



June 13, 2012

Mr. Bob Feild
EPA Project Manager
U.S. Environmental Protection Agency, Region 7
901 North 5th Street
Kansas City, Kansas 66101

Subject: Site Reassessment Report for an Expanded Site Review
Proposed Strecker Forest Development Site, Wildwood, Missouri
U.S. EPA Region 7 START 3, Contract No. EP-S7-06-01, Task Order No. 0002.058
Task Monitors: Jim Silver, EPA Region 7 On-Scene Coordinator
Bob Feild, EPA Region 7 Remedial Project Manager

Dear Mr. Feild:

Tetra Tech EM Inc. is submitting the enclosed Site Reassessment Report for an Expanded Site Review of the proposed Strecker Forest Development site in Wildwood, Missouri. If you have any questions or comments regarding this submittal, please contact the START project manager, Dave Kinroth, at (314) 395-3157.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. David Kinroth', followed by the word 'for' in a smaller, cursive script.

G. David Kinroth, CHMM
START Project Manager

A handwritten signature in blue ink, appearing to read 'Ted Faile'.

Ted Faile, PG, CHMM
START Program Manager

Enclosures

cc: Roy Crossland, EPA Region 7 (Cover letter only)

**SITE REASSESSMENT REPORT
FOR AN
EXPANDED SITE REVIEW
PROPOSED STRECKER FOREST DEVELOPMENT SITE
WILDWOOD, MISSOURI**

Superfund Technical Assessment and Response Team (START)

Contract No. EP-S7-06-01, Task Order 0002.058

Prepared For:

U.S. Environmental Protection Agency
Region 7
Superfund Division
901 N. 5th Street
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June 13, 2012

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CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 SITE LOCATION.....	1
3.0 SITE DESCRIPTION	2
4.0 SITE HISTORY	3
5.0 SITE REASSESSMENT ACTIVITIES	4
5.1 GEOPHYSICAL SURVEY AND EXPLORATORY TRENCHING	6
5.2 SURFACE SOIL SAMPLING	7
5.3 SUBSURFACE SOIL SAMPLING	9
5.4 INTERIOR DUST SAMPLING	10
5.5 GROUNDWATER MONITORING WELL INSTALLATION	10
5.5.1 Well Development	11
5.5.2 Groundwater Level Measurements	12
5.6 GROUNDWATER SAMPLING	12
5.7 DEVIATIONS FROM THE QAPP	13
6.0 ANALYTICAL RESULTS	13
7.0 DISCUSSION OF FINDINGS	14
8.0 RECOMMENDATIONS	16
9.0 REFERENCES	18

CONTENTS (Continued)

APPENDICES

Appendix

A	FIGURES
B	PREVIOUS INVESTIGATIONS
C	PHOTOGRAPHIC RECORD
D	GEOPHYSICAL SURVEY AND EXPLORATORY TRENCHING INVESTIGATION REPORT
E	FIELD SHEETS
F	MONITORING WELL INSTALLATION REPORT
G	SOIL AND GROUNDWATER DATA EVALUATION
H	TABLES
I	INDOOR DUST EVALUATION
J	DATA VERIFICATION
K	EPA ADVANCED KAPLAN-MEIER TOXICITY EQUIVALENCE CALCULATOR TABLES

1.0 INTRODUCTION

The Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked to conduct a site reassessment to support the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division with an Expanded Site Review (ESR) of targeted areas adjoining a portion of the Ellisville site in Wildwood, Missouri¹. A residential development known as Strecker Forest has been proposed for the subject property (hereafter referred to as “Strecker Forest”). The purpose of the ESR was to determine if contaminants are present in soil and groundwater at concentrations that may present a threat to human health and the environment for the proposed land use. The ESR was also to provide additional data to help clarify hydrogeological conditions in the area, including the direction of groundwater flow. Sampling and analysis of environmental media occurred during the ESR to assess soil and groundwater at the Strecker Forest property for presence of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), metals regulated under the Resource Conservation and Recovery Act (RCRA), and dioxins/furans.

The study area for this ESR includes the 18.3 acres of Strecker Forest, within which are 23 proposed home sites in the southern portion of the property and an undeveloped “preservation area” in the northern portion of the property. The study area for this ESR also includes a portion of the Ellisville site known as the “Callahan property,” located across Strecker Road south of Strecker Forest, where a former drum burial area was remediated in the early 1980s.

2.0 SITE LOCATION

Strecker Forest is located in Saint Louis County, Missouri (see Appendix A, Figure 1) and includes three parcels of land encompassing 18.3 acres to the north of Strecker Road in Wildwood, Missouri. The three parcels include the former Dozier property, located at 165 Strecker Road (approximately 5 acres); the former Primm property, located at 173 Strecker Road (approximately 10 acres); and the former Schoessel property, located at 177 Strecker Road (approximately 3 acres). These three properties were purchased by W.J. Byrne Builders, Inc., of Glencoe, Missouri, with the intent to develop the proposed Strecker Forest subdivision. The study area for the ESR also includes part of the Callahan property across Strecker Road to the south, at 210 Strecker Road (see Appendix A, Figure 2). The geographic coordinates on Strecker Road at this location are 38.597578 degrees north latitude and 90.605617 degrees west longitude.

3.0 SITE DESCRIPTION

Strecker Forest is mostly undeveloped, except for foundations remaining from a recently demolished garage structure and two abandoned homes on the former Dozier and Primm properties. The northern two-thirds of Strecker Forest is covered mostly by hardwood forest (see Appendix A, Figure 2). The property is surrounded by suburban residential areas, except to the north and east, where a 12-acre tract with a residence, horse arena, and stables are located. Specific features identified in previous investigations of the Strecker Forest property include the abandoned residences on the former Primm and Dozier properties, a “Western Pond Area” in the southwestern quadrant of the site, a “Solid Waste Disposal Area” in a drainage ravine in the central portion of the site, an “Alleged Former Haul Road” that parallels the drainage ravine, and an “Eastern Disturbed Area (EDA)” and “National Priorities List (NPL) Area” that are both located in the northeastern portion of the site (see Appendix A, Figure 3). The EDA and the NPL Area are located adjacent to the Bliss portion of the Ellisville Superfund site, sometimes referred to as the Bliss-Ellisville site².

The terrain at the Strecker Forest property slopes downward to the north from Strecker Road. Relatively steep slopes are present that vary in elevation from approximately 720 feet at Strecker Road to approximately 635 feet along a tributary of Caulks Creek at the northeast perimeter of the site in the NPL Area (see Appendix A, Figure 4). The intermittent Caulks Creek tributary flows to the north along a ravine in the central portion of Strecker Forest, and intersects another intermittent tributary crossing the northeast corner of the Strecker Forest property. All surface water and drainage pathways on the site flow in a northerly direction toward this area.

Features on the Callahan property include a small pond and barn. The terrain at the Callahan property slopes downward to the south from Strecker Road. Two drainage ways intersect another intermittent tributary of Caulks Creek near the southernmost property boundary. The small pond receives drainage from the northern portion of the parcel and is upgradient of the former drum burial area (fill area) (see Appendix A, Figure 5).

¹ The Ellisville site appears on the National Priorities List (NPL), which includes priority Superfund sites maintained by the U.S. Environmental Protection Agency (EPA).

² The overall Ellisville Superfund site includes the Bliss, Callahan, and Rosalie subsites, which are technically defined not by property boundaries but by boundaries of the areas where contamination was found.

4.0 SITE HISTORY

Strecker Forest is located directly adjacent to the Bliss subsite of the Ellisville site; the planned preservation area includes a small (0.15-acre) portion of the Bliss subsite at the northeast corner of the 18.3-acre tract (see Appendix A, Figure 2). The Callahan subsite is located south of Strecker Forest across Strecker Road, and the Rosalie subsite is located approximately 0.5 mile west-southwest of Strecker Forest. The following are brief summaries of each of the three subsites of the Ellisville site:

The Bliss subsite borders Strecker Forest to the north and east, and includes a small portion of the proposed preservation area in the northeast corner of the Strecker Forest property. Investigative activities began on September 16, 1980, that identified two waste disposal areas to the northwest of a horse arena on the property. On June 2, 1981, trenching operations guided by eyewitness accounts identified buried drums at the Bliss subsite. Several follow-up geophysical surveys were conducted starting in June 1982 and continuing through August 1990. These surveys identified buried waste at a number of locations on the Bliss and contiguous properties. In August 1985, the Missouri Department of Natural Resources (MDNR) placed a liner in the stream bed of the Caulks Creek tributary to stabilize the stream banks, and constructed a berm to divert overland flow from the eroding stream. EPA implemented a removal action in 1996, involving excavation and management of soil impacted by dioxin³ and non-dioxin wastes, along with bulk wastes in buried drums, and other materials. During the removal action, dioxin-contaminated materials were transported to the Times Beach site for thermal treatment (incineration). All non-dioxin hazardous wastes were managed off-site at commercial RCRA-permitted hazardous waste facilities. Non-hazardous materials were disposed of at a sanitary landfill. In all, 24,700 tons of dioxin-contaminated soil, 581 tons of soil contaminated with hazardous substances other than dioxin, and 480 buried drums and other containers of wastes were removed from the site. Soil samples were collected to confirm that cleanup goals had been achieved. Once cleanup activities had been completed, excavated areas were backfilled, re-graded, and seeded. The removal activities included a 0.15-acre area in the extreme northeast corner of the Strecker Forest property (referred to as the “NPL Area” of Strecker Forest during past investigations). Currently, monitoring of groundwater and soil vapor conditions at the Bliss subsite by MDNR is ongoing.

The Callahan subsite is located due south of Strecker Forest. In August 1980, an eyewitness reported drums being buried near a barn on the Callahan property. On December 14, 1981, EPA/MDNR initiated an emergency removal action to excavate the drums. The removal action was completed February 18, 1982, and involved removal of 1,205 drums from the property. Of the 1,205 drums, 613 contained hazardous materials. EPA released a Remedial Investigation Report for the Ellisville site on September 21, 1983, that presented results from field investigation performed at the Callahan subsite. On July 10, 1985, EPA selected a remedial action to be performed at the Callahan subsite that included stabilization of soils in the former drum burial area and removal of a plastic cover, blocks, and gravel and fencing remaining from the 1981-1982 drum removal. A Site Removal Evaluation (SRE) was conducted by MDNR on January 31, 2005, to determine if any residual soil contamination remained at the site at concentrations that would warrant further response. A Removal

³ The term “dioxin” refers to a family of related compounds. Risk related to dioxin-contaminated soils at the Bliss-Ellisville site was primarily driven by 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), which has the highest toxicity of dioxin compounds.

Site Evaluation Report was prepared for EPA dated August 5, 2005, which incorporated the findings of the MDNR SRE (MDNR 2005).

The Rosalie subsite is located approximately 0.5 mile west-southwest of Strecker Forest. On July 17, 1980, contractors for the St. Louis Metropolitan Sewer District encountered buried drums on the Rosalie property while installing a new sewer line along Caulks Creek. The St. Louis Metropolitan Sewer District notified EPA, MDNR, and the U.S. Coast Guard Safety Office about the drums. In September 1980, four areas were identified where drums, pieces of drums, or trash were found. During initial response actions, 267 drums were removed from the Rosalie subsite. On July 10, 1985, a final remedy for the Rosalie subsite was selected by EPA and implemented by MDNR, involving off-site disposal of contaminated soil, drums, cans, and debris remaining at two locations. An Environmental Site Assessment (ESA) was conducted January 29-31, 1986, to characterize conditions at all four disposal areas (ELL-01, ELL-02, ELL-03, and ELL-04). Twenty-five soil samples were collected and analyzed for SVOCs; all results were below EPA's Regional Screening Levels (RSL) for residential soil (EPA 2011a).

5.0 SITE REASSESSMENT ACTIVITIES

The purpose of this ESR is to build upon previous studies (see Appendix B) to establish a data set that would support a more comprehensive assessment of human health risks for short term trespassers and for proposed residential land use at Strecker Forest. The ESR is also intended to characterize the potential for impacts to existing properties/residents in nearby areas.

The study area for the Strecker Forest ESR includes the entire 18.3-acre tract proposed for development, and a portion of the Callahan property south of Strecker Road. During a recent Phase II ESA by Mundell & Associates, Inc. (Mundell 2010), six areas of interest were identified on the Strecker Forest property:

- The former Dozier and Primm residences near the southeast property boundary
- A pond located near the western property boundary in the southwestern portion of the site (Western Pond Area)
- An existing solid waste disposal area located within a drainage ravine in the central part of the site (Solid Waste Disposal Area)
- A historical roadway interpreted as a former haul road located along the central drainage ravine (Alleged Former Haul Road)
- An area in the northeastern portion of the site that was identified as formerly disturbed, based on historical aerial photography from 1966 (Eastern Disturbed Area)
- An area in the extreme northeast portion of the site that was included in a 1996 cleanup at the adjoining Bliss subsite of the Ellisville NPL site (NPL Area).

The scope of this investigation included these previously designated areas, as well as several areas excluded from previous studies. The overall investigation strategy involved a combination of methods used to gather additional data and information in order to better characterize potential risks associated with conditions across the property. The scope of this investigation includes:

- Geophysical investigation for metals
- Exploratory trenching
- Collection of surface soil samples using an incremental sampling protocol
- Collection of subsurface soil samples from borings
- Collection of interior dust samples from existing structures
- Installation of groundwater monitoring wells
- Measurement of static water levels in new and existing monitoring wells
- Collection of groundwater samples from new and existing monitoring wells
- Hydraulic conductivity testing

Selection of analytes for this ESR was based on results of previous investigations. All soil and groundwater samples were analyzed for SVOCs, RCRA metals, PCBs, and/or dioxin-related compounds⁴. All subsurface soil and groundwater samples collected from the Strecker Forest and Callahan properties were also analyzed for VOCs. Interior dust (wipe) samples were analyzed for dioxins/furans only.

EPA obtained access to properties and provided the equipment and personnel for subsurface soil investigation (soil borings). Three to four Tetra Tech START team members (STM) conducted/supported the activities described in this report. Where applicable, the standard operating procedures (SOP) and chain-of-custody (COC) procedures referenced in a site specific Quality Assurance Project Plan (QAPP) were followed throughout the sampling activities to assure the integrity of the samples from the time of collection until submittal to the laboratory for analysis.

On August 24-31, 2011, surveying activities occurred, and EPA and START recorded Geoprobe® sampling locations, corners for soil sampling cells, and geophysical survey area boundaries. During this time period, the property owner assisted by clearing brush from the area. Remaining field activities at the Strecker Forest and Callahan properties occurred from August 2011 through February 2012. Photographic documentation of the activities is included in Appendix C.

⁴ Dioxin analysis included seventeen 2,3,7,8-substituted dioxin and furan congeners that contribute to calculation of a dioxin toxic equivalence (TEQ) value.

The following sections discuss activities of EPA, START, and MDNR regarding the geophysical survey and exploratory trenching, soil sampling, groundwater sampling, interior dust sampling, and other support for this project.

5.1 GEOPHYSICAL SURVEY AND EXPLORATORY TRENCHING

A geophysical survey and exploratory trenching occurred on September 6-8, 2011. The geophysical survey was an attempt to locate buried metal/debris at three areas on the Strecker Forest and Callahan properties in order to guide follow-up exploratory trenching activities.

A terrain conductivity survey was performed with a Geonics EM-31-MK2 terrain conductivity meter, and a magnetometer survey was conducted with a Geometrics G-858 MagMapper proton precession magnetometer. The geophysical survey located several subsurface features and anomalies at the site that subsequently were found to contain buried metal.

EPA Region 7's Emergency and Rapid Response Services (ERRS) contractor conducted exploratory trenching where anomalies were identified by the preliminary geophysical survey. Each proposed trench was assigned an identification number, and exploratory trenching commenced. Trench dimensions were contingent on the stability of soils and equipment capabilities. Excavation was conducted with heavy equipment, including a backhoe, and hand tools. An area directly adjacent to each trench was covered with two layers of 6-mil polyethylene sheeting to stockpile excavated waste and soils. Excavated trenches were visually assessed for presence of waste material. The trench dimensions varied, depending on location and site conditions. The excavations continued at each location until undisturbed soil or bedrock was encountered, or the maximum bucket reach of the trenching equipment was achieved. Excavated soil was returned to the trenches.

Air monitoring was conducted throughout the assessment to detect emissions that may have threatened workers or neighboring residents. A MultiRAE Plus multi-gas meter with photoionization detector (PID) was used to determine presence of VOCs and other airborne contaminants. No VOCs or other airborne contaminants were detected. In this capacity, the MultiRAE Plus was used solely to monitor the atmosphere within the work environment; these readings could not be used to characterize subsurface conditions.

Excavations occurred at all three areas where geophysical surveys were conducted. At the EDA and Callahan Property, several anomalies of sufficient magnitude were identified via preliminary in-field geophysical analysis that warranted excavations to search for buried metal. Excavation at the EDA unearthed a car battery, some trash, and miscellaneous metal debris (motorcycle fender, etc.). Excavation

at the Callahan property unearthed several rusty drum lids; an empty, deteriorated, metal, 5-gallon bucket; a portion (~1/3) of a steel drum; several paint buckets surrounded by solidified paint; and other metal debris. Preliminary analysis of geophysical survey data for the Western Pond area did not indicate any significant anomalies; however, four trenches were excavated in each primary quadrant of the pond basin to document the soil conditions and depth to bedrock under the pond basin. START prepared a separate report documenting these activities and findings, entitled “Geophysical Survey and Exploratory Trenching Investigation Report,” which is included in Appendix D of this report.

5.2 SURFACE SOIL SAMPLING

Initial surface soil sampling at the Strecker Forest and Callahan properties began September 12, 2011, and continued through September 21, 2011.

Surface soil samples were collected using an incremental-composite sampling (ICS) strategy. The ICS strategy involved the separation of the entire site area into decision units (DU) (see Appendix A, Figure 6). Each DU was split into four sampling units (SU) of approximately equal size (see Appendix A, Figure 7). In each SU, a nine-aliquot composite sample was collected from 0-2 inches (in.) below ground surface (bgs), using a disposable stainless steel spoon to collect and homogenize the aliquots. Approximately equal portions of samples from each SU were transferred to a disposable aluminum pan and homogenized to create a composite “top-tier” sample representing the entire DU. Initial analyses were performed on the top-tier DU samples. The remaining portions of the composite samples from each SU were retained and archived for potential future analysis in the event that the top-tier data indicated presence of one or more contaminants exceeding their respective levels of concern. If the top-tier data showed any exceedance, archived SU samples were then packaged and shipped for analysis to provide sub-DU information in support of remedial action or additional sample collection planning. All of this was done in accordance with the *User Guide: Uniform Federal Policy Quality Assurance Project Plan Template for Soils Assessment of Dioxin Sites* (EPA 2011b)

Compared to collection of discrete samples, the ICS approach provides greater assurance that potential hot spots are not missed, because many aliquots (approximately 36 in this case) are collected across the entire DU and combined for analysis. This approach involves more resource-intensive sample collection, but minimizes analytical costs because samples collected from smaller quadrants within larger DUs are analyzed only if concentrations of contaminants exceed levels of concern in the top-tier samples.

ICS sampling involves use of techniques to ensure that the sample collection procedures provide data that are scientifically appropriate for the project. A suite of sample collection and preparation techniques is

applied that takes into account heterogeneity of soil contamination in order to ensure correct decision making. Incremental-based sample preparation reduces the chance of misleading results stemming from sample heterogeneity (as measured by laboratory duplicates and split samples). At larger spatial scales on the order of yards to acres, incremental soil sampling manages field heterogeneity and sample-to-sample variation by means of high-density sample (increment) collection.

At Strecker Forest, 44 DUs were eventually established and sampled. Initially, 39 DUs (sometimes referred to as exposure units [EU]) had been established at Strecker Forest to characterize surface soils using an incremental soil sampling approach (see Appendix A, Figure 6). Twenty-three DUs were designated to correspond to individual home site boundaries presented in the preliminary plat for property development. These home site DUs ranged from 0.22 to 0.43 acre. The portion of Strecker Forest not planned for residential home sites has been designated as a “preservation area.” This preservation area was divided into nine DUs with areas ranging from 0.96 to 1.17 acres. Seven additional DUs with areas ranging from approximately 0.18 to 0.26 acre were established near the NPL Area. The purposes of the incremental surface soil sampling in the vicinity of the NPL Area were to confirm residual conditions following past cleanup activities, and to assess any subsequent impacts from the NPL Area on adjoining areas of Strecker Forest. The seven DUs established to assess conditions at and near the NPL Area conformed to the stream features and topography in the area. An additional five DUs were added at a later date, based on secondary review of sampling results (see Appendix A, Figure 6). Following the initial sampling event (on September 21, 2011), an anomaly was identified in the sampling results for DU-34 leading to invalidation of that DU’s results. During sampling of the additional five DUs (on January 24, 2012), DU-34 was sampled again.

Three DUs were established on the Callahan property for characterization of surface soils using the incremental sampling approach (see Appendix A, Figure 8). One DU corresponded to an area of approximately 0.19 acre, where soils had been previously disturbed during the 1981-1982 drum removal activities (fill area). Two additional DUs were established in areas that had been used for drum staging operations (north and west staging areas) during the drum removal activities. Records indicate that the north staging area encompassed approximately 0.23 acre, and the western staging area covered approximately 0.08 acre.

As described above, each of the 44 DUs at Strecker Forest (see Appendix A, Figure 7) and three DUs at the Callahan property was subdivided into four SUs (see Appendix A, Figures 8). A composite sample consisting of nine aliquots was collected from 0-2 in. bgs in each SU using a clean, dedicated, stainless steel spoon (or equivalent); placed in a clean, disposable aluminum pan; and homogenized. Portions of

the samples from each quadrant were transferred to 8-ounce jars for storage. The remaining portions of the SU samples were combined and homogenized to represent one composite sample for the entire DU. Part of this homogenized sample was transferred to two 8-ounce jars and submitted to a Contract Laboratory Program (CLP) laboratory or to the EPA Region 7 laboratory for analysis of SVOCs, RCRA metals, and PCBs. A portion of the homogenized DU sample was also transferred to a separate jar and submitted to Cape Fear Analytical, LLC (CFA) in Wilmington, North Carolina, for analysis for dioxin toxic equivalence (TEQ) concentrations by Method 1613B. The remaining portion of the homogenized DU sample was transferred to a sealed sample container and retained for possible future analysis. Pertinent data, including analyses to be performed and sample location data, were recorded on field sheets for each sample (see Appendix E). All samples were cooled to a temperature of 4 degrees Celsius (° C) or lower until they were received by the laboratories.

5.3 SUBSURFACE SOIL SAMPLING

Subsurface soil samples were collected from 46 locations at the Strecker Forest (see Appendix A, Figure 9) and Callahan properties (see Appendix A, Figure 8). At each of those boring locations, continuous soil cores were collected with a Geoprobe® direct-push apparatus. Geoprobe® sample locations were selected to address specific areas of interest and to cover the geographic extent of the site.

At each borehole, a Geoprobe® Macro-Core soil sampler fitted with a disposable polyvinyl chloride (PVC) sleeve was advanced to 12 feet bgs, groundwater, or refusal, whichever was encountered first. The soil core was retrieved and screened for VOCs with a PID. Samples for laboratory analysis were collected from each borehole from 0 to 2 feet bgs and from the 2-foot interval of the soil core below 2 feet bgs that yielded the highest PID reading (samples for analysis of VOCs were only collected from depths greater than 2 feet bgs). If none of the boring intervals indicated elevated PID readings, a sample was collected from an interval with visible staining or other indication of potential chemical contamination. If no soil intervals exhibited elevated PID levels or visible staining, a sample was collected from the deepest interval (from the bottom 2-foot interval of the boring).

Soil samples for VOC analysis were collected following EPA Method 5035. Samples for VOC analysis were placed into two 40-milliliter vials preserved with sodium bisulfate (5 grams of soil in each) and two unpreserved 40-milliliter vials (each filled with soil). Then, soil from the sample interval was removed from the PVC sleeve and placed in a disposable aluminum pie pan for homogenization prior to transfer to three 8-ounce jars for the remaining analyses (dioxin TEQ, SVOCs, RCRA metals, and PCBs). Following sample collection, excess soil was returned to the respective boreholes. Remaining void space

in the boreholes was filled with bentonite. General descriptions of the lithology of the materials and soil types of the samples were recorded in the START logbook.

Pertinent data, including analyses to be performed and sample location data, were recorded on field sheets for each sample (see Appendix E). All soil samples were stored in coolers maintained at or below a temperature of 4° C pending submittal to CFA or the EPA Region 7 laboratory.

5.4 INTERIOR DUST SAMPLING

Interior dust samples were collected on September 22, 2011, from the former Primm and Dozier residences. Whole dust samples were collected from the floor at two locations inside each residence. Another sample was collected from windowsills, shelves, and ledges inside an abandoned garage behind the former Dozier residence. These samples were analyzed by Method 1613B for dioxins and furans to determine the dioxin TEQ concentrations. The sampling protocol was based on procedures described in ASTM International (ASTM) Method “Standard Practice for Collection of Floor Dust for Chemical Analysis” (ASTM 2000). For each sample, two measuring tapes were taped down so that they were parallel to each other on both sides of the sampling area. A High Volume Small Surface Sampler (HVS3) was used to collect each sample. Efforts were made to collect a minimum of 10 grams of total dust per sample, if possible. Pertinent data, including analyses to be performed, sample location data, total surface area sampled, and surface type(s) from which the sample was collected were recorded on a field sheet for each sample (see Appendix E). All dust samples were stored in coolers maintained at or below 4° C pending submittal to CFA.

5.5 GROUNDWATER MONITORING WELL INSTALLATION

Six new monitoring wells were installed by MDNR between September 20 and October 3, 2011, to better determine groundwater flow patterns at the site and to further characterize shallow groundwater quality. Three of the new monitoring wells were installed on the Strecker Forest property (MW-08, -09, and -10), and three were completed on the Callahan property (MW-C01, -C02, and -C03) (see Appendix A, Figure 3). The monitoring wells were installed by the MDNR Division of Geology and Land Survey (DGLS) in accordance with standard procedures.

During drilling at MW-CO1 on September 22, 2011, the drillers noted solvent-like odors emanating from the subsurface soils at a depth of 13 feet bgs near the top of bedrock. A sample of this soil was placed in a glass vial, and a headspace reading with a PID indicated 128 parts per million (ppm) of VOCs. A sample from this soil interval was submitted to the EPA Region 7 laboratory for analysis of VOCs, along

with the other subsurface soil samples. Because of the possible contaminants present, MW-CO1 was relocated approximately 15 feet southeast of the original well location.

Well borings were completed using an air hammer method. The lithology of the materials encountered, along with any other pertinent information, was logged by qualified personnel. Soils were classified and described on boring logs, using the Uniform Soil Classification System (USCS), following methods outlined in ASTM Standard D 2488-93 (ASTM 1993).

The monitoring wells were constructed in accordance with Missouri Well Construction Rules 10 CSR 23-4.010 through 10 CSR 23-4.080 (MDNR 2009). Well risers for the monitoring wells consisted of 2-inch-diameter Schedule 80 PVC. Riser sections were joined by threaded joint couplings to form water-tight unions. Each riser section was kept in its factory wrapping and off of the ground until it was installed in the borehole.

The screen lengths for each well were 20 feet except for MW-CO1 (30 feet long) and MW-CO2 (60 feet long). The screens were continuous-wrap Schedule 80 PVC, with a 0.010-inch slot size. The bottom of each screen was capped with a PVC plug. The annular space around the well screen was backfilled with clean, washed, quartz sand to a depth of at least 3 feet above the screen slots to serve as a filter between the formation material and the well screen. Upon completion, each well was secured with a protective cover (with a locking top) installed around the well casing.

5.5.1 Well Development

The objectives of well development were to: (1) assure that groundwater enters the well screen freely, thus yielding representative groundwater samples and accurate water level measurements; (2) remove all water that may have been introduced during drilling and well installation; and (3) remove very fine-grained sediment in the filter pack and nearby formation so that groundwater samples are not highly turbid and silting of the well does not occur.

Groundwater levels and total well depths were measured prior to and after development. Development consisted of mechanical surging (with a surge block) and bailing or pumping for a minimum of 2 hours. Sediment that entered the well during this process was removed by periodic bailing or pumping. At the end of that time, the well was continuously pumped for a minimum of 15 minutes using an electric submersible pump. Temperature, pH, specific conductivity, dissolved oxygen, and turbidity were monitored during pumping. Pumping continued until these parameters stabilized (within 0.2 pH units or a 10-percent-maximum difference among three consecutive readings of each of all other parameters), and the water was clear and free of fines.

5.5.2 Groundwater Level Measurements

Static water level measurements were taken at the monitoring wells to be used in determining variation in groundwater gradients over an annual cycle. All groundwater levels and well depth measurements were made relative to an established reference point on the well casing (a notch at the top of the PVC casing), and were documented in the field logbook. That reference point was placed on the north side of the top of the casing. The newly constructed monitoring wells were surveyed to determine top of casing (at the reference point) and ground surface elevations, as well as northing and easting coordinates. Each ground surface elevation was measured by the surveyor as the approximate median ground elevation of a well upon a topographically sloped surface.

MDNR/DGLS prepared a separate report documenting the well installations, well development, and groundwater level measurements, entitled “Monitoring Well Installation Report – Strecker Forest and Callahan Properties – Ellisville Site St. Louis County, Missouri,” which is included as Appendix F of this report.

5.6 GROUNDWATER SAMPLING

The seven previously existing monitoring wells on the Strecker Forest property and the six newly installed wells on the Strecker Forest and Callahan properties were sampled to better characterize groundwater quality in the study area (see Appendix A, Figure 3). Static water levels were measured at all monitoring wells prior to purging and sampling. Purging and sampling were conducted using low-flow procedures with a ProActive™ low-flow pump. Temperature, pH, specific conductivity, dissolved oxygen, and visual turbidity were monitored during pumping. Pumping continued until these parameters had stabilized (within 0.2 pH units or a 10-percent-maximum difference among three consecutive readings of each of all other parameters), and the water was clear and free of fines. Dedicated lengths of new polyethylene tubing were used in each well, and the pump was rinsed with deionized water after sampling at each well.

The groundwater samples were submitted to CFA for analysis of dioxins/furans (TEQ compounds) by Method 1613B, and to the EPA Region 7 laboratory for analysis of VOCs, SVOCs, dissolved RCRA metals, and PCBs. Water samples submitted for VOCs analysis were collected in four 40-milliliter vials and preserved with hydrochloric acid (HCl) to a pH <2. Water samples submitted for analysis of SVOCs and PCBs were collected in two 80-ounce amber glass jugs. Water samples submitted for analysis of dissolved metals were filtered using disposable 0.45-micrometer (µm) membrane filters, transferred to 500-milliliter plastic bottles, and preserved with nitric acid (HNO₃) to a pH <2. Water samples submitted

for analysis for dioxins/furans were each collected in one 1-liter amber glass bottle. All water samples were stored in coolers maintained at or below 4° C pending submittal to the laboratories. A field sheet was completed for each groundwater sample location. The field sheets included the following information: water quality parameters, purge times, estimated purge volumes, sample locations, and analyses to be performed (see Appendix E).

5.7 DEVIATIONS FROM THE QAPP

Slug tests were planned at multiple monitoring wells to estimate the hydraulic conductivity and groundwater flow rate. Hydraulic conductivity would then be used to estimate the travel time for the subsequent dye tracing study (DTS) to assist in determining preferential groundwater pathways in bedrock fractures. During this study, dye was to be injected into upgradient monitoring wells, and groundwater samples would be collected from the monitoring well network and Lewis Spring to trace the dye through the subsurface environment. Lewis Spring, located approximately 3 miles northeast of the site, is a discharge point for shallow groundwater recharge in the Strecker Forest area. A number of dyes could be used for the DTS—including fluorescein, eosine, and rhodamine WT, or equivalent. These dyes are environmentally safe and pose no risk to humans or to aquatic life at the concentrations used in professionally directed groundwater tracing work.

Hydraulic conductivity testing and water tracing elements of the study were postponed pending the results of the potentiometric (groundwater flow direction) analysis and water quality sampling and analysis. The necessity for slug tests will be considered after all water quality analyses have been evaluated. In addition, an understanding of groundwater flow patterns and direction(s) would benefit planning for hydraulic conductivity testing. Water tracing involves the introduction of one or more fluorescent tracing dyes into one or more of the groundwater monitoring wells. Due to the likelihood of residual amounts of dye remaining on the surfaces of the well screens and riser pipes, it was determined all water quality sampling and hydraulic conductivity testing should be completed prior to initiating any water tracing activities. Therefore, these activities were postponed until it is determined that no additional water quality sampling will be needed.

6.0 ANALYTICAL RESULTS

Samples submitted to the EPA Region 7 laboratory for this investigation were analyzed under Analytical Services Requests (ASR) 5527, 5573, 5618, and 5651. Evaluation and an initial screening-level assessment of these analytical data was conducted by EPA; a summary report is included as Appendix G. Tables summarizing the soil and groundwater data are included in Appendix H. As mentioned in Section

5.2, two sets of results were obtained for DU-34 that are included in Table H-10 of Appendix H, but the analytical results from the initial sampling event are denoted with an “I” qualifier to indicate that they are invalid. As the purpose of this ESR was to establish a comprehensive data set, summary tables of historical analytical data exceeding screening levels are included in Appendix B. An EPA memo evaluating the interior dust sampling results is included in this report as Appendix I. EPA data verification of analytical results from CFA, and EPA advanced Kaplan-Meier TEQ calculator tables used to evaluate the dioxin/furan results, are included in this report as Appendices J and K, respectively. A more in-depth human health risk assessment will be performed at a later date.

7.0 DISCUSSION OF FINDINGS

The following conclusions are formed in consideration of information gathered from the Expanded Site Review:

Strecker Forest Parcel

- Assessment of dioxin TEQ levels in dust samples conducted within residential structures located on the Strecker Forest parcel indicated these structures could be demolished safely, without presenting significant health risks to workers or residents from exposure to dioxins and furans, with no special precautions or additional protective gear required.
- Results of the hydrogeological assessment presented in the MDNR Monitoring Well Installation Report indicates that shallow ground water in the western portion of the Strecker Forest parcel is generally moving in a south to south-easterly direction, away from the existing Strecker Farms development.
- Analysis of samples from surface soil, subsurface soil, and ground water in the portion of the Strecker Forest parcel planned for residential development (as presented in the submitted preliminary plat) do not indicate concentrations of volatile organic compounds, semi-volatile organic compounds, or PCBs exceeding a level of concern for unrestricted residential use. This includes areas previously designated as the former Dozier and Primm residences, the “western pond area”, the “alleged haul road”, and the “solid waste disposal area”.
- All metals analyzed in surface soils, subsurface soils, and groundwater samples collected from the Strecker Forest parcel, with the exception of total chromium, were below a level of concern for unrestricted residential use.
- Total chromium was detected above a level of concern for future residential use in several subsurface soil samples collected in the northeastern portion of the Strecker Forest parcel, but the level of concern is conservatively based on the exclusive presence of hexavalent chromium instead of trivalent chromium, which is typically more prevalent in non-impacted soils. Specific analysis for hexavalent chromium was not performed on subsurface samples. However, hexavalent chromium was not detected in nine surface soil samples collected on the Callahan and Strecker Forest parcels, which suggests that hexavalent chromium concentrations are very low or not detectable in Strecker Forest soils. Although hexavalent chromium was not detected in any of

the surface soil samples, future assessment may consider speciation of subsurface soil samples for trivalent and hexavalent chromium.

- Investigation of subsurface conditions in the “western pond area” conducted during the geophysical survey and exploratory trenching did not identify the presence of buried containers, contaminant levels exceeding a level of concern, or other evidence of waste disposal. The breached dam which allows this depression to collect and hold water and the intact bedrock surface are evidence that this feature is a man-made impoundment.
- A surface soil sample collected in one planned residential parcel had slightly elevated dioxin TEQ levels. The dioxin/furan congener profile in this sample does not correspond to the congener profile displayed in samples collected from the Bliss portion of the Ellisville site, which indicates that the dioxin TEQ in Decision Unit 19 likely originated from a separate, unidentified source. Dioxin/furan compounds are created during combustion processes that occur in the presence of chlorine. Uncontrolled barrel burning of trash is a primary remaining source of dioxins/furans into the environment which could account for this isolated dioxin TEQ level identified at this single location on the Strecker Forest parcel.
- Elevated dioxin TEQ levels were detected in surface and subsurface soil samples collected in the northeastern portion of the Strecker Forest parcel near the boundary with the Bliss portion of the Ellisville Site. The elevated TEQ levels were identified adjacent to the area where a previous dioxin response action was performed in 1996-1997. This previous response action was directed at removing dioxin-contaminated soils exceeding 1,000 parts per trillion from an area which included a small portion of the Strecker Forest parcel. Residual dioxin levels in soil less than 1,000 ppt that achieved previous cleanup goals and were allowed to remain in place following the 1996-97 response action were found in some cases to exceed the screening level values established for this investigation. These elevated dioxin TEQ levels were limited to an approximate 0.5 acre area in the northeastern portion of the 18.3 acre Strecker Forest parcel, and include portions of the previously designated “eastern disturbed area” and “NPL area”.
- The concentration of naphthalene detected in Monitoring Well 6 in the northeastern corner of the Strecker Forest property exceeded a level of concern for use as a tapwater source. Naphthalene was not detected in any groundwater samples collected from any of the other monitoring wells. Based on potential groundwater flow, elevated levels of naphthalene may also be present in groundwater on the Bliss property, but would not pose a threat to that adjacent Strecker Farms development. Shallow ground water in this area does not represent a potential tapwater source.
- Subsurface investigation conducted in the eastern disturbed area located in the northeast portion of the Strecker Forest parcel identified the presence of buried trash and discarded metal objects such as wheel rims and machine parts. No evidence of buried wastes or waste containers was observed. These buried items were unearthed and are currently stored on-site.

Callahan Property

- With the exception of lead and chromium, samples of surface soil, subsurface soil, and ground water collected from the Callahan property did not exceed levels of concern for dioxins/furans, volatile organic compounds, semi-volatile organic compounds, metals, or PCBs.
- Three subsurface soil samples indicated lead concentrations exceeding a level of concern for residential use. However, current residents or trespassers are not expected to contact subsurface soils, so the potential health concern exists only if this soil is brought to the surface.

- Total chromium concentrations exceeding a level of concern for hexavalent chromium were detected in several subsurface soil samples at the Callahan property. As discussed above, the metals analysis performed on the subsurface samples did not distinguish between hexavalent and trivalent chromium, but hexavalent chromium was not detected in surface soil samples. Further assessment could include speciation of subsurface chromium to enable comparison to appropriate criteria.
- Investigation of subsurface conditions at the Callahan property identified the presence of crushed drum fragments in or near the former drum burial area where a response action was performed in 1981-1982. Trenching was performed to unearth these materials, and they are currently stored on-site.
- The presence of residual waste material was also identified during installation of monitoring wells and soil borings in the area of the previous drum removal. Although somewhat elevated levels of volatile compounds were detected using a portable photo-ionization detector (PID) when this material was encountered and brought to the surface during field activities, laboratory analyses of samples collected directly from these waste materials did not detect concentrations of volatile organic compounds, semi-volatile organic compounds, PCBs, or dioxin TEQ exceeding a level of concern for residential use. Elevated levels of lead (and possibly chromium) were detected in subsurface samples in the former drum burial area at concentrations exceeding residential screening levels.

8.0 RECOMMENDATIONS

Strecker Forest Parcel

- On the Strecker Forest parcel, none of the dioxin TEQ concentrations detected in the surface soil samples exceeded the site-specific short-term level of concern derived for a youth trespasser. This indicates that immediate actions are not warranted in the short-term to mitigate exposure, while further site assessment is on-going.
- Conditions throughout the portion of the Strecker Forest parcel proposed for housing construction are generally considered protective for residential development and use. Further assessment of this portion of the parcel would be limited to additional characterization of the isolated dioxin TEQ level identified in DU 19 to provide information regarding a possible source and help determine the need for mitigation prior to development.
- Further assessment of potential risks at the Strecker Forest property should focus on conditions in the northeast portion of the parcel and evaluate potential risks from complete exposure pathways based on current and potential future land use.
- Further assessment of naphthalene in shallow groundwater in the northeastern portion of the Strecker Forest parcel should include consideration of groundwater data generated during State groundwater investigations on the Bliss property.

Callahan Property

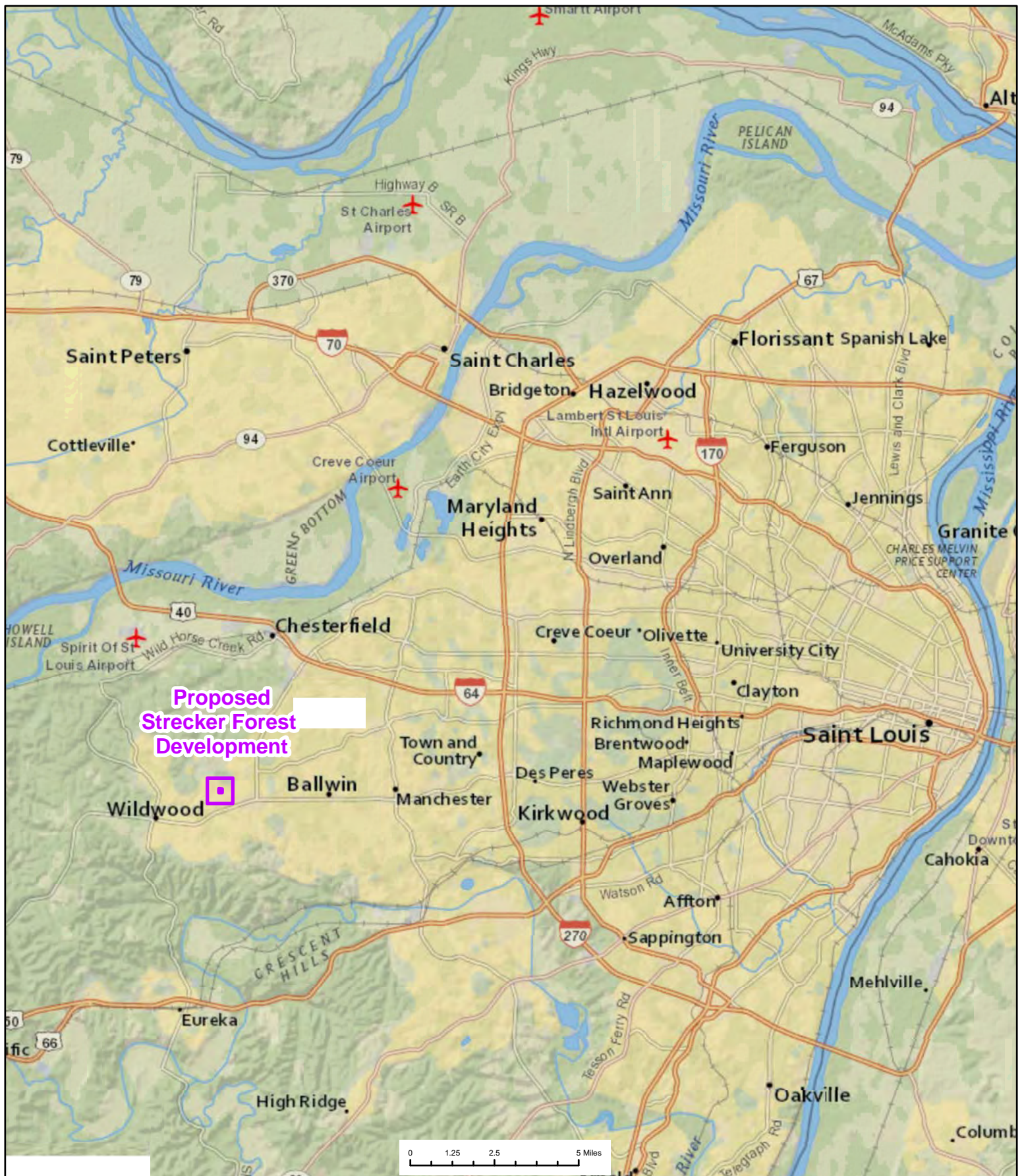
- Data generated during this investigation do not indicate that conditions at the Callahan property are impacting local groundwater.
- Surface soil samples collected at Callahan were below a level of concern for residential use for all potential contaminants analyzed.
- Further assessment of conditions at the former drum burial area at the Callahan property should include an evaluation of the elevated lead and total chromium levels in subsurface soils in consideration of the potential for future residential land use.

