL exceeds the maximum observation**											
721												
722	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
723	Recommendations are based upon data size, data distribution, and skewness.											
724	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
725	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician											
726												
727	**Toluene**											
728												
729	**General Statistics**											
730	Total Number of Observations					6	Number of Distinct Observations					4
731							Number of Missing Observations					35
732	Number of Detects					1	Number of Non-Detects					5
733	Number of Distinct Detects					1	Number of Distinct Non-Detects					3
734												
735	**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**											
736	**gested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B**											
737												

	A	B	C	D	E	F	G	H	I	J	K	L
738	The data set for variable Toluene was not processed!											
739												
740												

ATTACHMENT D

Risk Calculations

Attachment D, Table 1
Cancer Risk Calculations - Composite Receptor/Age-Adjusted
Substation - Groundwater
RESIDENT (4 AGE GROUPS) - RESIDENT (AGES 0- 26)

Human Health Risk Assessment
Huster Substation
St. Charles, Missouri

Exposure Routes Evaluated		ELCR (Total)
Incidental Ingestion	Yes	2E-01
Dermal Contact	Yes	2E-02
Ambient Vapor Inhalation	Yes	1E-02
		2E-01

NC - not carcinogenic by this exposure route
NTV - no toxicity value available
NV - not volatile
DAD - dermally absorbed dose
EC - exposure concentration
ABS - absorption factor
CSF - cancer slope factor
UR - cancer unit risk
ELCR - excess lifetime cancer risk
EPC - exposure point concentration
EPD - effective permeability domain

COPC	CASRN	EPC	Intake Calculations				Tapwater Dermal Parameters						Mutagenic MOA?	Cancer Toxicity Values			ELCR			
			$Intake_{ingestion}$	DA_{event}	DAD_{dermal}	EC_{vapor}	B	τ	t*	Kp	FA	In EPD?		CSF_{oral}	CSF_{dermal}	IUR	$ELCR_{ingestion}$	$ELCR_{dermal}$	$ELCR_{vapor}$	$ELCR_{total}$
		(mg/L)	(mg/kg/day)	(mg/kg/day)	(mg/kg/day)	(ug/m^3)	(unitless)	(hr/event)	(hr)	(cm/hr)	(unitless)	(Y/N)		$(mg/kg/day)^{-1}$	$(mg/kg/day)^{-1}$	$(ug/m^3)^{-1}$				
Trichloroethylene	79-01-6	5.9E-02	1.1E-03	1.2E-06	1.7E-04	1.5E+01	5.1E-02	5.7E-01	1.4E+00	1.2E-02	1	Y	Y	4.6E-02	4.6E-02	4.1E-06	4.9E-05	7.8E-06	6.1E-05	1.18E-04
Vinyl Chloride	75-01-4	4.5E+00	2.9E-01	4.3E-05	2.3E-02	3.1E+03	2.5E-02	2.4E-01	5.7E-01	8.4E-03	1	Y	Y	7.2E-01	7.2E-01	4.4E-06	2.1E-01	1.6E-02	1.3E-02	2.40E-01
1,1-Dichloroethene	75-35-4	6.8E-02	8.7E-04	1.1E-06	1.1E-04	NC	4.4E-02	3.7E-01	8.8E-01	1.2E-02	1	Y	N	NTV	NTV	NTV	NTV	NTV	NTV	
Acetone	67-64-1	7.0E-03	9.0E-05	4.0E-09	4.1E-07	NC	1.5E-03	2.2E-01	5.3E-01	5.1E-04	1	Y	N	NTV	NTV	NTV	NTV	NTV	NTV	
cis-1,2-Dichloroethylene	156-59-2	3.0E+01	3.8E-01	4.5E-04	4.6E-02	NC	4.2E-02	3.7E-01	8.8E-01	1.1E-02	1	Y	N	NTV	NTV	NTV	NTV	NTV	NTV	
Tetrachloroethylene	127-18-4	7.5E-02	9.7E-04	5.4E-06	5.5E-04	1.3E+01	1.7E-01	8.9E-01	2.1E+00	3.3E-02	1	Y	N	2.1E-03	2.1E-03	2.6E-07	2.0E-06	1.2E-06	3.5E-06	6.67E-06
Toluene	108-88-3	1.8E-03	2.3E-05	7.4E-08	7.6E-06	NC	1.1E-01	3.5E-01	8.3E-01	3.1E-02	1	Y	N	NTV	NTV	NTV	NTV	NTV	NTV	
trans-1,2-Dichloroethylene	156-60-5	6.2E-01	8.0E-03	9.4E-06	9.6E-04	NC	4.2E-02	3.7E-01	8.8E-01	1.1E-02	1	Y	N	NTV	NTV	NTV	NTV	NTV	NTV	

Attachment D, Table 2
Non-Cancer Risk Calculations
Substation - Groundwater
RESIDENT (4 AGE GROUPS) - CHILD (AGE 0-<2)

Human Health Risk Assessment
Huster Substation
St. Charles, Missouri

Exposure Routes Evaluated		HI (Total)
Incidental Ingestion	Yes	8E+02
Dermal Contact	Yes	9E+01
Ambient Vapor Inhalation	Yes	4E+01
		950.5

NV - not volatile
NTV - no toxicity value available
EC - exposure concentration
DAD - dermally absorbed dose
RfD - reference dose
ABS - absorption factor
HI - hazard index
RfC - reference concentration
EPC - exposure point concentration
COPC - chemical of potential concern
EPD - effective permeability domain

COPC	CASRN	EPC	Intake Calculations				Tapwater Dermal Parameters						Non-Cancer Toxicity Values			$HQ_{ingestion}$	HQ_{dermal}	HQ_{vapor}	HQ_{total}
			$Intake_{ingestion}$	DA_{event}	DAD_{dermal}	EC_{vapor}	B	τ	t*	Kp	FA	In EPD?	RfD_{oral}	RfD_{dermal}	RfC				
		(mg/L)	(mg/kg/day)	(mg/kg/day)	(mg/kg/day)	(mg/m^3)	(unitless)	(hr/event)	(hr)	(cm/hr)	(unitless)	(Y/N)	(mg/kg/day)	(mg/kg/day)	(mg/m^3)				
Trichloroethylene	79-01-6	5.86E-02	2.9E-03	1.0E-06	4.2E-04	2.8E-02	5.1E-02	5.7E-01	1.4E+00	1.2E-02	1	Y	5.0E-04	5.0E-04	2.0E-03	5.8E+00	8.5E-01	1.4E+01	2.1E+01
Vinyl Chloride	75-01-4	4.51E+00	2.3E-01	3.7E-05	1.5E-02	2.2E+00	2.5E-02	2.4E-01	5.7E-01	8.4E-03	1	Y	3.0E-03	3.0E-03	1.0E-01	7.5E+01	5.1E+00	2.2E+01	1.0E+02
1,1-Dichloroethene	75-35-4	6.78E-02	3.4E-03	9.8E-07	4.0E-04	3.3E-02	4.4E-02	3.7E-01	8.8E-01	1.2E-02	1	Y	5.0E-02	5.0E-02	2.0E-01	6.8E-02	7.9E-03	1.6E-01	2.4E-01
Acetone	67-64-1	7.00E-03	3.5E-04	3.5E-09	1.4E-06	3.4E-03	1.5E-03	2.2E-01	5.3E-01	5.1E-04	1	Y	9.0E-01	9.0E-01	3.1E+01	3.9E-04	1.6E-06	1.1E-04	5.0E-04
cis-1,2-Dichloroethylene	156-59-2	2.98E+01	1.5E+00	4.0E-04	1.6E-01	1.4E+01	4.2E-02	3.7E-01	8.8E-01	1.1E-02	1	Y	2.0E-03	2.0E-03	NTV	7.4E+02	8.2E+01	NTV	8.2E+02
Tetrachloroethylene	127-18-4	7.53E-02	3.8E-03	4.8E-06	2.0E-03	3.6E-02	1.7E-01	8.9E-01	2.1E+00	3.3E-02	1	Y	6.0E-03	6.0E-03	4.0E-02	6.3E-01	3.3E-01	9.0E-01	1.9E+00
Toluene	108-88-3	1.80E-03	9.0E-05	6.7E-08	2.7E-05	8.6E-04	1.1E-01	3.5E-01	8.3E-01	3.1E-02	1	Y	8.0E-02	8.0E-02	5.0E+00	1.1E-03	3.4E-04	1.7E-04	1.6E-03
trans-1,2-Dichloroethylene	156-60-5	6.21E-01	3.1E-02	8.4E-06	3.4E-03	3.0E-01	4.2E-02	3.7E-01	8.8E-01	1.1E-02	1	Y	2.0E-02	2.0E-02	NTV	1.5E+00	1.7E-01	NTV	1.7E+00

Attachment D, Table 3
Intake and Risk Equations - Composite Receptor/Age-Adjusted

Human Health Risk Assessment
Huster Substation
St. Charles, Missouri

Cancer Risk from Ingestion

$$ELCR = Intake_{ing} * CSF$$

$$Intake_{ing\ (age\ group\ x)} = \frac{[EPC]_{water} * IFWadj\ - OR - IFWM * FI}{AT_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR = DAD * CSF$$

$$DAD_{derm\ (age\ group\ x)} = \frac{DA_{Event} * DFWadj - OR - DFWM}{AT_{lifetime}}$$

$$DA_{Event} = [EPC]_{water} * PCevent$$

Organic Compounds:

$$PCevent_{Tevent<t*} = 2 * FA * \frac{Kp}{C2} * \sqrt{\frac{6 * \tau * Tevent}{\pi}}$$

$$PCevent_{Tevent>=t*} = FA * \frac{Kp}{C2} * \left[\left(\frac{Tevent}{1+B}\right) + 2 * \tau * \left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

Inorganics Compounds:

$$PCevent = \frac{Kp * Tevent}{C2}$$

Cancer Risk from Inhalation

$$ELCR_{inh} = EC_{can} * IUR$$

$$EC_{can\ (age\ group\ x)} = \frac{[EPC]_{vapor} * (ET_{Vap} * EF * ED) - OR - INHM * C1}{24 * AT_{lifetime}}$$

Noncancer Risk from Ingestion

$$HQ = \frac{Intake_{ing}}{RfD}$$

$$Intake_{ing} = \frac{[EPC]_{water} * IR * FI * EF * ED}{BW * AT}$$

Noncancer Risk from Dermal Absorption

$$HQ = \frac{DAD}{RfD}$$

$$DAD_{derm} = \frac{DA_{Event} * SA * EV * EF * ED}{BW * AT}$$

$$DA_{Event} = [EPC]_{water} * PCevent$$

Organic Compounds:

$$PCevent_{Tevent<t*} = 2 * FA * \frac{Kp}{C2} * \sqrt{\frac{6 * \tau * Tevent}{\pi}}$$

$$PCevent_{Tevent>=t*} = FA * \frac{Kp}{C2} * \left[\left(\frac{Tevent}{1+B}\right) + 2 * \tau * \left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