9.0 REFERENCES

- ASTM International (ASTM). 2000. Standard Practice for Collection of Floor Dust for Chemical Analysis, Designation D 5438-00, Reprinted from the Annual Book of ASTM Standards, Philadelphia, PA.
- ASTM. 1993. Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). D 2488-93. November.
- Ecology and Environment, Inc. 1998. Additional Remedial Investigation of Bliss-Ellisville Site, Wildwood, Missouri. EPA Contract No. 68-W6-0012. March.
- Missouri Department of Natural Resources (MDNR). 2005. Site Reassessment/Post Removal Sampling Report, Ellisville-Callahan Site, Wildwood, Missouri, St. Louis County. August 26, 2005
- MDNR. 2009. Missouri Well Construction Rules: Private Wells, Heat Pump Systems, Pump Installations and Monitoring Wells, Authorizing Statutes – 256.600 to 256.640 RSMO. August 2009.
- Mundell & Associates, Inc. (Mundell). 2010. Phase II Environmental Site Assessment Report, Proposed Strecker Forest Development Site, 165, 173 and 177 Strecker Road, Wildwood, Missouri 63011. MUNDELL Project No. M08044. March 3, 2010.
- U.S. Environmental Protection Agency (EPA). 2011a. Regional Screening Table.
<http://www.epa.gov/reg3hwmd/risk/human/index.htm>
- U.S. EPA. 2011b. User Guide - Uniform Federal Policy - Quality Assurance Project Plan Template for Soils Assessment of Dioxin Sites. September 2011. Available at:
<http://www.epa.gov/superfund/health/contaminants/dioxin/pdfs/Dioxin%20%20QAPP%20UserGuide.pdf>

APPENDIX A


FIGURES



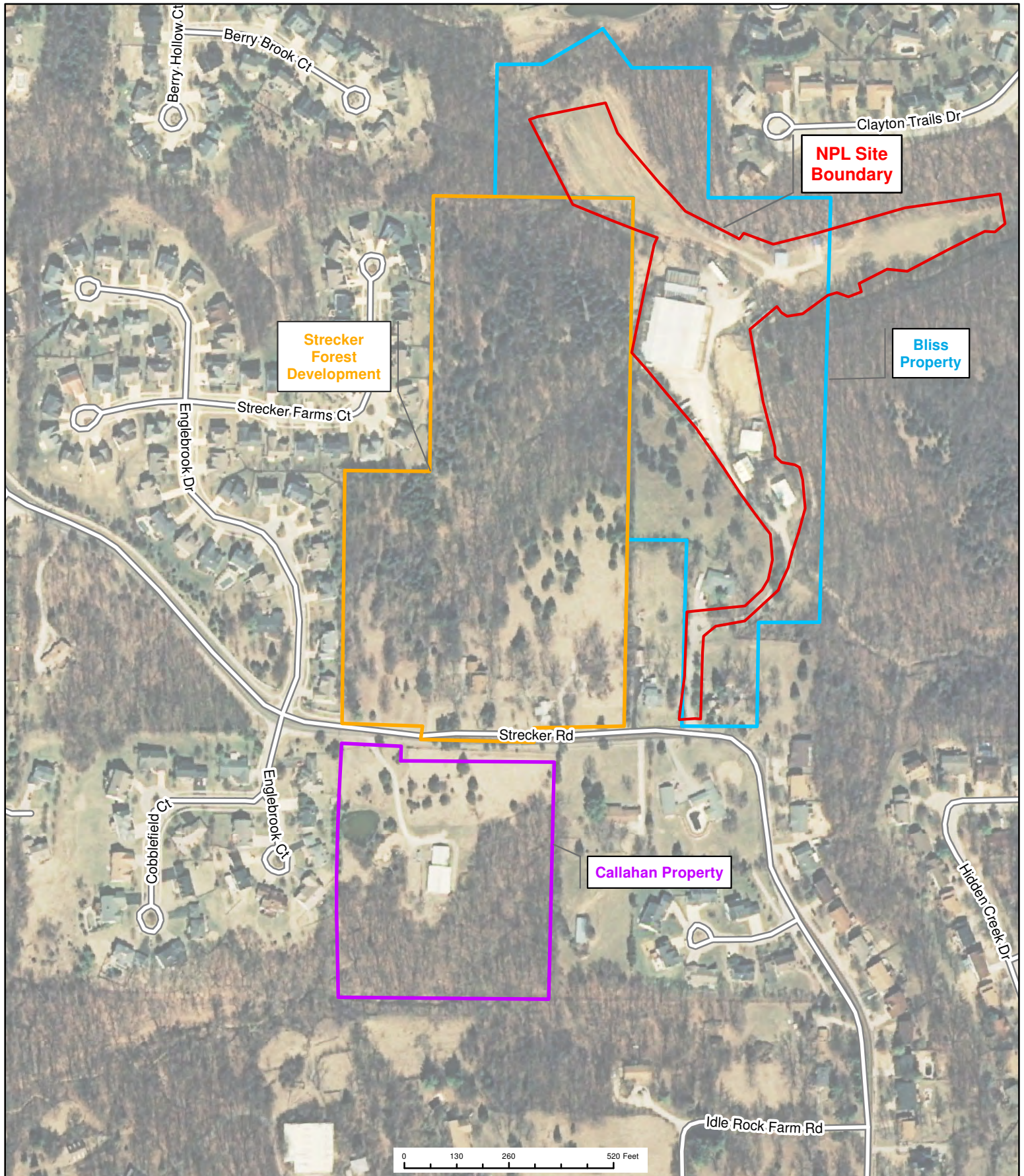
NOTE: The Environmental Protection Agency does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from reliance upon the information shown.
6/13/2012 CJM

1 Locator Map_FinalReport.mxd
Data Sources:
ESRI National Geographic Basemap
GDT Streets 2007



 Callahan Property

Locator Map Ellisville NPL Site and proposed Strecker Forest Development



NOTE: The Environmental Protection Agency does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from reliance upon the information shown.
6/13/2012 CJM



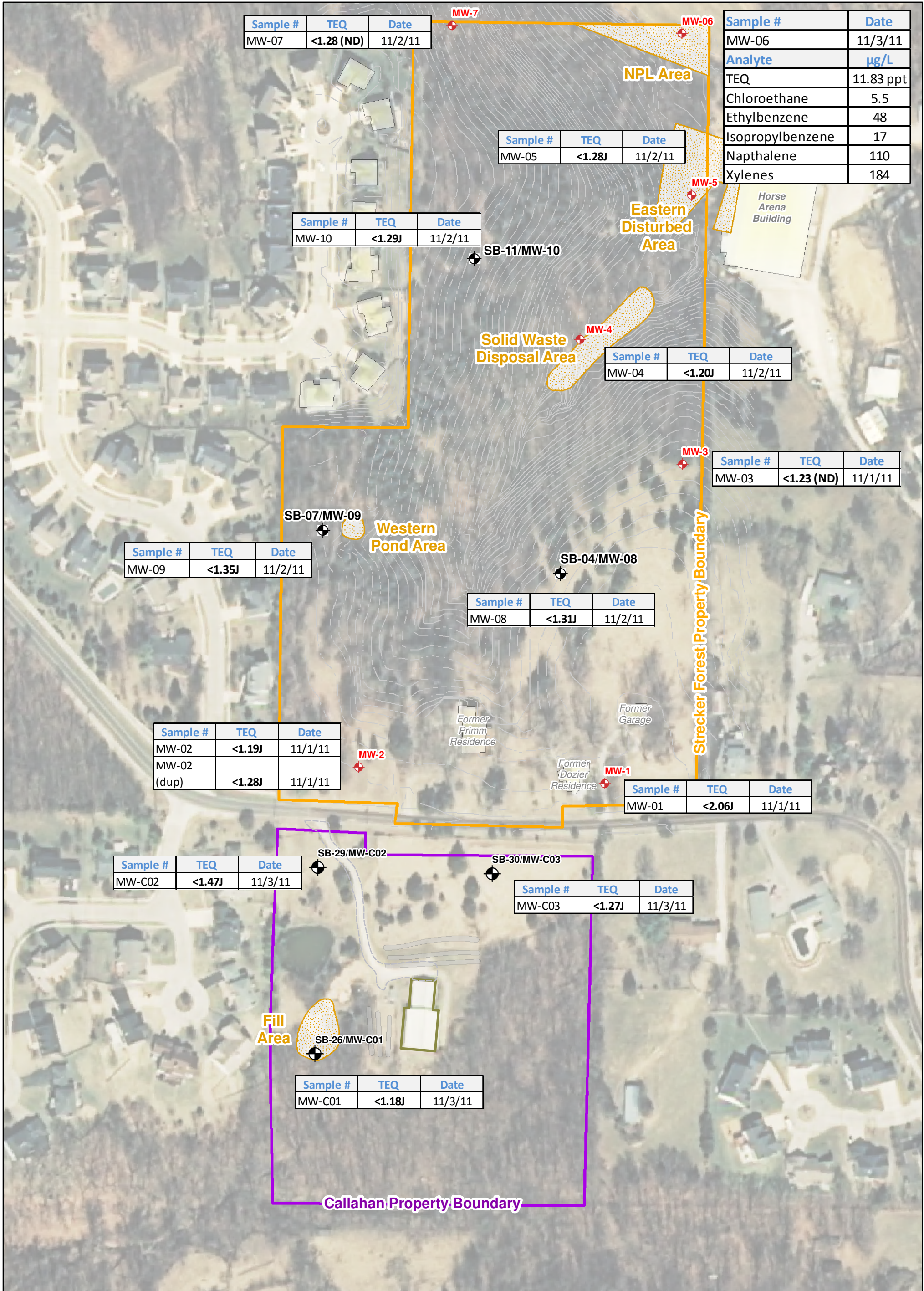
2 Study Area Map_FinalReport.mxd
USGS Missouri Aerial Imagery 2007 (2 foot)
GDT Streets (2007)



- NPL Site Boundary
- Callahan Property
- Proposed Strecker Forest Development
- Bliss Property

Study Area Strecker Forest Development

Figure 2



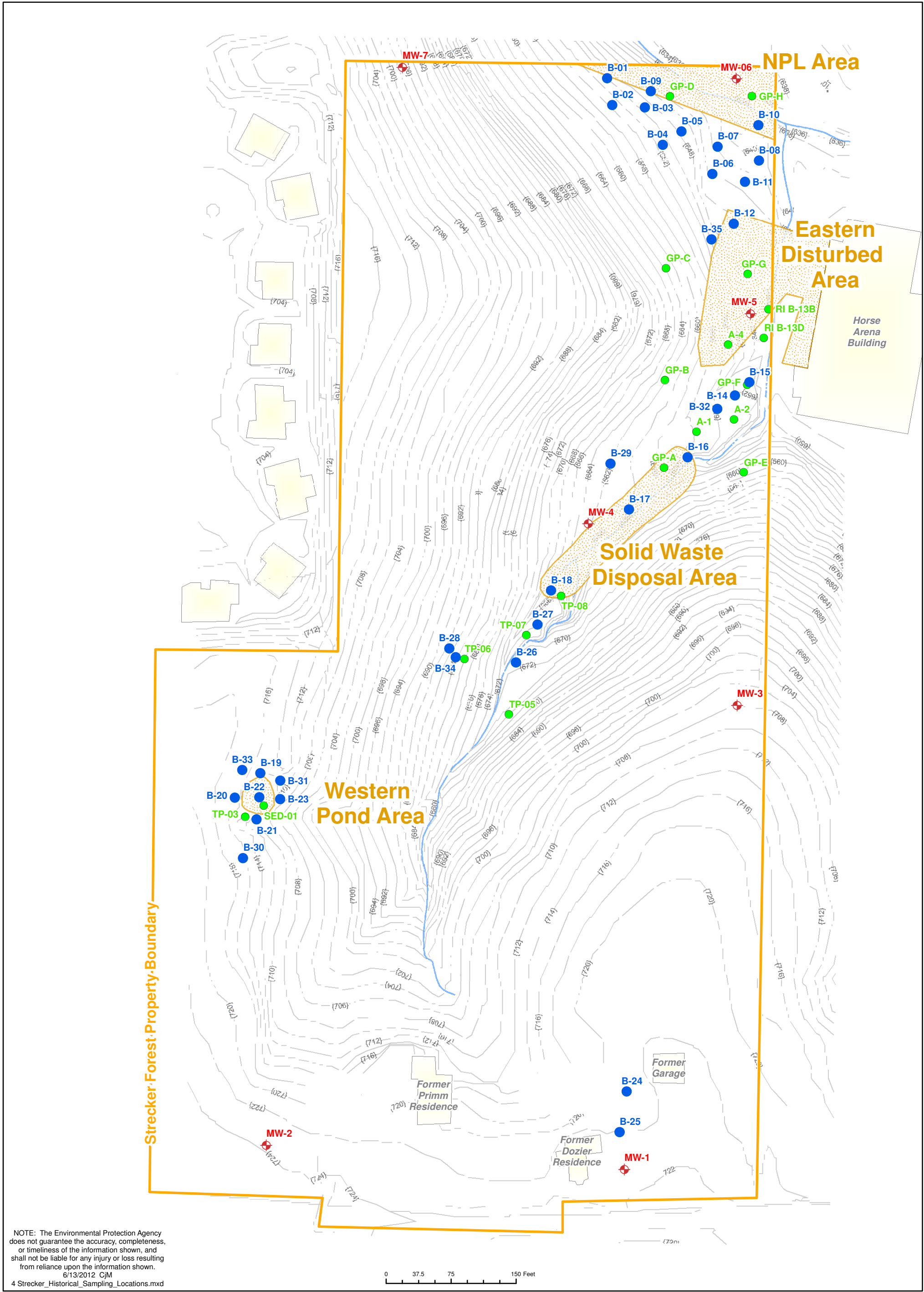
NOTE: The Environmental Protection Agency does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from reliance upon the information shown.
6/13/2012 CJM
3 Water_Sampling_Map_Results_FinalReport1.mxd
Data Sources:
Mundell Report, 2011
-Strecker Forest Boundary
EPA Expanded Site Review, 2012
- Sampling Results
- Monitoring Wells
Aerial Imagery, 2008
- 1-foot from MO Spatial Data Infrastructure Service

Dioxin Results in parts per trillion
ND = Non-detect
J = Estimated Result. Result is less than the reporting limit.

- Mundell Monitoring Wells
- EPA ESR Monitoring Wells
- Strecker Forest Boundary
- Contours from Mundell Report
- Disturbed Areas
- Callahan Property
- Callahan Driveway
- Callahan Barn
- Drum Staging Locations
- Existing Structures

Monitoring Wells Analytical Detects and TEQ Results (ppt) Strecker Forest Wildwood, Missouri

Figure 3



Data Sources:
Mundell Report, 2011
-Strecker Forest Boundary
-Contours
-House Locations
-Screening Locations

USEPA
-EPA Regional Screening Level (RSL) Table, 2011

Missouri Risk-Based Corrective Action (MRBCA), June 2006
-Lowest Default Target Levels (LDTL)

URS Data Review, May 2008
-Eastern Disturbed Area Boundary



- Brucker Soil Samples
- Mundell Soil Borings
- ◆ Mundell Monitoring Wells

Historical Sampling Strecker Forest Wildwood, Missouri



Figure 4



Data Sources:
MDNR Site Reassessment, 2005
-MDNR Exposure Units
USEPA Remedial Investigation, 2003
-EPA Regional Screening Level (RSL) Table
Missouri Risk-Based Corrective Action (MRBCA), June 2006
-Lowest Default Target Levels (LDTL)
Aerial Imagery, 2008
- 1-foot from MO Spatial Data Infrastructure Service



Discrete Sample
(Dot)



2005 MDNR Exposure Unit Boundaries



2005 MDNR Exposure Unit (EU) Samples



2005 MDNR Barn Wipe Samples



2005 MDNR Barn Soil Borings



1983 EPA RI Soil Samples



Drainage Way



Callahan Property



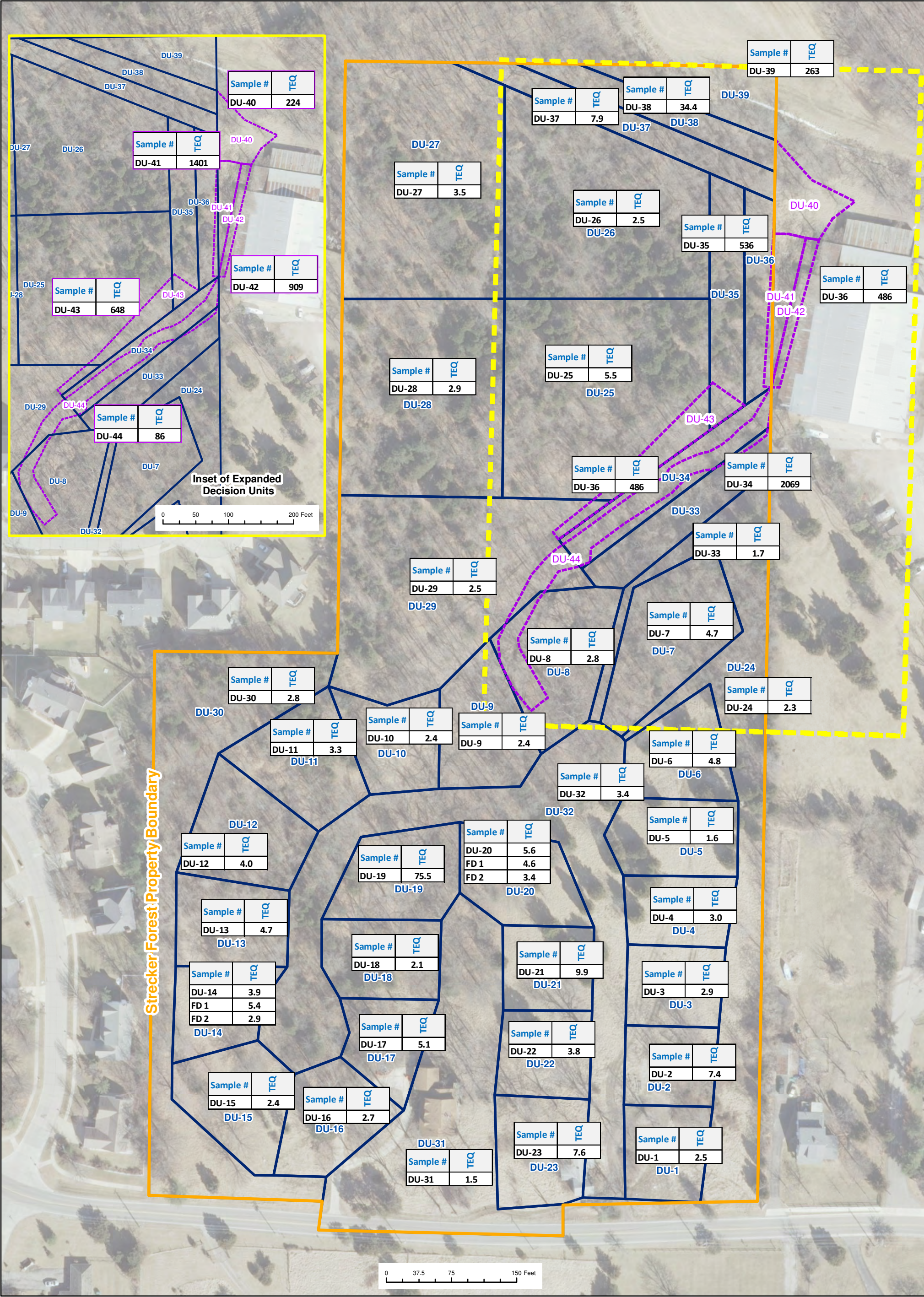
Drum Staging Locations



Approximate Fill Area


Historical Sampling Callahan Property Wildwood, Missouri



Figure 5



NOTE: The Environmental Protection Agency does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from reliance upon the information shown.
6/13/2012 CJM
6 Sampling_Results_DUs_FinalReport.mxd

Data Sources:
Mundell Report, 2011
-Strecker Forest Boundary
EPA Expanded Site Review, 2012
- Decision Units
- Sample Units
- Sampling Results: 1/2012
Aerial Imagery, 2008
- 1-foot from MO Spatial Data Infrastructure Service



 Decision Units*
 Expanded Decision Units*
*Units as defined by field GPS.

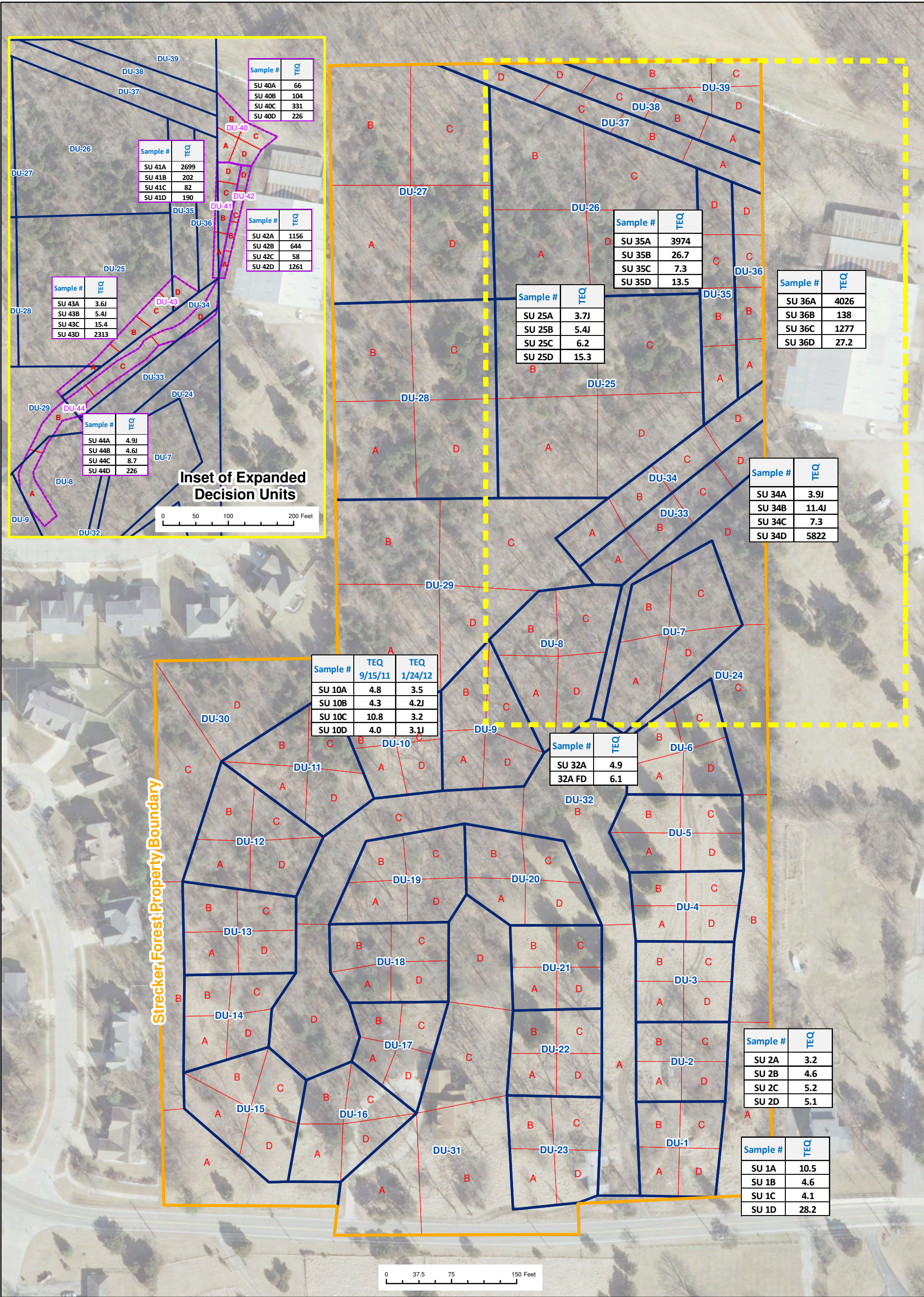
EPA Decision Unit Results

2012 TEQ Results (ppt)

Strecker Forest

Wildwood, Missouri

Figure 6



NOTE: The Environmental Protection Agency does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from reliance upon the information shown.
6/13/2012 CjM
7 Sampling_Results_SUs_FinalReport.mxd

Data Sources:
Mundell Report, 2011
-Strecker Forest Boundary
EPA Expanded Site Review, 2012
- Decision Units
- Sample Units
- Sampling Results: 9/2011 and 1/2012
Aerial Imagery, 2008
- 1-foot from MO Spatial Data Infrastructure Service

SAMPLING NOTE:
Decision Unit 34 contained mis-labeled sample units and is **invalid**. Additional sampling obtained 1/2012.

Decision Units*
Sample Units*
*Units as defined by field GPS.

EPA Sampling Unit Results

2012 TEQ Results (ppt)

Strecker Forest

Wildwood, Missouri

Figure 7

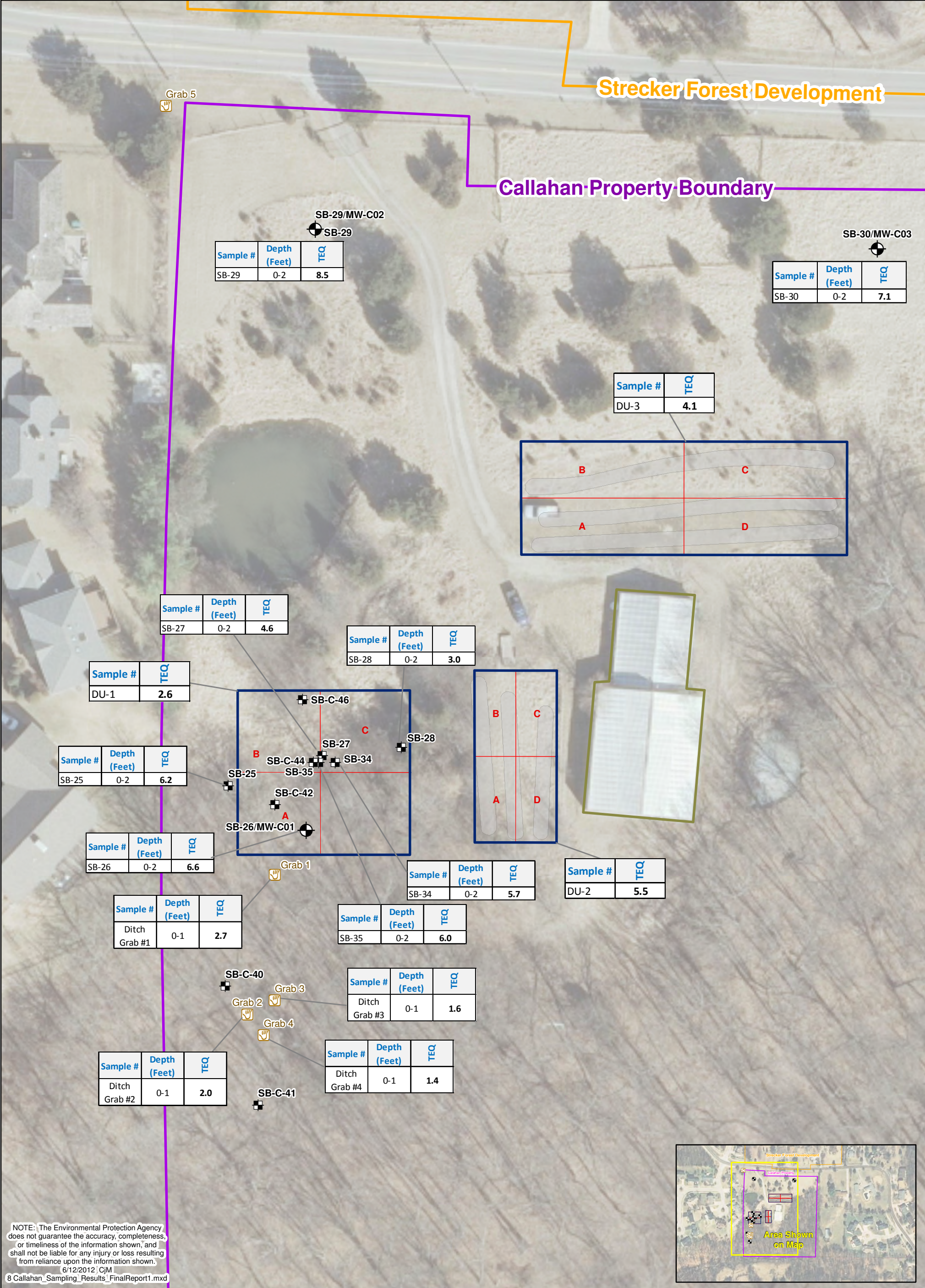
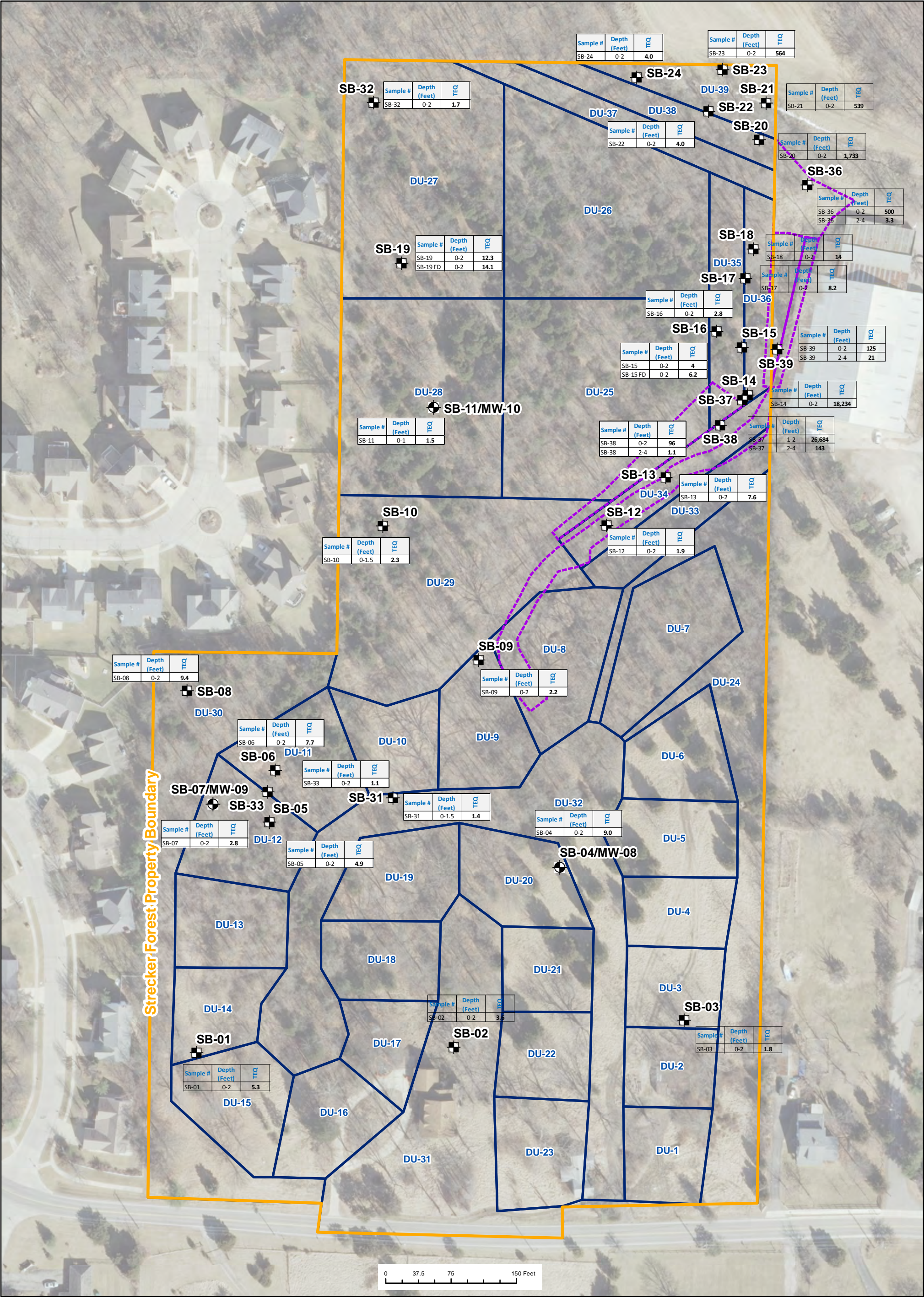


Figure 8



NOTE: The Environmental Protection Agency does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any injury or loss resulting from reliance upon the information shown.
6/13/2012 CJM
9 Sampling_Results_Borings_FinalReport.mxd

Data Sources:
Mundell Report, 2011
-Strecker Forest Boundary
EPA Expanded Site Review, 2012
- Decision Units
- Sample Units
- Soil Bring Locations
- Sampling Results: 9/2011 and 1/2012
- Monitoring Wells
Aerial Imagery, 2008
- 1-foot from MO Spatial Data Infrastructure Service



- EPA ESR Soil Boring Locations
- EPA ESR Monitoring Wells
- Decision Units*
- Expanded Decision Units*

*Units as defined by field GPS.

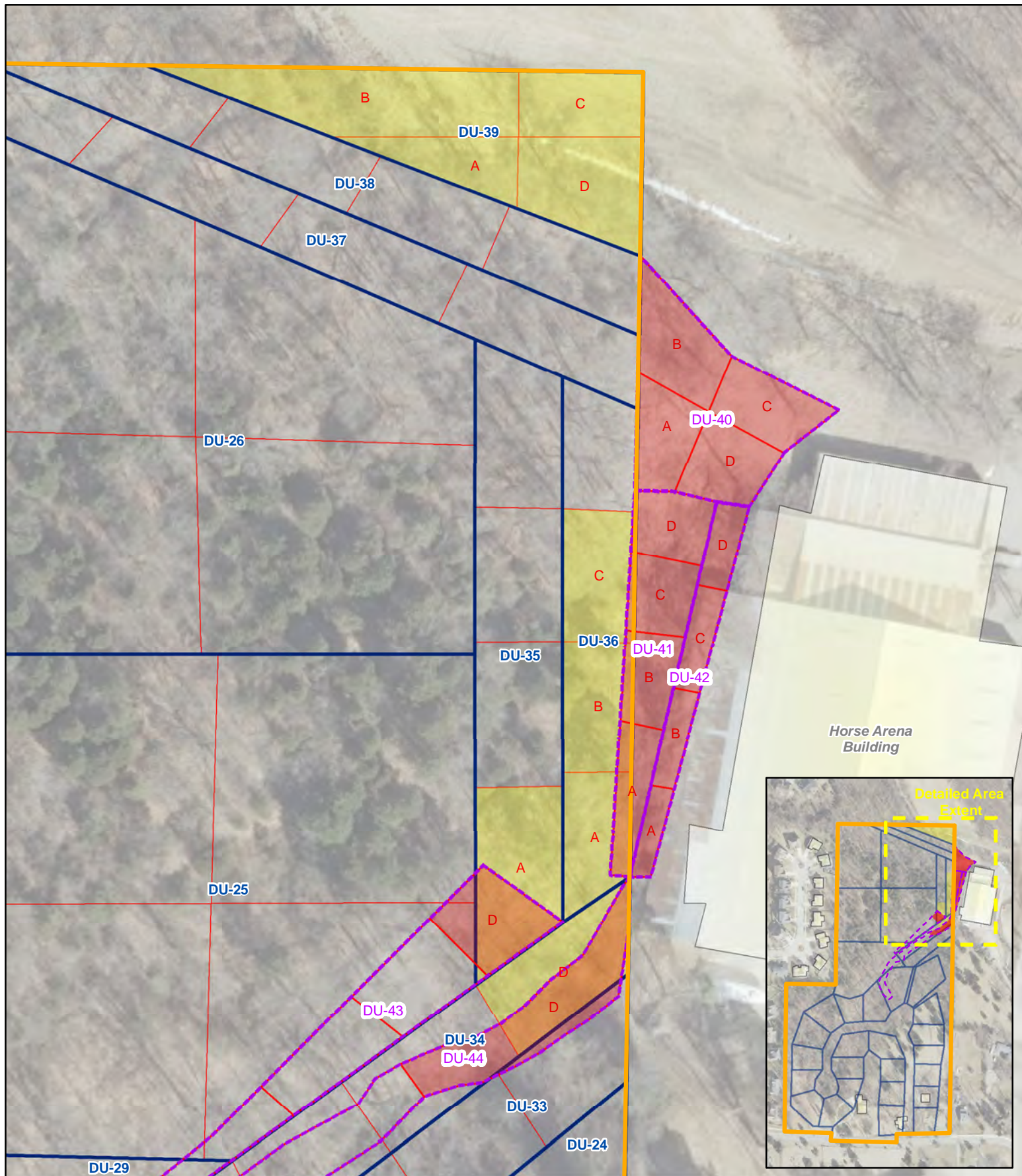
EPA Boring Hole Results

2012 TEQ Results (ppt)

Strecker Forest

Wildwood, Missouri

Figure 9

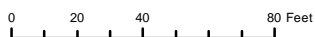


Data Sources:
 -Mundell Report, 2011
 -Strecker Forest Boundary
 -EPA Expanded Site Review, 2012
 -Decision Units
 -Sample Units
 -Soil Bring Locations
 -Sampling Results: 1/2012
 -Monitoring Wells
 -Aerial Imagery, 2008
 -1-foot from MO Spatial Data Infra. Service



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 6/13/2012 CJM
 10 ReassessmentAreas_DUs_FinalReport.mxd

*Units as defined by field GPS.



Red and yellow shading indicate areas with dioxin TEQ values exceeding the screening range and area identified for further assessment.

- Decision Units*
- Expanded Decision Units*
- Sample Units*

*Units as defined by field GPS.

EPA Decision Units Reassessment Areas Strecker Forest Wildwood, Missouri

Figure 10

APPENDIX B
PREVIOUS INVESTIGATIONS

PREVIOUS INVESTIGATIONS

Strecker Forest

Several previous environmental investigations of Strecker Forest have been commissioned by various parties, including the current property owner and developer, W.J. Byrne Builders, Inc., and the City of Wildwood, Missouri. These investigations have been intended to determine whether this property is suitable for residential development based on environmental conditions. These investigations have included a removal assessment/action, Phase I and Phase II ESAs, a data review, and a human health risk assessment. A brief summary of the past investigations at Strecker Forest follows:

1. **Removal Assessment/Action by EPA, 1990 to 1996.** Soil sampling performed by EPA in February 1990 established a boundary of dioxin-contaminated soil to be remediated at the Bliss-Ellisville site by defining a clean perimeter immediately south of the intermittent creek that flows across the northeast corner of the Strecker Forest parcel. Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin [2,3,7,8-TCDD]) was undetected in surface soils at a detection limit of 0.3 parts per billion (ppb) in the area defining the clean perimeter. Dioxin was detected above the action level of 1 ppb in three areas to the north that were partially located on the Strecker Forest property (95 percent upper confidence level [UCL] concentrations of 2.248 ppb, 1.366 ppb, and 1.269 ppb). In 1996, remediation in these areas involved removal of soil in lifts until a residual dioxin concentration of less than 1 ppb was detected in the upper 1 foot of soil (upper 2 feet in stream bed areas) or less than 10 ppb at depths greater than 1 foot (2 feet in stream bed areas). Following soil removal, confirmation sampling was performed to verify that cleanup goals had been achieved, and excavated areas were backfilled to their original grade and restored. Remediated areas located in the stream bed were further stabilized with rip rap after they had been backfilled. A 0.15-acre portion of the Strecker Forest property was included in the 1996 removal action performed by EPA. This area in the extreme northeast corner of the parcel is shown as the “NPL Area” on Figure 3 in Appendix A, along with other features and locations of past sampling events.

In addition to management of dioxin-contaminated soil, drum fragments were removed during the 1996 removal action from the surface of one area located approximately 50 feet west of the southwest corner of the horse arena building in the northeast portion of Strecker Forest. The Final On-Scene Coordinator’s Report (EPA 1996a) for this removal action indicated that following removal of the drum fragments, no contamination was observed in the area, and field screening using an immunoassay method did not detect the presence of benzene, toluene, ethyl benzene, or xylenes (BTEX) above a detection limit of 100 parts per million.