Inorganics Compounds:

$$PCevent = \frac{Kp * Tevent}{C2}$$

Noncancer Risk from Inhalation

$$HQ = \frac{EC_{nc}}{RfC}$$

$$EC_{nc} = \frac{[EPC]_{VAPOR} * ET_{Vap} * EF * ED * C1}{24 * AT}$$

Parameter	Value - Cancer	Value - Non-Cancer	Units
CSF	Chemical specific	--	$(mg/kg\text{-}day)^{-1}$
IUR	Chemical specific	--	$(ug/m^3)^{-1}$
Intake	Age/chemical specific	--	mg/kg-day
EC_{can}	Age/chemical specific	--	(ug/m^3)
ELCR	Age/chemical specific	--	unitless
RfD	--	Chemical specific	mg/kg-day
RfC	--	Chemical specific	(mg/m^3)
DAD	Age/chemical specific	Age/chemical specific	mg/kg-day
DA_{Event}	Age/chemical specific	Age/chemical specific	mg/cm^2-event
EC_{nc}	--	Age/chemical specific	mg/m^3
HQ	--	Age/chemical specific	unitless
$[EPC]_{water}$	Chemical specific	Chemical specific	mg/L
PCevent	Chemical specific	Chemical specific	L/cm^2-event
$[EPC]_{vapor}$	Attachment D, TABLE 5	Attachment D, TABLE 5	ug/m^3
BW	NA	15	kg
EF	350	350	day/year
ED	26	2	year
AT	--	730	day
ATlifetime	25550	--	day
IR	NA	0.78	L/day
FI	1	1	unitless
IFWadj	327.95	--	L/kg
IFWM	1019.90	--	L/kg
SA	NA	6365	cm2
Tevent	0.67	0.54	hr/event
EV	1	1	event/day
DFWadj	2610650	--	events-cm2/kg
DFWM	8191633.333	--	mg-yr/kg-day
C1	0.001	0.001	mg/ug
ETVap	24	24	hours/day
INHM	604800	--	unitless
C2	1000	1000	cm^3/L

Attachment D, Table 4
Exposure Factors

Huster Substation
St. Charles, Missouri

RECEPTOR			CHILD (AGE 0-<2)		CHILD (2 - <6)		OLDER CHILD (AGE 6 - <16)		ADULT		RESIDENT (AGES 0- 26)	
Standard Parameters												
Body Weight	BW	kg	15	EPA, 2014	15	EPA, 2014	80	EPA, 2014	80	EPA, 2014	NA	
Exposure Frequency	EF	day/year	350	EPA, 2014	350	EPA, 2014	350	EPA, 2014	350	EPA, 2014	350	EPA, 2014
Exposure Duration	ED	year	2	Ages 0 - <2	4	Ages 2 - <6	10	Balance of 26-yr exposure	10	Balance of 26-yr exposure	26	EPA, 2014
Non–carcinogenic Averaging Time	AT	day	730	Exposure duration expressed in days	1460	Exposure duration expressed in days	3650	Exposure duration expressed in days	3650	Exposure duration expressed in days	9490	Exposure duration expressed in days
Carcinogenic Averaging Time	$AT_{lifetime}$	day	25550	70 year lifetime	25550	70 year lifetime	25550	70 year lifetime	25550	70 year lifetime	25550	70 year lifetime
Age-Dependent Adjustment Factor	ADAF	unitless	10	USEPA, 2008	3	USEPA, 2008	3	USEPA, 2008	1	USEPA,2008		
Ingestion of Water												
Water Ingestion Rate	IR	L/day	0.78	EPA, 2014	0.78	EPA, 2014	2.50	EPA, 2014	2.50	EPA, 2014	NA	
Fraction Ingested	FI	unitless	1.0	Assumption	1.0	Assumption	1.0	Assumption	1.0	Assumption	1.0	Assumption
Age-Adjusted Water Ingestion Rate	IFWadj	L/kg	NA		NA		NA		NA		328.0	
Age-Adjusted Water Ingestion Factor-Mutagenic	IFWM	L/kg									1019.9	
Dermal Exposure with Water												
Exposed Skin Surface Area	SA	cm^2	6365	EPA, 2014	6365	EPA, 2014	19652	EPA, 2014	19652	EPA, 2014	NA	
Exposure Time	Tevent	hr/event	0.54	EPA, 2014	0.54	EPA, 2014	0.71	EPA, 2014	0.71	EPA, 2014	0.671	
Events per Day	EV	event/day	1.0	Assumption	1.0	Assumption	1.0	Assumption	1.0	Assumption	1.0	Assumption
Age-Adjusted Dermal Contact Factor	DFWadj	$events\text{-}cm^2/kg$	NA		NA		NA		NA		2610650	
Age-Adjusted Dermal Contact Factor-Mutagenic	DFWM	mg-yr/kg-day									8191633.333	
Vapor Inhalation												
Exposure Time	ET_{Vap}	hours/day	24	EPA, 2014	24	EPA, 2014	24	EPA, 2014	24	EPA, 2014	24.0	
Age-Adjusted Inhalation Factor-Mutagenic	INHM	unitless									604800	