2. **Phase I ESA conducted by SCI Engineering, Inc., (SCI), dated March 15, 2000.** This Phase I ESA identified three recognized environmental conditions (REC). The first REC was a partially buried drum found near the Bliss property. The second REC was a disturbed area identified in a 1966 aerial photograph. The third REC was potential for on-site impact due to groundwater migration from the Bliss property.
3. **Phase II ESA conducted by Brucker Engineering, Ltd., (Brucker), dated November 2004.** This report summarized information gathered from soil samples collected from (1) eight test pits (TP-1 through TP-8) that had been excavated, (2) nine direct-push subsurface soil samples (GP-A through

GP-H), (3) one sediment sample from a pond, and (4) one soil sample from an excavation pit (A4). In all, 19 samples were collected and analyzed for metals, pesticides, PCBs, SVOCs, and VOCs. During excavation of the test pits, the soils were visually inspected for disturbance and screened for VOCs with a photoionization detector (PID). PID detections, odors, and staining were reported at locations A-4 and GP-H. Analytical results were above residential RSLs at GP-F (PCBs), GP-H (naphthalene), TP-6 (PCBs), and A-4 (VOCs and SVOCs). Results also exceeded Missouri Risk-based Corrective Action (MRBCA) Lowest Default Target Levels (LDTL) at A-4 (cadmium, 1,3,5-trimethylbenzene, and xylenes) and GP-H (PCE and 1,3,5-trimethylbenzene).

4. **Data Review of 18.3-Acre Tract performed by URS Corporation (URS), dated May 1, 2008.** No additional environmental data were obtained during this study. This data review concluded that the contaminants identified during the previous investigations were limited to an area adjacent to the Bliss subsite. The report suggested an additional investigation to complete delineation of the identified contamination. URS also recommended installing monitoring wells, fencing the NPL Area, and sampling the “solid waste” and “western pond” areas.
5. **Phase II ESA conducted by Mundell & Associates (Mundell), dated March 3, 2010.** This report summarized information from a geophysical survey, installation and sampling of seven monitoring wells (MW-1 through MW-7), collection of three groundwater samples from Geoprobe® borings (B-22, B-26, B-33), and collection of 42 soil samples (B-1 through B-35, and MW-1 through MW-7). The geophysical survey identified 29 anomalies. After further consideration and acquisition of additional information, only one anomaly was determined to represent possible buried containers. In residential soil at B-10 and MW-6, concentrations of one or more VOCs, SVOCs, PCBs, and/or dioxin exceeded their respective RSLs. Although the Mundell report did not reference RSLs, these data were subsequently compared to RSL values. Results for soil samples also exceeded MRBCA LDTLs at MW-06 (methylene chloride, 2-methylnaphthalene, 2,4,5-trichlorophenol, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes). In a groundwater sample collected from soil boring B-33, the bis-(2-ethylhexyl) phthalate concentration exceeded the EPA Maximum Contaminant Level (MCL). In a groundwater sample collected from monitoring well MW-6, concentrations of 2-methylnaphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene exceeded their respective MRBCA LDTLs.
6. **Human Health Risk Assessment (HHRA) prepared by Environmental Stewardship Concepts and Henshel EnviroComm, dated March 14, 2011.** No additional environmental data were obtained during this study. The HHRA recommended restricting access to the property and performing additional investigation to address identified data gaps and uncertainties.

Figure 4 in Appendix A depicts the Strecker Forest sampling locations from the Brucker and Mundell investigations. Table B-1 summarizes the exceedances of soil screening levels reported from previous investigations of Strecker Forest.

Groundwater sampling during past investigations at Strecker Forest has been limited to a single set of samples collected from seven monitoring wells installed on the property and from three boreholes during the Mundell Phase II ESA. The reported exceedances of EPA RSLs or MRBCA LDTLs are summarized in Table B-2.

Callahan Property

Several environmental investigations have been conducted at the Callahan subsite subsequent to the drum removal in 1981-1982. Brief summaries of those investigations at the Callahan subsite are as follows:

1. **Remedial Investigation by Black & Veatch Engineers-Architects (Black & Veatch), dated September 21, 1983.** Field activities included collection of seven soil samples (ELL-21 through ELL-25, ELL-31, ELL-32) and two surface water samples (ELL-26 and Ell-27). Results for surface soil samples from ELL-31 and ELL-32 (collected from the former drum staging areas) exceeded EPA residential RSLs for methylene chloride and oxirane. Surface water results were non-detect.
2. **Phase II ESA by Brucker, dated December 1999.** During this investigation, five composite soil samples were collected and analyzed for dioxin, PCBs, pesticides, and metals. All sample results were non-detect. A geophysical survey during this investigation showed no evidence of buried drums.
3. **Site Reassessment/Post-Removal Sampling Report prepared by MDNR, January 31-February 2, 2005.** The purpose of the 2005 MDNR site reassessment at the Callahan property was to determine if any residual soil contamination existed at the site at concentrations that would warrant further removal response. Five sediment samples and 29 soil samples were collected and analyzed for SVOCs, pesticides/herbicides, PCBs, RCRA metals, and dioxin. Results exceeded EPA residential RSLs for soil at EU-6 for ethylbenzene, PCE, and 1,2,4-trimethylbenzene. MRBCA LDTLs for various VOCs and SVOCs were exceeded in samples collected from EU-5 and EU-6.
4. **Removal Site Evaluation Report at Callahan Property Site prepared by EPA, dated August 5, 2005.** This report incorporated results of the 2005 MDNR Site Reassessment. No additional environmental data were obtained for this report.

Figure 5 in Appendix A depicts the Callahan property sampling locations from the Black and Veatch and MDNR investigations. Table B-3 summarizes the exceedances of screening levels reported from past investigations of the Callahan property.

As discussed above, conditions at the Strecker Forest property have been previously characterized during Phase II ESAs performed in 2004 and 2010. In addition, conditions in the extreme northeast portion of the property were characterized during past EPA removal activities at the adjacent Bliss-Ellisville site. These investigations have provided a great deal of information about conditions at the Strecker Forest property. However, previous studies have recommended additional investigation to address uncertainties regarding contaminants possibly present in certain portions of the property and hydrogeological conditions in the area. As a result, EPA performed additional characterization of Strecker Forest and surrounding areas in 2011 and 2012, as discussed in the main body of the Expanded Site Review report, to increase confidence in the assessment of potential human health risks.

TABLE B-1

**HISTORICAL SOIL SAMPLE ANALYTICAL RESULTS SUMMARY - SCREENING LEVEL EXCEEDANCES
STRECKER FOREST SITE, WILDWOOD, MISSOURI**

Sample ID (Results mg/kg)	Depth (feet below ground surface)	Date	Benzo(b)fluoranthene	Benzo(a)pyrene	Cadmium	Dibenz(a,h)anthracene	1,2-Dibromo-3- Chloropropane	Ethylbenzene	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	Methylene Chloride	2-Methylnaphthalene	Naphthalene	PCBs (arochlor 1248)	PCBs (arochlor 1254)	PCBs (arochlor 1260)	Tetrachloroethene	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes
RSL for Residential Soil			0.15	0.015	70	0.015	0.0054	5.4	4.5 pg/g	11	310	3.6	0.22	0.22	0.22	0.55	22	6100	62	780	630
MRBCA LDTL			6.19	0.62	9.31	0.62	0.0011	39.9	NE	0.0176	7.55	0.325	2.2	2.2	2.2	0.141	18.7	0.0293	3.93	0.882	24.7
GP-A	0-3	1/23/04	ND	ND	ND	NA	0.0029	ND	NA	0.0033	ND	0.0064	ND	ND	ND	0.0029	0.0035	NA	0.0017	ND	0.0044
GP-F	0-3	1/23/04	NA	ND	2.9	NA	ND	ND	NA	0.0039	ND	ND	ND	ND	0.36	0.0039	ND	NA	0.0012	ND	0.0006
GP-H	9-12	1/23/04	NA	ND	0.36	NA	ND	0.47	NA	ND	0.42	6.1/4.5	ND	ND	ND	0.27	ND	NA	2.7	2.4	3.4
TP-6	Test Pit	1/23/04	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	1.1	ND	0.0025	0.0008	NA	ND	ND	0.0008
A-4	Test Pit	1/23/04	ND	0.15	28.5	ND	ND	17	NA	ND	2.8	11/4.4	ND	ND	ND	0.67	43	NA	ND	53	67.8
B-10	0.5-2	11/5/09	ND	ND	NA	ND	ND	ND	150	0.0014 JB	ND	ND	ND	ND	0.033 J	ND	ND	ND	ND	ND	ND
MW-06	7-10	11/13/09	0.18 J	0.12 J	NA	0.11 J	ND	7	9100 E; 6500 D	0.15 J	8.1	14; 49 D; 37 E	0.24	0.13	0.14	ND	0.16 J	0.073 J	9.2	0.95	13.1 FB
MW-06 (dup)	7-10	11/13/09	0.12 J	0.072 J	NA	0.073 J	ND	44	2000	1 J	5	71; 27 E; 22 D	0.21	0.12	0.12	ND	ND	ND	58	14	198

Notes:

All soil results are in parts per million

All groundwater results except dioxin are in milligrams per liter (mg/L)

Dioxin Results in parts per trillion in soil and parts per quadrillion in water

B = The associated method blank contains analyte at a level above the MDL.

D = Result was obtained from analysis of dilution.

dup = duplicate

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

FB = Compound detected in associated field blank.

J = Estimated Result. Result is less than the reporting limit.

LDTL = Lowest default target limit

MRBCA = Missouri Risk-based Corrective Action

NA = Was not analyzed for.

NE = Not established

ND = Analyte was not detected above specified detection limit.

PCB = polychlorinated biphenyls

Q = Quantitative Interference.

RSL = Regional Screening Level.

S = Spike Recovery outside recovery limits.

TABLE B-2

**HISTORICAL GROUNDWATER SAMPLE ANALYTICAL RESULTS SUMMARY - SCREENING LEVEL EXCEEDANCES
STRECKER FOREST SITE, WILDWOOD, MISSOURI**

Sample # (Results µg/L)	Date	Bis-(2-ethylhexyl)phthalate	Methylene Chloride	2-Methylnaphthalene	Napthalene	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride
EPA MCL		6.0	5.0	NE	NE	5.0	NE	NE	2.0
MRBCA LDTL		6.0	5.0	11.7	1.09	5.0	7.06	7.05	2.0
B-33	11/13/09	12	ND	ND	ND	ND	ND	ND	ND
MW-06	11/13/09	ND	7.2 J B	15	290 B/300 D/260 E	4.2 J	180	25	3.5 J
MW-06 (dup)	11/13/09	ND	3.9 J B	13	390 B/240 D/220 E	5.1 J	240	31	3.9 J

Notes:

Dioxin Results in parts per quadrillion in water

B = The associated method blank contains analyte at a level above the MDL.

D = Result was obtained from analysis of dilution.

dup = duplicate

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

FB = Compound detected in associated field blank.

J = Estimated Result. Result is less than the reporting limit.

LDTL = Lowest default target limit

MRBCA = Missouri Risk-based Corrective Action

NA = Was not analyzed for.

NE = Not established

ND = Analyte was not detected above specified detection limit.

PCB = polychlorinated biphenyls

Q = Quantitative Interference.

RSL = Regional Screening Level.

S = Spike Recovery outside recovery limits.

TABLE B-3

**HISTORICAL SOIL SAMPLE ANALYTICAL RESULTS SUMMARY - SCREENING LEVEL EXCEEDANCES
CALLAHAN SITE, WILDWOOD, MISSOURI**

Sample ID	Depth (feet bgs)	Date	Benzene	2,4-Dimethylphenol	Ethylbenzene	Methylene Chloride	4-Methylphenol	Naphthalene	Oxirane (Dimethylene Oxide)	Phenanthrene	Tetrachloroethene	Toulene	1,1,2-Trichloroethane	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes
RSL for Residential Soil			1.1	1200	5.4	11	310	3.6	0.17	NE	0.55	5000	1.1	2.8	62	780	630
Missouri default MRBCA			0.0561	9.37	39.9	0.0176	0.64	0.325	NE	0.0158	0.141	29.8	0.0448	0.141	3.93	0.882	24.7
ELL-31-SL-01		1/6/83	ND	ND	ND	11.0	ND	ND	10.0	ND	ND	0.79	ND	ND	ND	ND	0.41
ELL-32-SL-01		1/6/83	ND	ND	ND	11.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EU-5, SB-06 (-25)	8	2/1/05	ND	NA	2.43	ND	NA	3.03	ND	NA	0.0352	32.1	ND	ND	17.2	6.44	8.52
EU-5, all borings (-26)	Composite (8.5)	2/1/05	NA	0.177	NA	NA	ND	0.601	NA	ND	NA	NA	NA	NA	NA	NA	NA
Duplicate EU-5 (-27)	Composite (8.5)	2/1/05	NA	1.31	NA	NA	0.729	1.69	NA	ND	NA	NA	NA	NA	NA	NA	NA
EU-6, SB-03 (-33)	7.5	2/2/05	ND	NA	3.57	ND	NA	0.050	ND	NA	0.713	71.2	0.0881	ND	5.17	0.508	13.1
EU-6, SB-05 (-34)	9.5	2/2/05	0.156	NA	20.1	ND	NA	2.95	ND	NA	5.72	1,180	ND	ND	85.6	28.7	58.4
EU-6, SB-05 (-35) Dup	9.5	2/2/05	0.124	NA	29.5	ND	NA	3.4	ND	NA	7.77	1,400	0.046	0.214	95.4	35.5	84.7
EU-6, all borings (-36)	Composite (refusal)	2/2/05	NA	11.7	NA	NA	4.88	0.461	NA	0.126	NA	NA	NA	NA	NA	NA	NA

Notes:

All results except dioxin are in parts per million

Dioxin Results in parts per trillion in soil

B = The associated method blank contains analyte at a level above the MDL.

D = Result was obtained from analysis of dilution.

dup = duplicate

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

FB = Compound detected in associated field blank.

J = Estimated Result. Result is less than the reporting limit.

LDTL = Lowest default target limit

MRBCA = Missouri Risk-based Corrective Action

NA = Was not analyzed for.

NE = Not established

ND = Analyte was not detected above specified detection limit.

PCB = polychlorinated biphenyls

Q = Quantitative Interference.

RSL = Regional Screening Level.

S = Spike Recovery outside recovery limits.

APPENDIX C
PHOTOGRAPHIC RECORD

Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review Wildwood, Missouri



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: East	DESCRIPTION	This photo shows a terrain conductivity survey being conducted at the "Fill Area" on the Callahan property.	1
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/06/11
	PHOTOGRAPHER	Jim Silver	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West	DESCRIPTION	This photo shows a terrain conductivity survey being conducted at the Fill Area on the Callahan property.	2
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/06/11
	PHOTOGRAPHER	Jim Silver	

Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review Wildwood, Missouri



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West	DESCRIPTION	This photo shows Emergency and Rapid Response Services (ERRS) personnel conducting exploratory trenching at Trench 1 (CATR-1) at the Fill Area on the Callahan property.	3
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/07/11
	PHOTOGRAPHER	Jim Silver	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West	DESCRIPTION	This photo shows rusty scrap metal, including drum and bucket fragments, unearthed from Trench 1 at the Fill Area on the Callahan property.	4
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/07/11
	PHOTOGRAPHER	Dave Kinroth	

Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review Wildwood, Missouri



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows Trench P-1 at the Western Pond basin (southeast quadrant), where packed silt/clay extended to a depth of 4 feet/bedrock at the Strecker Forest property.	5
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/08/11
	PHOTOGRAPHER	Jim Silver	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: East	DESCRIPTION	This photo shows geophysical survey and exploratory trenching activities conducted at the Strecker Forest Eastern Disturbed Area.	6
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/08/11
	PHOTOGRAPHER	Jim Silver	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows scrap metal unearthed at the Eastern Disturbed Area (EDA-2) at the Strecker Forest property.	7
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/08/11
	PHOTOGRAPHER	Jim Silver	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows Environmental Protection Agency (EPA) Region 7 personnel conducting subsurface soil sampling at the Strecker Forest property.	8
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/13/11
	PHOTOGRAPHER	Lauren Jackson	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: Northwest	DESCRIPTION	This photo shows EPA personnel conducting subsurface soil sampling at the Strecker Forest property.	9
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/13/11
	PHOTOGRAPHER	Lauren Jackson	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: East	DESCRIPTION	This photo shows Superfund Technical Assessment and Response Team (START) personnel conducting sample processing and decontamination of sampling equipment at the Strecker Forest property.	10
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/15/11
	PHOTOGRAPHER	Jim Silver	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: Northwest	DESCRIPTION	This photo shows START personnel conducting incremental composite sampling of surface soil at the Strecker Forest property.	11
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/21/11
	PHOTOGRAPHER	Dave Kinroth	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: North	DESCRIPTION	This photo shows equipment for collection of interior dust samples from the floor inside an abandoned house at the former Primm property.	12
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/22/11
	PHOTOGRAPHER	Dave Kinroth	

Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review Wildwood, Missouri



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: North	DESCRIPTION	This photo shows Missouri Department of Natural Resources (MDNR) personnel installing monitoring well MW-C02 at the Callahan property.	13
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/20/11
	PHOTOGRAPHER	Jim Silver	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows START personnel sampling monitoring well MW-C01 on the Callahan property, using a low-flow sampling technique.	14
	CLIENT	Environmental Protection Agency - Region 7	DATE 11/03/11
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: Southeast	DESCRIPTION	This photo shows START personnel sampling monitoring well MW-C01 at the Callahan property, using a low-flow sampling technique.	15
	CLIENT	Environmental Protection Agency - Region 7	DATE 11/03/11
	PHOTOGRAPHER	Dave Kinroth	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows exploratory excavation in the Western Pond basin; the pond was completely dry due to evaporation and drought conditions at the time.	16
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/08/11
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



<p>TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: Northeast</p>	DESCRIPTION	This photo shows the Western Pond on the Strecker Forest property; it will hold only a small volume of water due to excavation cut into the dam/berm.	17
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/18/12
	PHOTOGRAPHER	Dave Kinroth	



<p>TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West</p>	DESCRIPTION	This photo shows a close-up view of the excavation that has been cut into the dam/berm of the Western Pond.	18
	CLIENT	Environmental Protection Agency - Region 7	02/18/12
	PHOTOGRAPHER	Dave Kinroth	

APPENDIX D

GEOPHYSICAL SURVEY AND EXPLORATORY TRENCHING INVESTIGATION REPORT

GEOPHYSICAL SURVEY AND EXPLORATORY TRENCHING INVESTIGATION REPORT
EXPANDED SITE REVIEW
OF THE PROPOSED STRECKER FOREST DEVELOPMENT SITE
WILDWOOD, MISSOURI

Superfund Technical Assessment and Response Team (START)
Contract No. EP-S7-06-01, Task Order 0002.058

Prepared For:

U.S. Environmental Protection Agency
Region 7
Superfund Division
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May 15, 2012

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CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 SITE LOCATION.....	1
3.0 SITE DESCRIPTION	1
4.0 FIELD ACTIVITIES	2
4.1 GEOPHYSICAL SURVEY	3
4.1.1 Calibration Procedures.....	3
4.1.2 Survey Areas and Data Acquisition.....	4
4.1.3 Results.....	4
4.2 EXPLORATORY TRENCHING	6
5.0 SUMMARY	10
6.0 REFERENCES	12

APPENDICES

Appendix

A	FIGURES
B	PHOTOGRAPHIC RECORD

TABLES

<u>Table</u>	<u>Page</u>
1 WESTERN POND AREA EXPLORATORY OBSERVATIONS	8
2 SB-33 SAMPLE RESULTS	9

1.0 INTRODUCTION

As a specific subtask of the Expanded Site Review (ESR) of the proposed Strecker Forest Development site (site) in Wildwood, Missouri, the Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked by the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division to conduct a geophysical survey at the site, and to perform follow-up exploratory trenching at locations where magnetic anomalies were identified. The study area for the ESR includes the entire 18.3 acres of the proposed Strecker Forest subdivision (Strecker Forest). This tract includes 23 proposed home sites in the southern portion of the study area and an undeveloped “preservation area” in the northern portion. The study area for this ESR also includes a portion of the Ellisville Superfund site known as the “Callahan property,” which is located across Strecker Road south of Strecker Forest, where a former drum burial area was remediated in the early 1980s.

Jim Silver and Bob Feild were the EPA Region 7 Task Monitors for this activity. EPA Region 7 START Team Member (STM) Dave Kinroth was the START Project Manager (PM), and Ross Martin of Tetra Tech MMI performed the geophysical survey. Environmental Restoration, LLC (ER) of St. Louis, Missouri, conducted the exploratory trenching under contract to Tetra Tech.

2.0 SITE LOCATION

Strecker Forest is located in Saint Louis County, Missouri (see Appendix A, Figure 1), and includes three parcels of land encompassing 18.3 acres to the north of Strecker Road in Wildwood, Missouri. The three parcels include the former Dozier property, located at 165 Strecker Road (approximately 5 acres); the former Primm property, located at 173 Strecker Road (approximately 10 acres); and the former Schoessel property, located at 177 Strecker Road (approximately 3 acres). These three properties were purchased by W.J. Byrne Builders, Inc., of Glencoe, Missouri, with the intent to develop the proposed Strecker Forest subdivision. The study area for the ESR also includes part of the Callahan property across Strecker Road to the south, at 210 Strecker Road.

3.0 SITE DESCRIPTION

Strecker Forest is mostly undeveloped, except for a garage structure and two abandoned homes on the former Dozier and Primm properties. The northern two-thirds of Strecker Forest is covered mostly by hardwood forest. The property is surrounded by suburban residential areas, except to the north and east, where a 12-acre tract with a residence, horse arena, and stables are located. Specific features identified in previous investigations of the Strecker Forest property include the abandoned residences on the former

Primm and Dozier properties, a “Western Pond Area” in the southwestern quadrant of the site, a “Solid Waste Disposal Area” in a drainage ravine in the central portion of the site, an “Alleged Former Haul Road” that parallels the drainage ravine, and an “Eastern Disturbed Area” (EDA) and “National Priorities List (NPL) Area” that are both located in the northeastern portion of the site. The EDA and the NPL Area are located adjacent to the Bliss portion of the Ellisville Superfund site, sometimes referred to as the Bliss-Ellisville site^a.

The terrain at the Strecker Forest property slopes downward to the north from Strecker Road. At the northeast perimeter of the site in the NPL Area are relatively steep slopes with an elevation change from approximately 720 feet above mean sea level (amsl) at Strecker Road to approximately 635 feet amsl along a tributary of Caulks Creek. The intermittent Caulks Creek tributary flows to the north along a ravine in the central portion of Strecker Forest, and intersects another intermittent tributary crossing the northeast corner of the Strecker Forest property. All surface water and drainage pathways on the site flow in a northerly direction toward this area.

Features on the Callahan property include a small pond and barn. The terrain at the Callahan property slopes downward to the south from Strecker Road. Two drainageways intersect another intermittent tributary of Caulks Creek near the southernmost property boundary. The small pond receives drainage from the northern portion of the parcel and is located upgradient of the former drum burial area (fill area).

4.0 FIELD ACTIVITIES

The following three areas of the site were identified for geophysical survey and subsequent exploratory trenching excavation as part of the ESR:

- The “Fill Area” on the Callahan property
- The “Western Pond Area” on the Strecker Forest Development property
- The “Eastern Disturbed Area” on the Strecker Forest Development property.

The remainder of this report focuses on the results and discussion of the geophysical survey and exploratory trenching activities. The work plan and final comprehensive ESR report for the proposed Strecker Forest Development site include a more detailed site history (with references cited) and associated information from previous investigations at the site (Tetra Tech and EPA 2011).

^a The overall Ellisville Superfund site includes the Bliss, Callahan, and Rosalie subsites, which are technically defined not by property boundaries, but by boundaries of the areas where contamination was found.

4.1 GEOPHYSICAL SURVEY

The geophysical survey was conducted on September 6-8, 2011, using two complementary surface geophysical methods—terrain conductivity and total field/gradient magnetometry. The terrain conductivity survey was performed with a Geonics EM-31-MK2 terrain conductivity meter, and the magnetometer survey was conducted with a Geometrics G-858 MagMapper proton precession magnetometer. Descriptions of the basic principles and applications of these instruments are as follows:

- The EM31-MK2 maps geologic variations, groundwater contaminants, or any subsurface feature associated with changes in ground conductivity, using a patented electromagnetic inductive technique that allows measurements without electrodes or ground contact. With this inductive method, surveys can be carried out under most geologic conditions, including those of high surface resistivity such as sand, gravel, and asphalt. Ground conductivity (quad-phase) and magnetic susceptibility (in-phase) measurements are read directly from an integrated DL600 data logger (which can be easily removed from the console for data transfer). Real-time graphical presentation of the data during data acquisition is possible by connecting a computer directly to the RS232 output port on the front panel with an RS232 cable. The effective depth of exploration is about 6 meters, making this ideal for geotechnical and environmental site characterization. Important advantages of the EM31-MK2 over conventional resistivity methods are the speed with which surveys can be performed, the precision with which small changes in conductivity can be measured, and continuous readout and data acquisition while traversing the survey area. Additionally, the in-phase component is particularly useful for detection of buried metallic structures and waste materials (Geonics Limited 2005).
- The G-858 system consists of a belt-mounted display/logging console connected to a cesium sensor mounted on a hand-held counterbalanced staff. The console contains electronics to acquire a magnetic field data position (Global Positioning System [GPS] or XY) and display it on a screen for review and editing. The console stores up to 8 hours of data in memory for a single-sensor system, and uploads those data to a processing computer for detailed analysis (Geometrics 2006). The gradient data are collected with two sensors separated over a small distance (i.e., 1 meter), which helps to filter out background noise and the variable effects of the earth's magnetic field (diurnal variations). The magnetic data can be used to distinguish nonferrous buried material and provide additional characterization of any ferrous burials (depth, mass, etc.).

When used for subsurface exploration, both instruments are susceptible to interferences from surficial sources of magnetic and electromagnetic fields, such as fences, buildings, overhead power lines, vehicles, and reinforced concrete. Such sources were present within or near the survey areas at this site, and their effects were accounted for when interpreting the data.

4.1.1 Calibration Procedures

Absolute calibration of the EM-31 is performed by the manufacturer in an area of known and constant conductivity. However, several functional tests were conducted in the field prior to beginning the survey.

A null calibration, phasing check, and instrument sensitivity check were performed as specified in the EM-31's operating manual. These tests occurred in an undisturbed area outside of the survey boundaries, before each survey.

The magnetometer is also calibrated at the factory. However, most magnetometers require tuning in the field to narrow the signal window. This procedure was performed in an undisturbed area outside of the survey area boundaries, as specified in the G-858's operating manual, before each survey.

4.1.2 Survey Areas and Data Acquisition

The survey areas at this site included the Western Pond Area, the EDA, and the former drum burial/fill area on the Callahan property (see Appendix A, Figure 2). North-south survey transects were established for each survey area at 5-foot intervals. Each survey began at the southwest corner and proceeded to the northwest corner. Then the surveyor moved 5 feet to the east and began the second transect going from north to south. This back-and-forth pattern was repeated until the eastern boundary of the survey area had been reached. The Western Pond Area included 12 transects, while 21 transects were established at the Callahan property, and 14 transects were surveyed at the EDA.

4.1.3 Results

The geophysical survey data were uploaded to a computer in the field immediately following acquisition. An initial analysis of the data was conducted to direct exploratory excavation in areas where anomalies were found. The initial analysis did not identify all of the anomalies—only those with the highest intensities. Generally, anomalies subsequently identified were much smaller and of lower intensity than those referenced to direct the excavations. The subsequent anomalies were believed to indicate presence of metal objects smaller and/or deeper than those identified for excavation. It was assumed that the material targeted for this investigation would have been deposited within a relatively short time period, and therefore would be found at similar depths (i.e., the depths of exploratory excavation).

The geophysical data were plotted on maps (see Appendix A, Figures 3, 4, and 5) displaying the conductivity, in-phase, and magnetometer survey results. Each survey plot is oriented such that the southwest corner is (0, 0).

Western Pond Area

At the Western Pond area (see Appendix A, Figure 3), the conductivity survey identified several relatively low-intensity anomalies. The background soil conductivity was between 0 and

7.7 millimhos/meter (mmhos/m). The perimeter of the pond had relatively low values (0-4 mmhos/m), likely because of non-native fill used to create the berms. Conductivity readings in the pond area were higher (4-7.7 mmhos/m), likely because of silts and clays deposited from suspended load in the pond.

In-phase data are relative measures of soil conductivity. There is no defined zero value, so the measurements are relative to base-level (background) data obtained in the field. The in-phase data determined the eastern half of the survey area yielded lower values (-1.2 to 0 mmhos/m) than the western half of the survey area (0-2 mmhos/m). Although the higher values are well within the range of typical soils, it is suspected the higher values may be a result of non-native soils.

The magnetometer survey data indicated several small anomalies. These anomalies were of much lower intensity than anomalies identified at the other two surveyed areas (EDA and Fill Area). These anomalous values were within the background ranges for the other two areas, and likely represent variations in soil type, soil disturbances, or small metallic objects.

EDA

At the EDA (see Appendix A, Figure 4), the conductivity survey identified three prominent negative anomalies (-35 to 0 mmhos/m) that were suspected to indicate buried metal objects. Small positive anomalies around the location of a monitoring well were suspected to represent soil disturbances. The background conductivity was 0-15 mmhos/m.

A large anomaly was identified at the northeast corner of the area in both the conductivity and in-phase surveys. This was attributed to a building with sheet metal walls and power lines near the survey area. The in-phase survey also identified the same three dominant negative anomalies found during the conductivity survey, along with one additional anomaly. The background in-phase values ranged from -2 to 2 mmhos/m.

The magnetometer survey data identified the same three to four anomalies found during the conductivity and in-phase surveys, along with some additional anomalies. The strongest anomaly was determined to represent a monitoring well. Anomalous activity was also indicated near the walls of the sheet metal building. The background magnetometer readings were between -500 and 1,000 gammas.

Fill Area (Callahan Property)

At the Callahan property (see Appendix A, Figure 5), the conductivity survey identified four prominent high-value anomalies in the range of -25 to -45 mmhos/m. These anomalies, located on the southern side

of the survey area, were suspected to represent buried metallic objects. At several other areas, anomalies of lower intensity were detected (about -20 to 0 mmhos/m and linear). These low-intensity anomalies were suspected to represent disturbed soil from trenching that had occurred at the site during remediation activities in the 1980s. The background soil conductivity was 0 to 10 mmhos/m.

The in-phase data for the Callahan property were corrupted and could not be used for analysis. However, the resolution of the other geophysical data was sufficient to make reasonable assessments regarding potential presence of buried metal.

The magnetometer survey data from the Callahan property showed several anomalies at locations similar to locations at which the conductivity survey identified anomalies. The background readings in this area were -2,000 to 2,000 gammas. Larger anomalies were later excavated, as documented in the following section of this report. Smaller anomalies may have indicated small buried metallic materials or disturbed soil.

4.2 EXPLORATORY TRENCHING

Exploratory trenching occurred where anomalies had been identified by the preliminary geophysical survey. Each proposed trench was assigned an identification number, and exploratory trenching commenced in accordance with detailed excavation procedures (Tetra Tech, Inc. Safe Work Practices [SWP] No. 6-4 Revision 1, Excavation Practices, July, 1998) that ensured compliance with applicable environmental and safety standards. Trench dimensions were contingent on the stability of soils and equipment capabilities. Excavation was conducted with heavy equipment (including a backhoe) and hand tools. An area directly adjacent to each trench was covered with two layers of 6-mil polyethylene sheeting to stockpile excavated waste and soils. Excavated trenches were visually assessed for presence of waste material. The trench dimensions varied, depending on location and site conditions. Excavations continued at each location until undisturbed soil or bedrock was encountered, or the maximum bucket reach of the trenching equipment was achieved. The excavated soil was returned to the trenches.

Air monitoring was conducted throughout the assessment to detect emissions that may have threatened workers or neighboring residents. A MultiRAE Plus multi-gas meter with photoionization detector (PID) was used to assess presence of volatile organic compounds (VOC) and other airborne contaminants.

Excavations occurred at all three sites where geophysical surveys were performed. At the EDA and Callahan Property, several anomalies of sufficient magnitude were identified from the preliminary in-field analysis that warranted excavations to search for buried metal. The excavations were documented, and

the buried materials that had caused the anomalies were removed from the trenches. Preliminary analysis of geophysical survey data for the Western Pond area did not indicate any significant anomalies; however, four trenches were excavated in each primary quadrant of the pond basin to document the soil conditions and depth to bedrock under the pond basin. This information would be used to help determine whether the pond may represent a sinkhole and thus possibly provide a conduit for groundwater contamination, if waste materials had been deposited here during historical site operations. The excavation findings in each area are discussed below.

Western Pond Area

On September 7, 2011, ER began to excavate the first trench (P-1) in the southeast quadrant of the pond. The soil/sediment at the bottom of the pond basin consisted of very fine silty loam and clay. As excavation progressed to 2 to 3 feet deep in spots, this material was packed so tightly under the surficial layers that the operator was unable to excavate with the smooth-lipped excavator bucket. ER returned the following day with an excavator bucket with teeth to penetrate the packed clay. Using the toothed bucket, the operator was able to successfully reach bedrock in each quadrant of the pond (P-1 to P-4), as summarized in Table 1 below.

Also included in Table 1 is information for Geoprobe soil boring SB-33, which was collected from the center of the pond basin on September 13, 2011, by EPA and START personnel. At this location, a Geoprobe soil sampler was advanced to refusal (bedrock), which was encountered at a depth of 6 feet. The material at the bottom 4 to 6 feet of the core appeared to be bentonite or similar clay material that likely had been used as a sealing material during construction of the pond.

TABLE 1

**WESTERN POND AREA EXPLORATORY OBSERVATIONS
PROPOSED STRECKER FOREST DEVELOPMENT SITE – WILDWOOD, MISSOURI**

Trench ID, Location and Dimensions	Soil Description	Depth to Bedrock
P-1, SE quadrant of pond basin, 15 by 3 feet	Silty loam to clay	4 feet to bedrock below pond basin sediment/soil surface
P-2, NE quadrant of pond basin, 12 by 3 feet	Silty loam to clay	2.8 feet to bedrock
P-3, SW quadrant of pond basin, 12 by 3 feet	Silty loam to clay	3.9 feet to bedrock
P-4, NW quadrant of pond basin, 9 by 3 feet	Silty loam to clay	2.8 feet to bedrock
SB-33, center of pond basin, 2-inch-diameter Geoprobe boring	Clay – possibly bentonite at 6 feet deep for manmade liner at pond bottom	6 feet to bedrock (refusal of Geoprobe sampler)

Notes:

ID Identification
NE Northeast
NW Northwest
SE Southeast
SW Southwest

A sinkhole may be defined as: “A rounded depression in the landscape formed when an underground cavity collapses. A sinkhole (also called a doline) is a depressed area usually formed by solution of surficial bedrock or collapse of underlying caves. The surface expression of a sinkhole is typically a conical depression or area of internal drainage” (Missouri Department of Natural Resources [MDNR] – Water Resources Center 2012); or “A collapsed portion of bedrock above a void. A ‘sink’ may be a relatively small sheer vertical opening into a cave system or only a shallow depression of many acres” (Missouri Department of Conservation [MDC] 2012). Regardless of their sizes or depths, sinkholes are created as a result of collapse or subsidence of underlying bedrock (usually limestone). Several photographs of sinkholes/sinks located in Missouri (Phelps and St. Louis Counties) are included in Appendix B to this report.

Because the shallow bedrock beneath the former Western Pond basin was consolidated and intact (no observed areas of collapse or subsidence) at depths ranging from 2.8 to 6 feet below ground surface (bgs) under the pond, an earthen berm/dam had been constructed around the downslope (eastern) perimeter of the pond, and a bentonite-like clay liner was present at the bottom of the pond basin overlying the bedrock; this feature likely was not a sinkhole but a manmade impoundment. At some time in the past, a trench had been cut into the pond berm to reduce its holding capacity. In September 2011, the pond basin

was dry due to evaporation, but it appeared capable of holding a couple of inches of water during wetter periods, as observed subsequently in January and February 2012 (see Appendix B).

To determine if chemical waste materials may have been deposited in this pond basin during past site activities, two soil samples were collected from SB-33 in the center of the pond. Sample 5527-23 was collected at 0 to 2 feet bgs, and 5527-24 was collected at 4 to 6-feet bgs. A portion of each sample was submitted to the EPA Region 7 Laboratory for analysis of VOCs, semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), and metals; the other portion of each sample was sent to Cape Fear Analytical in Wilmington, North Carolina, for analysis of dioxin toxic equivalent (TEQ) compounds by Method 1613B. Because the analytical results were mostly non-detect and/or otherwise well below any Regional Screening Levels (RSL) or other levels of concern, the samples from this boring do not indicate deposition of chemical waste materials in this pond basin during past site activities. The analytical results are summarized in Table 2 below, and the complete laboratory submittal will be included with the final ESR report regarding the Proposed Strecker Forest Development site.

TABLE 2
SB-33 SAMPLE RESULTS
PROPOSED STRECKER FOREST DEVELOPMENT SITE – WILDWOOD, MISSOURI

Analysis	Sample 5527-23 (SB-33, 0 to 2 feet bgs)	Sample 5527-24 (SB-33, 4 to 6 feet bgs)
VOCs	Not analyzed	All compounds non-detect (<5.8 to <16 $\mu\text{g/kg}$)
SVOCs	All compounds non-detect (<230 to <460 $\mu\text{g/kg}$)	All compounds non-detect (<200 to <390 $\mu\text{g/kg}$)
PCBs	All compounds non-detect (<45 $\mu\text{g/kg}$)	All compounds non-detect (<39 $\mu\text{g/kg}$)
RCRA metals	All non-detect or well below established RSLs	All non-detect or well below established RSLs
1613B dioxins/furans TEQ	<1.1 pg/g or parts per trillion TEQ	Not analyzed

Notes:

bgs Below ground surface
PCB Polychlorinated biphenyl
pg/g Picograms per gram
RCRA Resource Conservation and Recovery Act
RSL Regional Screening Level
SVOC Semivolatile organic compound
TEQ Toxic equivalent
VOC Volatile organic compound
 $\mu\text{g/kg}$ Micrograms per kilogram

EDA

Trenching at the EDA was conducted in three areas on September 8, 2012. The first excavation (EDA-1) was approximately 5 by 5 feet and contained only small metal rubble and a coiled piece of barbed wire. This area appeared to be an old trash pile. The strongest anomaly was explored at the second area (EDA-2). This area also appeared to be a former trash/discard pile and contained a steel car wheel/rim, a motorcycle fender, a capacitor box from lighting equipment, and other small unidentifiable scrap metal. The third excavation area (EDA-3) was just southeast of a monitoring well. At approximately 5 feet deep, a strong chemical or diesel odor was detected, although the PID did not register any readings above background. Just below the stratum where the smell was noted, a crumbled car battery was found and removed.

Fill Area (Callahan Property)

Five areas were excavated on the Callahan property on September 7, 2012. The first excavated area (CA-1) contained three steel drum lids and some metal fragments. The soil was stained in the proximity of the drum lids, and the PID registered 0.3 parts per million (ppm). The excavated area was 15 by 10 feet, with a total depth of approximately 3 feet. The second excavation area (CA-2) was where the strongest geophysical anomaly was located. At this area, several drum lids, a metal 5-gallon bucket, a portion (~1/3) of a steel drum, and paint buckets surrounded by solidified paint were found. The PID did not register any readings above background near any of the excavated material. The excavated area was 16 by 6 feet, with a depth of 3 feet. The third area (CA-3) contained a drum lid and some pieces of scrap metal. The excavated area was circular (approximately 12-13 feet in diameter), with a depth of 1.5 feet. At the fourth area (CA-4), several fragments of old drums were found. Because a tree between CA-3 and CA-4 was directly on top of a geophysical anomaly, the tree was removed, and CA-4 was extended so that it intersected CA-3. The excavated area of CA-4 was 12 by 14 feet and 3 feet deep. The final excavation area (CA-5) contained several small drum fragments. This area was 10 by 12 feet and 3 feet deep.

5.0 SUMMARY

A geophysical survey was conducted at three areas of the proposed Strecker Forest Development site (Western Pond area, EDA, and Fill Area [Callahan property]), as part of an ESR for the site. Exploratory trenching was subsequently conducted where anomalies were identified by the geophysical survey. Several anomalies of significant magnitude were identified in the EDA and Fill Area, based on a preliminary in-field analysis, warranting excavations to search for buried metal. The preliminary analysis

of the Western Pond area did not show any anomalies that warranted excavation; however, four trenches were excavated in each primary quadrant of the pond basin to document the soil conditions and depth to bedrock under the pond basin. The excavations were documented, and the buried materials producing the anomalies were removed.

The geophysical survey was successful in locating several subsurface features and anomalies at the site that subsequently were confirmed as buried metal. Conductivity and magnetometer methods, as any remote sensing technique, require interpretation of what are indirect methods of measurement. In addition, these types of geophysical results can be non-unique, that is, differing subsurface conditions or features can generate similar anomalies. Therefore, an inherent margin of error is unavoidable. However, the methods of data acquisition and interpretation used for this project are believed to provide a reasonable representation of the subsurface conditions. Select features identified by this survey were assessed by direct observation and trenching/excavation. If necessary, additional trenching may be conducted to confirm presence and source(s) of other anomalous features not assessed during this investigation.

Physical data and observations documented within the Western Pond area indicated that shallow bedrock beneath the basin was consolidated and intact (no observed areas of collapse or subsidence), at depths ranging from 2.8 to 6 feet bgs under the pond. An earthen berm/dam had been constructed around the downslope (eastern) perimeter of the pond, and a bentonite-like clay liner was present at the bottom of the pond basin overlying the bedrock. These observations indicate this feature is not a sinkhole but a manmade impoundment. Two samples of soil/sediment from the basin were analyzed for VOCs, SVOCs, PCBs, dioxins/furans, and metals in an effort to determine if chemical waste materials may have been deposited in this pond basin during past site activities. These sample results were mostly non-detect and/or below levels of concern, and do not suggest deposition of chemical wastes in the pond during historical site activities.

6.0 REFERENCES

Geometrics. 2006. Operator's Manual. Geometrics Magnetometer G-858 MagMapper. California.

Geonics Limited. 2005. Operator's Manual. Geonics Ground Conductivity Meters (EM31-MK2|EM31-SH). Ontario.