Attachment D, Table 4
Exposure Factors

Huster Substation
St. Charles, Missouri

RECEPTOR

Standard Parameters			
	Body Weight	BW	kg
	Exposure Frequency	EF	day/year
	Exposure Duration	ED	year
	Non–carcinogenic Averaging Time	AT	day
	Carcinogenic Averaging Time	$AT_{lifetime}$	day
	Age-Dependent Adjustment Factor	ADAF	unitless
Ingestion of Water			
	Water Ingestion Rate	IR	L/day
	Fraction Ingested	FI	unitless
	Age-Adjusted Water Ingestion Rate	IFWadj	L/kg
	Age-Adjusted Water Ingestion Factor-Mutagenic	IFWM	L/kg
Dermal Exposure with Water			
	Exposed Skin Surface Area	SA	cm^2
	Exposure Time	Tevent	hr/event
	Events per Day	EV	event/day
	Age-Adjusted Dermal Contact Factor	DFWadj	events-cm^2/kg
	Age-Adjusted Dermal Contact Factor-Mutagenic	DFWM	mg-yr/kg-day
Vapor Inhalation			
	Exposure Time	ET_{Vap}	hours/day
	Age-Adjusted Inhalation Factor-Mutagenic	INHM	unitless

Attachment D, Table 4
Exposure Factors

Huster Substation
St. Charles, Missouri

RECEPTOR

Standard Parameters			
	Body Weight	BW	kg
	Exposure Frequency	EF	day/year
	Exposure Duration	ED	year
	Non–carcinogenic Averaging Time	AT	day
	Carcinogenic Averaging Time	$AT_{lifetime}$	day
	Age-Dependent Adjustment Factor	ADAF	unitless
Ingestion of Water			
	Water Ingestion Rate	IR	L/day
	Fraction Ingested	FI	unitless
	Age-Adjusted Water Ingestion Rate	IFWadj	L/kg
	Age-Adjusted Water Ingestion Factor-Mutagenic	IFWM	L/kg
Dermal Exposure with Water			
	Exposed Skin Surface Area	SA	cm^2
	Exposure Time	Tevent	hr/event
	Events per Day	EV	event/day
	Age-Adjusted Dermal Contact Factor	DFWadj	events-cm^2/kg
	Age-Adjusted Dermal Contact Factor-Mutagenic	DFWM	mg-yr/kg-day
Vapor Inhalation			
	Exposure Time	ET_{Vap}	hours/day
	Age-Adjusted Inhalation Factor-Mutagenic	INHM	unitless

Attachment D, Table 4
Exposure Factors

Huster Substation
St. Charles, Missouri

Notes and Abbreviations

EPA, 2008. "Handbook for Implementing Supplemental Cancer Guidance at Waste and Cleanup Sites"; Office of Emergency and Remedial Response
EPA, 2011 - Exposure Factors Handbook. EPA/600/R-10/030. October, 2011.
EPA, 2014 - Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120. February 6, 2014.
[1] - Table 8-1 of EPA (2011), Recommended Values for children ages 6 - <11 and 11 - <16; See Table 2
[2] - Based on the total number of days with precipitation greater than 0.01 inch in Hayden, AZ (http://www.myforecast.com/bin/climate.m?city=10857&metric=false)
[3] - One-tenth of the value for swimming (49 ml/hour; Table 3-5 of EPA (2011)) used to approximate incidental ingestion during wading in washes during storm water events.
[4] - One-tenth of the value for swimming (21 ml/hour; Table 3-5 of EPA (2011)) used to approximate incidental ingestion during wading in washes during storm water events.
[5] - Assumes two hours per event and that on days when play in storm water occurs , all daily exposure to storm water is derived from locations at the Site.
[6] - Based on surface area of hands, forearms, lower legs, and feet - see calculations Table 2.

Values are based on time-weighted average of child, adolescent, and adult exposure values, calculated as follows:

EF = (child EF x child ED) + (adolescent EF x adolescent ED) + (adult EF x adult ED) / total scenario ED

IFWadj = (child ED [0-2] x child EF [0-2] x child IR [0-2] / child BW [0-2]) + (child ED [2-6] x child EF [2-6] x child IR [2-6] / child BW [2-6]) + (older child ED [6-16] x older child EF [6-16] x older child IR [6-16] / older child BW [6-16]) + (adult ED x adult EF x adult IR / adult BW)

IFWM = (child ED [0-2] x child EF [0-2] x child IR [0-2] x ADAF [0-2] / child BW [0-2]) + (child ED [2-6] x child EF [2-6] x child IR [2-6] x ADAF [2-6] / child BW [2-6]) + (older child ED [6-16] x child EF [6-16] x older child IR [6-16] x ADAF [6-16] / older child BW [6-16]) + (adult ED x adult EF x adult IR x adult ADAF / adult BW)

DFWadj = (child EF [0-2] x child ED [0-2] x child SA [0-2] x child EV [0-2] / child BW [0-2]) + (child EF [2-6] x child ED [2-6] x child SA [2-6] x child EV [2-6] / child BW [2-6]) + (older child EF [6-16] x older child ED [6-16] x older child SA [6-16] x older child EV [6-16] / older child BW [6-16]) + (adult EF x adult ED x adult SA x adult EV / adult BW)

DFWM = (child EF [0-2] x child ED [0-2] x child SA [0-2] x child EV [0-2] x ADAF [0-2] / child BW [0-2]) + (child EF [2-6] x child ED [2-6] x child SA [2-6] x child EV [2-6] x ADAF [2-6] / child BW [2-6]) + (older child EF [6-16] x older child ED [6-16] x older child SA [6-16] x older child EV [6-16] x ADAF [6-16] / older child BW [6-16]) + (adult EF x adult ED x adult SA x adult EV x adult ADAF / adult BW)

ET = [(child ET [0-2] x child ED [0-2]) + (child ET [2-6] x child ED [2-6]) + (older child ET [6-16] x older child ED [6-16]) + (adult ET x adult ED)] / total scenario ED

INHF = [(child ET [0-2] x child EF [0-2] x child ED [0-2] x ADAF [0-2]) + (child ET [2-6] x child EF [2-6] x child ED [2-6] x ADAF [2-6]) + (older child ET [6-16] x older child EF [6-16] x older child ED [6-16] x ADAF [6-16]) + (adult ET x adult EF x adult ED x adult ADAF)]

Attachment D, Table 5
Vapor to Inddor Air EPC Calculations
Substation - Groundwater
RESIDENT (4 AGE GROUPS) - RESIDENT (AGES 0- 26)

Human Health Risk Assessment
Huster Substation
St. Charles, Missouri

EQUATIONS:

$EPC_{[VAPOR]} = EPC_{[WATER]} \times K \times 1000$ ug/mg

or

$EPC_{[VAPOR]} = EPC_{[WATER]} \times VF \times 1000$ ug/mg

PARAMETER/DEFINITION	UNITS	DEFAULT	Basis of EPC Vapor	Source
K / Andelman Volatilization Factor	L/m^3	0.5	x	EPA, 2014
VF / volatilization factor	L/m^3	Calculated		

EPA, 2014 - Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120. February 6, 2014.

CASRN	COPC	Volatile (Y/N)	K (constant) (L/m^3)	VF (chemical-specific) (L/m^3)	EPC Water (mg/L)	EPC Vapor (ug/m^3)
79-01-6	Trichloroethylene	Y	0.5		0.0586	2.9E+01
75-01-4	Vinyl Chloride	Y	0.5		4.514	2.3E+03
75-35-4	1,1-Dichloroethene	Y	0.5		0.0678	3.4E+01
67-64-1	Acetone	Y	0.5		0.007	3.5E+00
156-59-2	cis-1,2-Dichloroethylene	Y	0.5		29.77	1.5E+04
127-18-4	Tetrachloroethylene	Y	0.5		0.0753	3.8E+01

Attachment D, Table 6
Toxicity Values and Sources

Human Health Risk Assessment
Huster Substation
St. Charles, Missouri

I - Integrated Risk Information System (IRIS)
P - Provisional Peer Reviewed Reference Toxicity Value (PPRTV)
H - Health Effects Assessment Summary Tables (HEAST)

X - Provisional Peer Reviewed Reference Toxicity Value (PPRTV) Appendix.
A - Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Level (MRL)
C - California EPA

M - MassDEP
E - Environmental Criteria and Assessment Office (ECAO)
S - Surrogate

Cr - Chronic value
J - New Jersey DEP

COPC	CASRN	Chronic Oral Reference Dose RfD-o (mg/kg-day)	REF	Chronic Dermal Reference Dose RfD-d (mg/kg-day)	REF	Subchronic Oral Reference Dose RfD-o (mg/kg-day)	REF	Subchronic Dermal Reference Dose RfD-d (mg/kg-day)	REF	Chronic Inhalation Ref. Concentration RfC-i mg/m3	REF	Subchronic Inhalation Ref. Concentration RfC-i mg/m3	REF	Oral Cancer Slope Factor CSF-o 1/(mg/kg/day)	REF	Dermal Cancer Slope Factor CSF-d 1/(mg/kg/day)	REF	Inhalation Unit Risk UR 1/(µg/m3)	REF	Mutagen
Trichloroethylene	79-01-6	5.0E-04	I	5.0E-04	I	5.0E-04	Cr	5.0E-04	Cr	2.0E-03	I	2.0E-03	A	4.6E-02	I	4.6E-02	I	4.1E-06	I	Y
Vinyl Chloride	75-01-4	3.0E-03	I	3.0E-03	I	3.0E-03	Cr	3.0E-03	Cr	1.0E-01	I	1.0E-01	Cr	7.2E-01	I	7.2E-01	I	4.4E-06	I	Y
1,1-Dichloroethene	75-35-4	5.0E-02	I	5.0E-02	I	5.0E-02	Cr	5.0E-02	Cr	2.0E-01	I	2.0E-01	Cr	NTV		NTV		NTV		N
Acetone	67-64-1	9.0E-01	I	9.0E-01	I	2.0E+00	A	2.0E+00	A	3.1E+01	A	3.1E+01	A	NTV		NTV		NTV		N
cis-1,2-Dichloroethylene	156-59-2	2.0E-03	I	2.0E-03	I	2.0E-02	P	2.0E-02	P	NTV		NTV		NTV		NTV		NTV		N
Tetrachloroethylene	127-18-4	6.0E-03	I	6.0E-03	I	1.0E-01	H	1.0E-01	H	4.0E-02	I	4.0E-02	Cr	2.1E-03	I	2.1E-03	I	2.6E-07	I	N

ATTACHMENT E

Toxicity Assessment

1. Toxicity Assessment

The objective of the toxicity assessment is to quantify the relationship between the intake, or dose, of COPCs and the likelihood that adverse health effects may result from exposure to the COPCs. There are two major types of adverse health effects evaluated in the HHRA: non-carcinogenic, and carcinogenic. Non-carcinogenic health effects refer to toxicological effects other than cancer which may result from exposure to a substance, such as toxicity to the liver, skin, or central nervous system. Carcinogenic health effects refer to the development of cancer which may result from exposure to a substance. Following USEPA guidance (USEPA, 1989), these two effects (non-carcinogenic and carcinogenic) are evaluated separately.