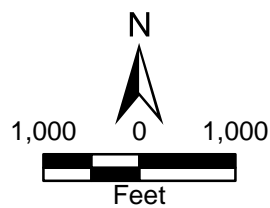
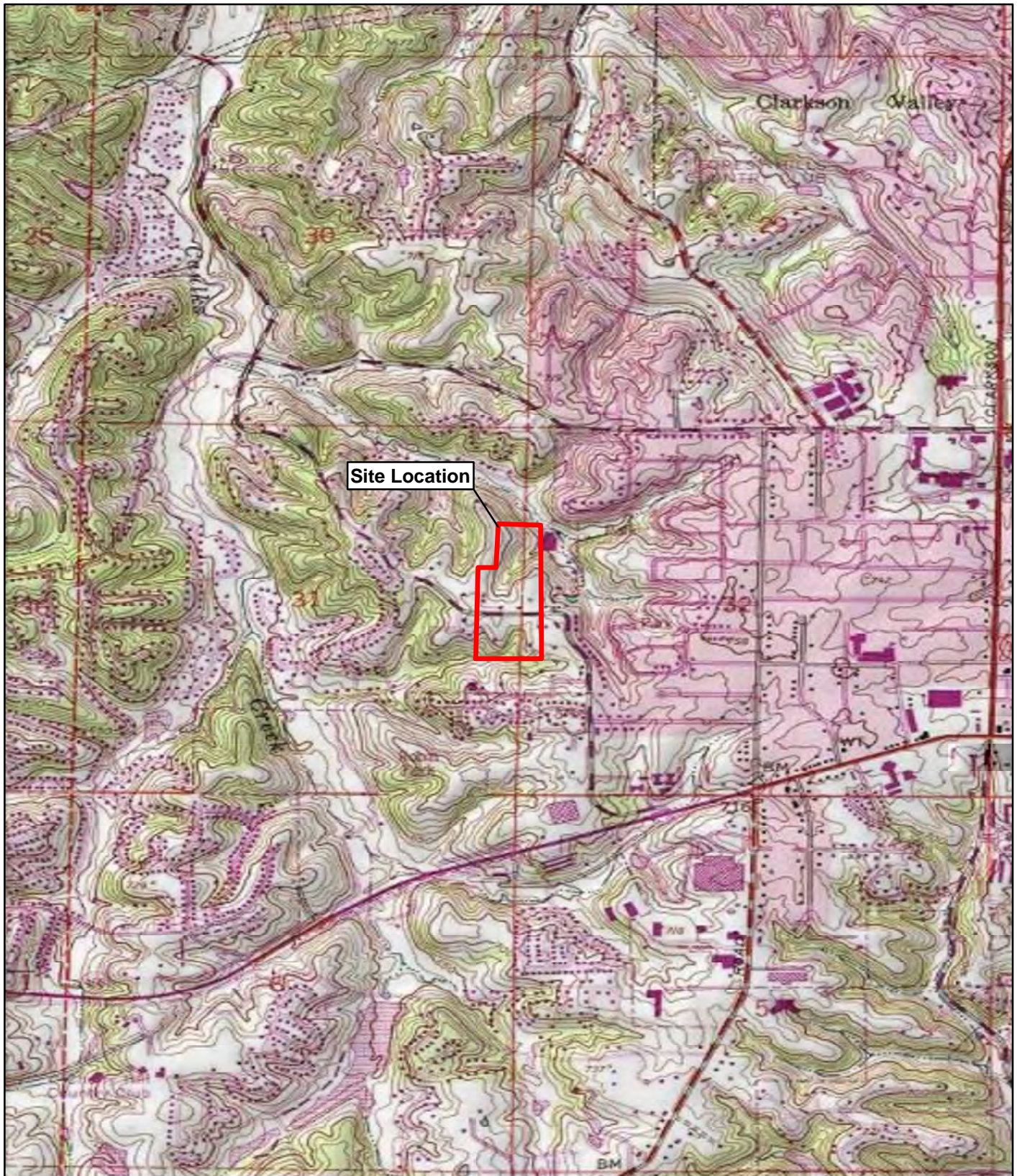
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APPENDIX A

FIGURES



Strecker Forest Development Site
Wildwood, Missouri

Figure 1
Site Location Map



Source: USGS Eureka, Missouri 7.5 Minute Topo Quad, 1993

Date: 3/26/2012

Drawn By: Colin Willis

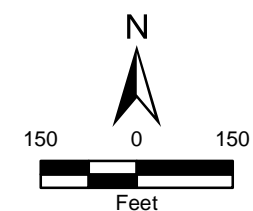
Project No: 103DX9004L060002.058.000

X:\G9004\0002\058\000\Projects\mxd\Figure1.mxd



Legend

- Geophysical survey site
- Approximate property boundary



Source: Bing Maps Aerial, ESRI On-line base maps, 2012

Strecker Forest Development Site
Wildwood, Missouri

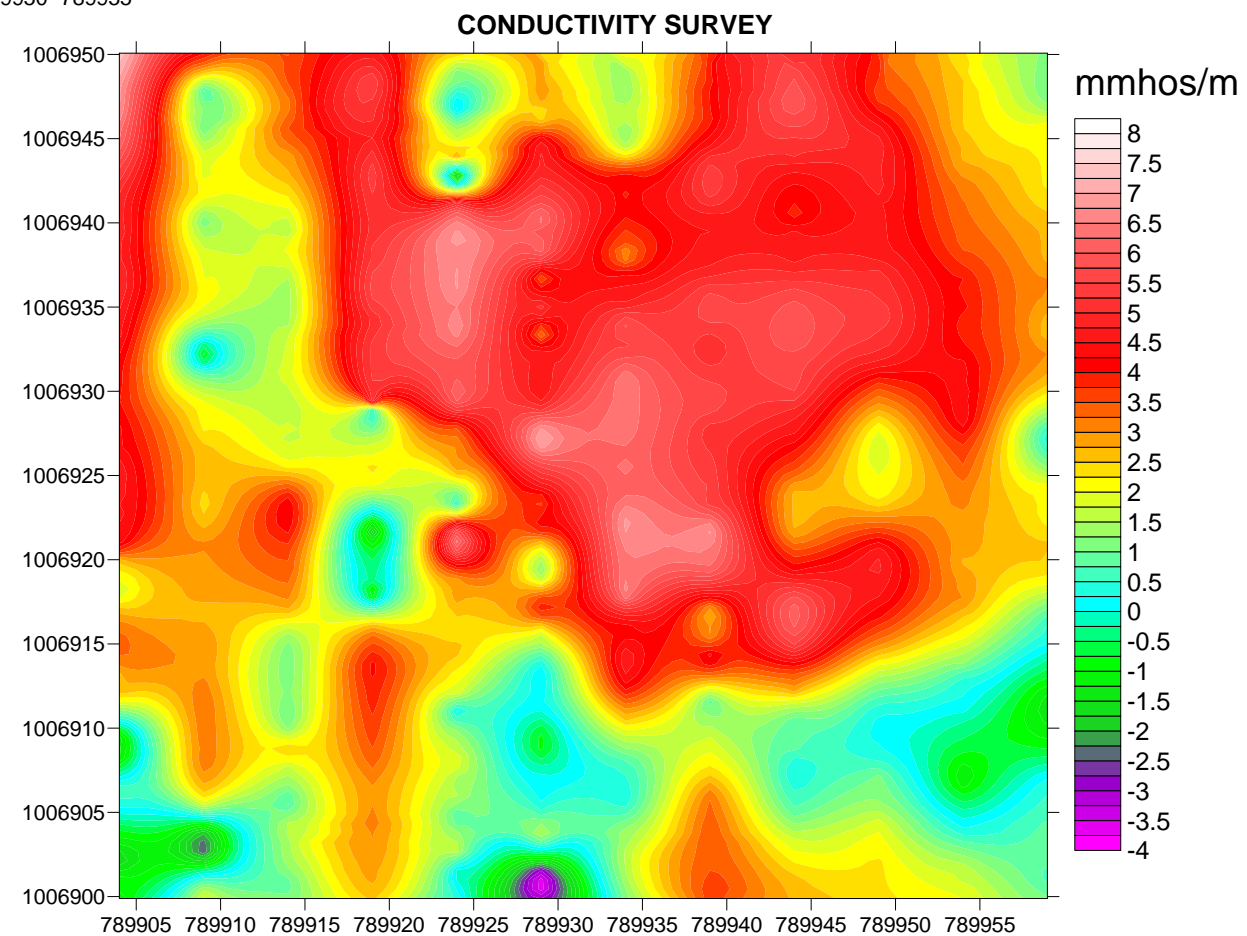
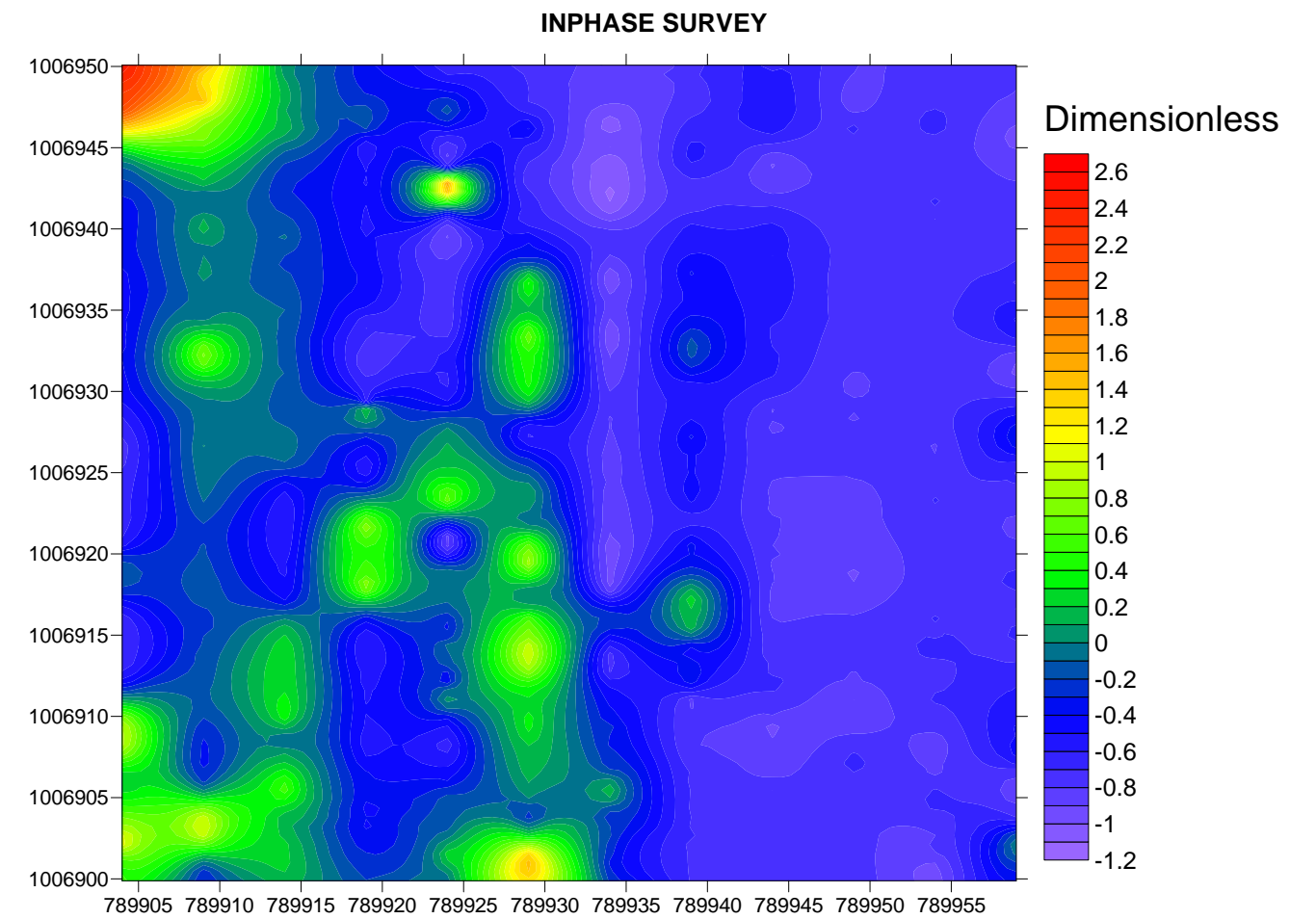
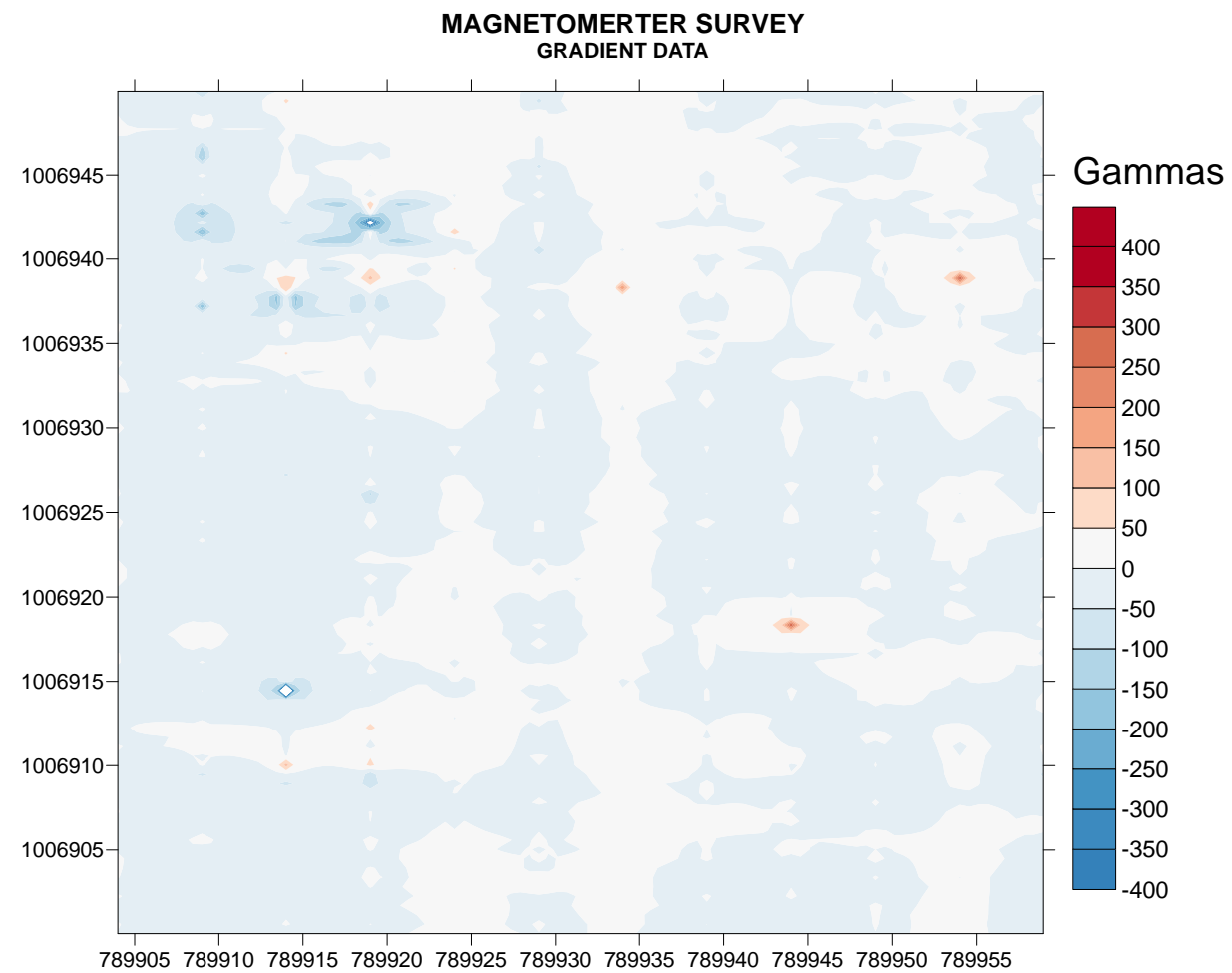
Figure 2
Site Layout Map




Date: 3/8/2012

Drawn By: Colin Willis

Project No: 103DX9004L060002.058.000



N



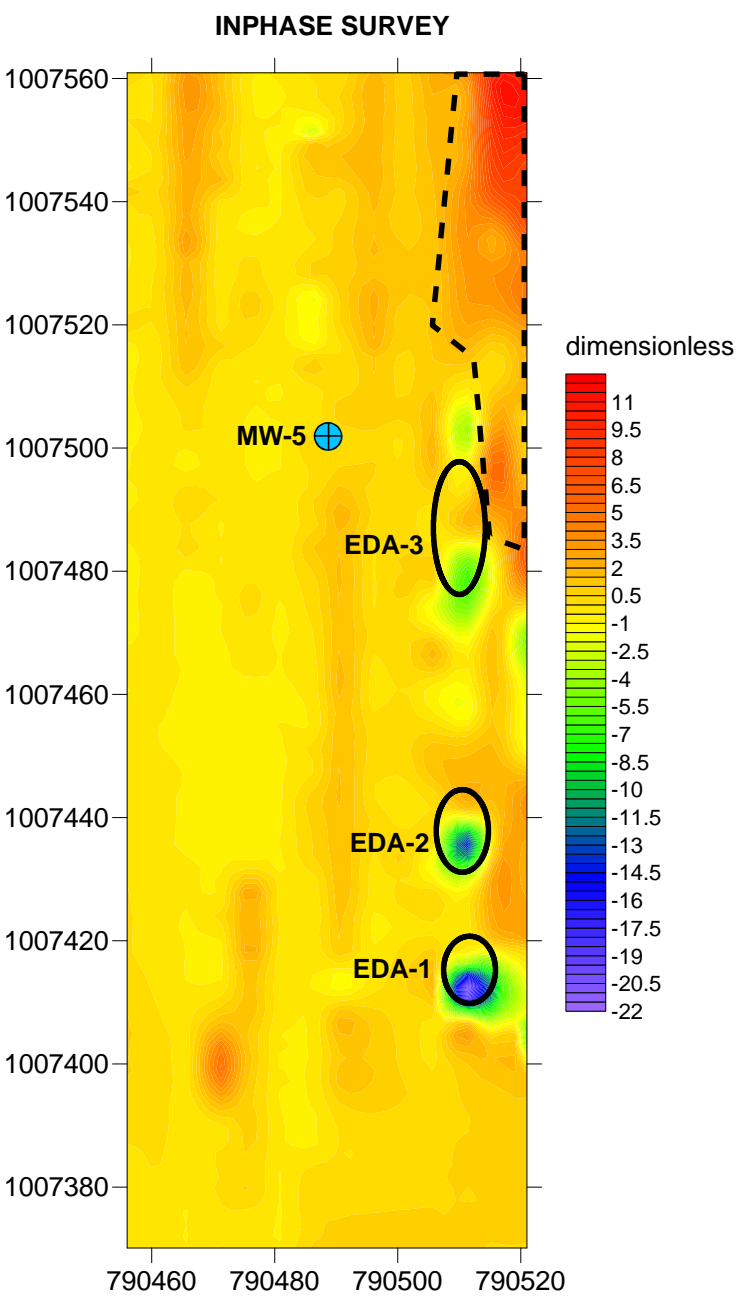
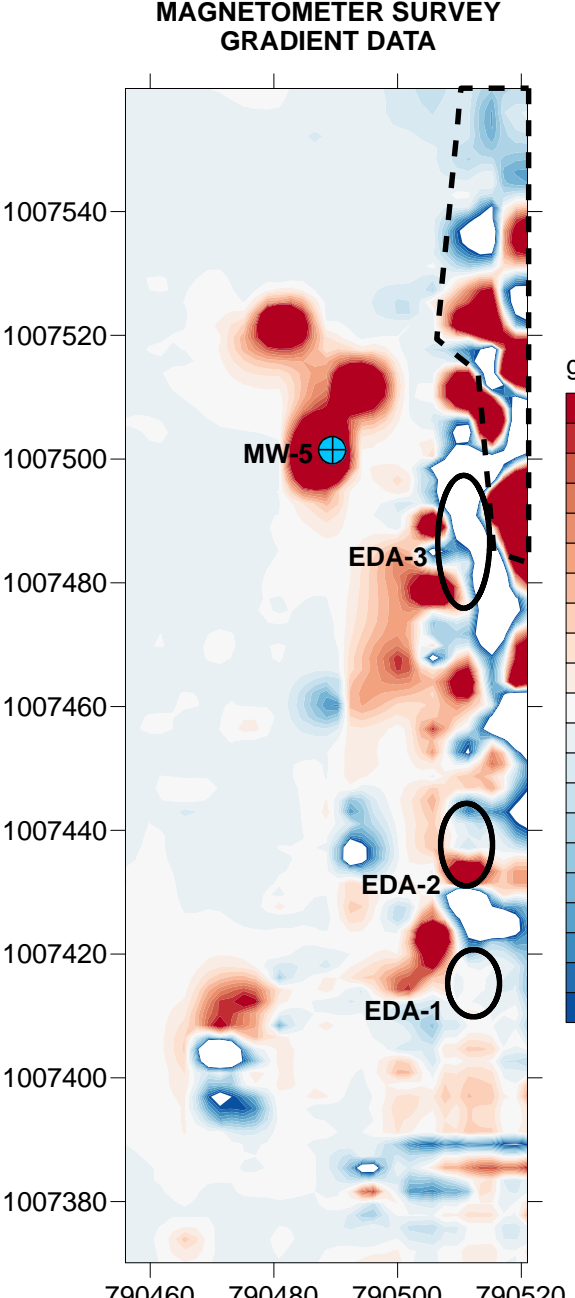
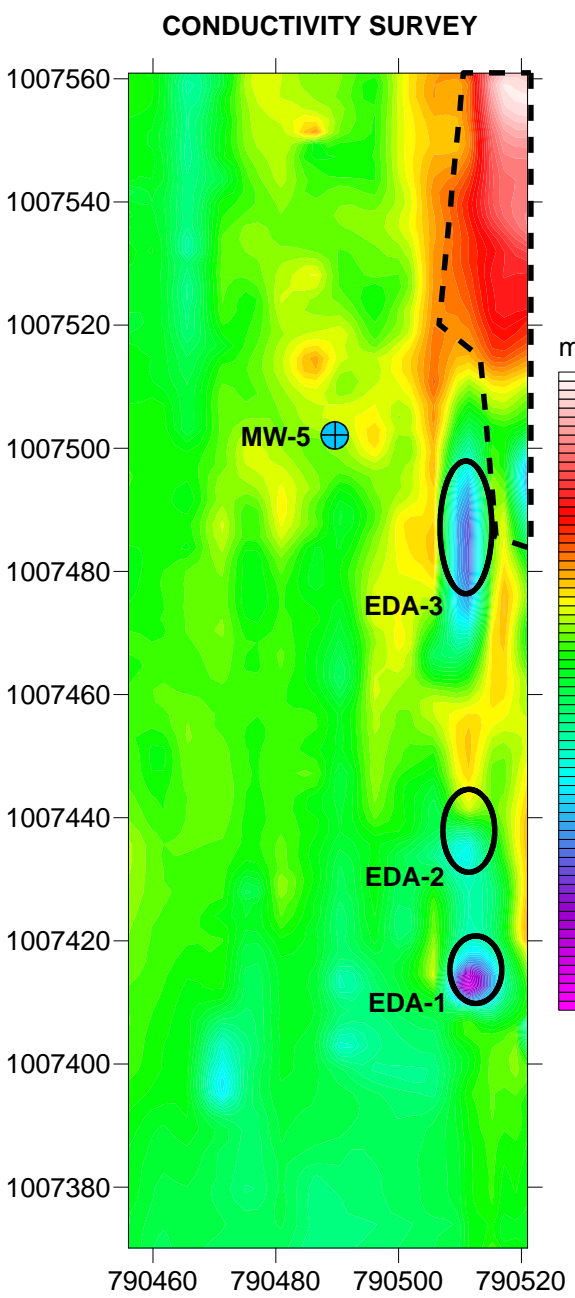
Not to Scale

Note: Survey grid coordinate system is North American Datum 1983 State Plane Missouri East - FIPS code 2401 Feet.

Strecker Forest Development Site
Wildwood, Missouri

Figure 3
Western Pond Area Survey





- Legend
- Monitoring well
 - Approximate excavated area
 - Survey results influenced by power lines and metal building

Note: Survey grid coordinate system is North American Datum
1983 State Plane Missouri East - FIPS code 2401 Feet.



Strecker Forest Development Site
Wildwood, Missouri

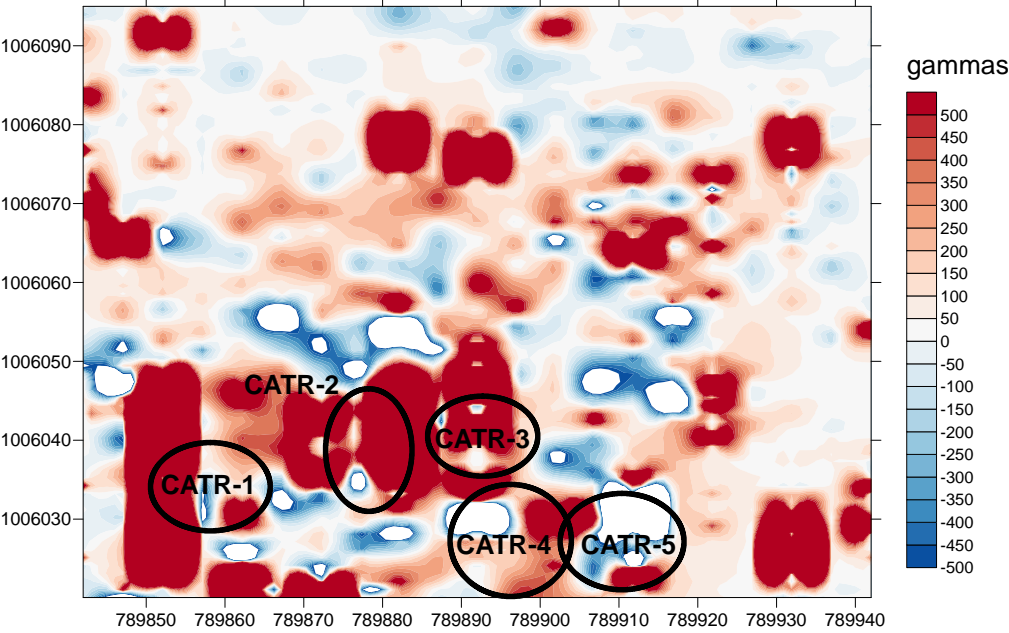
Figure 4
Eastern Disturbed Area



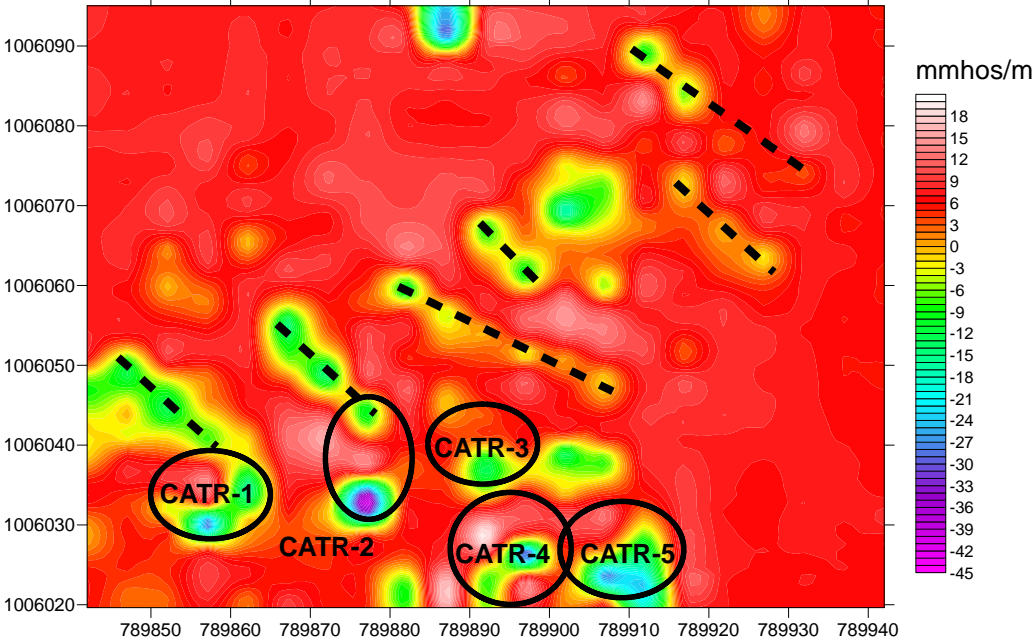
Site Locator



MAGNETOMETER SURVEY
GRADIENT DATA



CONDUCTIVITY SURVEY



Not to Scale

Note: Survey grid coordinate system is North American Datum 1983 State Plane Missouri East - FIPS code 2401 Feet.

Strecker Forest Development Site
Wildwood, Missouri

Figure 5
Callahan Fill Area



Legend

- Monitoring well
- Probable old trench location from former remedial action
- Approximate excavated area

APPENDIX B
PHOTOGRAPHIC RECORD

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West	DESCRIPTION	This photo shows a terrain conductivity survey being conducted at the Callahan Property Fill Area.	1
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/06/11
	PHOTOGRAPHER	Jim Silver	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: East	DESCRIPTION	This photo shows a terrain conductivity survey being conducted at the Callahan Property Fill Area.	2
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/06/11
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



<p>TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West</p>	DESCRIPTION	This photo shows Emergency and Rapid Response Services (ERRS) personnel conducting exploratory trenching at Trench 1 (CATR-1) at the Callahan Property Fill Area.	3
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/07/11
	PHOTOGRAPHER	Dave Kinroth	



<p>TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West</p>	DESCRIPTION	This photo shows rusty scrap metal, including drum and bucket fragments, unearthed from Trench 1 at the Callahan Property Fill Area.	4
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/07/11
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows a rusty 55-gallon drum that was removed from Trench 2 (CATR-2) at the Callahan Property Fill Area.	5
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/07/11
	PHOTOGRAPHER	Dave Kinroth	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows scrap metal unearthed at the Eastern Disturbed Area (EDA-2) at the Strecker Forest Development Property.	6
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/08/11
	PHOTOGRAPHER	Jim Silver	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



<p>TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: NA</p>	DESCRIPTION	This photo shows Trench EDA-3 at the Strecker Forest Development Property that was excavated to 5 feet deep, and where an old car battery was removed.	7
	CLIENT	Environmental Protection Agency - Region 7	<p>DATE 09/08/11</p>
	PHOTOGRAPHER	Jim Silver	



<p>TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South</p>	DESCRIPTION	This photo shows Trench P-1 at the Western Pond Basin (southeast quadrant), where packed silt/clay extended to a depth of 4 feet/bedrock at the Strecker Forest Development Property.	8
	CLIENT	Environmental Protection Agency - Region 7	<p>DATE 09/08/11</p>
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows Trench P-2 at the Western Pond Basin (northeast quadrant), where a T-post was driven to bedrock (2.8 feet below the soil surface).	9
	CLIENT	Environmental Protection Agency - Region 7	DATE 09/08/11
	PHOTOGRAPHER	Dave Kinroth	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: East	DESCRIPTION	This photo shows the Western Pond, with a constructed berm/dam and drainageway to limit the volume of accumulated water.	10
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/18/12
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: Unknown	DESCRIPTION	This photo shows an example of a sinkhole near Edgar Springs in Phelps County, Missouri, showing collapse and subsidence of underlying bedrock.	11
	CLIENT	Environmental Protection Agency - Region 7	DATE Unknown
	PHOTOGRAPHER	Unknown	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: South	DESCRIPTION	This photo shows an example of a small "sink" depression in North St. Louis County, Missouri.	12
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/16/12
	PHOTOGRAPHER	Dave Kinroth	

**Missouri Dioxin Sites-Strecker Forest Development Expanded Site Review
Wildwood, Missouri**



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: West	DESCRIPTION	This photo shows an example of a large “sink” depression along Sinks Road in North St. Louis County, Missouri.	13
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/16/12
	PHOTOGRAPHER	Dave Kinroth	



TETRA TECH PROJECT NO. X9004.06.0002.058 DIRECTION: East	DESCRIPTION	This photo shows an example of a sinkhole depression along Sinks Road in North St. Louis County, Missouri.	14
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/16/12
	PHOTOGRAPHER	Dave Kinroth	

APPENDIX E
FIELD SHEETS

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 1 QC Code: ___ Matrix: Solid Tag ID: 5527-1-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB 28-2 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 15:00
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System <i>omit dsk</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 2 QC Code: ____ Matrix: Solid Tag ID: 5527-2-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-27 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 9/12/11 16:07

Longitude: _____

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA Vials (soil VOA-5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System <i>omit ASDK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Add 16 BB dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 3 QC Code: ___ Matrix: Solid Tag ID: 5527-3-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-27 6-8 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 7/12/11 16:50
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System *
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property
Green Staining in Core Sample
* PID reads 2-9 ppm
Could be elevated VOCs

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 4 QC Code: Matrix: Solid Tag ID: 5527-4-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-25 0-2 feet

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/12/11

17:43

Longitude:

End: / /

: :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 5 QC Code: ___ Matrix: Solid Tag ID: 5527-5-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-25 4-6 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/12/11

17:43

Longitude: _____

End: ___/___/___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 6 QC Code: ___ Matrix: Solid Tag ID: 5527-6-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-26 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date 9/12/11 Time(24 hr) 18:10
Latitude: _____ Sample Collection: Start: 9/12/11
Longitude: _____ End: 18:10

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (coil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap <i>omit OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 7 **QC Code:** ___ **Matrix:** Solid **Tag ID:** 5527-7-___

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-26 5-7 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/12/11 10:15
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 8 QC Code: Matrix: Solid Tag ID: 5527-8-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-29 0-2 feet

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/12/11 18:30
Longitude: End: 1/1/11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40 mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments: Callahan Property
(N/A)

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 9 QC Code: ___ Matrix: Solid Tag ID: 5527-9-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-29 8-10 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/12/11 18:40
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 10 QC Code: ___ Matrix: Solid Tag ID: 5527-10-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-30 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 9:12
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap <i>omit - OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Add 16B B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 11 QC Code: __ Matrix: Solid Tag ID: 5527-11-__

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: SB 30 10-12 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/13/11

9:23

Longitude: _____

End: __/__/__

__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 12 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-12-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DV-1 ICS Surface Soil Composite

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/12/11 17:34
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap <i>omit ADK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property
Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 13 QC Code: ___ Matrix: Solid Tag ID: 5527-13-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DUZ - ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/12/11 15:55
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA-5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's In Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property
Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 14 QC Code: ___ Matrix: Solid Tag ID: 5527-14-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DV-3 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/12/11

16:58

Longitude: _____

End: ___/___/___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System <i>omit OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Callahan Property
Add 163 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 15 QC Code: ___ Matrix: Solid Tag ID: 5527-15-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-01 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/13/11

10:10

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil	4 Deg C; H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)		Purge-and-trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs In Soil by GC/EC

omit CYDK

Sample Comments:

(N/A)

Add 1613 B dioxins/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 16 QC Code: ___ Matrix: Solid Tag ID: 5527-16-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-01 2-4 ft.

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 10:27
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 17 QC Code: ___ Matrix: Solid Tag ID: 5527-17-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-03 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 11:12
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System
VOA-5035)	bisulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 18 QC Code: ___ Matrix: Solid Tag ID: 5527-18-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-03 6-8 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 11:20
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 19 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-19-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-04 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/13/11 11:53
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap <i>omit ADK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 20 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-20-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-04 2-4 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 9/13/11

11:53

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 21 QC Code: ___ Matrix: Solid Tag ID: 5527-21-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB05 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 12:37
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System
VOA 5035)	bisulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 16B B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 22 QC Code: ___ Matrix: Solid Tag ID: 5527-22-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: SB-05 4.5 to 6.5 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: 9/13/11

12:47

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 23 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-23-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-33 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/13/11 13:26
Longitude: _____ **End:** ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil - VOA-5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap <i>omit + OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Center of Western Pond Basin

Add 1613B dioxin/furan analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 24 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-24-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-33 4-6 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/13/11 13:34
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Center of Western Pond Basin

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 25 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-25-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-06 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 9/13/11

14:01

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml. VOA vials (soil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap <i>omit + MDK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs In Soil by GC/EC

Sample Comments:

(N/A)

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 26 QC Code: ____ Matrix: Solid Tag ID: 5527-26-____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-06 3-5 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/13/11

17:12

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (In 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 27 QC Code: ____ Matrix: Solid Tag ID: 5527-27-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-07 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/13/11 14:24
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 3035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 28 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-28-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-07 9-11 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start:

9/13/11

14:35

Longitude: _____

End: ____/____/____

____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 29 QC Code: ___ Matrix: Solid Tag ID: 5527-29-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-08 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/13/11

14:44

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA-5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-trap <i>omit - OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 30 QC Code: ___ Matrix: Solid Tag ID: 5527-30-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-08 3-5 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/11 15:03
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 31 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-31-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-09 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/13/11 15:07
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium distillate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System-Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 32 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-32-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-10 0-1.5 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 9/13/11

15:35

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 33 QC Code: ____ Matrix: Solid Tag ID: 5527-33-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-11 0-1 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/13/11 15:45
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	disulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 34 QC Code: ___ Matrix: Solid Tag ID: 5527-34-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB19 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/13/11

15:55

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA Vials (soil VOA-5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap <i>omit by DK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ³⁴11 QC Code: ^{FD} Matrix: Solid Tag ID: 5527-³⁴11-^{FD}

Project ID: JS0708SF Project Manager: Jim Silver ^{RDK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Field Duplicate SB19 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/13/11 15:55
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap ^{omit RDK}
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/forens analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 35 QC Code: ___ Matrix: Solid Tag ID: 5527-35-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-19 4-5 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 16:00
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 36 QC Code: ___ Matrix: Solid Tag ID: 5527-36-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-32 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/13/11 16:15
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA-5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 37 QC Code: ___ Matrix: Solid Tag ID: 5527-37-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-17 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/13/11 16:32
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA-5035)	bisulfate (in 2 vials)	28 Days	Purge and Trap
1 - 8 oz glass	4 Deg C	180 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	14 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 38 QC Code: Matrix: Solid Tag ID: 5527-38-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-12 8-10 feet

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

9/13/11

16:50

Longitude:

End:

:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 39 QC Code: ___ Matrix: Solid Tag ID: 5527-39-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-13 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/13/11 16:55
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA-5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System* Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 40 QC Code: Matrix: Solid Tag ID: 5527-40-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-13 3-5 feet

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/13/11 17:01
Longitude: End: : :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 41 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-41-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-31 0 to 1.5 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 9/14/11 9:15

Longitude: _____

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 42 QC Code: ___ Matrix: Solid Tag ID: 5527-42-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-14 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

9:53

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium disulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 43 QC Code: ___ Matrix: Solid Tag ID: 5527-43-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc:

SB-19 8-10 feet

MDK
9-14-11 14

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/14/11

9:58

Longitude: _____

End: ____/____/____

____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap - Triple Volume included for QA/QC
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Triple Volume of Soil VOA 5035 included for MS/MSD QC.

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 44 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-44-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU 1 ICS Soil Composite Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/13/11 09:00
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil - VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments: DU 1 on Strecker Forest Property
(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 45 QC Code: ____ Matrix: Solid Tag ID: 5527-45-____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: D02 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date: 9/13/11 Time(24 hr): 09:32
Latitude: _____ Sample Collection: Start: 9/13/11 End: 9/13/11
Longitude: _____ End: 9/13/11 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil	4 Deg C, H₂O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)	Purge and Trap	om. + OK
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) D02 on Strecker Forest Property
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 46 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-46-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU3 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/13/11 10:26
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil - VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

DU3 on strecker Forest Property
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 47 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-47-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU4 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/13/11 11:17
Longitude: _____ **End:** 1/1/11 :__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

DU4 on Strecker Forest Property
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 48 QC Code: Matrix: Solid Tag ID: 5527-48-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: D05 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 9/13/11 12:06
Longitude: End: : :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)	Purge and Trap	omit OYOK
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

D05 on Strecker Forest Property

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 49 QC Code: ___ Matrix: Solid Tag ID: 5527-49-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-15 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

10:39

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (Soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5835)	Disulfate (in 2 vials)		Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527

Sample Number: ⁴⁹140

QC Code: ⁴⁹FD

Matrix: Solid

Tag ID: 5527-140-⁴⁹FD

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: Duplicate SB-15 - 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

10:39

Longitude: _____

End: 1/1/

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap ^{om. + MOK}
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 50 QC Code: ___ Matrix: Solid Tag ID: 5527-50-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-15 6-8 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

10:55

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 51 QC Code: ___ Matrix: Solid Tag ID: 5527-51-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-16 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

11:07

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 52 QC Code: ___ Matrix: Solid Tag ID: 5527-52-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-16 3-5'

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/14/11 11:27
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System [*] Purge-and-Trap - Triple Volume [*] As QA/QC
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

* Triple Volume VOA Vial Samples
for MS/MSD QC.