1.1 CARCINOGENIC HEALTH EFFECTS

USEPA uses a two-part evaluation to characterize the carcinogenicity of a chemical. The first part involves assigning a weight-of-evidence classification to a chemical, which describes the strength of available information in determining the likelihood of a chemical actually causing cancer in humans. The second part involves calculation of a CSF or UR to reflect the carcinogenic potency.

1.1.1 WEIGHT OF EVIDENCE CLASSIFICATION

Historically, U.S. EPA has used an alphanumeric system to describe the weight-of-evidence:

Group A - Human Carcinogen. This category indicates there is sufficient evidence from epidemiological studies to support a causal association between an agent and human cancer.

Group B - Probable Human Carcinogen. This category generally indicates there is at least limited evidence from epidemiologic studies of carcinogenicity to humans (Group B1) or that, in the absence of data on humans, there is sufficient evidence of carcinogenicity in animals (Group B2).

Group C - Possible Human Carcinogen. This category indicates that there is limited evidence of carcinogenicity in animals in the absence of data on humans.

Group D - Not Classified. This category indicates that the evidence for carcinogenicity in animals is inadequate.

Group E - No Evidence of Carcinogenicity to Humans. This category indicates that there is evidence of noncarcinogenicity in at least two adequate animal tests in different species or in both epidemiologic and animal studies.

In the revised Guidelines for Carcinogenic Risk Assessment (USEPA, 2005a), U.S. EPA revised the approach to describing the carcinogenic potential of an agent from an alphanumeric system to a weight-of-evidence-based descriptive narrative. Descriptors are as follows:

Carcinogenic to Humans. This descriptor indicates strong evidence of human carcinogenicity, and is appropriate A) when there is convincing epidemiologic evidence of a causal association between human exposure and cancer; or B) when all of the following conditions are met: (a) there is strong evidence of an association between human exposure and either cancer or the key precursor events of the agent's mode of action but not enough for a causal association, and (b) there is extensive evidence of carcinogenicity in animals, and (c) the mode(s) of carcinogenic action and associated key precursor events have been identified in animals, and (d) there is strong evidence that the key precursor events

that precede the cancer response in animals are anticipated to occur in humans and progress to tumors, based on available biological information

Likely to Be Carcinogenic to Humans. This descriptor is appropriate when the weight of the evidence is adequate to demonstrate carcinogenic potential to humans but does not reach the weight of evidence for the descriptor "Carcinogenic to Humans." The use of the term "likely" as a weight of evidence descriptor does not correspond to a quantifiable probability. Supporting data for this descriptor may include: an agent demonstrating a plausible (but not definitively causal) association between human exposure and cancer, in most cases with some supporting biological, experimental evidence, though not necessarily carcinogenicity data from animal experiments; an agent that has tested positive in animal experiments in more than one species, sex, strain, site, or exposure route, with or without evidence of carcinogenicity in humans; a positive tumor study that raises additional biological concerns beyond that of a statistically significant result, for example, a high degree of malignancy, or an early age at onset; a rare animal tumor response in a single experiment that is assumed to be relevant to humans; or a positive tumor study that is strengthened by other lines of evidence, for example, either plausible (but not definitively causal) association between human exposure and cancer or evidence that the agent or an important metabolite causes events generally known to be associated with tumor formation (such as DNA reactivity or effects on cell growth control) likely to be related to the tumor response in this case.

Suggestive Evidence of Carcinogenic Potential. This descriptor is appropriate when the weight of evidence is suggestive of carcinogenicity; a concern for potential carcinogenic effects in humans is raised, but the data are judged not sufficient for a stronger conclusion. This descriptor covers a spectrum of evidence associated with varying levels of concern for carcinogenicity, ranging from a positive cancer result in the only study on an agent to a single positive cancer result in an extensive database that includes negative studies in other species.

Data Inadequate for an Assessment of Human Carcinogenic Potential. This descriptor of the database is appropriate when available data are judged inadequate for applying one of the other descriptors.

Not Likely to be Carcinogenic in Humans. This descriptor is appropriate when the available data are considered robust for deciding that there is no basis for human hazard concern. In some instances, there can be positive results in experimental animals when there is strong, consistent evidence that each mode of action in experimental animals does not operate in humans. In other cases, there can be convincing evidence in both humans and animals that the agent is not carcinogenic

The weight of evidence classification for a given chemical may reflect either of the two classification schemes identified above, depending on when U.S. EPA most recently reviewed and revised the carcinogenicity assessment for any given chemical.

1.1.2 CARCINOGENIC POTENCY

It has been generally assumed historically that carcinogenic effects are non-threshold effects. This means that any dose, no matter how small, has been assumed to pose a finite probability of generating a response. Thus, no dose of a carcinogen has been thought to be risk-free. More contemporary evaluations that focus on the mechanisms of action by which a chemical may cause cancer have, for some chemicals, identified threshold doses below which carcinogenesis does not occur. In consideration of the nature of the toxicological data that are available for a given chemical, USEPA uses one or more of several different models to identify the relationship between the dose of the chemical and a carcinogenic response.

The toxicological data that are used to evaluate carcinogenic potency generally come from cancer bioassays that are performed using laboratory animals such as specific strains of rats and mice. An advantage of using laboratory animals to identify dose-response relationships is that the substances and doses that the animals are exposed to are controlled, such that if a carcinogenic response occurs, there is more confidence that the response occurred as a result of exposure to a specific substance, and the doses that caused the response are known. Disadvantages of using animal studies include uncertainties with extrapolating a carcinogenic response in animals to a carcinogenic response in humans. This uncertainty is addressed, in part, through the use of relatively high doses of chemicals in cancer bioassays. Generally, laboratory animals are given maximum tolerated doses (i.e., the highest dose that the animal con tolerate without suffering adverse effects that would otherwise compromise the study) and fractions of the maximum tolerated dose. These doses are typically much higher than any dose that would be experienced by human populations. If a positive dose-response relationship is not identified in animal studies that use these high doses, then there is more confidence that the substance would not cause cancer at the much lower exposure levels potentially experienced by human populations. In contrast, if a positive dose-response relationship is identified in animal studies that use high doses, there is uncertainty in extrapolating the dose-response relationship from high doses to the much lower exposure levels potentially experienced by human populations.

Consequently, human epidemiologic data are a preferred basis for developing estimates of carcinogenic potency. However, the majority of chemicals studied to do not have sufficient epidemiological study data to allow for derivation of dose-response relationships. Many epidemiology studies find causal relationships between exposure to a chemical and a toxicological response, but are confounded by the fact that human populations are exposed to many substances over a lifetime, as well as by the uncertainty inherent in measuring actual human exposures to specific substances (e.g., actual concentrations in workplace air that a population may have been exposed to over a period of many years). These uncertainties often preclude establishing a dose-response relationship that is sufficient to use as the basis of carcinogenic potency estimates. Since laboratory bioassays avoid these uncertainties, they are often used as basis for the derivation of dose-response profiles, despite the availability of human epidemiological data.

The ultimate product of the cancer potency assessment is the derivation of a CSF or a UR. These values represent the upper-bound excess lifetime cancer risk (ELCR) estimated to result from continuous lifetime exposure to an agent at a concentration of 1 mg/kg/day (for the CSF) or 1 microgram per cubic meter ($\mu g/m^3$) in air (for the UR) (USEPA, 2017). CSF values are expressed as risk per mg/kg/day [$(mg/kg/day)^{-1}$] and UR values are expressed as risk per ($\mu g/m^3$) [$(ug/m^3)^{-1}$]. CSF and UR values are typically calculated for chemicals in Groups A, B1, B2, and “Carcinogenic to humans” and “Likely to be carcinogenic to humans.” Cancer dose-response values for chemicals in Group C are calculated on a case-by-case basis.

In this HHRA, CSFs are used to estimate the risks associated with ingestion and dermal exposures, and URs are used to estimate the risks associated with inhalation of carcinogenic COPCs in vapor emissions.

1.2 TOXICITY ASSESSMENT FOR NON-CARCINOGENIC EFFECTS

Non-carcinogenic effects are threshold effects. This means that at some level of exposure there is a threshold below which adverse effects would not be expected, and above which adverse effects could potentially occur. Examples of non-carcinogenic (i.e., threshold) effects include liver toxicity, kidney toxicity, reproductive effects, neurotoxicity, and teratogenicity. The same process that is used to identify toxicity data to support carcinogenic potency assessment is also used to identify toxicity data to support the identification of dose-response relationships for non-carcinogenic effects.

The outcome of the dose-response assessment for non-carcinogenic health effects is the derivation of an RfD or RfC. The RfD, expressed in units of mg/kg/day, is defined as an estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime (USEPA, 1989). Unlike a CSF or UR, which represents a probability of incurring a carcinogenic effect following exposure to a substance, the RfD represents a threshold dose below which adverse health effects are unlikely to occur, and above which the potential for adverse health effects exists. The RfD is derived from the following equation:

$$RfD\ (mg/kg/day) = \frac{NOAEL\ or\ LOAEL}{UF\ and/or\ MF}$$

The No Observed Adverse Effect Level (NOAEL) represents the dose of a chemical at which there are no statistically or biologically significant differences in the frequency of an adverse effect between the exposed population and its appropriate control. The Lowest Observed Adverse Effect Level (LOAEL) represents the lowest dose at which a statistically significant difference in the frequency of an effect is noted. Both the NOAEL and the LOAEL are reported in terms of mg/kg/day. An uncertainty factor (UF) is used to account for inter-species and intra-species differences, whether the dose was an NOAEL or an LOAEL, and the adequacy of the data. The magnitude of the UF will therefore vary from chemical to chemical, ranging from 3 to 3,000. A modifying factor (MF), ranging from 1 to 10 may also be included to reflect qualitative uncertainties not explicitly addressed in the UFs. The toxicity endpoint upon which the RfD is derived and the UF and/or MF used in the calculation are presented in the dose-response tables.

The RfC, in units of mg/m^3, is analogous to the RfD and is developed through a similar process (USEPA, 2009). However, unlike RfDs, which represent a dose (in mg/kg/day) at which adverse or deleterious effects are unlikely, RfCs represent air concentrations (in mg/m^3) at which adverse or deleterious effects are unlikely (i.e., an air concentration corresponding to a Hazard Index (HI) = 1.0). In this HHRA, inhalation RfCs are used to estimate the non-cancer risks associated with inhaling COPCs. Chronic RfDs and RfCs are used for the future resident scenario.

1.3 TOXICITY VALUES FOR DERMAL EXPOSURE

Route-specific toxicity values are generally not available for the dermal pathway. Per U.S. EPA (2004a), in the absence of such information, the dermal pathway was addressed by route-to-route extrapolation of the oral RfD or oral SF to the dermal route. Additionally, the oral RfD or oral SF is adjusted as appropriate, by using a chemical-specific oral absorption factor (OAF). A fundamental difference must be recognized when deriving dermal toxicity values from oral toxicity values: oral RfDs are generally

expressed in terms of an administered dose, whereas the calculated dermal RfDs are expressed in terms of an absorbed dose. This adjustment is accomplished by multiplying the oral RfD by the OAF and by dividing the oral SF by the OAF. A default OAF of 1 was assumed for chemicals without OAFs (USEPA, 2004).