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 53 QC Code: ___ Matrix: Solid Tag ID: 5527-53-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-17 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date 9/14/11 Time(24 hr) 12:11

Latitude: _____

Sample Collection: Start: 9/14/11 12:11

Longitude: _____

End: 9/14/11 12:11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA-5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 54 QC Code: ___ Matrix: Solid Tag ID: 5527-54-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-17 5.5-7.5 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/14/11 12:32
Longitude: _____ End: /// ::

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 55 QC Code: __ Matrix: Solid Tag ID: 5527-55-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-18 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11 12:54

Longitude: _____

End: 1/1/ :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap <i>omit MDK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) *Add 1613B dioxin/furans analysis*

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 56 QC Code: ___ Matrix: Solid Tag ID: 5527-56-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-18 10-12 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11 13:32

Longitude: _____

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 57 QC Code: ___ Matrix: Solid Tag ID: 5527-57-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-20 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11 13:49

Longitude: _____

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium biculfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furan analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 58 QC Code: ___ Matrix: Solid Tag ID: 5527-58-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-20 6.5-8.5 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

14:02

Longitude: _____

End: 1/1/

14:02

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 59 QC Code: __ Matrix: Solid Tag ID: 5527-59-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-22 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/14/11 14:13
Longitude: _____ End: /// :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap <i>omit & OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 60 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-60-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-22 5.5-7.5'

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/14/11 14:34
Longitude: _____ **End:** ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds In Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs In Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 61 QC Code: ___ Matrix: Solid Tag ID: 5527-61-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-24 0 - 2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

14:57

Longitude: _____

End: 1/1/

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 62 QC Code: ___ Matrix: Solid Tag ID: 5527-62-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-24 10-12 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

15:15

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 63 QC Code: ____ Matrix: Solid Tag ID: 5527-63-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-21 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 7/15/11 0858
Longitude: _____ **End:** 7/15/11 _____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap <i>omit NOK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 64 QC Code: ____ Matrix: Solid Tag ID: 5527-64-____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-21 4-6 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date: 9/15/11 Time(24 hr): 9:15
Latitude: _____ Sample Collection: Start: 9/15/11 End: 9/15/11
Longitude: _____ End: 9/15/11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 65 QC Code: ___ Matrix: Solid Tag ID: 5527-65-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-23 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/15/11

9:33

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	Disulfate (in 2 vials)		Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 16BB dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 66 QC Code: ___ Matrix: Solid Tag ID: 5527-66-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-23 4-6 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/15/11 9:52

Longitude: _____

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 67 QC Code: ___ Matrix: Solid Tag ID: 5527-67-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-02 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/15/11

10:12

Longitude: _____

End: 1/1/11

10:12

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOCs in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 68 QC Code: ___ Matrix: Solid Tag ID: 5527-68-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-02 2-4 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/15/11 16:20
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 69 QC Code: ___ Matrix: Solid Tag ID: 5527-69-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB-34 0-2 feet

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/15/11

10:55

Longitude: _____

End: ___/___/___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 70 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-70-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-34 8-9 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 7/15/11 11:02
Longitude: _____ **End:** 7/15/11 11:02

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 71 QC Code: ____ Matrix: Solid Tag ID: 5527-71-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-35 0-2 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/15/11 12:07
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap <i>omit + VOK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) *Add 16BB dioxin/Furans analysis*

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 72 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-72-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB-35 8-9 feet

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/15/11 12:21
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 73 QC Code: ___ Matrix: Solid Tag ID: 5527-73-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DV-6 ICS Surface Soil Composite

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

9:55

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA Vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 74 QC Code: ___ Matrix: Solid Tag ID: 5527-74-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DV-7 ICS sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: _____

Longitude: _____

End: 9/15/11

17:50

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 75 QC Code: ___ Matrix: Solid Tag ID: 5527-75-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU-8 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/15/11

16:25

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOCs in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap <i>omit HAPK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxins/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 76 QC Code: ___ Matrix: Solid Tag ID: 5527-76-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc:

DU-9 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/15/11

15:45

Longitude: _____

End: ____/____/____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (In 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 77 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-77-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU-10 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/15/11 15:15
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap <i>omit GC/MS</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 78 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-78-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU-21 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/14/11 12:00
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil - VOA-5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysts

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 79 QC Code: __ Matrix: Solid Tag ID: 5527-79-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU-ZZ ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/14/11

11:34

Longitude: _____

End: 1/1/

11:34

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysts

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 80 QC Code: ___ Matrix: Solid Tag ID: 5527-80-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc:

DU-23 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/14/11

10:45

Longitude: _____

End: ____/____/____

____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 81 QC Code: ____ Matrix: Solid Tag ID: 5527-81-____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU -11 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date: 9/16/11 Time(24 hr): 10:20
Latitude: _____ Sample Collection: Start: 9/16/11 End: 9/16/11
Longitude: _____ End: 9/16/11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) ADD 16BB dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 82 QC Code: Matrix: Solid Tag ID: 5527-82-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU-12 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/16/11

10:50

Longitude:

End: / /

: :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA Vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System
VOA-5035)	bisulfate (in 2 vials)		Purge-and-Trip
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 83 QC Code: ___ Matrix: Solid Tag ID: 5527-83-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DUB IES Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/16/11 11:12

Longitude: _____

End: 1/1/11 1:12

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4-Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 84 QC Code: Matrix: Solid Tag ID: 5527-84-

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DU 14 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/20/11

9:20

Longitude:

End: / /

: :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA-5035)	bisulfate (in 2 vials)		Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527

Sample Number: ⁸⁴138

QC Code: ^{FD}EDT

Matrix: Solid

Tag ID: 5527-138-^{84 FD}EDT

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708

Site OU: 00

Location Desc:

DUI4 ICS Sample Field Duplicate #1

External Sample Number:

Expected Conc:

(or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/20/11

9:20

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁰⁵~~139~~₀₄ QC Code: ~~F02~~ Matrix: Solid Tag ID: 5527-~~139~~₀₄-~~F02~~

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DUIY ICS Sample Field Duplicate #2

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: 9/20/11

10:40

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 16BB dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ~~85~~ ⁸⁶ QC Code: Matrix: Solid Tag ID: 5527-~~85~~ ⁸⁶

Project ID: JS0708SF ~~ADK~~ Project Manager: Jim Silver ~~ADK~~
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DV 15 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/20/11 9:40
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA Vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's In Soil at Low Levels by GC/MS Closed System
VOA-5035)	bisulfate (in 2 vials)	28 Days	Purge-and-Trap
1 - 8 oz glass	4 Deg C	180 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	14 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 16BB dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ⁸⁷~~86~~ QC Code: Matrix: Solid Tag ID: ⁸⁷~~5527-86~~

Project ID: JS0708SF ^{YPK} Project Manager: Jim Silver ^{YDK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU16 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date 9/20/11 Time(24 hr) 10:05

Latitude:

Sample Collection: Start: 9/20/11 10:05

Longitude:

End:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System
VOA 5035)	bisulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁸⁸87 QC Code: Matrix: Solid Tag ID: 5527-⁸⁸87

Project ID: JS0708SF ^{MDK} Project Manager: Jim Silver ^{MDK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 17 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/20/11 11:06
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System--
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁸⁹88 QC Code: Matrix: Solid Tag ID: 5527-⁸⁹88

Project ID: JS0708SF ^{NOK} Project Manager: Jim Silver ^{NOK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU18 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/20/11

11:30

Longitude: _____

End: / /

 :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil)	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	Disulfate (in 2 vials)	 	Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ⁹⁰~~89~~ QC Code: Matrix: Solid Tag ID: 5527-⁹⁰~~89~~-

Project ID: JS0708SF ^{OK} Project Manager: Jim Silver ^{OK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DUI9 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/20/11 11:50
Longitude: End:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil)	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	disulfate (in 2 vials)	 	Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Needs to Air Dry for homogenization
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁹¹90 QC Code: Matrix: Solid Tag ID: 5527-90-⁹¹

Project ID: JS0708SF ^{OK} Project Manager: Jim Silver ^{OK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU #20 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 9/20/11 12:50
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40 ml VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)	14 Days	Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Collected Extra Volume for 2 slab cake
homogenized duplicate samples
Needs to Air Dry for homogenization
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁹⁰⁹¹137 QC Code: ⁹¹FD⁹⁰ Matrix: Solid Tag ID: 5527-137-FD⁹¹

Project ID: JS0708SF ^{OK} Project Manager: Jim Silver ^{OK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 20 ICS Stabecke Composite Field Duplicate #1

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/20/11 12:50
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA-5035)	bisulfate (in 2 vials)		Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Needs to Air Dry
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁹²136 QC Code: ⁹⁰FDZ Matrix: Solid Tag ID: 5527-136-⁹²FDZ

Project ID: JS0708SF ^{ADK} Project Manager: Jim Silver ^{ADK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 20 ICS 5/abake Composite Field Duplicate #2

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/20/11 12:50
Longitude: _____ End: 1/1/11 12:50

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40 mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap ^{Omit ADK}
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Needs to Air Dry
Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ⁹³ ~~91~~ QC Code: Matrix: Solid Tag ID: 5527-⁹³ ~~91~~

Project ID: JS0708SF ^{OK} Project Manager: Jim Silver ^{OK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 25 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 9/20/11 14:20
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 94 QC Code: MDK Matrix: Solid Tag ID: 5527-94

Project ID: JS0708SF Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DUZ6 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: 9/20/11 15:05

Longitude: _____

End: 1/1/ :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	disulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ⁹⁵~~98~~ QC Code: Matrix: Solid Tag ID: 5527-⁹⁵~~98~~

Project ID: JS0708SF ^{OK} Project Manager: Jim Silver ^{OK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 27 FCS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date 9/20/11 Time(24 hr) 15:40
Latitude: Sample Collection: Start:
Longitude: End:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)	 	Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ⁹⁶~~94~~ QC Code: Matrix: Solid Tag ID: ⁹⁶~~5527-94~~

Project ID: JS0708SF ^{OK} Project Manager: Jim Silver ^{OK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 2B ICS Sample
External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/29/11 16:05
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)	 	Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: ⁹⁷95 QC Code: Matrix: Solid Tag ID: 5527-⁹⁷95-

Project ID: JS0708SF ^{ADPK} Project Manager: Jim Silver ^{ADPK}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 29 ICS Sample

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/29/11 16:40

Longitude:

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System
VOA 5035)	bisulfate (in 2 vials)	28 Days	Purge-and-Trap
1 - 8 oz glass	4 Deg C	180 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	14 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ~~98~~ ⁹⁸ QC Code: _____ Matrix: Solid Tag ID: 5527-~~98~~ ⁹⁸

Project ID: JS0708SF ~~MAIL~~ Project Manager: Jim Silver ~~MDK~~
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 24 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: 9/20/11 17:40

Longitude: _____

End: 1/1/11 17:40

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 99 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-99-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU 30 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 9/21/11 12:50

Longitude: _____

End: ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 100 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-100-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU 31 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/21/11 12:15
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap <i>omit OK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 101 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-101-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU 32 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/21/11 15:20
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/Furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 102 QC Code: ___ Matrix: Solid Tag ID: 5527-102-___

Project ID: JS0708SF Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DU 33 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: 9/21/11

11:20

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap <i>omit VPK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 103 QC Code: ___ Matrix: Solid Tag ID: 5527-103-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 34 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 9/24/11 11:25
Longitude: _____ End: 1/1/11 11:25

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil - VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 104 QC Code: ___ Matrix: Solid Tag ID: 5527-104-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: OU35 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date: _____ Time(24 hr): _____
Latitude: _____ Sample Collection: Start: 9/2/11 9:40
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1633 dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 105 QC Code: __ Matrix: Solid Tag ID: 5527-105-__

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: DU 36 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: 9/21/11

9:46

Longitude: _____

End: 1/1/11

1:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5035)	bisulfate (in 2 vials)	14 Days	Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 106 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-106-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: DU 37 ICS Sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 9/21/11 10:12
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap <i>omit + VPK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) *Add 1613B dioxin/furans analysis*

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 107 QC Code: ___ Matrix: Solid Tag ID: 5527-107-___

Project ID: JS0708SF Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: OU 38 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/21/11 10:08

Longitude: _____

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 108 QC Code: ___ Matrix: Solid Tag ID: 5527-108-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: DU 39 ICS Sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/21/11 10:40

Longitude: _____

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil - VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 109 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-109-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: Callahan Property Ditch Grab #1

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 9/24/11 16:40
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40ml VOA vials (soil VOA 5035)	4 Deg C, H₂O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap <i>omit (X)DK</i>
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

*35' South of SB-26 -creek bed due
South of fill area & debris pile*

38.59638

90.60619

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 110 QC Code: ___ Matrix: Solid Tag ID: 5527-110-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Callahan Property Ditch Grab #2

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/2/11 16:55
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed System
VOA 5635)	bisulfate (in 2 vials)	28 Days	Purge-and-Trap
1 - 8 oz glass	4 Deg C	180 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	14 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

85' south of SB-26 in ditch
creek bed

38.59618

90.60624

Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 111 QC Code: ___ Matrix: Solid Tag ID: 5527-111-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Callahan Ditch Grab #3

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/21/11 17:00
Longitude: _____ End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

100' South of SB-26
5 feet east of creek bed

38.59620

90.60619

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 112 QC Code: Matrix: Solid Tag ID: 5527-112-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Callahan Ditch Grab #4

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date 7/24/11 Time(24 hr) 17:05
Latitude: _____ Sample Collection: Start: _____
Longitude: _____ End: _____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs In Soil by GC/EC

Sample Comments:

(N/A)

100' south of SB-26
5 feet west of creek bed

38.59615
90.60621

Add 1613 B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 **Sample Number:** 113 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5527-113-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: mw-C01 Boring at 13 feet depth

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** 9/22/11 **Time(24 hr)** 14:00
Latitude: _____ **Sample Collection: Start:** 9/22/11 14:00
Longitude: _____ **End:** ____/____/____ :__:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's In Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment <i>omit</i>
1 - 8 oz glass	4 Deg C	100 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES <i>omit</i>
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil <i>omit</i>
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC <i>omit</i> OK

Sample Comments:

(N/A)

VOA Analysis Only

*Note: VOA on Vial headspace reads 128 ppm
PID*

Sample Collected By: DK-TT/START

Household Dust
1613 B only

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 114 QC Code: ____ Matrix: Solid Tag ID: 5527-114-____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Primm Kitchen/Dining Floor

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: _____

Longitude: _____

End: 9/22/11 10:45

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury In Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals In Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A) Dust - Primm Interior - Dining / Kitchen Floor
9.5 X 2 feet area

To be sent to Cape Fear for 1613B Dioxin/Furans
analysis only.

OK
9/22/11

Sample Collected By: DK-TT/START

Household Dust
1613 B only

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: ¹¹⁴~~125~~ QC Code: FD Matrix: Solid Tag ID: 5527-¹¹⁴~~125~~-FD

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Duplicate Prim in Kitchen/Dining Floor

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: _____

Longitude: _____

End: 9/22/11

11:30

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's In Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Duplicate of 114 9.5 x 2 feet area
colocated

To be sent for 1613 B analysis only.

MDK
9/22/11

Sample Collected By: DK-TT/START

Household Dust
1613B Only

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 115 QC Code: ___ Matrix: Solid Tag ID: 5527-115-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Primm Upstairs Foyer Carpet Dust

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ___/___/___

Longitude: _____

End: 9/27/11 12:15

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H ₂ O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

9x4 feet area
send to Cape Fear for 1613B analysis/s
only.

ADK 9/22/11

Sample Collected By: DK-TT/START

Household waste
1613 B only

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 116 QC Code: ___ Matrix: Solid Tag ID: 5527-116-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Dozier 1st Floor Kitchen/Dining Floor

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 9/24/11 14:53

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

12 x 2.5 feet area
send to Cape Fear for 1613 B analysis
only.
XPK 9/22/11

Sample Collected By: DK-TT/START

Household Dust
1613 B only

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 117 QC Code: ___ Matrix: Solid Tag ID: 5527-117-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Dozier 2nd Floor Foyer Carpet Dust

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/22/11

Longitude: _____

End: 15:23

~~Laboratory Analyses:~~

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

9 x 2 feet area

send to Cape Fear for 1613B
analysis only.

WOK 9/22/11

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 118 QC Code: _____ Matrix: Solid Tag ID: 5527-118-_____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Dozier Detached Garage Interior Dust

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____

Latitude: _____

Sample Collection: Start: _____

Longitude: _____

End: 9/27/11 15:55

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC

Sample Comments:

(N/A)

Collected from shelves, window sills & ledges
48 linear feet X .33 feet area
vacuumed with HEPA vac

sending to Cape Fear for 1613B
analysis only.

MDK
9/22/11

Sample Collected By: DK-TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5527 Sample Number: 201 QC Code: ____ Matrix: Water Tag ID: 5527-201-____

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Rinsate sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date: _____ Time(24 hr): _____
Latitude: _____ Sample Collection: Start: 9/14/11 9:00
Longitude: _____ End: ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC

Sample Comments:

(N/A)

Rinsate for evaluation of decon protocol
on soil sampling apparatus - Geoprobe
Macrocore Sampler Tubes & cutting
Shoes.

Add 1613B dioxin/furans
analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5527 Sample Number: 202 QC Code: ___ Matrix: Water Tag ID: 5527-202-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Rinsate sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 9/15/11 11:25
Longitude: _____ End: __/__/__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC

Sample Comments:

(N/A)

Rinsate of Geoprobe macrocore sampler
parts after decontamination wash
Add 1613B dioxin/furans analysis

Sample Collected By: DK-TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 1 QC Code: __ Matrix: Water Tag ID: 5573-1-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Monitoring well MW-1

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/1/11 12:28

Longitude: _____

End: 1/1/ :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5573 Sample Number: 2 QC Code: __ Matrix: Water Tag ID: 5573-2-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: WW-2

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 11/1/11 14:37
Longitude: _____ End: 1/1/11 14:37

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

*dissolved metals
filtered in the
field*

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573

Sample Number: ²~~14~~

QC Code: ²~~FD~~

Matrix: Water

Tag ID: 5573-²~~14~~ ²~~FD~~

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: MW-2 Field Duplicate

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/1/11

14:37

Longitude: _____

End: 1/1/11

14:37

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5573 **Sample Number:** 3 **QC Code:** ____ **Matrix:** Water **Tag ID:** 5573-3-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: MW-3

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 11/1/11 16:43
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5573 **Sample Number:** 4 **QC Code:** ___ **Matrix:** Water **Tag ID:** 5573-4-___

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: New Well MW-10

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____
Latitude: _____ **Sample Collection: Start:** 11/21 9:13
Longitude: _____ **End:** 1/1 —:—

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water <i>3x Volume</i>
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC <i>3x Volume</i>
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS <i>3x Volume</i>

Sample Comments:

(N/A) *Metals are dissolved metals - filtered in the field*

*3x Volume for MS/MSD QA
on VOC, SVOC, PCB*

Add 1613B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 5 QC Code: __ Matrix: Water Tag ID: 5573-5-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: WW-7

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/2/11 11:42

Longitude: _____

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO3/L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO3 acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

*Dissolved metals
filtered in the field*

Sample Comments:

(N/A) *Add 1613B dioxin/furans analysis*

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 6 QC Code: ___ Matrix: Water Tag ID: 5573-6-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: MW-8

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/2/11

13:29

Longitude: _____

End: ____/____/____

____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Dissolved Metals
filtered in the
field

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5573 Sample Number: 7 QC Code: __ Matrix: Water Tag ID: 5573-7-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Proactive Sampling Pump after decon - rinsate
External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 11/2/11 14:00
Longitude: _____ End: ___/___/___ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO3/L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO3 acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

*Dissolved Metals
Filtered in the
field*

Sample Comments:

(N/A) ADD 1613B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 8 QC Code: ___ Matrix: Water Tag ID: 5573-8-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: MW-9

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 11/2/11 13:29 ADPK
Longitude: _____ End: 15:11 11-2-11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

*Dissolved metals
Filtered in the field*

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 9 QC Code: __ Matrix: Water Tag ID: 5573-9-__

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: MW-4

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/2/11

16:35

Longitude: _____

End: / /

:_

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A) Add 16BB dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5573 **Sample Number:** 10 **QC Code:** ____ **Matrix:** Water **Tag ID:** 5573-10-__

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: MW-5

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ____-____-____ **Sample Collection: Start:** 11/2/11 17:47
Longitude: ____-____-____ **End:** ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

*dissolved metals
filtered in the
field*

Sample Comments:

(N/A) *Add 1613B dioxin/furans analysis*

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5573 **Sample Number:** 11 **QC Code:** ____ **Matrix:** Water **Tag ID:** 5573-11-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: MW - C02

External Sample Number: _____

Expected Conc: _____ (or Circle One: * Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: 11/3/11

10:29

Longitude: _____

End: 1/1/11

10:29

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

*Dissolved Metals
Filter in the field*

Sample Comments:

(N/A)

*Callahan well MW-C02
Property*

Add 1613B dioxin/furan analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 12 QC Code: ___ Matrix: Water Tag ID: 5573-12-___

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: MW-003

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/3/11

11:43

Longitude: _____

End: ___/___/___

___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A)

Callahan Property Well 003
Add 1613B dioxin/furans analysis

Dissolved Metals Filter
in the field

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 13 QC Code: __ Matrix: Water Tag ID: 5573-13-__

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708 Site OU: 00

Location Desc: MW-01

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 11/3/11 13:10

Longitude: _____

End: 1/1/ 1:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

*Dissolved Metals only
Filtered in
the
field
11-3-11*

Sample Comments:

(N/A)

*Callahan Property well MW-01
Add 1613 B dioxin/furans analysis*

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5573 Sample Number: ¹⁴13 QC Code: Matrix: Water Tag ID: 5573-13-¹⁴

Project ID: JS0708SF ^{YDK 11-3-11} Project Manager: Jim Silver ^{YDK 11-3-11}
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: MW-6

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____ Sample Collection: Start: 11/3/11 16:11
Longitude: _____ End: 1/1/ 1:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Sample Comments:

(N/A)

Add 1613 B dioxin analysis

<sup>Dissolved Metals only
filtered in the
field
11-3-11
YDK</sup>

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5573 Sample Number: 15 QC Code: FB Matrix: Water Tag ID: 5573-15-FB

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: Field Blank sample

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 11/1/11 18:03
Longitude: _____ End: 1/1/11 :_

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	5 mL of HNO ₃ /L to pH<2	28 Days	1 Mercury in Water
1 - 1 Liter Cubitainer	HNO ₃ acidify, 4 Deg C	180 Days	1 Metals in Water by ICP-AES
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS

Dissolved metals filtered in the field

Sample Comments:

(N/A) Add 1613 B dioxin/furans analysis

Sample Collected By: TT/START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5573 Sample Number: 16 QC Code: FB Matrix: Water Tag ID: 5573-16-FB

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: LDL VOA Trip Blank sample

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____ **Sample Collection: Start:** 11/1/11 18:08
Longitude: _____ **End:** ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
2 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS



Sample Comments:

(N/A)

Sample Collected By: TT/START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 1 **QC Code:** ___ **Matrix:** Solid **Tag ID:** 5618-1-___

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: Incremental Composite Sample Unit 1A

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:19
Longitude: _____ **End:** ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) Add 1613 B dioxins/furans analysis by Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 2 **QC Code:** ___ **Matrix:** Solid **Tag ID:** 5618-2-___

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 1B

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 12:30
Longitude: _____ **End:** ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 3 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5618-3-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 1C

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:34
Longitude: _____ **End:** ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 4 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5618-4-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit ID

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:37
Longitude: _____ **End:** ____/____/____ ____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Add 1613 B dioxin furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 5 **QC Code:** ___ **Matrix:** Solid **Tag ID:** 5618-5-___

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: IGS Unit 2A

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:42
Longitude: _____ **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 6 **QC Code:** ___ **Matrix:** Solid **Tag ID:** 5618-6-___

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 2B

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:45
Longitude: _____ **End:** ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 7 QC Code: ____ Matrix: Solid Tag ID: 5618-7-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 2C

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:48
Longitude: _____ **End:** 1/1/12 1:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Add 1613B dioxins/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 8 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5618-8-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 2D

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/1/11 13:51
Longitude: _____ **End:** 1/1/12 1:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 9 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5618-9-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 32A

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: ____ **Sample Collection: Start:** 12/1/11 13:09
Longitude: ____ **End:** 1/1/12 1:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: ⁹ ~~1~~ QC Code: FD Matrix: Solid Tag ID: 5618-^{9-FD} ~~1~~

Project ID: JS0708SF ^{OK} 12-1-11 Project Manager: Jim Silver ^{OK} 12-1-11
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS 32A duplicate

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) Date _____ Time(24 hr) _____
Latitude: _____ Sample Collection: Start: 12/1/11 13:09
Longitude: _____ End: 1/1/11 _____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) Add 1613B dioxin/furans analysis

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 10 QC Code: Matrix: Solid Tag ID: 5618- 10

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS Unit 10A

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/1/11 13:57
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 - PAH's in Soil by GC/MS <u>Oxins/Furans by 1613B</u>
0 -	4 Deg C	0 Days	1 Percent Solid <u>only</u>

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5618 Sample Number: 11 QC Code: Matrix: Solid Tag ID: 5618- 11

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS Unit 10B

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/1/11

14:00

Longitude:

End: / /

: :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	1 yr. 14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Dioxins/Furans by 1613B only

Sample Comments:

(N/A)

submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Kansas City, KS

Tag ID: 5618-12

Site ID: 0708 **Site OU:** 00

ICS Unit 10C

Time(24 hr)

14:01

1

Laboratory Analyses:

1 Percent Solid

Sample Comments:

submitted to Cape Fear Analytica

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 13 QC Code: Matrix: Solid Tag ID: 5618- 13

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 10 D

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:03
Longitude: **End:** / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	1 yr. 14 Days	1. PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Dioxins/Furans by 1613B only

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

ASR Number: 5618 Sample Number: 14 QC Code: ____ Matrix: Solid Tag ID: 5618-14

Location Desc: ICS Unit 34A

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** _____ **Time(24 hr)** _____

Latitude: _____ **Sample Collection: Start:** 12/1/11 14.07

Longitude: _____ **End:** _____

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Dioxins/Furans by 1613B only

(N/A)

submitted to Cape Fear Analytica

1 of 1

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 15 QC Code: Matrix: Solid Tag ID: 5618- 15

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS Unit 34B

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/1/11 14:09
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - <u>4</u> oz glass	4 Deg C	<u>1 yr</u> <u>14</u> Days	1. PAH's in Soil by GC/MS <u>Dioxins/Furans by 1613B</u>
0 -	4 Deg C	0 Days	1. Percent Solid

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 16 QC Code: Matrix: Solid Tag ID: 5618- 16

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS Unit 34C

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/1/11 14:10

Longitude:

End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
<u>4</u> 1 - 8 oz glass	4 Deg C	<u>1 yr</u> <u>14</u> Days	1. PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Dioxins/Furans by 1613B only

Sample Comments:

(N/A)

Submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 **Sample Number:** 17 **QC Code:** **Matrix:** Solid **Tag ID:** 5618- 17

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 34D

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:12
Longitude: **End:**

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
<u>4</u> 1 - 8 oz glass	4 Deg C	<u>1 yr</u> <u>14</u> Days	1. PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Oxins/Furans by 1613B only

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 18 QC Code: Matrix: Solid Tag ID: 5618- 18

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS Unit 35A

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/1/11 14:15
Longitude: End: / / :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - <u>4</u> 8 oz glass	4 Deg C	<u>1 yr</u> 14 Days	1. PAH's in Soil by GC/MS <u>Dioxins/Furans by 1613B</u>
0 -	4 Deg C	0 Days	1 Percent Solid <u>only</u>

Sample Comments:

(N/A)

Submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 19 QC Code: Matrix: Solid Tag ID: 5618- A

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 35B

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:17
Longitude: **End:**

Laboratory Analyses:

<u>4</u> Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	<u>1 yr</u> 14 Days	1 PAH's in Soil by GC/MS <u>Dioxins/Furans by 1613B</u>
0 -	4 Deg C	0 Days	1 Percent Solid <u>only</u>

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 20 QC Code: Matrix: Solid Tag ID: 5618- 20

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 35C

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:19
Longitude: **End:**

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	1 yr. 14 Days	1 PAH's in Soil by GC/MS Dioxins/Furans by 1613B only
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 21 QC Code: Matrix: Solid Tag ID: 5618- 21

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: ICS Unit 35D

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/1/11 14:20
Longitude: End:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	1 yr. 14 Days	1. PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Dioxins/Furans by 1613B only

Sample Comments:

(N/A)

Submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 22 QC Code: Matrix: Solid Tag ID: 5618- 22

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 36A

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:23
Longitude: **End:**

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	14 Days	1 PAH's in Soil by GC/MS Dioxins/Furans by 1613B
0 -	4 Deg C	0 Days	1 Percent Solid only

Sample Comments:

(N/A) Submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 23 QC Code: Matrix: Solid Tag ID: 5618- 23

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 36B

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:26
Longitude: **End:**

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	1 yr. 14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Dioxins/Furans by 1613B only

Sample Comments:

(N/A) submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5618 Sample Number: 24 QC Code: Matrix: Solid Tag ID: 5618- 24

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: ICS Unit 36 C

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/1/11 14:28
Longitude: **End:**

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 1 - 8 oz glass	4 Deg C	1 yr. 14 Days	1 PAH's in Soil by GC/MS
0 -	4 Deg C	0 Days	1 Percent Solid

Orexins/Furans by 1613B only

Sample Comments:

(N/A) Submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5618

Sample Number: 25

QC Code: _____

Matrix: Solid

Tag ID: 5618-

25

Project ID: JS0708SF

Project Manager: Jim Silver

Project Desc: Ellisville site - Strecker Forest Development Expanded site Review

City: Wildwood

State: Missouri

Program: Superfund

Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION

Site ID: 0708

Site OU: 00

Location Desc:

ICS Unit 36D

External Sample Number: _____

Expected Conc:

(or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

12/1/11

14:30

Longitude: _____

End:

____/____/____

____:____

Laboratory Analyses:

4 Container
1 - 8 oz glass
0 -

Preservative
4 Deg C
4 Deg C

Holding Time
1 yr. 14 Days
0 Days

Analysis

1. PAH's in Soil by GC/MS
1 Percent Solid

Dioxins/Furans by 1613B only

Sample Comments:

(N/A)

submitted to Cape Fear Analytical

Sample Collected By: DK/TT-START

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5651 Sample Number: 1 QC Code: ___ Matrix: Solid Tag ID: 5651-1-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 40, 0-2 Ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ___/___/___

Longitude: _____

End: 1/24/12 13:30

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOCs in Soil at Low Levels by GC/MS Closed System
VOA-5035)	bisulfate (in 2 vials)		Purge and Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

No VOC analysis on 0-2' bore samples

Soil boring sample from Callahan property

OK 1-25-12

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 2 QC Code: ___ Matrix: Solid Tag ID: 5651-2-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 40, 2-4 ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 1/24/12

13:40

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Soil boring from Callahan property

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 3 QC Code: Matrix: Solid Tag ID: 5651-3-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB# 40, 4 - 6 ft

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 1/24/12 13:50

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
12 p.o. 4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample collected from Callahan property
(N/A)

MS/MSD sample
3X Volume

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 4 QC Code: ___ Matrix: Solid Tag ID: 5651-4-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 41, 0 - 2.5 Ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ___/___/___ :___

Longitude: _____

End: 1/24/12 14:21

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil	4 Deg C, H2O + sodium	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System
VOA 5035) D.O.	bisulfate (in 2 vials)		Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

No VOC samples collected for ^{bore} samples 0-2'

Soil boring sample collected from Callahan property

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5651 Sample Number: 5 QC Code: ___ Matrix: Solid Tag ID: 5651-5-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 41, 4-6 ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____ : ____

Longitude: _____

End: 1/24/12 14:20

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample from Callahan property
(N/A)

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 6 QC Code: ___ Matrix: Solid Tag ID: 5651-6-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 42, 10 - 12 ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 1/24/12 15:54

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample collected from Callahan property
(N/A)

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 7 QC Code: Matrix: Solid Tag ID: 5651-7-__

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 42, 6-8 ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____ : ____

Longitude: _____

End: 1/24/12 16:05

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs In Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample collected from Callahan property
(N/A)

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 8 QC Code: ___ Matrix: Solid Tag ID: 5651-8-___

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 41, 12-13 ft

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ___/___/___ :___

Longitude: _____

End: 1/24/12 16:30

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample collected from Callahan property
(N/A)

Sample Collected By: DK/TT

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5651 Sample Number: 9 QC Code: Matrix: Solid Tag ID: 5651-9-

Project ID: JS0708SF Project Manager: Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood State: Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION Site ID: 0708 Site OU: 00

Location Desc: SB # 44, 8-11 ft

External Sample Number:

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 1/24/12

16:55

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample collected from Callahan property
(N/A)

Sample Collected By: DK/TT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5651 **Sample Number:** 10 **QC Code:** ____ **Matrix:** Solid **Tag ID:** 5651-10-____

Project ID: JS0708SF **Project Manager:** Jim Silver
Project Desc: Ellisville site - Strecker Forest Development Expanded site Review
City: Wildwood **State:** Missouri
Program: Superfund
Site Name: ELLISVILLE SITE - SITE EVALUATION/DISPOSITION **Site ID:** 0708 **Site OU:** 00

Location Desc: SB # 46, 4 - 6.5 ft

External Sample Number: _____

Expected Conc: _____ (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____ **Sample Collection: Start:** ____/____/____ ____:____

Longitude: _____ **End:** 1/24/12 12:08

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: Soil boring sample collected from Callahan property
(N/A)

Sample Collected By: DK/TT

**US EPA Region 7
Kansas City, KS**

Project ID:	JS0708SF	Project Manager:	Jim Silver
Project Desc:	Ellisville site - Strecker Forest Development Expanded site Review		
City:	Wildwood	State:	Missouri
Program:	Superfund		
Site Name:	ELLISVILLE SITE - SITE EVALUATION/DISPOSITION	Site ID:	0708
		Site OU:	00

External Sample Number: _____

Longitude: _____ End: 1/24/12 15:25

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (In 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Total Metals Analysis of TCLP Metals in Soil by ICP-AES
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds In Soil
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Collected By: DK/TT

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-12
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU - 10 - A
Layer

Date Collected: 1/24/12

TIME: 1:33:33

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS: 0 - 2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-13
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-10-B
Layer

Date Collected: 1/24/12

TIME: 1:34:0

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 1

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-14
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-10-C
Layer

Date Collected: 1/24/12

TIME: 1:34:5

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-15
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-10-D
Layer

Date Collected: 1/24/12

TIME: 1:35:2

Team Leader:

Samplers: _____

Sample Depth: in.

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL SIS REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-16
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DO-25-A
Layer

Date Collected: 1/23/12

TIME: 1:44:9

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-17
Contract Number:
Priority: High
Medium: Soil

Clean-up Area
Layer DU-25-B

Date Collected: 1/23/12

TIME: 1:45:3

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-18
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-25-C
Layer

Date Collected: 1/23/12

TIME: 1:45:6

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-19
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-25-D
Layer

Date Collected: 1/23/12

TIME: 1:50:00

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-20
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-34-A
Layer:

Date Collected: 1/24/12

TIME: 08:50

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-21
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-34-B
Layer

Date Collected: 1/24/12

TIME: 08:50

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS:

0 - 2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-22
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-34-C
Layer

Date Collected: 1/24/12

TIME: 08150

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No: _____
Site Code: JS0708SF

Epa Number: 5651-23
Contract Number: _____

Priority: High
Medium: Soil

Clean-up Area DU-34-D
Layer _____

Date Collected: 1/24/12

TIME: 0850

Team Leader: _____

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL. REQ. REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-24
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-40-A
Layer

Date Collected: 1/23/12

TIME: 1:4:00

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-25
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-40-B
Layer

Date Collected: 1/23/12

TIME: 1:40:5

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-26
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-40-C
Layer

Date Collected: 1/23/12

TIME: 1:40:8

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-27
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-40-D

Date Collected: 1/23/12

TIME: 1:41:3

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-28
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-41-A
Layer

Date Collected: 1/23/12

TIME: 1:40:00

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS: 0-2*

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-29
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-41-B

Date Collected: 1/23/12

TIME: 1:40:3

Team Leader:

Samplers: _____

Sample Depth: in.

No. of Aliquots: 9

COMMENTS:

0 - 2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL. REQ. REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 64115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-30
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-41-C

Date Collected: 1/23/12

TIME: 1:40:06

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-31
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-41-D

Date Collected: 1/23/12

TIME: 1:40:29

Team Leader:

Samplers: _____

Sample Depth: 17.

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-32
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-42-A
Layer

Date Collected: 1/23/12

TIME: 1:40:00

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-33
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-42-B

Date Collected: 1/23/12

TIME: 1:40:5

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-34
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-42-C

Date Collected: 1/23/12

TIME: 1:40:08

Team Leader:

Samplers: _____

Sample Depth: 10

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-35
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-42-D
Layer

Date Collected: 1/23/12
TIME: 1:41:10

Team Leader:

Samplers: _____

Sample Depth: 1.5
No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANALYSIS REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-36
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-43-A
Layer

Date Collected: 1/24/12
TIME: 1:12:0

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-37 Priority: High
Contract Number: Medium: Soil

Clean-up Area DU-43-B
Layer

Date Collected: 1/24/12

Team Leader:

TIME: 1:12:4

Samplers: _____

Sample Depth: 10

No. Of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL REQ REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-38
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-43-C

Date Collected: 1/24/12

TIME: 1:40

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code:

JS0708SF

Epa Number: 5651-39
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer DU-43-D

Date Collected: 1/24/12

TIME: 1:14:7

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL REQ REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-40
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-44-A
Layer

Date Collected: 1/24/12

TIME: 1:15:00

Team Leader:

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code:

JS07085F

Epa Number: 5651-41
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DV-44-B
Layer

Date Collected: 1/24/12

Team Leader:

TIME: 11:51

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code:

JS07085F

Epa Number: 5651-42
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DV-44-C
Layer

Date Collected: 1/24/12

Team Leader:

TIME: 1:15:5

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 9

COMMENTS:

0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-43
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU-44-D
Layer

Date Collected: 1/24/12

Team Leader:

TIME: 1:156

Samplers: _____

Sample Depth: _____

No. of Aliquots: 9

Comments: 0-2"

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-44
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer SB-36

Date Collected: 1/23/12

TIME: 1:55:3

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 1

COMMENTS: 0 - 2 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL. REQ. REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-45
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer SB-36

Date Collected: 1/23/12

TIME: 1:55:3

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 1

COMMENTS: 2 - 4 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code:

JS07085F

Epa Number: 5651-46
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer SB-37

Date Collected: 1/23/12

Team Leader:

TIME: 1. 6. 3. 3

Samplers: _____

Sample Depth: _____ in.

No. Of Aliquots: 1

COMMENTS:

1 - 2 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL REQ REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-47
Contract Number:
Priority: High
Medium: Soil

Clean-up Area
Layer SB-37

Date Collected: 1/23/12

Team Leader:

TIME: 1 6 33

Samplers: _____

Sample Depth: _____

No. of Aliquots: 1

COMMENTS:

2 - 4 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No: _____
Site Code: JS07085F

Epa Number: 5651-48
Contract Number: _____

Priority: High
Medium: Soil

Clean-up Area SB-38
Layer _____

Date Collected: 1/24/12

TIME: 09125

Team Leader: _____

Samplers: _____

Sample Depth: _____

No. of Aliquots: 1

COMMENTS:

0 - 2 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-49
Contract Number:

Priority: High
Medium: Soil

Clean-up Area SB-38
Layer

Date Collected: 1/24/12

TIME: 09:28

Team Leader:

Samplers: _____

Sample Depth: _____

No. Of Aliquots: 1

COMMENTS:

2-4 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-50 Priority: High
Contract Number: Medium: Soil

Clean-up Area SB-39
Layer

Date Collected: 1/24/12

Team Leader:

TIME: 1:00:06

Samplers: _____

Sample Depth: _____

No. of Aliquots: 1

COMMENTS: 0-2 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-51
Contract Number:

Priority: High
Medium: Soil

Clean-up Area SB-39
Layer

Date Collected: 1/24/12

Team Leader:

TIME: 1:01:00

Samplers: _____

Sample Depth: _____

No. of Aliquots: 1

COMMENTS:

2 - 4 ft

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Site Code: JS07085F

EPA Number: 5651-52
Contract Number:

Priority: High
Medium: Soil

Cleanup Area DV 40 ICS
Layer slabate Composite

Date Collected: 1-23-12
TIME: 1.45.3

Team Leader:

Samplers: Kinroth

Sample Depth: 0-2

No. of Aliquots: 36

COMMENTS:

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-53
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU 41
Layer ICS Slabcrete
Composite

Date Collected: 1-23-12

TIME: 1409

Team Leader:

Samplers: O'Connor

Sample Depth: 0-2 in.

No. of Aliquots: 36

COMMENTS:

SAMPLE CONTAINER

PRESERVATIVE

ANAL. REQ. REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO Expanded Site Review Superfund Site No:
Site Code:

JS0708SF

Epa Number: 5651-54
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DV 42
Layer ICS slabcake
Composite

Date Collected: 1-23-12
TIME: 1507

Team Leader:

Samplers: Jackson

Sample Depth: 0-2

No. of Aliquots: 36

COMMENTS:

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS0708SF

Epa Number: 5651-55
Contract Number:

Priority: High
Medium: Soil

Clean-up Area DU 43
Layer ICS slabcake
Team Leader: composite

Date Collected: 1-24-12
TIME: 1147

Samplers: O'Connor

Sample Depth: 0-2

No. of Aliquots: 36

COMMENTS:

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz. amber

Ice/4°C

1613B

dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Ellisville Site - Strecker Forest Development
City/State: Wildwood, MO
Expanded Site Review
Superfund Site No:
Site Code: JS07085F

Epa Number: 5651-56
Contract Number:
Priority: High
Medium: Soil

Clean-up Area
Layer: DU 44
ICS Slabcake
Composite
Date Collected: 1-24-12
TIME: 11.56

Team Leader:

Samplers: O'Connor
Sample Depth: 0-2 in.
No. of Aliquots: 36

COMMENTS:

SAMPLE CONTAINER

PRESERVATIVE

ANAL. REQ. REQUESTED

4oz. amber

Ice/4°C

1613B
dioxins/furans

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site Superfund Site No:
City/State: Wilwood, MO Site Code:

Epa Number: 5651-57 Priority: High
Contract Number: Medium: 5011

Clean-up Area NA Date Collected: 5-15-12
Layer TIME: 1.5.42
Team Leader: Bob Feild
Jim Silver
Samplers: Pave Kinneth Sample Depth: 0-2 in.
No. of Aliquots: 269 ✓ 1K

COMMENTS: Sample Unit (SU) 19A

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

402 Glass
Amber

40C

1613B
dioxin/Furans
TEQ

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site Superfund Site No:
City/State: Wilwood, MO Site Code:

Epa Number: 5651-58 Priority: High
Contract Number: Medium: 5071

Clean-up Area NA Date Collected: 5-15-12
Layer TIME: 1:545
Team Leader: Bob Feild
Jim Silver
Samplers: Dave Kinneth Sample Depth: 0-2 in.
No. Of Aliquots: 36 9 OK

COMMENTS: Sample Unit SU19B

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz Glass
Amber

4°C

1613B
proxin/Furans
TEQ

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site Superfund Site No:
City/State: Wilwood, MO Site Code:

Epa Number: 5651-59 Priority: High
Contract Number: Medium: 5011

Clean-up Area NA
Layer

Date Collected: 5-15-12

Team Leader: Bob Feild
Jim Silver

TIME: 1:54 PM

Samplers: Dave Kinneth

Sample Depth: 0-2 in.

No. of Aliquots: 36 9/24 DK

5-15-12

COMMENTS:

Sample Unit SU19C

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz Glass
Amber

4°C

1613B
Proxin/Furans
TEQ

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site Superfund Site No:
City/State: Wilwood, MO Site Code:

Epa Number: 5651-60 Priority: High
Contract Number: Medium: 5011

Clean-up Area NA
Layer

Date Collected: 5-15-12

Team Leader: Bob Feild
Jim Silver

TIME: 1549

Samplers: Dave Kinneth

Sample Depth: 0-2 in.