1.4 ADJUSTMENT FOR EARLY LIFE EXPOSURES TO CARCINOGENS WITH A MUTAGENIC MODE OF ACTION

USEPA has developed guidance for characterizing cancer susceptibility associated with early life exposures (e.g., young children) to potentially carcinogenic chemicals (Supplemental cancer Guidance; USEPA, 2005b; 2008). The approach developed by USEPA to characterize cancer risks for early life stages includes consideration of differences in physiology and exposure potential between children and adults, as well as differences in susceptibility to tumor development between children and adults. Physiological and behavioral differences are accounted for in the exposure assessment, whereby age-specific exposure parameters (e.g., body weights, ingestion rates, inhalation rates, contact frequencies) are applied to the various age groups evaluated in the risk assessment. Differences in susceptibility to tumor development are accounted for by considering the carcinogenic mode of action (MOA) in accordance with the Supplemental Cancer Guidance developed by USEPA (USEPA, 2005b).

In accordance with the Supplemental Cancer Guidance, for chemicals that initiate carcinogenesis by a mutagenic MOA and for which data concerning differential susceptibility for early life stages is available, USEPA may develop CSFs that are applicable to specific ages (e.g., infants and young children, adults). This approach has been used by USEPA to develop CSFs for vinyl chloride. If chemical-specific data are not available to differentiate susceptibility among various life stages, the Supplemental Cancer Guidance recommends application of age-dependent adjustment factors (ADAFs) to develop risk estimates. The ADAFs reflect USEPA's conclusion that cancer risks for chemicals that act by a mutagenic MOA are generally higher from early-life exposure than from similar exposures later in life; the ADAFs developed by USEPA are as follows (USEPA, 2005b; 2008):

- For exposure before 2 years of age (i.e., spanning a 2-year time interval from the first day of birth of until a child's second birthday), the ADAF = 10;
- For exposure between 2 and <16 years of age (i.e., spanning a 14-year time interval from a child's second birthday up until their sixteenth birthday), the ADAF = 3;
- For exposures after turning 16 years of age, no adjustment is required (i.e., ADAF = 1).

USEPA initially identified 12 chemicals for which the Supplemental Cancer Guidance should be applied (USEPA, 2008). Subsequently, USEPA has identified chemicals that exhibit a mutagenic MOA on a case-by-case basis, generally as updates to toxicological profiles and Final Assessments in support of toxicity values published in the Integrated Risk Information System (IRIS). For these chemicals, USEPA identifies the specific technical approach that should be used to apply the Supplemental Cancer Guidance to risk characterization.

Of the 8 COPCs identified at the Site (1,1-dichloroethene, acetone, cis-1,2-Dichloroethene, trans-1,2-dichloroethene, tetrachloroethylene, toluene, trichloroethylene, and vinyl chloride), trichloroethylene and vinyl chloride have been identified as a mutagen, therefore age-dependent adjustment factors were

applied to account for mutagenicity of trichloroethylene and vinyl chloride in the Appendix B risk calculations.

1.5 SOURCES OF DOSE-RESPONSE VALUES

The following hierarchy of sources for dose-response values has been utilized in identifying dose-response values for this HHRA.

Tier 1- IRIS (http://www.epa.gov/iris/). In accordance with U.S. EPA guidance, the main source of dose-response values is IRIS, which is a database established by USEPA containing all validated data on many toxic substances found at hazardous waste sites. This database (USEPA, 2019), current as of March 2019, was used to identify the CSFs, URs, RfDs, and RfCs applied in this risk assessment.

Tier 2- National Center for Environmental Assessment (NCEA) provisional peer reviewed toxicity values (PPRTVs) (http://hhpprtv.ornl.gov/). NCEA's PPRTVs are developed by the Superfund Technical Support Center (STSC) for the U.S. EPA Superfund program. STSC's reassessment of U.S. EPA Health Effects Assessment Summary Tables (HEAST) toxicity values, as well as development of PPRTVs in response to Regional or Headquarters Superfund program requests, are consistent with Agency practices on toxicity value development, use the most recent scientific literature, and are supported by both internal and external peer review, providing a high level of confidence in the use of these values in the Superfund Program. The PPRTVs used in this HHRA were obtained from the U.S. EPA Regional Screening Levels (RSL) Tables and are current as of November 2018 (USEPA, 2018).

Tier 3 - Other toxicity values:

- California Environmental Protection Agency (CALEPA's) toxicity values (CALEPA, 2018). CALEPA develops toxicity values for both cancer and non-cancer effects. CALEPA toxicity values are obtained on the CALEPA website at http://www.oehha.ca.gov/risk/chemicalDB//index.asp.
  CALEPA toxicity values are current as of 2018.

- Agency for Toxic Substances and Disease Registry (ATSDR's) Minimal Risk Levels (MRLs) (ATSDR, 2018) address noncancer effects only, and are available on the ATSDR website at http://www.atsdr.cdc.gov/mrls/index.asp. MRL values for intermediate exposure were used as subchronic RfD and RfC values, and MRL values for chronic exposure were used as chronic RfD and RfC values. The MRL values used in this HHRA are current as of August 2018.

- Toxicity values remaining in current versions of HEAST.

1.6 REFERENCES

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