No. Of Aliquots: 369 NDK

COMMENTS:

SU 19D

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz Glass
Amber

40C

1613B
dioxin/Furans
TEQ

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site Superfund Site No:
City/State: Wilwood, MO Site Code:

Epa Number: 5651-61 Priority: High
Contract Number: Medium: 5011

Clean-up Area NA
Layer

Date Collected: 5-15-12
TIME: 1.6.00

Team Leader: Bob Feild
Jim Silver
Samplers: Dave Kinneth

Sample Depth: 0-2 in.
No. of Aliquots: 36

COMMENTS:

DU 19 overall ICS composite
sample

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

4oz Glass
Amber

4°C

1613B
dioxin/Furans
TEQ

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

EPA Number: 5651-62
Contract Number:

Priority: High
Medium:

Clean-up Area
Laver

Date Collected: 5-18-12

Team Leader:

TIME: 11.08

Samplers:

Sample Depth: 0.2m.

No. of Aliquots: 36

COMMENTS:

Decision Unit 27 overall TCS Sample

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

802 clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: strecker Forest development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

Epa Number: 5651-63
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer

Date Collected: 5-18-12

Team Leader:

TIME: 1.1.19

Samplers:

Sample Depth: 0-2 in.

No. of Aliquots: 36

COMMENTS:

DV 28 overall ICS Sample

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

8oz clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: strecker Forest development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

Epa Number: 5651-64
Contract Number:

Priority: High
Medium: for 1

Clean-up Area
Laver

Date Collected: 5-18-12

Team Leader:

Bob Feild
Jim Silver

TIME: 11.30

Samplers:

Dave Kinneth

Sample Depth: 0-2m.

No. Of Aliquots:

36

COMMENTS:

DU 30 ICS Sample

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

802 clear
glass

40C
Ice

Total Cr
and
Cr +6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: strecker Forest development site
City/State: Wildwood MO

Superfund Site No:
Site Code:

Epa Number: 5651-65
Contract Number:

Priority: High
Medium:

For

Clean-up Area
Laver

Date Collected: 5-18-12

TIME: 1.1.43

Team Leader:

Bob Feld
Jim Silver

Samplers:

Dave Kinneth

Sample Depth: 0-2 in.

No. Of Aliquots:

36

COMMENTS:

DV 32

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

802 clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

EPA Number: 5651-66
Contract Number:

Priority: High
Medium: For 1

Clean-up Area
Layer

Date Collected:

Team Leader:

TIME: _ _ _ _

Samplers:

Sample Depth: 0-2 in.

No. of Aliquots:

COMMENTS:

Callahan Property DVI

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

8oz clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

Epa Number: 5651-67
Contract Number:

Priority: High
Medium: For 1

Clean-up Area
Layer

Date Collected: 5-18-12
TIME: 1203

Team Leaders: Bob Feild
Jim Silver
Samplers: Dave Kinneth

Sample Depth: 0-2 in.
No. of Aliquots: 36

COMMENTS: Callahan Property DUZ

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

802 clear glass

40C Ice

Total Cr and Cr +6 hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest Development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

EPA Number: 5651-68
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer

Date Collected: 5-18-12

Team Leader:

Bob Feild
Jim Silver

TIME: 1:21

Samplers:

Dave Kinneth

Sample Depth: 0-2 in.

No. of Aliquots:

36

COMMENTS:

Callahan Property DU 3

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

8oz clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: Strecker Forest development site
City/State: Wildwood MO

Superfund Site No:
Site Code:

EPA Number: 565H69
Contract Number:

Priority: High
Medium: Soil

Clean-up Area
Layer

Date Collected: 5-18-12

Team Leader:

TIME: 1:31 PM

Samplers:

Sample Depth: 0-2 in.

No. of Aliquots: 36

COMMENTS:

DU 34

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

802 clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS. 66115

Site Name: streater Forest development Site
City/State: Wildwood MO

Superfund Site No:
Site Code:

Epa Number: 5651-70
Contract Number:

Priority: High
Medium: For 1

Clean-up Area
Layer

Date Collected: 5-18-12

Team Leader:

TIME: 1.3.18

Samplers:

Sample Depth: 0-2 in.

No. of Aliquots: 36

COMMENTS:

DU 39

SAMPLE CONTAINER

PRESERVATIVE

ANAL RES REQUESTED

8oz clear
glass

40C
Ice

Total Cr
and
Cr + 6
hexavalent chrome

APPENDIX F

MONITORING WELL INSTALLATION REPORT

**MONITORING WELL INSTALLATION REPORT
STRECKER FOREST AND CALLAHAN PROPERTIES
ELLISVILLE SITE
St. Louis County, Missouri**

January 17, 2012

**Prepared for:
Don Van Dyke, Project Manager
Superfund Section
Hazardous Waste Program
Division of Environmental Quality
Missouri Department of Natural Resources**

**Prepared by:
Peter Price, R.G.
Chief, Environmental Geology Section
Geological Survey Program
Division of Geology and Land Survey
Missouri Department of Natural Resources**



INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division initiated an Expanded Site Review (ESR) at property adjoining the Ellisville site located in Wildwood, Missouri, in early September of 2011. The study area for the ESR, as described in the “Expanded Site Review Work Plan for the Proposed Strecker Forest Development, Wildwood, Missouri” (Tetra Tech, 2011), includes the proposed Strecker Forest residential development and a portion of the Ellisville site known as the Callahan property. The Missouri Department of Natural Resources (MDNR), Division of Geology and Land Survey (DGLS), Geological Survey Program (GSP) assisted the EPA by conducting one component of the ESR, the installation of groundwater monitoring wells. This report describes the installation of three monitoring wells on the Strecker Forest property and three monitoring wells on the Callahan property designed to evaluate the direction of groundwater flow in the shallow bedrock aquifer and to determine if contaminants are present in groundwater.

SITE LOCATION

The Bliss subsite of the Ellisville site is located in Wildwood, Missouri, at 149 Strecker Road in west St. Louis County. The 18.3-acre proposed Strecker Forest development comprises three former residential tracts along the north side of Strecker Road; the Dozier property at 165 Strecker Road, the Primm property at 173 Strecker Road, and the Schoessel property at 177 Strecker Road. The Callahan property is located south of the Strecker Forest tract at 210 Strecker Road. These properties are located within the SE ¼ of the NE ¼ and the NE ¼ of the SE ¼ of Section 31, Township 45 North, Range 4 East of St. Louis County.

HISTORY

A summary of the site history and environmental actions at the site is provided in the work plan for the ESR (Tetra Tech, 2011). During previous site investigations monitoring wells were installed on the Bliss and Strecker Forest properties. Six wells were installed on the Bliss property (BMW-01 through BMW-06 on fig. 1). The first three were installed in 1997 as part of the remedial action on the Bliss property. The second three (BMW-04 through BMW-06 on fig. 1) were installed in 2010 by the Missouri Department of Natural Resources to further investigate groundwater (MDNR, 2010). In 2009, seven monitoring wells (MW-01 through MW-07 on fig. 1) were installed on the Strecker Forest property as part of a phase II environmental site assessment (Mundell, 2010). All of these monitoring wells were completed in the uppermost groundwater aquifer below the surface.

GENERAL GEOLOGIC AND HYDROLOGIC SETTING

The Strecker Forest and Callahan properties of the Ellisville site straddle a northwest trending ridge of the Caulks Creek drainage. Most surface-water runoff on the Strecker Forest property drains to the north to an unnamed tributary of Caulks Creek. Surface-

water runoff on the Callahan property drains generally south to another unnamed tributary of Caulks Creek. Caulks Creek flows north about 5 ½ miles to the Missouri River valley. Water tracing conducted by MDNR has shown that Caulks Creek and its tributaries are losing streams that recharge Lewis Spring located about 2 ½ miles north of the Ellisville site (MDNR, 1993).

Surficial materials on the hill slopes and ridge tops in the area are composed of cherty, clay-rich residual materials derived from the weathering of the carbonate bedrock. The valley floors of Caulks Creek and the Bliss property are filled with silty clay surface soils over chert gravel alluvial materials. The bedrock in the area is the Mississippian-age Burlington-Keokuk Limestone formation, a gray, cherty limestone that typically displays an irregular weathered surface with cutters and pinnacles. Shallow karst development is also typical of this bedrock formation. These surficial materials and bedrock are generally characterized as having moderate to high permeability.

WELL INSTALLATION

Three monitoring wells (MW-8, -9, and -10) were installed on the Strecker Forest property and three (MW-C01, -C02 and -C03) on the Callahan property by the GSP in September and October of 2011 (fig. 1). All six were drilled into bedrock and constructed to sample the uppermost groundwater aquifer, similar to the construction of existing monitoring wells. The wells were drilled with down-the-hole air hammer methods. The wells were drilled and constructed in accordance with the Missouri Well Construction Rules by GSP staff holding monitoring-well installer permits. All well construction materials used were purchased new and handled in a manner to keep them free of surface contaminants.

Drilling equipment was initially mobilized to the site on September 19, 2011 and drilling was initiated the next day. Drilling of the six wells was completed by October 4 with surface completions installed the following two days. The total depths of the wells ranged from 98 to 168 feet, however, only MW-C02, the first well drilled, was advanced deeper than 121 feet due to difficulty recognizing the uppermost point of saturation in that well. Groundwater recharges into MW-C02 more slowly than the other wells. Due to the initial uncertainty of the water level within the well, the well is constructed with a greater length of screen and sand pack than the other wells.

During the drilling and installation of well MW-C01, positioned at the base of 1983-drum excavation area, organic vapors were detected in the surficial soils near the top of bedrock. Due to the concern that contaminants were present during the drilling and installation of the well, a replacement well was drilled about 15 feet southeast of the original well. During the drilling of the replacement well, additional precautions were taken to isolate the surface soils by installing a temporary surface casing to the top of bedrock. Following the construction of the replacement well, the original MW-C01 well was plugged with bentonite grout through a tremmie pipe after removing the riser pipe. The well screen could not be recovered.

The wells were constructed with 2-inch, schedule 80 PVC flush-threaded riser pipe, factory slotted (0.010 inch slots) screen and above-ground completions. A 2-inch PVC well point was placed on the bottom of each well screen. The screen lengths for each well are 20 feet long, except for MW-C01 which is 30 feet and MW-C02 which is 60 feet. Well screens were positioned in an effort to bracket the groundwater surface within the screened interval, however, the water level in MW-10 rose above the screen several feet. Quartz sand was poured into the annular space from the surface to form a sand pack around the well screen to a depth at least 3 feet above the screen slots. Bentonite chips were similarly emplaced from the surface to form the bentonite seal and annular seal to within a few feet of the surface. Four-inch square steel protective casings were installed at each well and set in at least 2 feet of concrete to form a surface seal. Three bolsters, set in concrete, were placed around each well, except well MW-10 where only two bolsters were used since it was installed adjacent to a wooded area.

The well designations for wells installed on the Strecker Forest property (MW-08, -09 and -10) were chosen to follow the numbering of the initial seven installed by Mundell. The wells installed on the Callahan property included a 'C' in the well number. Measuring points on the rim of the riser pipes were also marked. Following the construction of the wells, water levels were measured in each well from the measuring point with an electronic water-level meter.

Following construction of the wells, the top-of-casing measuring-point elevations were surveyed using a self-leveling survey instrument and stadia rod. The measuring-point elevations of the casing tops of existing wells installed by Mundell were used as datums for the level survey. GSP staff developed the wells by surging and pumping them with a submersible pump and or bailer. Well construction details and location coordinates for the six wells are listed in table 1 below.

Table 1. Location coordinates and construction details for newly installed wells.

	MW-08	MW-09	MW-10	MW-C01	MW-C02	MW-C03
Latitude (dms)	38 35 55.2	38 35 56.4	38 36 00.4	38 35 47.4	38 35 50.5	38 35 50.3
Longitude (dms)	-90 36 17.2	-90 36 21.7	-90 36 18.9	-90 36 22.5	-90 36 22.4	-90 36 18.3
Borehole diameter (inches)	6.25	6.25	6.25	6.25	6.25	6.25
Total depth (ft)	112	119	120	98	168	121
Screen length (ft)	20.0	20.0	20.0	30.0	60.0	20.0
Measuring point elevation (ft msl)	713.71	720.91	705.09	695.21	728.12	722.47

Construction diagrams for the wells are attached to this report. Also attached are copies of daily field notes recorded during the project.

WATER LEVEL MEASUREMENT

In May of 2011 the Geological Survey Program began measuring water levels monthly in monitoring wells at the Ellisville site, including the six existing wells on the Bliss

property and the seven wells on the Strecker Forest property. Following construction and development of the six new monitoring wells on the Strecker Forest property, the static water levels within all existing monitoring wells were measured in order to determine the direction of groundwater flow at the Ellisville site. Table 2 lists water-level data compiled for all the existing monitoring wells at the Ellisville site. The compiled data includes water-level measurements reported by Mundell (2010) and measurements made during a well sampling event conducted by an EPA contractor on October 31, 2011 (Laura Price, personal communication, November 16, 2011). All measurements made by GSP staff used an electronic water-level indicator with 0.01-ft markings embossed on the measurement tape.

With few exceptions, the water-level measurements show consistency from one date to another. The water level in BMW-02 appears to fluctuate more than the other wells and may be more influenced by precipitation events than the water levels of other wells. Only one set of water-level measurements is available for all of the wells now present, the measurements made on December 2, 2011. The water level elevations from that data set have been plotted on a map of the site and contoured to provide a potentiometric surface map of the uppermost aquifer (fig. 2).

DISCUSSION

All of the wells constructed at the Ellisville site extend into the uppermost groundwater aquifer. Wells MW-02 and MW-C02, however, extend deeper into the aquifer than the other wells. The water levels of these two wells may be slightly deeper than if the wells were constructed similarly to the rest of the wells, however, the overall shape of the potentiometric surface and groundwater flow patterns would not likely be significantly different.

Based upon the data points available it appears that the shape of the uppermost groundwater surface beneath the site somewhat resembles the topographic surface. Groundwater beneath the northern portion of the Strecker Forest tract flows generally northeast toward the northwest arm of the Bliss property. From there, it appears that groundwater flows generally north. Groundwater beneath the western pond area of the Strecker Forest tract appears to flow south to southeast to meet northwest-flowing groundwater from the southeast corner of the Strecker Forest tract (former Dozier residence area). This groundwater then flows southwest toward the northwest corner of the Callahan property and subsequently flows generally to the west toward Caulks Creek.

As mentioned above, both Caulks Creek and its tributary that drains the Bliss property are losing streams and water tracing has demonstrated that these drainages recharge groundwater that discharges from Lewis Spring (MDNR, 1993).

REFERENCES

- Missouri Department of Natural Resources (MDNR). 1993. Report of Water Trace, Ellisville-Bliss Water Trace, St. Louis County, Missouri. Unpublished report of investigation. March 16, 1993.
- Missouri Department of Natural Resources (MDNR). 2010. Monitoring Well Installation Report, Bliss-Ellisville Site, Shallow Groundwater Investigation, St. Louis County. MDNR Division of Geology and Land Survey unpublished report. April 2010.
- Mundell & Associates, Inc. (Mundell). 2010. Phase II Environmental Site Assessment Report, Proposed Strecker Forest Development Site, 165, 173 and 177 Strecker Road, Wildwood, Missouri 63011. MUNDELL Project No. M08044. March 3, 2010.
- Tetra Tech EM Inc. (Tetra Tech). 2011. Expanded Site Review Work Plan for the Proposed Strecker Forest Development, Wildwood, Missouri. Superfund Technical Assessment and Response Team (START) Contract No. EP-S7-06-01, Task Order 0230, prepared for U.S. Environmental Protection Agency, Region 7. July 1, 2011.




Table 2. Ellisville site well location and water-level information.

Well ID	Latitude DMS	Longitude DMS	Latitude DDEG	Longitude DDEG	Installation Date	Total Depth (FT)	Ground Elevation	TOC Elevation	11/16/2009		5/4/2011	
									SWL ¹	ELEV	SWL	ELEV
BMW-01	38 35 59.465	90 36 12.687	38.599851	-90.603524	9/10/1997	52		651.63			35.83	615.80
BMW-02	38 36 2.666	90 36 8.135	38.600741	-90.60226	9/10/1997	50.3		649.93			33.80	616.13
BMW-03	38 36 6.199	90 36 14.654	38.601722	-90.604071	9/10/1997	54		638.15			30.48	607.67
BMW-04	38 36 7.410	90 36 14.738	38.602058	-90.604094	1/14/2010	65.2	637.75	642.41			35.94	606.47
BMW-05	38 36 7.537	90 36 15.859	38.602094	-90.604405	1/13/2010	54.4	632.45	637.21			32.66	604.55
BMW-06	38 36 6.385	90 36 16.673	38.601774	-90.604631	1/12/2010	62	630.53	635.15			29.37	605.78
MW-01	38 35 51.582	90 36 15.480	38.597662	-90.6043	10/28/2009	122	722.07	724.87	96.95	625.12	100.24	624.63
MW-02	38 35 51.903	90 36 21.184	38.597751	-90.605885	10/22/2009	151	724.26	727.02	110.20	614.06	113.36	613.66
MW-03	38 35 56.827	90 36 14.509	38.599119	-90.60403	11/3/2009	116	708.72	711.63	91.24	617.48	94.03	617.60
MW-04	38 35 59.071	90 36 16.240	38.599742	-90.604511	11/5/2009	73	662.53	665.48	46.78	615.75	48.78	616.70
MW-05	38 36 1.701	90 36 13.742	38.600473	-90.603817	11/5/2009	62	647.60	650.34	38.99	608.61	39.22	611.12
MW-06	38 36 4.178	90 36 14.274	38.601161	-90.603965	10/20/2009	47	637.51	640.14	28.64	608.87	31.65	608.49
MW-07	38 36 4.175	90 36 19.213	38.60116	-90.605337	11/6/2009	102	701.39	704.06	82.07	619.32	84.80	619.26
MW-08	38 35 55.2	90 36 17.2	38.59866	-90.60478	9/26/2011	112		713.71				
MW-09	38 35 56.4	90 36 21.7	38.599	-90.60602	9/27/2011	119		720.91				
MW-10	38 36 00.4	90 36 18.9	38.60011	-90.60525	9/28/2011	120		705.09				
MW-C01	38 35 47.4	90 36 22.5	38.5965	-90.60625	10/3/2011	98		695.21				
MW-C02	38 35 50.5	90 36 22.4	38.597361	-90.60622	9/20/2011	168		728.12				
MW-C03	38 35 50.3	90 36 18.3	38.597305	-90.605084	9/21/2011	121		722.47				
Notes:												
1. Water levels from Mundell (2010); reported as measured from ground surface on logs.												
2. Top-of-casing elevations for BMW wells based on the original three Bliss wells.												

Table 2 (cont.). Ellisville site well location and water-level information.															
Well ID	6/3/2011		7/6/2011		8/3/2011		9/2/2011		10/6/2011		10/31/2011		12/2/2011		
	SWL	ELEV	SWL	ELEV	SWL	ELEV	SWL	ELEV	SWL	ELEV	SWL	ELEV	SWL	ELEV	
BMW-01	36.10	615.53	36.17	615.46	36.50	615.13	36.84	614.79					36.97	614.66	
BMW-02	36.55	613.38	33.99	615.94	36.88	613.05	37.05	612.88					37.02	612.91	
BMW-03	30.70	607.45	31.05	607.10	31.25	606.90	31.58	606.57					31.97	606.18	
BMW-04	36.22	606.19	36.39	606.02	36.63	605.78	36.90	605.51					38.97	603.44	
BMW-05	32.71	604.50	32.74	604.47	32.90	604.31	33.03	604.18					33.03	604.18	
BMW-06	29.54	605.61	29.49	605.66	29.65	605.50	29.70	605.45					29.53	605.62	
MW-01	99.78	625.09	99.65	625.22	99.37	625.50	99.70	625.17			99.96	624.91	100.38	624.49	
MW-02	113.23	613.79	113.17	613.85	113.10	613.92	113.15	613.87			113.17	613.85	113.52	613.50	
MW-03	93.90	617.73	94.04	617.59	94.11	617.52	94.41	617.22			94.67	616.96	94.91	616.72	
MW-04	49.05	616.43	49.04	616.44	49.15	616.33	49.10	616.38			49.16	616.32	49.40	616.08	
MW-05	39.31	611.03	39.40	610.94	39.56	610.78	39.56	610.78			39.66	610.68	39.65	610.69	
MW-06	31.65	608.49	31.65	608.49	31.65	608.49	31.65	608.49			31.69	608.45	31.73	608.41	
MW-07	85.01	619.05	85.20	618.86	85.42	618.64	86.35	617.71			86.65	617.41	86.80	617.26	
MW-08									96.49	617.22	96.61	617.1	96.91	616.80	
MW-09									102.88	618.03	102.92	617.99	103.23	617.68	
MW-10									87.53	617.56	87.63	617.46	87.95	617.14	
MW-C01									78.00	617.21	78.12	617.09	78.28	616.93	
MW-C02									121.51	606.61	124.23	603.89	121.75	606.37	
MW-C03									101.16	621.31	101.19	621.28	101.58	620.89	



FIGURE 1
MONITORING WELL LOCATION MAP
ELLISVILLE SITE
WILDWOOD, MISSOURI
ST. LOUIS COUNTY

-  Monitoring Well
-  Strecker Forest Property
(Approximate Boundary)
-  Callahan Property
(Approximate Boundary)

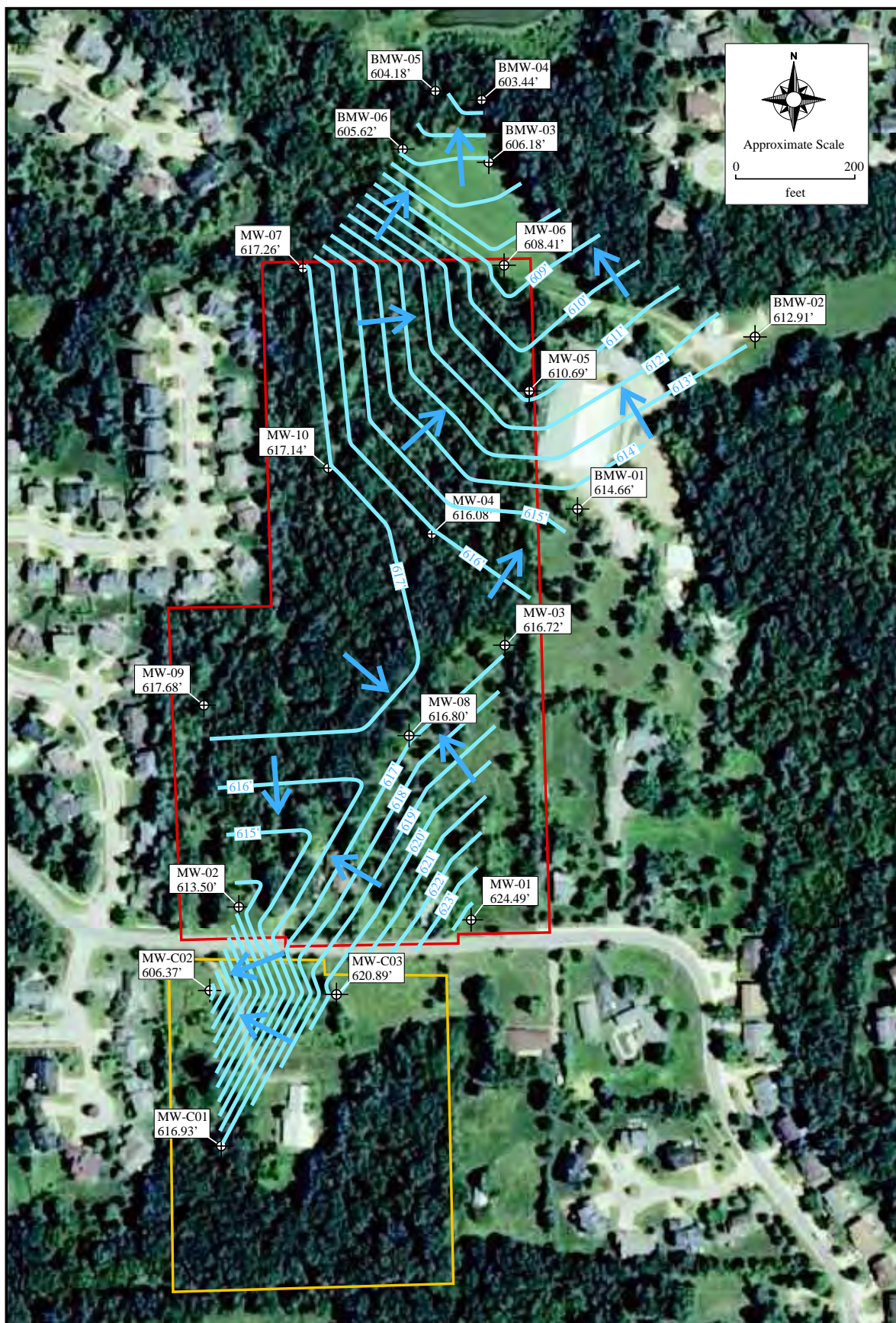


FIGURE 2
GROUNDWATER ELEVATION MAP
ELLISVILLE SITE
WILDWOOD, MISSOURI
ST. LOUIS COUNTY



Monitoring Well



Strecker Forest Property
(Approximate Boundary)



Callahan Property
(Approximate Boundary)



Potentiometric Surface
(December 2, 2011)



Groundwater Flow Direction
(December 2, 2011)

FIELD NOTES – STRECKER FOREST / CALLAHAN PROPERTIES WELL INSTALLATION

09/20/11

Began drilling MW-C02 on the Callahan Property using air rotary with a 6 inch bit and a combined hammer and stabilizer length of 10 feet. The bit started bouncing and hammering at a depth of 4 feet, but was just on a residual piece of rock. At 13 to 14 feet began bouncing and hammering on cherty residuum. Drilled boring to a total depth of 168 feet (see well log).

Constructed well with 60 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 110 feet of 2-inch schedule 80 riser (2 feet above the ground surface). The sand pack was constructed with 21.5 bags of sand (50 lb) to a depth of 103 feet below ground surface (5 feet above the top of the screen). Two bags of bentonite chips (50 lb bags) were placed above the sand pack and hydrated.

09/21/11

Checked the static water level in MW-C02 (from the top of the casing prior the installation of the above ground completion).

MW-C02

Time	Static Water Level (feet)
08:23	115.26
08:34	115.19
08:40	115.12
08:50	115.06

Began drilling MW-C03 on the Callahan Property using air rotary with a 6 inch bit and a combined hammer and stabilizer length of 10 feet. The bit started bouncing and hammering at a depth of 9 feet, but appeared to be just on a residual piece of rock. At 17 feet began bouncing and hammering on cherty residuum. Drilled boring to a total depth of 121 feet (see well log).

Constructed monitoring well MW-C03 with 20 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 100 feet of 2-inch schedule 80 riser (1 foot above the ground surface). The screen and riser were suspended to a total depth of 119 feet (one foot of riser above the ground surface). The sand pack was constructed with 8.25 bags of sand (50 lb) to a depth of 94 feet below ground surface (5 feet above the top of the screen). A 3 foot bentonite seal was placed above the sand pack using medium bentonite chips (hydrated every foot or poured through standing water). The annular seal was placed above the bentonite seal using medium bentonite chips (hydrated every foot or poured through standing water). A total of 20.5 bags of medium bentonite chips were used for the bentonite seal and annular seal. A static water level of 119.07 feet was measured in monitoring well MW-C03 at 15:54.

09/22/11

A static water level of 107.00 feet was measured in monitoring well MW-C03 at 07:42.

Returned top monitoring well MW-C02 and emplaced the annular seal using medium bentonite chips (hydrated every foot or poured through standing water). A total of 21.5 bags of medium bentonite chips (50 lb bags) were used for the bentonite seal and annular seal.

Began drilling MW-C01 on the Callahan Property using air rotary with a 6 inch bit and a combined hammer and stabilizer length of 10 feet. The bit started bouncing and hammering at a depth of 12 feet and a strong toluene type odor was present. Had a hard time keeping hammer operating so added water at residuum/bedrock interface to clean out the hole after cleaning the hammer out. Had to add a little water to hole at a depth of 50 to 70 feet to keep the dust down. Drilled boring to a total depth of 100 feet. There were a few gallons of water that blew out of the hole after waiting about 20 minutes.

Constructed well with 20 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 80 feet of 2-inch schedule 80 riser (2 foot above the ground surface). The screen and riser were suspended to a total depth of 98 feet (two foot of riser above the ground surface). The sand pack was constructed with 8 bags of sand (50 lb bags) to a depth of 73 feet below ground surface (5 feet above the top of the screen). A 3 foot bentonite seal was placed above the sand pack using medium bentonite chips (hydrated every foot or poured through standing water). The annular seal was placed above the bentonite seal using medium bentonite chips (hydrated every foot or poured through standing water). A total of 16 bags of medium bentonite chips were used for the bentonite seal and annular seal. A static water level of 73.85 feet was measured in monitoring well MW-C01 at 18:23. There was still an odor to the well at this time.

09/26/11

Brenna McDonald on-site to log wells.

Began drilling MW-08 on the Primm Property using air rotary with a 6 inch bit and a combined hammer and stabilizer length of 10 feet. Drilled boring to a total depth of 112 feet (see well log).

Constructed monitoring well MW-08 with 20 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 100 feet of 2-inch schedule 80 riser (cut off 3.5 feet above the ground surface).

The sand pack was constructed with 7 bags of sand (50 lb bags) to a depth of 85.5 feet below ground surface (6.5 feet above the top of the screen). A 3 foot bentonite seal was

placed above the sand pack using medium bentonite chips (hydrated every foot or poured through standing water). The annular seal was placed above the bentonite seal using medium bentonite chips (hydrated every foot or poured through standing water). A total of 20 bags of medium bentonite chips were used for the bentonite seal and annular seal.

09/27/11

Brenna McDonald on-site to log wells.

Began drilling MW-09 on the Primm Property using air rotary with a 6 inch bit and a combined hammer and stabilizer length of 10 feet. Drilled boring to a total depth of 119 feet (see well log). Went to lunch and had water in the hole when they got back.

Constructed monitoring well MW-09 with 20 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 100 feet of 2-inch schedule 80 riser (1 foot above the ground surface).

The sand pack was constructed with 6.5 bags of sand (50 lb bags) to a depth of 95 feet below ground surface (4 feet above the top of the screen). A 3 foot bentonite seal was placed above the sand pack using medium bentonite chips (hydrated every foot or poured through standing water). The annular seal was placed above the bentonite seal using medium bentonite chips (hydrated every foot or poured through standing water). A total of 23.5 bags of medium bentonite chips were used for the bentonite seal and annular seal.

09/28/11

Measured static water level in monitoring well MW-C01 at 77.19 feet below the top of casing (uncompleted well) at 08:03. Bailed 5 gallons of water from well with 3 foot stainless steel bailer. Re-measured static water level at 85.01 feet at 08:41 and 84.44 feet at 08:51. Put Grundfos pump in well with garden hose and tried to pump water. Pumped approximately ¼ gallon then it stopped pumping (pumped the hole dry filling the hose).

Began drilling MW-10 on the Primm Property using air rotary with a 6 inch bit and a combined hammer and stabilizer length of 10 feet. The bit started bouncing and hammering at a depth of 10 feet. Bit was getting hung up on a small ledge at approximately 25 feet (having a hard time lowering tools into hole with just the winch). Drilling dust went away at a depth of approximately 90 feet. Drilled boring to a total depth of 120 feet.

Constructed well with 20 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 100 feet of 2-inch schedule 80 riser. The screen and riser went down to a total depth of 116 feet (4 feet of riser above ground)(4 feet of sluff in the hole). The sand pack was constructed with 7.5 bags of sand (50 lb bags) to a depth of 91 feet below ground surface (5 feet above the top of the screen). A 3 foot bentonite seal was placed above the sand pack using medium bentonite chips (hydrated every foot or poured through standing water). The annular seal was

placed above the bentonite seal using medium bentonite chips (hydrated every foot or poured through standing water). A total of 22.5 bags of medium bentonite chips were used for the bentonite seal and annular seal.

09/29/11

Returned to MW-C01 location to drill replacement well using a temporary surface casing. Started drilling at 12:00 using an 8 inch bit and a combined hammer and stabilizer length of 15 feet. Green soil on stabilizer at a depth of 7 to 10 feet with strong odor. It is not known just how thick the contaminated layer was since the soil was smeared on the hammer and stabilizer. Repeatedly cleaned off the hammer and stabilizer to allow for air flow. Added a few gallons of water to help clean out the hole. Put on dust deflector and added first drill stem. Started hammering at a depth of 13 feet. Turned off water valve to insure that no more water could enter the hole, but had to turn it back on due to gumming up of the hammer. Started hammering better at a depth of 23 feet. Up and down the hole to clean it out (ribs on stabilizer getting clogged up). Hammering steady at 27 feet. Drilled to 30 feet and cleaned out the hole. Some water in hole during cleanout. At 13:35 pulled out of the hole to set the temporary casing. Added 3 bags of medium bentonite chips to the hole and hydrated (brought the hole up to 24 feet total depth). Set 30 feet of 6 inch schedule 40 PVC in the hole (6 feet above the ground) and waited 15 minutes for the bentonite to hydrate some. Used drill rig to push the casing down 5 feet into the bentonite (1 foot above ground). Added 2.5 bags of bentonite into the annular space between boring and casing and hydrated. Pushed the casing down the remaining one foot to ground level. Switched to 6 inch hammer and stabilizer and attempted to start drilling. The hammer got stuck in the casing and blew out the seal. Pulled the casing up 4 feet and added 2 more bags of medium bentonite chips to the bottom of the hole. Waited 15 minutes and pushed the casing down again. Waited additional 20 minutes and attempted to drill again, but the seal blew out again. Decided to install temporary casing with cement and allow to set.

09/30/11

Pulled out the temporary casing and went back down the hole with the 8 inch hammer and stabilizer to clean out the hole. Pulled back out of the hole and added ½ bag of bentonite chips and then 4 sacks of portland cement (94 lb bags) mixed with 6 gallons of water per bag. Put the 6 inch SCH 40 PVC temporary casing back down the hole at 09:30 and added 6 bags of medium chips to annular space between boring and casing (hydrated).

10/03/11

Returned to MW-C01 location and measured 26 feet to the bottom of the hole inside the casing. Put 6 inch hammer and stabilizer in the hole and started drilling. Drilling dust went away at a depth of approximately 69 feet. Drilled the hole to a depth of 85 feet and waited 15 minutes and then blew about ½ gallon of water out of the hole. Decided to take the hole another 10 feet deep after comparing the total depth of the well at that time.

to the water level in monitoring well MW-C02 (up the hill). Drilled the hole to a total depth of 98 feet.

Constructed monitoring well with 30 feet of 2 inch schedule 80 screen (with stainless steel centralizers at the bottom and top of the screen) and 70 feet of 2-inch schedule 80 riser (2 foot above the ground surface). The sand pack was constructed with 11 bags of sand (50 lb bags) to a depth of 63 feet below ground surface (5 feet above the top of the screen). A 3 foot bentonite seal was placed above the sand pack using medium bentonite chips (hydrated every foot or poured through standing water). The annular seal was placed above the bentonite seal using medium bentonite chips (hydrated every foot or poured through standing water) up to the bottom of the temporary casing. 6 bags of bentonite chips were used.

10/04/11

Measured static water level in the replacement monitoring well MW-C01 at 92.66 feet below the top of casing (uncompleted well) at 07:45 and slowly rising.

Pulled the temporary 6 inch PVC casing and added 6 more bags of medium bentonite chips (hydrated every foot or poured through standing water). A total of 18 bags of medium bentonite chips (including the 6 bags that were used in the annular space between the boring and temporary casing) were used for the bentonite seal and annular seal.

Finished the surface completions on monitoring wells MW-C01 (except for bolsters), MW-C02, MW-C03 and MW-08.

10/05/11

Attempted to pull the 2" screen and riser from the original MW-C01, but the riser broke off at the top joint (10 feet). Went to rolla to get extractor tool, tremmie pipe and powdered bentonite.

Returned to site and pulled a total of 80 feet of 2 inch riser from the original MW-C01. The screen broke off and would not pull due to the centralizers.

Put 1 inch PVC tremmie pipe down the hole to a depth of 70 feet (top of sand pack at 73 feet). Mixed 1 sack of bentonite powder with 25 gallons of water and pressure grouted the remaining hole with a Moyno pump.

10/06/11

Finished surface completions for MW-09 and MW-10.

Surveyed the top of casing of new wells to the top of casing of the nearest existing well and surveyed the 4 metal posts in the former pond area.

Station	Rod Location	Rod Reading (feet)	Elevation	
1	Primm TOC MW-02	4.22	*727.02	
1	Callahan TOC MW-C02 (GSP)	3.12	728.12	
2	Primm TOC MW-02	0.92	*727.02	
2	Callahan TOC MW-C03 (GSP)	5.47	722.47	
3	Callahan TOC MW-C02 (GSP)	1.58	728.12	
3	Leg 1	17.79	711.91	
4	Leg 1	0.89	711.91	
4	Callahan TOC MW-C01 (GSP)	17.59	695.21	
5	Top of Stake 1	7.26	714.78	
5	Top of Stake 2	6.70	715.34	
5	Top of Stake 3	6.37	715.67	
5	Top of Stake 4	6.37	715.67	
5	Primm TOC MW-09 (GSP)	1.13	720.91	
5	Leg 1	0.25	721.79	
6	Leg 1	5.76	721.79	
6	Primm TOC MW-02	0.53	*727.02	
7	Primm TOC MW-10 (GSP)	9.28	705.09	
7	Leg 1	13.58	700.79	
8	Leg 1	6.54	700.79	
8	Primm TOC MW-07	3.27	*704.06	
9	Primm TOC MW-03	8.29	*711.63	
9	Primm TOC MW-08 (GSP)	6.21	713.71	

*Previously reported top of casing elevation

Measured static water levels in new wells prior to attempting to develop the wells

Location	TOC elevation	SWL	GW Elevation	Time
Callahan MW-C01	695.21	78.00	617.21	14:17
Callahan MW-C02	728.12	121.51	606.61	09:48
Callahan MW-C03	722.47	101.16	621.31	13:52
Primm MW-08	713.71	96.49	617.22	14:26
Primm MW-09	720.91	102.88	618.03	14:33
Primm MW-10	705.09	87.53	617.56	11:41

Surged MW-C02 with a 3 foot stainless steel bailer and bailed 12 gallons of water from it.

Tried to surge MW-C03 but the 3 foot bailer became lodged in the bottom of the hole (fines in the well locked it up).

10/12/11

Arrived at Ellisville site 13:20 to develop monitoring wells.

Monitoring well MW-C02. Measured static water level at 124.19 feet below the top of casing at 13:30. Started pumping with Grundfos and ½ inch poly tubing. The pump controller shut off (over amps) several times. Pumped 5 gallons of water from the well by 15:22. Pumped another 5 gallons by 16:17 and another 2 gallons by 16:40. Measured the static water level at 141.72 feet below the top of the casing at 16:54 and 141.71 feet at 17:02.

Began bailing and bailed 5 gallons of water from the well by 09:43 and another 3 gallons of water by 09:55. Stopped bailing since lower bailer was only about ¼ full. Re-measured static water level at 109.76 feet below the top of casing at 09:58.

Moved to monitoring well MW-C03. Measured static water level at 100.67 feet below the top of casing at 17:09 and 112.80 feet from the top of casing down to the top of the stuck bailer.

10/13/11

Moved to monitoring well MW-C02. Measured static water level at 138.41 feet below the top of casing at 07:32.

Moved to monitoring well MW-08. Measured static water level at 96.12 feet below the top of casing at 07:46. Started pumping with Grundfos and ½ inch poly tubing at 08:00. Pumped 5 gallons of water from the well by 08:10. Pumped another 2 gallons by 08:12 and then ran out of water. Measured the static water level at 105.41 feet below the top of the casing at 08:37.

Moved to monitoring well MW-10. Measured static water level at 87.08 feet below the top of casing at 09:10. Started pumping with Grundfos and ½ inch poly tubing at 09:18. Pumped 5 gallons of water from the well by 09:26. Pumped another 5 gallons by 09:34, another 5 gallons by 09:44 and another 2 gallons by 09:50 and then ran out of water. Measured the static water level at 112.00 feet below the top of the casing.

Moved to monitoring well MW-09. Measured static water level at 102.40 feet below the top of casing. Started pumping with Grundfos and ½ inch poly tubing. Pumped a total of 10 gallons of water from the well then ran out of water. Measured the static water level at 115.45 feet below the top of the casing at 11:09 (after pumping).

Moved to monitoring well MW-C03. Measured static water level at 96.97 feet below the top of casing at 11:33. Dropped slug down the hole and surged up and down on a string. This loosened the stuck bailer for a moment (it went up and down a couple of feet), but then it locked up again. The slug started getting hung up on the bailer string, so was afraid to try again. Measured 113.5 feet to the top of the bailer from the top of casing.

Moved to monitoring well MW-C01. Measured static water level at 77.90 feet below the top of casing at 12:05. Started pumping with Grundfos and ½ inch poly tubing at 12:14. Pumped 5 gallons of water from the well by 12:24. Pumped another 5 gallons by 12:35 and then ran out of water. Measured the static water level at 93.51 feet below the top of the casing at 12:39.

Moved to monitoring well MW-C02. Measured static water level at 137.22 feet below the top of casing at 13:05.

Moved to monitoring well MW-08. Measured static water level at 97.38 feet below the top of casing at 13:12. Started pumping with Grundfos and ½ inch poly tubing at 13:45. Pumped 5 gallons of water from the well by 13:56. Pumped another ¼ gallon and then ran out of water. Measured the static water level at 104.65 feet below the top of the casing at 14:03.

Moved to monitoring well MW-10. Measured static water level at 87.18 feet below the top of casing at 14:19. Started pumping with Grundfos and ½ inch poly tubing at 14:37. Pumped 5 gallons of water from the well by 14:55. Pumped another 5 gallons by 15:16 and then another 5 gallons by 15:58. Measured the static water level at 103.15 feet below the top of the casing at 16:02.

Measured static water levels in wells

MW-09, static water level 103.09 feet at 16:29

MW-08, static water level 98.92 feet at 16:36

MW-C01, static water level 88.37 feet at 16:42

MW-C02, static water level 136.5 feet at 16:46

10/17/11

Arrived at Ellisville site 11:45

Got water from the Callahan residence (about 50 gallons) for cleaning purposes.

Monitoring well MW-C03 (3 foot stainless steel bailer stuck in the well). Measured the static water level at 101.08 feet below the top of casing. Measured 113 feet to the top of bailer from the top of casing. Put 110 feet of 1 inch tremmie pipe down the hole and pumped approximately 5 gallons of water to dislodge the bailer. The bailer wouldn't come free. Added another 10 feet of tremmie pipe and set it on top of the bailer and the bailer went down with little resistance (just the weight of the tremmie pipe). Applied

pressure to the bailer string slowly by winding it around a brush handle. The string stretched until it broke, but the bailer didn't move (recovered 68 feet of string). Measured 119.25 feet to top of bailer from the top of casing. Began developing well. Started pumping with the Grundfos with ½ inch poly tubing at 13:50. The pump controller kept shutting off (over amps), but pumped 5 gallons of water out of the well by 14:14 and another 5 gallons by 14:46.

Moved to monitoring well MW-C02. Measured the static water level at 126.21 feet below the top of casing at 15:12. Started pumping with Grundfos and ½ inch poly tubing at 16:10. The pump controller kept shutting off (over amps), so gave up on using Grundfos. Began using 2 disposable bailers (in-train on the same line) and bailed 5 gallons of water from the well by 16:48. Bailed another 5 gallon by 17:10, another 5 gallons by 17:30, another 5 gallons by 17:44 and another 3.5 gallons by 17:54. Measured the static water level at 165.80 feet below the top of the casing at 17:56.

10/18/11

Returned to monitoring well MW-C02. Measured static water level at 161.00 feet below the top of casing at 07:53. Bailed 4 gallons of water from well by 08:11. Re-measured static water level at 167.81 feet at 08:14

Moved to monitoring well MW-C03. Measured static water level at 101.43 feet below the top of casing at 08:47. Began bailing and bailed 5 gallons of water from the well by 09:02 and another 3 gallons of water by 09:13. Stopped bailing since lower bailer was only about ¼ full. Re-measured static water level at 115.79 feet below the top of casing at 09:16.

Moved to monitoring well MW-08. Measured static water level at 96.43 feet below the top of casing at 09:27. Began bailing and bailed 5 gallons of water from the well by 09:43 and another 3 gallons of water by 09:55. Stopped bailing since lower bailer was only about ¼ full. Re-measured static water level at 109.76 feet below the top of casing at 09:58.

Moved to monitoring well MW-09. Measured static water level at 102.71 feet below the top of casing at 10:09. Began bailing and bailed 5 gallons of water from the well by 10:25, another 5 gallons of water by 10:42 and another gallon of water by 10:47. Stopped bailing since lower bailer was only about ½ full.

Moved to monitoring well MW-10. Measured static water level at 87.37 feet below the top of casing at 11:02. Began bailing and bailed 5 gallons of water from the well by 11:17, another 5 gallons of water by 11:31, another 5 gallons of water by 11:51 and another 5 gallons of water by 12:11. Stopped bailing.

Moved to monitoring well MW-C01. Measured static water level at 77.97 feet below the top of casing at 12:58. Began bailing and bailed 5 gallons of water from the well by

13:12, another 5 gallons of water by 13:23 and another 4 gallons of water by 13:35. Re-measured static water level at 98.97 feet below the top of casing at 13:37.

Moved to monitoring well MW-C02. Measured static water level at 166.08 feet below the top of casing at 13:51. Began bailing and bailed 2 gallons of water from the well by 14:05.

Moved to monitoring well MW-C01. Measured static water level at 98.08 feet below the top of casing at 14:14.

Moved to monitoring well MW-C03. Measured static water level at 108.85 feet below the top of casing at 14:20. Began bailing and bailed 5 gallons of water from the well by 14:43 and another gallon of water by 14:48. GPS location coordinates: N 38° 35' 50.3", W 090° 36' 18.3"

Moved to monitoring well MW-08. Measured static water level at 98.36 feet below the top of casing at 15:00. Began bailing and bailed 5 gallons of water from the well by 15:16. Collected GPS location data N 38° 35' 55.2", W 090° 36' 17.2"

Moved to monitoring well MW-09. Measured static water level at 104.86 feet below the top of casing at 15:28. Collected GPS location data N 38° 35' 56.4", W 090° 36' 21.7"

Moved to monitoring well MW-10. Measured static water level at 87.57 feet below the top of casing at 15:37. Began bailing and bailed 4 gallons of water from the well by 15:50. Collected GPS location data N 38° 36' 00.4", W 090° 36' 18.9"

Moved to monitoring well MW-C02. Collected GPS location data N 38° 35' 50.5", W 090° 36' 22.4"

Moved to monitoring well MW-C01. Collected GPS location data N 38° 35' 47.4", W 090° 36' 22.5"

Ellisville Site – Wildwood, Missouri
Addendum to Field Notes, October 6, 2011

The field notes produced by Glen Young on October 6, 2011 contained top of casing survey data for the new monitoring wells (MW-C01, MW-C02, MW-C03, MW-08, MW-09 and MW-10) installed at the site. The survey tied the top of casing elevations of existing wells at the site to the top of casing elevations of the new wells and to the top of four stakes in the former pond area at the site. Unfortunately, the elevation data that was utilized as the top of casing elevation for the existing wells was actually the ground elevation for those wells taken from the well boring logs. This resulted in erroneous top of casing elevations for the wells reported in the field notes.

The following table contains the revised top of casing elevations for the new monitoring wells and the top of the four stakes at the site.

Location	Elevation
MW-C01 (Top of Casing)	695.21
MW-C02 (Top of Casing)	728.12
MW-C03 (Top of Casing)	722.47
MW-08 (Top of Casing)	713.71
MW-09 (Top of Casing)	720.91
MW-10 (Top of Casing)	705.09
Stake 1 (Top of Stake)	714.78
Stake 2 (Top of Stake)	715.34
Stake 3 (Top of Stake)	715.67
Stake 4 (Top of Stake)	715.67

The following page replaces the page found in the Field Notes from October 6, 2011.

Surveyed the top of casing of new wells to the top of casing of the nearest existing well and surveyed the 4 metal posts in the former pond area.

Station	Rod Location	Rod Reading (feet)	Elevation	
1	Primm TOC MW-02	4.22	*727.02	
1	Callahan TOC MW-02 (GSP)	3.12	728.12	
2	Primm TOC MW-02	0.92	*727.02	
2	Callahan TOC MW-03 (GSP)	5.47	722.47	
3	Callahan TOC MW-02 (GSP)	1.58	728.12	
3	Leg 1	17.79	711.91	
4	Leg 1	0.89	711.91	
4	Callahan TOC MW-01 (GSP)	17.59	695.21	
5	Top of Stake 1	7.26	714.78	
5	Top of Stake 2	6.70	715.34	
5	Top of Stake 3	6.37	715.67	
5	Top of Stake 4	6.37	715.67	
5	Primm TOC MW-09 (GSP)	1.13	720.91	
5	Leg 1	0.25	721.79	
6	Leg 1	5.76	721.79	
6	Primm TOC MW-02	0.53	*727.02	
7	Primm TOC MW-10 (GSP)	9.28	705.09	
7	Leg 1	13.58	700.79	
8	Leg 1	6.54	700.79	
8	Primm TOC MW-07	3.27	*704.06	
9	Primm TOC MW-03	8.29	*711.63	
9	Primm TOC MW-08 (GSP)	6.21	713.71	

*Previously reported top of casing elevation

Measured static water levels in new wells prior to attempting to develop the wells

Location	TOC elevation	SWL	GW Elevation	Time
Callahan MW-01	695.21	78.00	617.21	14:17
Callahan MW-02	728.12	121.51	606.61	09:48
Callahan MW-03	722.47	101.16	621.31	13:52
Primm MW-08	713.71	96.49	617.22	14:26
Primm MW-09	720.91	102.88	618.03	14:33
Primm MW-10	705.09	87.53	617.56	11:41



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-08**

TOTAL DEPTH: **112**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Primm Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Brenna McDonald**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-26-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 55.2 W 90 36 17.2**
SURFACE ELEVATION:
MEASURING PT ELEV: **713.71**

☒ Water level during drilling

☒ Water level in completed well 96.49

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0			Clay, silty				Concrete surface seal
5							
10			Residuum: chert and clay, reddish-brown to gray, angular (from drilling)				
15							
20							
25							
30							
35							
40							
45							
50			Cherty Limestone: light gray to buff; BURLINGTON-KEOKUK LIMESTONE				
55							
60			Cherty Limestone: brown; BURLINGTON-KEOKUK				
65							

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-08**

TOTAL DEPTH: **112**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Primm Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Brenna McDonald**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-26-2011**

DRILLING INFORMATION

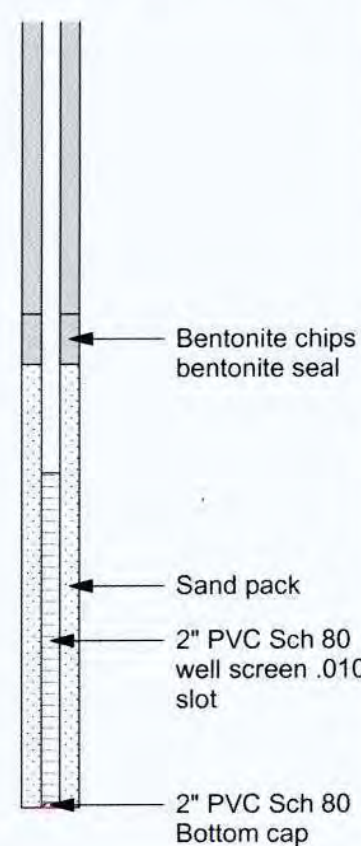
DRILLER: **Dan Nordwald**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 55.2 W 90 36 17.2**
SURFACE ELEVATION:
MEASURING PT ELEV: **713.71**

☞ Water level during drilling

☛ Water level in completed well 96.49

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
65			LIMESTONE				
70			Cherty Limestone: gray to buff; BURLINGTON-KEOKUK LIMESTONE				
75							
80							
85							
90							
95							
100			Cherty Limestone: gray to bluish-gray; BURLINGTON-KEOKUK LIMESTONE				
105			Cherty Limestone: light gray; BURLINGTON-KEOKUK LIMESTONE				
110							
115							
120							
125							



Bentonite chips
bentonite seal

Sand pack

2" PVC Sch 80 well screen .010 slot

2" PVC Sch 80 Bottom cap

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-09**

TOTAL DEPTH: **119**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Primm Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Brenna McDonald**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-27-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 56.4 W 90 36 21.7**
SURFACE ELEVATION:
MEASURING PT ELEV: **720.91**

☞ Water level during drilling

☛ Water level in completed well 102.88

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0			Clay, silty				Concrete surface seal
5							
10							
15			Residuum: chert and clay, reddish-brown to gray, angular (from drilling)				
20							
25							
30							
35							
40							
45							
50			Cherty Limestone: light gray to buff; BURLINGTON-KEOKUK LIMESTONE				
55							
60			Cherty Limestone: brown to tan; BURLINGTON-KEOKUK LIMESTONE				
65							

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-09**
TOTAL DEPTH: **119**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Primm Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Brenna McDonald**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-27-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 56.4 W 90 36 21.7**
SURFACE ELEVATION:
MEASURING PT ELEV: **720.91**

☞ Water level during drilling

☛ Water level in completed well 102.88

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
65							
70							
75							
80							
85							
90							
95							
100							
105							
110							
115							
120							

Cherty Limestone: light gray to buff; BURLINGTON-KEOKUK LIMESTONE

Cherty Limestone: gray to bluish-gray; BURLINGTON-KEOKUK LIMESTONE

Cherty Limestone: light gray to buff; BURLINGTON-KEOKUK LIMESTONE

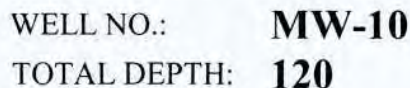
Bentonite chips bentonite seal

Sand pack

2" PVC Sch 80 well screen .010 slot

2" PVC Sch 80 Bottom cap

NOTES: Above ground completion. Measuring point at top of riser pipe.



DRILLING INFORMATION

DRILLER: **Dan Nordwald/Glen Young**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 36 00.4 W 90 36 18.9**
SURFACE ELEVATION:
MEASURING PT ELEV: **705.09**

Oct. 6, 2011

Page 1 of 2



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-10**

TOTAL DEPTH: **120**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Primm Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Glen Young**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-28-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald/Glen Young**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 36 00.4 W 90 36 18.9**
SURFACE ELEVATION:
MEASURING PT ELEV: **705.09**

☒ Water level during drilling

☒ Water level in completed well 87.53

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
65							
70							
75							
80							
85							
90							
95							
100							
105							
110							
115							
120							

Cherty Limestone: light gray; BURLINGTON-KEOKUK LIMESTONE

Cherty Limestone: light gray to buff; BURLINGTON-KEOKUK LIMESTONE

Cherty Limestone: gray to bluish-gray and buff (alternating); BURLINGTON-KEOKUK LIMESTONE

Cherty Limestone: bluish-gray; BURLINGTON-KEOKUK LIMESTONE

Bentonite chips bentonite seal

Sand pack

2" PVC Sch 80 well screen .010 slot

2" PVC Sch 80 Bottom cap

Borehole collapse

NOTES: Above ground completion. Measuring point at top of riser pipe.

Page 2 of 2



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-C01**
TOTAL DEPTH: **98**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Bliss-Ellisville	DRILLER:	Dan Nordwald/Glen Young
SITE LOCATION:	Callahan Property	RIG TYPE:	Simco 7000
CITY/COUNTY:	St. Louis County	METHOD OF DRILLING:	8" and 6" air hammer
LOGGED BY:	Glen Young	LATITUDE/LONGITUDE:	N 38 35 47.4 W 90 36 22.5
PROJECT MANAGER:	Don Van Dyke	SURFACE ELEVATION:	
DATES DRILLED:	09-29-2011 to 10-03-2011	MEASURING PT ELEV:	695.21

☞ Water level during drilling ☞ Water level in completed well 78.00 Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0			Clay, silty: fill material				Concrete surface seal
5							
10							
15			Residuum: chert and clay, reddish-brown to gray, angular (from drilling)				Bentonite chips annular seal
20							6" PVC Sch 40 temporary casing
25							
30			Cherty Limestone: light gray; BURLINGTON-KEOKUK LIMESTONE (minor amount of water in hole at a depth of 70 feet after adding drill rod)				Portland Cement
35							Bentonite chips
40			Cherty Limestone: light brown to buff; BURLINGTON-KEOKUK LIMESTONE				Bentonite chips annular seal
45							
50			Cherty Limestone: light gray; BURLINGTON-KEOKUK LIMESTONE (dust from drilling went away)				2" PVC Sch 80 riser pipe
55							

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-C01**

TOTAL DEPTH: **98**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Callahan Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Glen Young**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-29-2011 to 10-03-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald/Glen Young**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **8" and 6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 47.4 W 90 36 22.5**
SURFACE ELEVATION:
MEASURING PT ELEV: **695.21**

☞ Water level during drilling

☛ Water level in completed well 78.00

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
60							
65							
70							
75			Cherty Limestone: light brown to buff; BURLINGTON-KEOKUK LIMESTONE				
80							
85			Cherty Limestone: gray to bluish-gray; BURLINGTON-KEOKUK LIMESTONE				
90							
95							
100							

Bentonite chips bentonite seal

Sand pack

2" PVC Sch 80 well screen .010 slot

2" PVC Sch 80 bottom cap

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-C02**
TOTAL DEPTH: **168**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Callahan Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Glen Young**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-20-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald/Glen Young**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 50.5 W 90 36 22.4**
SURFACE ELEVATION:
MEASURING PT ELEV: **728.12**

☞ Water level during drilling

☛ Water level in completed well 121.51

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0			Clay, silty				Concrete surface seal
5							
10							
15			Residuum: chert and clay, reddish-brown to gray, angular (from drilling)				
20							
25							
30							
35							
40							
45							
50							Bentonite chips annular seal
55							2" PVC Sch 80 riser pipe
60							

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-C02**

TOTAL DEPTH: **168**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Callahan Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Glen Young**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-20-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald/Glen Young**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 50.5 W 90 36 22.4**
SURFACE ELEVATION:
MEASURING PT ELEV: **728.12**

☞ Water level during drilling

☛ Water level in completed well 121.51

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
65			Cherty Limestone: light gray; BURLINGTON-KEOKUK LIMESTONE (minor amount of water in hole at a depth of 70 feet after adding drill rod)				
70							
75							
80							
85							
90							
95							
100			Cherty Limestone: light brown to buff; BURLINGTON-KEOKUK LIMESTONE				
105							
110							
115							
120			Cherty Limestone: gray to bluish-gray; BURLINGTON-KEOKUK LIMESTONE				
125							

← Bentonite chips
bentonite seal

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-C02**
TOTAL DEPTH: **168**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Bliss-Ellisville	DRILLER:	Dan Nordwald/Glen Young
SITE LOCATION:	Callahan Property	RIG TYPE:	Simco 7000
CITY/COUNTY:	St. Louis County	METHOD OF DRILLING:	6" air hammer
LOGGED BY:	Glen Young	LATITUDE/LONGITUDE:	N 38 35 50.5 W 90 36 22.4
PROJECT MANAGER:	Don Van Dyke	SURFACE ELEVATION:	
DATES DRILLED:	09-20-2011	MEASURING PT ELEV:	728.12

☒ Water level during drilling

☒ Water level in completed well 121.51

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
130							
135							
140							
145							
150							
155							
160							
165							
170							
175							

130

135

140

145

150

155

160

165

170

175

Sand pack

2" PVC Sch 80 well screen .010 slot

2" PVC Sch 80 Bottom cap

NOTES: Above ground completion. Measuring point at top of riser pipe.



MISSOURI

Department of Natural Resources
Division of Geology and Land Survey

Well Construction Log

WELL NO.: **MW-C03**

TOTAL DEPTH: **121**

PROJECT INFORMATION

PROJECT: **Bliss-Ellisville**
SITE LOCATION: **Callahan Property**
CITY/COUNTY: **St. Louis County**
LOGGED BY: **Glen Young**
PROJECT MANAGER: **Don Van Dyke**
DATES DRILLED: **09-21-2011**

DRILLING INFORMATION

DRILLER: **Dan Nordwald/Glen Young**
RIG TYPE: **Simco 7000**
METHOD OF DRILLING: **6" air hammer**
LATITUDE/LONGITUDE: **N 38 35 50.3 W 90 36 18.3**
SURFACE ELEVATION:
MEASURING PT ELEV: **722.47**

☒ Water level during drilling

☒ Water level in completed well 101.16

Oct. 6, 2011

DEPTH	LITHOLOGIC SYMBOLS	USCS	LITHOLOGIC DESCRIPTION	SAMPLE	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0			Clay, silty				Concrete surface seal
5							
10							
15							
20			Residuum: chert and clay, reddish-brown to gray, angular (from drilling)				
25							
30							
35							
40							
45							
50							Bentonite chips annular seal
55							2" PVC Sch 80 riser pipe
60							
65							

NOTES: Above ground completion. Measuring point at top of riser pipe.

APPENDIX G

SOIL AND GROUNDWATER DATA EVALUATION




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY


REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

JUN 13 2012

MEMORANDUM

SUBJECT: Evaluation of Soil and Groundwater Data
Proposed Strecker Forest Development and Callahan Property
Wildwood, Missouri

FROM: Kelly Schumacher 
Toxicologist
ENSV/EAMB

THRU: Mike Beringer 
Branch Chief
ENSV/EAMB

TO: Gene Gunn
Branch Chief
SUPR/SPEB

As requested, we have evaluated the soil and groundwater samples collected from the Proposed Strecker Forest Development (Strecker Forest) and the Callahan property, in Wildwood, Missouri, from September 2011 through January 2012. The samples were analyzed for dioxins and furans, polychlorinated biphenyls, metals, semi-volatile organic compounds, and volatile organic compounds, and the analytical results are summarized in the attached tables. The purpose of this evaluation is to determine whether contaminants are present on the Strecker Forest and Callahan properties at concentrations that may exceed a level of concern for human health and to identify the compounds of interest and potentially impacted areas that warrant additional investigation and/or assessment of site risks. If you have any questions or need further assistance, please contact me at x7963.

**Evaluation of Soil and Groundwater Data
Proposed Strecker Forest Development and Callahan Property
Wildwood, Missouri**

1.0 INTRODUCTION

1.1 Background

The Proposed Strecker Forest Development (Strecker Forest) and the Callahan property are separate parcels located in Wildwood, Missouri. Both the Strecker Forest and Callahan parcels are surrounded by residential areas. Two former residences have been demolished on the Strecker Forest tract, and residential development is proposed for a portion of the 18.3 acre parcel. The Callahan parcel is currently unimproved, except for a pond and barn that have been present for more than 30 years. The community has questioned whether contaminants are present on the Strecker Forest and Callahan properties above a level of health concern for the residents currently living near the properties, as well as for potential future residents of the currently undeveloped Strecker Forest property. Contaminants of concern include 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) and other dioxins and furans. Concern has also been expressed that other contaminants, in addition to TCDD, may be present on the Strecker Forest and Callahan properties above a level of health concern.

1.2 Purpose and Approach of this Evaluation

The purpose of this evaluation is to determine whether contaminants are present on the Strecker Forest and Callahan properties at concentrations that may exceed a level of concern for human health and to identify the compounds of interest and potentially impacted areas that warrant additional investigation and/or assessment of site risks.

To evaluate long-term residential exposure, the concentrations detected in soil and groundwater samples collected from the properties were compared to levels based on either a 1×10^{-4} excess individual lifetime cancer risk (i.e., the upper end of the EPA's target cancer risk range as directed by the National Contingency Plan, USEPA, 1991b) or a noncancer hazard quotient of 1. For each contaminant, the lower (i.e., more stringent) of these was selected as the level of health concern, which is protective for potential risks from both cancer and noncancer health effects. For example, the level of concern for residential exposure to TCDD used in this evaluation was based on a noncancer hazard quotient of 1, and it also falls within the EPA's target cancer risk range.

An additional goal of this evaluation is to determine whether immediate measures are warranted to control potential exposure in the short-term, while further investigation and/or assessment of potential health risks is underway. To evaluate whether the levels of dioxins and furans pose a more immediate health threat to children and adolescents who may trespass onto the properties, the concentrations detected were also compared to a site-specific short-term level of concern derived for a youth trespasser.

2.0 SUMMARY OF DATA COLLECTED FOR THIS EVALUATION

2.1 Data Collection

In order to characterize the magnitude and extent of contamination and to evaluate potential health risks, the EPA conducted four sampling events between September 2011 and January 2012 on the Strecker Forest and Callahan properties. Groundwater and soil samples were collected and analyzed for the presence of TCDD and other dioxins and furans, polychlorinated biphenyls (PCBs), metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs).

To characterize surface soil, which is the uppermost layer of soil that residents (and trespassers) are expected to contact, an incremental-composite sampling (ICS) approach was used. For samples collected in accordance with the ICS protocol, the area to be sampled is first divided into decision units. A decision unit (DU) is defined in the Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) for dioxin sites as “the volume of soil over which a mean concentration value is obtained for comparison to a regulatory threshold value or other type of action level or for using in risk assessment calculations” (USEPA, 2011a). Using risk assessment terminology, the DU is equivalent to an exposure unit (EU), and the analytical result for a DU is equal to an exposure point concentration (EPC), which is the average contaminant concentration that an individual is exposed to over a defined period of time. The DUs can be further divided into subunits called sampling units (SUs). SU samples are archived for later analysis, in case additional detail is needed regarding contaminant distribution across a DU. From each SU in a given DU, many small samples (or increments) are collected and combined (or composited) into a single sample representative of the mean (or average) concentration for that SU. Then, a portion of the SU samples for each DU are composited into a single sample that represents the mean concentration of that DU. The advantage of ICS over traditional sampling methods is that a larger number of samples are collected, which provides a better estimate of the true mean concentration, and retained samples can be analyzed at a later date if more precise characterization of conditions is desired.

In accordance with the Expanded Site Review Workplan for the Proposed Strecker Forest Development, the portion of the Strecker Forest property proposed for private residences was divided into decision units (DUs) 1 through 23, ranging from 0.22 to 0.43 acres, in the area corresponding to preliminary plat drawings submitted to the city. The portion of Strecker Forest not planned for residential home sites has been designated as a “preservation area.” This preservation area was divided into DUs 24 through 39, with areas ranging from 0.96 to 1.17 acres. Seven additional DUs with areas ranging from approximately 0.18 to 0.26 acres were established conforming to site topography along the northeastern property line between the Strecker Forest and Bliss properties. On the Callahan property, the delineation of three DUs (Callahan DUs 1 through 3) was based on the known locations of a former drum burial site and two former drum staging areas that were constructed as part of a previous drum removal action. In accordance with the UFP-QAPP for dioxin sites, each of the 47 DUs was divided into four sampling units (SUs), labeled A, B, C, and D. Nine increments of surface soil (i.e., the top two inches of soil) were collected from each SU and homogenized to represent each SU sample. Next, for each DU, portions of each of the four SU samples were composited to represent the surface soil for the entire DU. Thus, each DU sample consisted of 36 increments. In addition, five surface soil grab samples (Grab Samples #1 through #5) were collected from the Callahan property.

To characterize subsurface soil, 33 soil borings were collected from the Strecker Forest property (SBs-01 through -24 and -31 through -39), and 11 soil borings were collected from the Callahan property (SBs-25 through -30 and -40, -41, -42, -44, and -46). Subsurface soil samples were collected from each soil boring in two foot intervals. The shallowest interval, 0 to 2 ft below ground surface, was always

analyzed for all designated analytes, with the exception of VOCs. The interval with the highest photoionization detector (PID) reading or most visible staining was also analyzed for all categories of analytes, including VOCs. If none of the intervals had elevated PID readings or visible staining, the deepest interval (10 to 12 feet bgs, or refusal) was analyzed.

To characterize groundwater, samples were collected from 10 monitoring wells on the Strecker Forest property (MWs -01 through -10) and from 3 monitoring wells on the Callahan property (MWs -C01, -C02, and -C03). Additional information regarding the construction and depth of the monitoring wells is found in Appendix F to the Final ESR Report.

2.2 Sample Results

Tables 1a, 1b, and 1c contain the concentrations of the individual dioxin and furan congeners, as well as the dioxin toxicity equivalence (TEQ) concentrations for the soil samples collected from the Strecker Forest property (Table 1a), the soil samples collected from the Callahan property (Table 1b), and the groundwater samples collected from both properties (Table 1c). The TEQ concentration accounts for the relative toxicity of the various dioxin-like compounds present in each sample using toxicity equivalence factors (TEFs) (USEPA, 2010), which are weighting factors reflecting the relative potency of each compound in terms of TCDD. Specifically, the concentration of each congener is multiplied by its TEF, and the adjusted concentrations of all the congeners in a given sample are then combined to give the TEQ concentration for that sample. The EPA Advanced Kaplan-Meier TEQ Calculator (KM Calculator), a macro-driven Excel spreadsheet, was used for the TEQ calculations. The KM Calculator was chosen to facilitate the mathematical computations involved with handling non-detect and estimated values in the calculation of representative means and standard deviations. The KM Calculator was developed by the EPA to support the calculation of TEQs and upper confidence limits for those TEQs, based on the mathematical techniques of Helsel (2005).

Tables 2a, 2b, 2c, and 2d contain the concentrations of polychlorinated biphenyls (PCBs), metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs), respectively, detected in soil samples collected during three of the four sampling events (ASR 5527 in September 2011, ASR 5618 in December 2011, and ASR 5651 in January 2012).

Tables 3a, 3b, 3c, and 3d contain the concentrations of PCBs, metals, SVOCs, and VOCs, respectively, detected in groundwater samples collected in November 2011 (ASR 5573).

2.3 Evaluation of Reporting Limits

A reporting limit is the lowest concentration that a laboratory can quantify during analysis of a compound. If a compound cannot be detected at or above the reporting limit, the laboratory indicates that it was undetected and provides the reporting limit. To determine whether the laboratory was capable of detecting concentrations of potential health concern, the reporting limits for all undetected compounds in the soil and groundwater samples were compared to the more health-protective level of concern for a residential scenario based on either a 1×10^{-4} excess individual lifetime cancer risk (i.e., the upper end of the EPA's target cancer risk range) or a noncancer hazard quotient of 1. Selecting the lower (i.e., more stringent) of these as a level of concern is protective for potential risks from both cancer and noncancer health effects. In addition, even though groundwater at the Strecker Forest and Callahan properties is not currently used as a source of drinking water, the groundwater reporting limits were compared to the EPA's Maximum Contaminant Levels (MCLs) when available, which are the highest allowable concentrations allowed in drinking water under the Safe Drinking Water Act.

2.3.1 PCBs

PCBs were not detected in any of the groundwater samples. The reporting limits for all of the PCB congeners, except Aroclor 1260, exceeded the MCL for total PCBs (0.5 µg/L). MCLs are not available for the individual PCB congeners. However, only the Aroclor 1221 and 1232 laboratory reporting limits exceeded the levels of concern based on the upper end of the EPA's target cancer risk range. The reporting limits for the other five PCBs in the groundwater samples and for all of the PCBs in the soil samples were less than the levels of concern. Therefore, even though the Aroclor 1221 and 1232 groundwater reporting limits were elevated, significant health risks from exposure to PCBs in groundwater at the Strecker Forest and Callahan properties (if used as a source of drinking water) are not expected.

2.3.2 Metals

Arsenic was not detected in any of the groundwater samples, but the reporting limit for each of these samples (25 µg/L) exceeded the level of concern based on the EPA's target cancer risk range, as well as the MCL (10 µg/L). The concentrations of arsenic detected in the soil samples did not exceed a level of concern, so significant health risks from exposure to arsenic in groundwater at the Strecker Forest and Callahan properties (if used as a source of drinking water) are not expected even though the arsenic groundwater reporting limits were elevated.

Total chromium was not detected in any of the groundwater samples. The reporting limit for each of these samples (15 µg/L) exceeded the level of concern based on the EPA's target cancer risk range for hexavalent chromium (3.1 µg/L), but they were less than the MCL for total chromium (100 µg/L). The tapwater level of concern used for total chromium in this evaluation is based on an extremely conservative (i.e., health-protective) assumption that all of the chromium is hexavalent chromium or chromium(VI), rather than a mixture that includes the less toxic trivalent chromium. In order to assess the actual proportions of hexavalent and trivalent chromium in the groundwater samples collected from the Strecker Forest and Callahan properties, nine archived soil samples collected from these properties were analyzed. Results from the nine archived soil samples submitted for chromium speciation did not detect the presence of hexavalent chromium (Table 4), which suggests that the percentage of hexavalent chromium is minimal (see Section 4.1.2).

Lead was not detected in any of the groundwater samples, but the reporting limit for each of these samples (50 µg/L) exceeded the tapwater level of concern (15 µg/L) and MCL (15 µg/L), which are conservative or health-protective because these levels assume that individuals consume contaminated water. Shallow groundwater at the Strecker Forest and Callahan properties is not currently used as a source of drinking water.

2.3.3 Semi-volatile Organic Compounds (SVOCs)

In a few of the soil samples, the reporting limits for benzo(a)pyrene, dibenz(a,h)anthracene, and n-nitroso-di-n-propylamine exceeded the levels of concern based on the EPA's target cancer risk range. The reporting limits for the remaining SVOCs in soil were below levels of concern. In addition, a minimum number of SVOCs were detected in a limited number of the soil samples, but none of the detected concentrations reached a level of concern.

In all of the groundwater samples, the reporting limits for 4,6-dinitro-2-methylphenol exceeded the tapwater level of concern based on a noncancer hazard quotient of 1, and the reporting limits for benzo(a)pyrene, bis(2-chloroethyl)ether, dibenz(a,h)anthracene, and n-nitroso-di-n-propylamine exceeded the levels of concern based on the EPA's target cancer risk range. The reporting limits for bis(2-ethylhexyl)phthalate exceeded the level of concern based on the EPA's target cancer risk range in two groundwater samples. The reporting limits for the remaining SVOCs in groundwater were below a level of concern. There were only two detections of SVOCs out of all the groundwater samples; of these, only the concentration of naphthalene in monitoring well 6 (36 µg/L) exceeded a level of concern.

2.3.4 Volatile Organic Compounds (VOCs)

In a few of the soil samples and all of the groundwater samples, the reporting limits for 1,2-dibromo-3-chloropropane; 1,2-dibromoethane; and vinyl chloride exceeded the levels of concern based on the EPA's target cancer risk range. Only a minimum number of VOCs were detected in a limited number of the soil samples, and none of the detected concentrations reached a level of concern. In groundwater, there were five detections of VOCs, all in the sample collected from monitoring well 6, and only the detection of naphthalene (reported as both a VOC and an SVOC) in this sample (110 µg/L) exceeded a level of concern.

3.0 EXPOSURE SCENARIOS

The EPA considers potential health risks under both current and potential future land use scenarios. Current receptors at the undeveloped Strecker Forest property and the uninhabited Callahan property include nearby off-site residents, as well as on-site trespassers or visitors. However, a preliminary plat has been submitted to develop the Strecker Forest property into a residential subdivision, in which case potential future receptors would also include children and adult residents.

The default assumption by the EPA is that on-site residents are directly exposed to soil, groundwater, and air at their homes via ingestion, dermal contact, and inhalation for 24 hours per day, for 350 days per year, for 30 years during both child- and adulthood. The default assumption for off-site residents is that they are exposed via inhalation to particulates (dust) and volatile substances transported from the site to their home by the wind, but they are not directly exposed to on-site soil and groundwater via ingestion or dermal contact. While there is no default trespasser scenario, Region 7 typically assumes that a youth trespasser is exposed to site soil and air via ingestion, dermal contact, and inhalation when they visit the site between 1 and 4 days per week, during the portion of the year that school is out.

Because potential exposure to contaminants for on-site residents is greater than for any other receptor, including off-site residents or trespassers, evaluating a residential scenario is the most health-protective approach. Therefore, in Section 4.1, levels of concern based on a future residential scenario were used to identify areas of concern for long-term on-site residential use, which is protective of current and potential future receptors at the Strecker Forest and Callahan properties.

Because areas of concern for potential long-term residential use are identified in Section 4.1, a site-specific short-term level of concern derived for youth trespassers is used in Section 4.2 to determine whether immediate measures are warranted to control potential exposure to children and adolescents who may trespass onto the properties in the short-term, while further investigation and/or assessment of potential health risks is underway.

4.0 DATA EVALUATION

4.1 Evaluation of all Data for Potential Areas of Concern for Future Residents

4.1.1 Residential Soil and Tapwater Levels of Concern

The residential soil and tapwater levels of concern used to evaluate the soil and groundwater data for the Strecker Forest and Callahan properties were derived from the EPA's Regional Screening Levels (RSLs). The RSLs are risk-based concentrations derived from standardized equations that combine default exposure assumptions with toxicity data, and they are considered by the Agency to be protective of human health (including sensitive groups) over a lifetime. The residential soil and tapwater levels of concern used for each compound in this evaluation were the lower (i.e., more health-protective) of the noncancer RSL based on a noncancer hazard quotient of 1, or the cancer RSL adjusted to reflect an individual excess lifetime cancer risk of 1×10^{-4} . A noncancer hazard quotient of 1 represents the "threshold" below which adverse noncarcinogenic health effects are not generally expected to occur to individuals under the given exposure conditions (USEPA, 1989). Adverse health effects occur only when physiologic protective mechanisms are overcome by exposure to doses or concentrations above the "threshold". The cancer risk level reflects the upper end of the EPA's target risk range of 1×10^{-6} to 1×10^{-4} , as directed in the National Contingency Plan (USEPA, 1991b). Thus, using the lower of these two levels of concern is protective for both potential noncancer and cancer health effects. For example, the level of concern for residential exposure to TCDD used in this evaluation was based on a noncancer hazard quotient of 1, and it also falls within the EPA's target cancer risk range.

In order to incorporate the latest toxicity data, as well as the best available methodology for assessing health risks, the EPA updates the RSLs biannually. In this evaluation, the May 2012 RSL tables were referenced; this latest version includes the EPA's new noncancer reference dose for dioxin. The noncancer and cancer residential soil RSLs are found at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/ressoil_sl_table_run_MAY2012.pdf. The noncancer and cancer tapwater RSLs are located at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/restap_sl_table_run_MAY2012.pdf. The equations and factors used to generate the RSLs are found in the User's Guide, located at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm. References are provided at the bottom of the User's Guide and include the following guidance documents: USEPA, 1989, 1991a, 2002, 2003, 2004, 2009, and 2010.

The RSLs are based on default assumptions; they do not account for site-specific information. Therefore, the levels of concern derived from the RSLs that were used in this evaluation may overestimate potential health risks. A more comprehensive risk assessment is planned to address these and other uncertainties, as discussed in Section 5.0.

4.1.2 Potential Areas of Concern for Future Residential Use

Some of the concentrations of dioxins and furans, total chromium, lead, and naphthalene that were detected in a portion of the soil and groundwater samples collected from the Strecker Forest and Callahan properties exceeded a level of concern for future long-term residential use, as discussed below. The concentrations of all of the other potential contaminants that were detected in all of the soil and groundwater samples were below a level of concern for a residential scenario.

The subsurface soil borings with dioxin TEQ concentrations that exceeded a level of concern for future residential use (50.5 parts per trillion, ppt) include SBs 14, 20, 21, 23, 37, and 38 in the northeastern corner of the Strecker Forest property, as well as SBs 36 and 39 on the Bliss property. The surface soil samples with dioxin TEQ concentrations greater than 50.5 ppt include DUs 19, 34, 35, 36, 39, 43, and 44 on the Strecker Forest property, as well as DUs 40, 41, and 42 on the Bliss property. The only groundwater sample with a dioxin TEQ concentration greater than the tapwater level of concern (11 parts per quadrillion, was monitoring well (MW) 6 (11.8 ppq), located in the northeastern corner of the Strecker Forest property. On the Callahan property, all of the dioxin TEQ concentrations found in the soil and groundwater samples were below a level of concern for residential use. With the exception of Decision Unit (DU) 19, all of the remaining surface, subsurface, and groundwater sample locations where dioxin TEQ concentrations exceeded a level of concern are in the extreme northeastern area of the Strecker Forest property or along the property boundary on the Bliss property. The northeastern portion of the Strecker Forest parcel is designated as a preservation area, and it is located away from the proposed residential lots in a remote, relatively inaccessible area.

In the northeastern corner of the Strecker Forest property and along the boundary on the Bliss property, the TEQ concentrations primarily consisted of TCDD (between 78.8 and 2040 ppt TCDD was detected in DUs 34, 35, 36, 39, 40, 41, 42, 43, and 44). In contrast, TCDD was not detected (reporting limit 0.753 ppt) in the DU 19 sample collected from the proposed residential area of Strecker Forest. Instead, the TEQ concentration at DU 19 was primarily due to other dioxin and furan congeners, such as 47,700 ppt 1,2,3,4,6,7,8,9-OCDD. Because TCDD was the specific congener that primarily contributes to the dioxin TEQ at the Bliss portion of the Ellisville Site, the data indicate that the dioxin TEQ concentration detected in DU 19 may originate from another source, such as trash burning.

On the Strecker Forest property, the concentrations of total chromium that were detected in subsurface soil borings 14, 20, 23, and 35 exceeded a level of concern for future residential land use. On the Callahan property, the concentrations of total chromium that were detected in soil borings 25, 26, and 27 and in grab samples 1 and 2 exceeded this level of concern. However, the level of concern used for total chromium in this evaluation is based on the extremely conservative assumption that all of the chromium is the hexavalent form, rather than a mixture including the less toxic trivalent form. To better identify the form of chromium found on the Strecker Forest and Callahan properties, nine of the archived soil samples were submitted for hexavalent chromium analysis. Six surface soils samples from Strecker Forest (DUs 27, 28, 30, 32, 34, and 39) and 3 surface soil samples from the Callahan property (Callahan DUs 1, 2, and 3) were selected for this analysis because they either represented the areas in which elevated chromium levels had been detected, or they were from the closest locations to nearby residences. Hexavalent chromium was not detected in any of the nine surface soil samples¹ (Table 4). Based on the laboratory reporting limits, the maximum percentage of hexavalent chromium in these particular samples ranged from 8 to 24%. If a similar composition is found in the soil across the Strecker Forest and Callahan properties, the concentrations of hexavalent chromium are not likely to exceed a level of concern in any area. This uncertainty could be reduced by collecting new subsurface soil samples from the areas in which elevated total chromium levels were detected and analyzing these particular samples for hexavalent chromium.

On the Callahan property, the concentrations of lead detected in three subsurface soil samples (408 mg/kg in SB-27, 431 mg/kg in SB-25 0-2 ft bgs, and 1040 mg/kg in SB-25 4-5 ft bgs) exceeded a level of concern (400 mg/kg). Residents are generally only assumed to contact the top layer of surface soil;

¹ Note that only the ICS surface soil samples were archived; none of the subsurface soil samples were archived, including any of the samples where chromium exceeded a level of concern.

they are not expected to contact subsurface soil. However, as discussed in Section 5, conservative levels of concern were used to evaluate both surface and subsurface soil samples collected from these properties. The concentrations of lead detected closer to the surface in SBs 25 and 27 slightly exceeded the level of concern and should be further evaluated.

Finally, in the northeastern corner of the Strecker Forest property, the concentrations of naphthalene detected in groundwater in MW-6 (36 µg/L and 110 µg/L) exceed a level of concern for residential use, assuming the groundwater is used as a source of tapwater. Shallow groundwater at the Strecker Forest and Callahan properties is not currently used as a source of tapwater. Naphthalene was limited to MW-6; it was not detected in any of the other monitoring wells.

4.2 Evaluation of Dioxin TEQs for Potential Areas of Concern for Current Youth Trespassers

The levels of dioxin and furan congeners that were detected in the northeastern corner of the Strecker Forest property exceed a level of concern for future residential use. Although this indicates that a level of concern would be exceeded if future residents live in houses constructed on this portion of the property, it does not indicate whether a level of concern is also exceeded for potential current receptors. To evaluate whether the levels of dioxins and furans pose a more immediate health threat to children and adolescents who may trespass onto the properties, the concentrations detected were also compared to a site-specific short-term level of concern derived for a youth trespasser. The goal for this portion of the evaluation is to determine whether immediate measures are warranted to protect current trespassers, while further investigation and/or assessment of potential health risks continues at those areas identified as exceeding a long-term residential level of concern.

Default RSLs or levels of concern do not exist for youth trespassers. Instead, site-specific exposure parameters were selected to derive a short-term level of concern for youth trespassers, consistent with how the EPA's Region 7 has assessed potential risks to youth trespassers and recreational visitors at other sites in the region. Because the goal for this portion of the evaluation is to determine whether immediate actions are warranted, a short-term exposure duration (ED) of 1 year was used to evaluate potential risks to youth trespassers. A body weight (BW) of 31.8 kg was used, which is the mean body weight of girls and boys between the ages of 6 and 11 years old (USEPA, 2011b). Assuming trespassers are younger, between the ages of 6 and 11 years, results in a more stringent (i.e., health-protective) level of concern compared to assuming the trespassers are older, such as between the ages of 11 and 17 years. A soil adherence factor (AF) for a child of 0.2 mg/cm² was used to evaluate dermal contact (USEPA, 2002). The exposed skin surface area (SA) was assumed to be 5,790 cm², which is the mean total surface area of the head, arms (including both forearms and upper arms), hands, and legs (including both lower and upper legs) of girls and boys between the ages of 6 and 11 years old (USEPA, 2011b). An exposure frequency of 96 days/year was used, which is a reasonable maximum exposure assumption that the youth visit the site 4 days per week over a period of 24 weeks, roughly when school is out, during May through September. The exposure time (ET) that youth trespassers were expected to visit the site was assumed to be 4 hours per visit. Finally, a soil ingestion rate (IR) of 100 mg/day was used, which is the default residential value for ages 6 years and up (USEPA, 1991a). The level of concern was based on a noncancer hazard quotient of 1 using the ATSDR intermediate-term Minimal Risk Level (MRL) of 2×10^{-8} mg/kg/day. This value was used as the subchronic noncancer reference dose.

The EPA's RSL calculator was used to derive the site-specific short-term level of concern for youth trespassers exposed to surface soil. This calculator can be found at: http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search. The output file including the site-specific exposure factors mentioned above and the resulting level of concern are attached as Appendix A. The short-term level of concern for youth

trespasser exposure to TCDD in surface soil at the Strecker Forest and Callahan properties, under the site-specific conditions described above, is 17,900 ppt or 17.9 parts per billion.

On the Strecker Forest property, none of the dioxin TEQ concentrations detected in the surface soil samples exceeded the site-specific short-term level of concern for a youth trespasser. This indicates that immediate actions are not warranted in the short-term to mitigate exposure, while further site assessment is on-going. Although the TEQ concentrations in the two subsurface soil samples collected from soil borings 14 and 37 were greater than 17,900 ppt, trespassers are not expected to be exposed to subsurface soil, and their visits are unlikely to be limited to these two areas 96 times in a year. Rather, trespassers would more likely contact contaminated surface soil over a much larger area throughout the summer.

5.0 UNCERTAINTIES

In order to be protective for all current and potential future land use scenarios at the Strecker Forest and Callahan properties, levels of health concern were derived for a residential scenario using default exposure parameters. Although the ICS approach used to collect the surface soil samples closely represents potential future exposure to surface soil based on the preliminary plat, residential use is not expected on certain areas. For instance, the northeastern corner of the Strecker Forest property was planned to remain undeveloped, as preservation land. In this case, potential levels of exposure would be much lower than under a residential scenario. Further assessment should more closely examine the intended future use of the property based on the results of this evaluation and the resulting risks to human health.

Residential soil levels of concern were also used to evaluate the subsurface soil samples. However, residents are only expected to contact the uppermost layer of surface soil. Receptors that contact subsurface soil are generally limited to construction or utility workers, although future work could bring subsurface soil to the surface. Additionally, as opposed to the ICS surface soil samples, the subsurface soil samples represent single locations. A receptor is more likely to be exposed to an average concentration across a given exposure area. A more comprehensive risk assessment could define exposure areas for the types of receptors who could contact subsurface soil and evaluate potential risks under these scenarios.

The groundwater samples were compared to a level of concern assuming tapwater use (i.e., as a source of drinking water). However, residents in this area typically are connected to a municipal water supply. Further investigation regarding use of groundwater at this site should be evaluated, particularly in the northeastern corner where elevated levels of naphthalene were detected.

6.0 CONCLUSIONS

The soil and groundwater samples collected from the Strecker Forest and Callahan properties were analyzed for the presence of dioxins and furans, PCBs, metals, SVOCs, and VOCs. A dioxin toxicity equivalence (TEQ) concentration was calculated for each sample using the EPA Advanced Kaplan-Meier TEQ Calculator, by accounting for the relative toxicity of the various dioxin-like compounds present using toxicity equivalence factors (TEFs). The concentrations detected in soil and groundwater samples collected from the properties were compared to the more health-protective (i.e., lower) level of concern for a future long-term residential scenario based on either a 1×10^{-4} excess individual lifetime cancer risk (i.e., the upper end of the EPA's target cancer risk range as directed by the National Contingency Plan, USEPA, 1991b) or a noncancer hazard quotient of 1. For each contaminant, the more stringent of these was selected as the level of health concern, which is protective for potential risks from

both cancer and noncancer health effects. For example, the level of concern for residential exposure to TCDD used in this evaluation was based on a noncancer hazard quotient of 1, and it also falls within the EPA's target cancer risk range. Basing the levels of concern on a future residential scenario is the most conservative approach, which is protective for current and potential future receptors, including off-site residents and trespassers. To evaluate whether immediate measures are warranted to control potential exposure to dioxins and furans by children and adolescents who may trespass onto the properties in the short-term, while further investigation and/or assessment of potential health risks is underway, the TEQ concentrations detected were also compared to a site-specific short-term level of concern derived for a youth trespasser.

Some of the concentrations of dioxins and furans, total chromium, lead, and naphthalene that were detected in a portion of the soil and groundwater samples collected from the Strecker Forest and Callahan properties exceeded a level of concern for future long-term residential use, as discussed below. The concentrations of all of the other potential contaminants that were detected in the soil and groundwater samples were all below a level of concern for a residential scenario; thus, they do not present a significant health risk to current or potential future receptors at the Strecker Forest or Callahan properties.

The dioxin TEQ concentrations exceeded a level of concern for future residential use in the northeastern corner of the Strecker Forest property (DUs 34, 35, 36, 39, 43, and 44; MW-6), the western portion of the Bliss property along the property line shared with Strecker Forest (DUs 40, 41, and 42), and in DU 19. However, immediate actions are not warranted while assessment is on-going at these areas, because none of the dioxin TEQ concentrations detected in the surface soil samples collected from the Strecker Forest or Callahan property exceed the site-specific short-term level of concern derived for children or adolescents who may trespass on these properties. With the exception of Decision Unit (DU) 19, all of the remaining surface, subsurface, and groundwater sample locations where dioxin TEQ concentrations exceeded a level of concern are in the extreme northeastern area of the Strecker Forest property, which is designated as preservation area, or along the property boundary on the Bliss property. Further assessment should more fully evaluate the intended future use of the property based on the results of this evaluation and the resulting risks to human health.

The dioxin TEQ concentrations were primarily due to TCDD in the northeastern corner of the Strecker Forest property and the western portion of the Bliss property (78.8 to 2040 ppt TCDD), but they were due to other congeners (e.g., 47,700 ppt OCDD) in the sample collected at DU 19. There are many man-made and natural sources of dioxin and furan contamination, and different sources typically have different congener compositions. TCDD was the primary contributor to dioxin TEQ at the Bliss portion of the Ellisville Site. The dioxin TEQ concentration detected in DU 19 appears to originate from a separate, more localized source, such as trash burning. Further assessment should examine the observed differences in congener composition identified in DU 19.

Although total chromium was detected in a few subsurface soil samples above a level of concern based on hexavalent chromium, results from nine surface soil samples suggest a low level of hexavalent chromium is present in the soil on the Strecker Forest and Callahan properties. Although hexavalent chromium was not detected in any of the surface soil samples, future assessment should also include analysis of subsurface soil samples for hexavalent chromium to reduce uncertainty regarding the amount of hexavalent chromium found in those samples with elevated total chromium levels.

There were three intervals of subsurface soil collected from the Callahan property (two samples from SB-25 and one from SB-27) where the concentrations of lead exceeded the level of concern for

residential use. Residents are generally only expected to contact the top layer of surface soil; they are not expected to contact subsurface soil. However, conservative levels of concern based on future residential exposure were used to evaluate both surface and subsurface soil samples. Here, a potential health concern from lead could exist if the subsurface soil in this portion of the Callahan property is brought to the surface. Further assessment should more closely examine future land use of the areas with elevated subsurface lead concentrations.

Finally, the concentration of naphthalene detected in monitoring well 6, which is located in the northeastern corner of the Strecker Forest property, exceeded a level of concern. Naphthalene was not detected in any of the groundwater samples collected from any of the other monitoring wells. Based on potential groundwater flow, elevated levels of naphthalene may also be found in the groundwater on the Bliss property. Future assessment should assess the levels of naphthalene in groundwater in consideration of ground water data from the Bliss property generated during past State investigations and evaluate potential risks from complete exposure pathways based on current or potential future land use.

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Tables

Appendix A

Appendix A. Short-Term 2,3,7,8-TCDD Level of Concern for Youth Trespasser.

Site-specific

Youth Trespasser Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.000001
SA _{recsc} (skin surface area - child) cm ² /day	0
SA _{recsa} (skin surface area - adult) cm ² /day	5790
SA ₀₋₂ (skin surface area - mutagenic) cm ² /day	0
SA ₂₋₆ (skin surface area - mutagenic) cm ² /day	0
SA ₆₋₁₆ (skin surface area - mutagenic) cm ² /day	5790
SA ₁₆₋₃₀ (skin surface area - mutagenic) cm ² /day	0
SA _{recsa} (skin surface area - adult) cm ² /day	5790
THQ (target hazard quotient) unitless	1
LT (lifetime - recreator) year	70
IFS _{rec-adj} (age-adjusted soil ingestion factor) mg/kg	301.887
DFS _{rec-adj} (age-adjusted soil dermal factor) mg/kg	3495.849
IFSM _{rec-adj} (mutagenic age-adjusted soil ingestion factor) mg/kg	905.66
DFSM _{rec-adj} (mutagenic age-adjusted soil dermal factor) mg/kg	10487.547
EF ₀₋₂ (exposure frequency) day/year	0
EF ₂₋₆ (exposure frequency) day/year	0
EF ₆₋₁₆ (exposure frequency) day/year	96
EF ₁₆₋₃₀ (exposure frequency) day/year	0
EF _{recsc} (exposure frequency - child) day/year	0
EF _{recsa} (exposure frequency - adult) day/year	96
EF _{recsa} (exposure frequency - adult) day/year	96
EF _{recs} (exposure frequency - recreator) day/year	96
IRS ₀₋₂ (soil intake rate) mg/day	200
IRS ₂₋₆ (soil intake rate) mg/day	200
IRS ₆₋₁₆ (soil intake rate) mg/day	100
IRS ₁₆₋₃₀ (soil intake rate) mg/day	100
IRS _{recsc} (soil intake rate - child) mg/day	0
IRS _{recsa} (soil intake rate - adult) mg/day	100
IRS _{recsa} (soil intake rate - adult) mg/day	100
ED ₀₋₂ (exposure duration) year	0
ED ₂₋₆ (exposure duration) year	0
ED ₆₋₁₆ (exposure duration) year	1
ED ₁₆₋₃₀ (exposure duration) year	0
ED _{recsc} (exposure duration - child) year	0
ED _{recsa} (exposure duration - adult) year	1
ED _{recsa} (exposure duration - adult) year	1
ED _{recs} (exposure duration - recreator) year	1
ET ₀₋₂ (exposure time) hr/day	0
ET ₂₋₆ (exposure time) hr/day	0
ET ₆₋₁₆ (exposure time) hr/day	4

Appendix A. Short-Term 2,3,7,8-TCDD Level of Concern for Youth Trespasser.

Site-specific	
Youth Trespasser Equation Inputs for Soil	
ET ₁₆₋₃₀ (exposure time) hr/day	0
ET _{recsc} (exposure time - child) hr/day	0
ET _{recsa} (exposure time - adult) hr/day	4
ET _{recsa} (exposure time - adult) hr/day	4
ET _{recs} (exposure time - recreator) hr/day	4
BW ₀₋₂ (body weight) kg	0
BW ₂₋₆ (body weight) kg	0
BW ₆₋₁₆ (body weight) kg	31.8
BW ₁₆₋₃₀ (body weight) kg	0
BW _{recsc} (body weight - child) kg	0
BW _{recsa} (body weight - adult) kg	31.8
BW _{recsa} (body weight - adult) kg	31.8
AF ₀₋₂ (skin adherence factor) mg/cm ²	0
AF ₂₋₆ (skin adherence factor) mg/cm ²	0
AF ₆₋₁₆ (skin adherence factor) mg/cm ²	0.2
AF ₁₆₋₃₀ (skin adherence factor) mg/cm ²	0
AF _{recsc} (skin adherence factor - child) mg/cm ²	0
AF _{recsa} (skin adherence factor - adult) mg/cm ²	0.2
AF _{recsa} (skin adherence factor - adult) mg/cm ²	0.2
City (Climate Zone) PEF Selection	Default
A _s (acres) PEF Selection	0.5
Q/C _{wp} (g/m ² -s per kg/m ³) PEF Selection	93.77
V (fraction of vegetative cover) unitless	0.5
U _m (mean annual wind speed) m/s	4.69
U _t (equivalent threshold value)	11.32
F(x) (function dependant on U _m /U _t) unitless	0.194
City (Climate Zone) VF Selection	Default
A _s (acres) VF Selection	0.5
Q/C _{wp} (g/m ² -s per kg/m ³) VF Selection	68.18
foc (fraction organic carbon in soil) g/g	0.006
ρ _b (dry soil bulk density) g/cm ³	1.5
ρ _s (soil particle density) g/cm ³	2.65
θ _w (water-filled soil porosity) L _{water} /L _{soil}	0.15
T (exposure interval) s	950000000

Output generated 24MAY2012:13:18:19

Site-specific

Youth Trespasser Risk-Based Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),

ca** (Where nc SL < 10 x ca SL),

max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat

Chemical	CAS Number	Ingestion SF (mg/kg-day) ⁻¹	SFO Ref	Inhalation Unit Risk (ug/m ³) ⁻¹	IUR Ref	Subchronic RfD (mg/kg-day)	SRfD Ref	Subchronic RfC (mg/m ³)	SRfC Ref	GIABS	ABS	Volatilization Factor (m ³ /kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m ³ /kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)
TCDD, 2,3,7,8-	1746-01-6	1.30E+05	C	3.80E+01	C	2.00E-08	A	-	-	1	0.03	-	-	1.36E+09	6.51E-04	1.87E-03

Output generated 24MAY2012:13:18:19

Appendix A. Short-Term 2,3,7,8-TCDD Level of Concern for Youth Trespasser.

Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
5.71E+01	4.83E-04	-	-	-	-	2.42E-02	6.96E-02	1.24E+03	1.79E-02	4.83E-04 ca**

APPENDIX H

TABLES

TABLE H-1
METALS IN SUBSURFACE SOIL
STRECKER FOREST SITE, WILDWODD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	Arsenic	Barium	Cadmium	Chromium	Chromium VI	Lead
5527-15	SB-01	0-2	9/13/11	9.6	114	4.8	20.4	NA	46.8
5527-16	SB-01	2-4	9/13/11	6.5	121	1.6	19.4	NA	28.8
5527-67	SB-02	0-2	9/15/11	11.4	155	ND	14.5	NA	34.1
5527-68	SB-02	2-4	9/15/11	9.5	156	ND	14.0	NA	21.6
5527-17	SB-03	0-2	9/13/11	6	131	ND	10.0	NA	17.1
5527-18	SB-03	6-8	9/13/11	5.5	159	ND	15.2	NA	10.3
5527-19	SB-04	0-2	9/13/11	11.1	124	ND	19.3	NA	20.9
5527-20	SB-04	2-4	9/13/11	6.7	188	ND	16.3	NA	11.1
5527-21	SB-05	0-2	9/13/11	11.0J	130	ND	20.6	NA	19.6J
5527-22	SB-05	4.5-6.5	9/13/11	8.8	133	ND	20.4	NA	14.2
5527-25	SB-06	0-2	9/13/11	11.5	102	ND	19.8	NA	20.6
5527-26	SB-06	3-5	9/13/11	7.8	149	ND	16.5	NA	12.0
5527-27	SB-07	0-2	9/13/11	6.5	99.2	ND	12.8	NA	15.4
5527-28	SB-07	9-11	9/13/11	12.5	98.7	ND	13.1	NA	14.8
5527-29	SB-08	0-2	9/13/11	12.6	118	ND	22.5	NA	18.3
5527-30	SB-08	3-5	9/13/11	7	137	ND	17.8	NA	12.0
5527-31	SB-09	0-2	9/13/11	5.7	149	ND	12.1	NA	17.1
5527-32	SB-10	0-1.5	9/13/11	6.1	136	ND	13.3	NA	14.6
5527-33	SB-11	0-1	9/13/11	4.5	163	ND	13.2	NA	9.2
5527-37	SB-12	0-2	9/13/11	7.2	119	ND	13.8	NA	17.9
5527-38	SB-12	8-10	9/13/11	7.5	134	ND	18.4	NA	19.6
5527-39	SB-13	0-2	9/13/11	6.0	123	ND	13.2	NA	16.8
5527-40	SB-13	3-5	9/13/11	5.7	153	ND	12.1	NA	14.4
5527-42	SB-14	0-2	9/14/11	7.2	130	29.0	40.7	NA	222
5527-43	SB-14	8-10	9/14/11	8.0	128J	3.7J	20.2J	NA	46.8J
5527-49	SB-15	0-2	9/14/11	6.8	150	ND	16.1	NA	12.1
5527-49 FD	SB-15 FD	0-2	9/14/11	6.3	153	ND	15.9	NA	12.1
5527-50	SB-15	6-8	9/14/11	5.3	147	ND	16.2	NA	10.3
5527-51	SB-16	0-2	9/14/11	10.0	322	ND	15.8	NA	16.1
5527-52	SB-16	3-5'	9/14/11	7.6	160	ND	19.8	NA	12.4
5527-53	SB-17	0-2	9/14/11	7.9	161	ND	16.5	NA	13.8
5527-54	SB-17	5.5-7.5	9/14/11	4.7	125	ND	14.5	NA	9.8
5527-55	SB-18	0-2	9/14/11	5.3	139	ND	10.6	NA	13.9
5527-56	SB-18	10-12	9/14/11	4.6	143	ND	14.3	NA	13.2
5527-34	SB-19	0-2	9/13/11	11	108	ND	20.8	NA	18.1
5527-34 FD	SB-19 FD	0-2	9/13/11	12.6	120	ND	21.8	NA	20.0
5527-35	SB-19	4-5	9/13/11	9.8	174	ND	17.4	NA	15.7
5527-57	SB-20	0-2	9/14/11	8.5	143	2.5	37.6	NA	203
5527-58	SB-20	6.5-8.5	9/14/11	10.7	153J	0.81J	22.2J	NA	75.5
5527-63	SB-21	0-2	9/15/11	5.9	104	ND	20.0	NA	70.9
5527-64	SB-21	4-6	9/15/11	5.3	132	ND	14.3	NA	49
5527-59	SB-22	0-2	9/14/11	6.1	134	ND	11.1	NA	17.3
5527-60	SB-22	5.5-7.5	9/14/11	6.7	188	ND	11.5	NA	15.6
5527-65	SB-23	0-2	9/15/11	6.6	107	ND	22.9	NA	68.4
5527-66	SB-23	4-6	9/15/11	5.3	107	0.90J	31.5	NA	139
5527-61	SB-24	0-2	9/14/11	6.2	124	ND	10.8	NA	18.2
5527-62	SB-24	10-12	9/14/11	4.5	122	ND	13.3	NA	13.8
5527-41	SB-31	0-1.5	9/14/11	5.4	88.6	ND	15.3	NA	13.4
5527-36	SB-32	0-2	9/13/11	5.3	138	ND	14.1	NA	9.9
5527-23	SB-33	0-2	9/13/11	5.8	203	ND	20.9	NA	34.7

TABLE H-1
METALS IN SUBSURFACE SOIL
STRECKER FOREST SITE, WILDWODD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	Arsenic	Barium	Cadmium	Chromium	Chromium VI	Lead
5527-24	SB-33	4-6	9/13/11	10.1	ND	ND	7.3	NA	15.3
5651-44	SB-36	0-2	1/23/12	NA	NA	NA	NA	NA	NA
5651-45	SB-36	2-4	1/23/12	NA	NA	NA	NA	NA	NA
5651-46	SB-37	1-2	1/23/12	NA	NA	NA	NA	NA	NA
5651-47	SB-37	2-4	1/23/12	NA	NA	NA	NA	NA	NA
5651-48	SB-38	0-2	1/23/12	NA	NA	NA	NA	NA	NA
5651-49	SB-38	2-4	1/23/12	NA	NA	NA	NA	NA	NA
5651-50	SB-39	0-2	1/23/12	NA	NA	NA	NA	NA	NA
5651-51	SB-39	2-4	1/23/12	NA	NA	NA	NA	NA	NA

Notes:

All results are in parts per million

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

J = Estimated Result. Result is less than the reporting limit.

NA = Was not analyzed for.

ND = Analyte was not detected above specified detection limit.

Q = Quantitative Interference

S = Spike Recovery outside recovery limits

TABLE H-2
VOLATILE ORGANIC COMPOUNDS AND SEMI-VOLATILE ORGANIC COMPOUNDS IN SUBSURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	Acetone	Benzo(a)anthracene	Benzo(b)fluoranthene	Bis-(2-ethylhexyl)phthalate	Biphenyl	Benzo(a)pyrene	2-Butanone (Methyl Ethyl Ketone)	Chrysene	2,4-Dimethylphenol	Ethylbenzene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isophorone	Isopropylbenzene	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol	Napthalene	Phenanthrene	Phenol	Pyrene	Xylenes
5527-65	SB-23	0-2	9/15/11	ND	ND	ND	0.52J	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	0.28	ND	NA
5527-66	SB-23	4-6	9/15/11	ND	ND	ND	16.0	13.0	ND	ND	ND	2.8	8.5J	ND	ND	ND	0.69	ND	2.0	1.4	1.1	4.5	ND	1.4J	ND	5.0J
5527-61	SB-24	0-2	9/14/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-62	SB-24	10-12	9/14/11	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5527-41	SB-31	0-1.5	9/14/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-36	SB-32	0-2	9/13/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-23	SB-33	0-2	9/13/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-24	SB-33	4-6	9/13/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5651-44	SB-36	0-2	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-45	SB-36	2-4	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-46	SB-37	1-2	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-47	SB-37	2-4	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-48	SB-38	0-2	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-49	SB-38	2-4	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-50	SB-39	0-2	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-51	SB-39	2-4	1/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All results are in parts per million
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
J = Estimated Result. Result is less than the reporting limit.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
S = Spike Recovery outside recovery limits

TABLE H-3
PCBs AND DIOXIN RELATED COMPOUNDS IN SUBSURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	PCBs (arochlor 1248)	PCBs (arochlor 1260)	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafulan)	2,3,4,7,8-PeCDF (pentafulan)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafulan)	2,3,4,6,7,8-HxCDF (hexafulan)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafulan)	1,2,3,4,7,8,9-HpCDF (Heptafulan)	1,2,3,4,6,7,8,9-OCDF (Octafulan)	TEQ
5527-15	SB-01	0-2	9/13/11	ND	0.059	0.312U	0.432J	0.737J	1.73J	1.59J	75.8	7720E	0.907J	0.571J	1.90J	1.86JQ	1.35J	1.60J	0.594J	9.53	1.33J	16.1	5.3
5527-16	SB-01	2-4	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-67	SB-02	0-2	9/15/11	0.052	0.09	0.328U	0.516J	1.17J	1.18J	1.69J	82.4	5930E	0.318J	0.328U	0.211U	0.297U	0.266U	0.313U	0.281U	1.17	0.35U	2.37J	3.6
5527-68	SB-02	2-4	9/15/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-17	SB-03	0-2	9/13/11	ND	ND	0.168U	0.250J	0.643U	0.641U	1.12J	42.2	3130	0.313J	0.131U	0.136U	0.211U	0.152U	0.176U	0.254U	0.357J	0.471U	0.869U	1.8
5527-18	SB-03	6-8	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-19	SB-04	0-2	9/13/11	ND	ND	0.124U	0.271U	0.613J	0.895J	1.32J	159	23400E	0.202J	0.101U	0.107U	0.387U	0.198U	0.188U	0.269U	0.515J	0.307U	0.735J	9.0
5527-20	SB-04	2-4	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-21	SB-05	0-2	9/13/11	ND	ND	0.147U	0.193U	0.419U	0.688J	0.835J	71.9	13300E	0.187J	0.122U	0.126U	0.163U	0.159U	0.184U	0.27U	0.631J	0.349U	0.780J	4.9
5527-22	SB-05	4.5-6.5	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-25	SB-06	0-2	9/13/11	ND	ND	0.111U	0.204U	0.637J	0.824J	1.15J	133	20000E	0.170J	0.0781U	0.0849U	0.349U	0.147U	0.151U	0.21U	0.216J	0.219U	0.884U	7.7
5527-26	SB-06	3-5	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-27	SB-07	0-2	9/13/11	ND	ND	0.163U	0.3U	0.607J	0.744J	0.938U	71.1	6340E	0.23U	0.177U	0.185U	0.372U	0.183U	0.18U	0.27U	0.659J	0.476U	0.909U	2.8
5527-28	SB-07	9-11	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-29	SB-08	0-2	9/13/11	ND	ND	0.105U	0.161U	0.502J	0.733J	0.923J	156	25100E	0.174J	0.0727U	0.074U	0.149U	0.0879U	0.101U	0.147U	0.201J	0.216U	0.578U	9.4
5527-30	SB-08	3-5	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-31	SB-09	0-2	9/13/11	ND	ND	0.445J	0.289J	0.481U	0.849J	0.760J	37.8	3040	0.214J	0.131U	0.139U	0.346U	0.153U	0.151U	0.2U	0.801J	0.333U	0.995J	2.2
5527-32	SB-10	0-1.5	9/13/11	ND	ND	0.188J	0.238U	0.768J	0.985J	0.990J	56.7	4050E	0.228U	0.142U	0.133U	0.366U	0.261U	0.284U	0.431U	0.538U	0.481U	0.806J	2.3
5527-33	SB-11	0-1	9/13/11	ND	ND	0.0982U	0.167U	0.340J	0.316U	0.407J	39.6	3310	0.132U	0.0675U	0.0719U	0.149U	0.0881U	0.0875U	0.132U	0.189J	0.226U	0.571U	1.5
5527-37	SB-12	0-2	9/13/11	ND	ND	0.352J	0.228U	0.693U	0.747J	0.894U	45.7	3220	0.25U	0.126U	0.138U	0.252U	0.197U	0.232U	0.36U	0.956J	0.501U	1.40J	1.9
5527-38	SB-12	8-10	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-39	SB-13	0-2	9/13/11	ND	ND	0.5351J	0.399J	0.780J	4.34J	2.51J	365	5210E	0.549J	0.349J	0.866J	1.20J	0.555J	0.563J	0.501J	6.35	0.435J	9.28J	7.6
5527-40	SB-13	3-5	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-42	SB-14	0-2	9/14/11	ND	1.4	18200	19U	34.8U	82.4U	30.2U	810	9050	133	13U	14.9U	15.4J	16.8U	16.2U	19.7U	196U	19.5U	441J	18234
5527-43	SB-14	8-10	9/14/11	ND	0.075	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-49	SB-15	0-2	9/14/11	ND	ND	0.506J	0.571U	1.29J	1.70J	2.37J	95.2	5760E	0.367J	0.295U	0.279U	0.282J	0.318J	0.243U	0.195U	2.75J	0.321U	5.17J	4.0
5527-49 FD	SB-15 FD	0-2	9/14/11	ND	ND	1.64	0.428J	0.540J	0.465J	0.885J	113	9290E	0.271J	0.00507U	0.0315U	0.0123U	0.0117U	0.0121U	0.0154U	0.0017U	0.00207U	0.0000831U	6.2
5527-50	SB-15	6-8	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-51	SB-16	0-2	9/14/11	ND	ND	0.50J	0.262U	0.619U	0.6U	0.959J	67.3	4810E	0.247J	0.169U	0.0988U	0.131U	0.13U	0.144U	0.181U	0.145U	0.224U	0.284U	2.8
5527-52	SB-16	3-5'	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-53	SB-17	0-2	9/14/11	ND	ND	1.25	0.282U	0.553U	0.732J	1.12J	128	17800J	0.228J	0.208U	0.124U	0.183U	0.179U	0.184U	0.226U	1.62J	0.249U	3.64J	8.2
5527-54	SB-17	5.5-7.5	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-55	SB-18	0-2	9/14/11	ND	ND	1.27	1.68J	5.90	14.0	13.3	431	5080E	0.314J	0.347U	0.280J	1.54J	1.57J	2.89J	0.504U	102	5.36	319	14.0
5527-56	SB-18	10-12	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-34	SB-19	0-2	9/13/11	ND	ND	0.0923J	0.161U	0.777J	0.771J	1.19J	211	32700E	0.177J	0.0846U	0.0982	0.143U	0.101U	0.121U	0.208U	0.269J	0.298U	0.823U	12.3
5527-34 FD	SB-19 FD	0-2	9/13/11	ND	ND	0.151J	0.279J	0.785J	0.759J	1.24J	203	37400J	0.158J	0.205J	0.200J	0.201J	0.168J	0.149J	0.207U	0.45U	0.384U	1.16U	14.1
5527-35	SB-19	4-5	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-57	SB-20	0-2	9/14/11	ND	0.37	1720	1.84U	11.1J	13.1J	4.89U	312	5840	13.7	3.76U	3.61J	5.34J	4.0J	3.73J	2.98U	56.0	4.54J	110	1733
5527-58	SB-20	6.5-8.5	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-63	SB-21	0-2	9/15/11	ND	0.1	533	0.736U	3.49J	7.49J	2.81J	161	5110	3.44J	1.67U	1.51J	2.33J	2.0J	1.65J	1.48U	21.8J	2.06U	30.9J	539

TABLE H-3
PCBs AND DIOXIN RELATED COMPOUNDS IN SUBSURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	PCBs (arochlor 1248)	PCBs (arochlor 1260)	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafulan)	2,3,4,7,8-PeCDF (pentafulan)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafulan)	2,3,4,6,7,8-HxCDF (hexafulan)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafulan)	1,2,3,4,7,8,9-HpCDF (Heptafulan)	1,2,3,4,6,7,8,9-OCDF (Octafulan)	TEQ
5527-64	SB-21	4-6	9/15/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
5527-59	SB-22	0-2	9/14/11	ND	ND	2.63	0.271U	0.683J	0.778U	1.10J	44.0	2150	0.273J	0.297U	0.185U	0.215U	0.215U	0.232U	0.263U	0.823J	0.299U	1.69J	4.0
5527-60	SB-22	5.5-7.5	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
5527-65	SB-23	0-2	9/15/11	0.15	ND	559	0.753U	2.95J	5.10J	2.23J	120	5060	2.71J	1.39U	0.9U	1.64J	0.885U	1.06J	1.1U	19.8J	1.71U	24.3J	564
5527-66	SB-23	4-6	9/15/11	ND	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
5527-61	SB-24	0-2	9/14/11	ND	ND	2.10	0.268U	0.75U	0.723U	1.03J	55.4	3290	0.463J	0.3U	0.285J	0.252U	0.252U	0.258U	0.287U	1.56J	0.507U	2.06J	4.0
5527-62	SB-24	10-12	9/14/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
5527-41	SB-31	0-1.5	9/14/11	ND	ND	0.216J	0.15U	0.486J	0.551J	0.682U	32.8	2410	0.184J	0.118U	0.147U	0.168U	0.129U	0.164U	0.281U	0.943J	0.684U	0.60J	1.4
5527-36	SB-32	0-2	9/13/11	ND	ND	0.119U	0.261U	0.325U	0.351J	0.514J	36.7	3890	0.153J	0.111U	0.122U	0.208U	0.169U	0.18U	0.284U	0.227J	0.286U	0.631U	1.7
5527-23	SB-33	0-2	9/13/11	ND	ND	0.123U	0.229U	0.359U	0.495J	0.519J	29.6	2320	0.184U	0.141U	0.156U	0.233U	0.117U	0.127U	0.189U	0.410J	0.315U	0.554U	1.1
5527-24	SB-33	4-6	9/13/11	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
5651-44	SB-36	0-2	1/23/12	NA	NA	484	1.54J	3.42J	17.4	7.93J	431	4570	4.99	1.04J	2.94J	13.8	5.69J	8.05J	2.62J	109	9.61J	200	500
5651-45	SB-36	2-4	1/23/12	NA	NA	2.81	0.191U	0.359U	0.363U	0.373U	16.2	902	0.323U	0.19U	0.202U	0.178J	0.154U	0.175U	0.262U	0.487J	0.349U	0.819U	3.3
5651-46	SB-37	1-2	1/23/12	NA	NA	26600	13.9U	20.9U	241J	48.8J	1560	8850	214	11.4U	22.8J	13.3U	23.4U	28.0J	25.4U	314J	23.9U	530J	26684
5651-47	SB-37	2-4	1/23/12	NA	NA	141	0.305J	0.834J	1.66J	1.20J	57.0	3130	1.67	0.253U	0.253U	0.16U	0.157U	0.285J	0.255U	2.75J	0.599U	4.73J	143
5651-48	SB-38	0-2	1/23/12	NA	NA	93.9	0.297U	0.809J	1.59J	1.46J	53.7	2760	1.06	0.163U	0.169J	0.240J	0.146J	0.217J	0.201U	2.35J	0.381U	4.29J	96
5651-49	SB-38	2-4	1/23/12	NA	NA	0.641J	0.187U	0.264U	0.26U	0.302J	15.3	708	0.242J	0.123U	0.122U	0.112U	0.104U	0.11U	0.165U	0.131U	0.227U	0.776U	1.1
5651-50	SB-39	0-2	1/23/12	NA	NA	118	0.776U	1.46J	3.87J	2.82J	165	11400E	1.96	0.427J	0.868J	1.85J	0.697J	0.963J	0.287U	20.1	1.81J	73.6	125
5651-51	SB-39	2-4	1/23/12	NA	NA	18.3	0.396U	0.700J	1.55J	1.42J	66.0	2780	0.708U	0.167U	0.294J	0.341J	0.208J	0.337J	0.241U	6.28	0.429J	28.9	21

Notes:
Dioxin Results in parts per trillion
All results except dioxin are in parts per million
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
J = Estimated Result. Result is less than the reporting limit.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
RSL = Regional Screening Level
S = Spike Recovery outside recovery limits

TABLE H-4
METALS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (inches below ground surface)	Date	Arsenic	Barium	Cadmium	Chromium	Chromium VI	Lead
5527-44	DU-1	0-2	9/13/11	5.5	111	ND	12.3	NA	81.7
5527-45	DU-2	0-2	9/13/11	6.9	101	ND	10.0	NA	53.8
5527-46	DU-3	0-2	9/13/11	6.5	136	ND	9.9	NA	30.4
5527-47	DU-4	0-2	9/13/11	6.6	117	ND	9.7	NA	24.6
5527-48	DU-5	0-2	9/13/11	7.2	107	ND	11.8	NA	23.8
5527-73	DU-6	0-2	9/14/11	6.5	99.6	ND	13.4	NA	26.4
5527-74	DU-7	0-2	9/15/11	7.2	124	ND	13.1	NA	24.4
5527-75	DU-8	0-2	9/15/11	5.0	119	ND	9.5	NA	22.0
5527-76	DU-9	0-2	9/15/11	5.6	122	ND	9.5	NA	25.3
5527-77	DU-10	0-2	9/15/11	5.7	140	ND	10.0	NA	25.7
5527-81	DU-11	0-2	9/16/11	7.0	127	ND	12.8	NA	37.5
5527-82	DU-12	0-2	9/16/11	8.9	139	ND	13.7	NA	51.3
5527-83	DU-13	0-2	9/16/11	8.2	130	ND	12.6	NA	42.8
5527-84	DU-14	0-2	9/20/11	9.0	136	ND	17.1	NA	54.4
5527-84FD	DU-14 FD #1	0-2	9/20/11	8.6	126	ND	13.7	NA	48.3
5527-85	DU-14 FD #2	0-2	9/20/11	9.0	140	ND	15.9	NA	53.3
5527-86	DU-15	0-2	9/20/11	7.7	126	ND	14.0	NA	31.3
5527-87	DU-16	0-2	9/20/11	7.8	123	ND	12.5	NA	28.6
5527-88	DU-17	0-2	9/20/11	8.7	136	ND	16.1	NA	22.2
5527-89	DU-18	0-2	9/20/11	7.8	126	ND	13.6	NA	31.7
5527-90	DU-19	0-2	9/20/11	6.0	121	ND	12.2	NA	25.5
5527-91	DU-20	0-2	9/20/11	7.9	122	ND	14.8	NA	23.7
5527-91FD	DU-20 FD #1	0-2	9/20/11	8.4	122	ND	14.7	NA	24.8
5527-92	DU-20 FD#2	0-2	9/20/11	8.5	121	ND	15.0	NA	26.0
5527-78	DU-21	0-2	9/14/11	9.2	106	ND	15.1	NA	26.8
5527-79	DU-22	0-2	9/14/11	6.8	110	ND	13.6	NA	35.9
5527-80	DU-23	0-2	9/14/11	7.6	231	ND	13.6	NA	165
5527-98	DU-24	0-2	9/20/11	6.7	114	ND	12.2	NA	21.8
5527-93	DU-25	0-2	9/20/11	5.8	142	ND	12.8	NA	25.3
5527-94	DU-26	0-2	9/20/11	6.8	152	ND	13.5	NA	21.6
5527-95	DU-27	0-2	9/20/11	5.5	110	ND	11.1/16.8	<2.59	18.4
5527-96	DU-28	0-2	9/20/11	7.5	136	ND	14.6/16.7	<2.695	27.0
5527-97	DU-29	0-2	9/20/11	6.3	133	ND	12.2	NA	23.8
5527-99	DU-30	0-2	9/21/11	6.8	112	ND	10.1/10.4	<2.54	31.0
5527-100	DU-31	0-2	9/21/11	7.8	212	ND	13.1	NA	26.2
5527-101	DU-32	0-2	9/21/11	7.8	118	ND	14.8/14.7	<2.55	37.5
5527-102	DU-33	0-2	9/21/11	4.0	107	ND	8.7	NA	14.5
5527-103	DU-34	0-2	9/21/11	6.5	138	5.1	19.2/26.1	<2.57	61.0
5527-104	DU-35	0-2	9/21/11	8.2	164	1.3J	16.7	NA	31.1
5527-105	DU-36	0-2	9/21/11	5.6	143	4.6	12.6	NA	25.3
5527-106	DU-37	0-2	9/21/11	6.5	153	ND	12.6	NA	23.1
5527-107	DU-38	0-2	9/21/11	5.5	129	ND	11.0	NA	17.9
5527-108	DU-39	0-2	9/21/11	6.3	138	ND	17.9/18.9	<2.73	49.3
5651-52	DU-40	0-2	2/23/12	NA	NA	NA	NA	NA	NA
5651-53	DU-41	0-2	2/23/12	NA	NA	NA	NA	NA	NA
5651-54	DU-42	0-2	2/23/12	NA	NA	NA	NA	NA	NA
5651-55	DU-43	0-2	2/24/12	NA	NA	NA	NA	NA	NA
5651-56	DU-44	0-2	2/24/12	NA	NA	NA	NA	NA	NA

Notes:

All results are in parts per million

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

J = Estimated Result. Result is less than the reporting limit.

NA = Was not analyzed for.

ND = Analyte was not detected above specified detection limit.

Q = Quantitative Regional Screening Level

S = Spike Recovery outside recovery limits

TABLE H-5
VOLATILE ORGANIC COMPOUNDS AND SEMI-VOLATILE ORGANIC COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (inches below ground surface)	Date	Acetone	Benzo(a)anthracene	Benzo(b)fluoranthene	Bis-(2-ethylhexyl)phthalate	Biphenyl	Benzo(a)pyrene	2-Butanone (Methyl Ethyl Ketone)	Chrysene	2,4-Dimethylphenol	Ethylbenzene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isophorone	Isopropylbenzene	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol	Napthalene	Phenanthrene	Phenol	Pyrene	Xylenes
5527-44	DU-1	0-2	9/13/11	ND	0.22	0.52	ND	ND	0.32	NA	0.42	ND	NA	0.98	ND	0.33	ND	NA	ND	ND	ND	ND	0.70	ND	0.88	NA
5527-45	DU-2	0-2	9/13/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-46	DU-3	0-2	9/13/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-47	DU-4	0-2	9/13/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-48	DU-5	0-2	9/13/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-73	DU-6	0-2	9/14/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-74	DU-7	0-2	9/15/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-75	DU-8	0-2	9/15/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-76	DU-9	0-2	9/15/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-77	DU-10	0-2	9/15/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-81	DU-11	0-2	9/16/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-82	DU-12	0-2	9/16/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-83	DU-13	0-2	9/16/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-84	DU-14	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-84FD	DU-14 FD #1	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-85	DU-14 FD #2	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-86	DU-15	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	0.23	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-87	DU-16	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-88	DU-17	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-89	DU-18	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-90	DU-19	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-91	DU-20	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-91FD	DU-20 FD #1	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-92	DU-20 FD#2	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-78	DU-21	0-2	9/14/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-79	DU-22	0-2	9/14/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-80	DU-23	0-2	9/14/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-98	DU-24	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-93	DU-25	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-94	DU-26	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-95	DU-27	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-96	DU-28	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-97	DU-29	0-2	9/20/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-99	DU-30	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-100	DU-31	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-101	DU-32	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-102	DU-33	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-103	DU-34	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-104	DU-35	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-105	DU-36	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-106	DU-37	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-107	DU-38	0-2	9/21/11	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA
5527-108	DU-39	0-2	9/21/11	ND	ND	ND	17.0	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA

TABLE H-5
VOLATILE ORGANIC COMPOUNDS AND SEMI-VOLATILE ORGANIC COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (inches below ground surface)	Date	Acetone	Benzo(a)anthracene	Benzo(b)fluoranthene	Bis-(2-ethylhexyl)phthalate	Biphenyl	Benzo(a)pyrene	2-Butanone (Methyl Ethyl Ketone)	Chrysene	2,4-Dimethylphenol	Ethylbenzene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isophorone	Isopropylbenzene	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol	Napthalene	Phenanthrene	Phenol	Pyrene	Xylenes
5651-52	DU-40	0-2	2/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-53	DU-41	0-2	2/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-54	DU-42	0-2	2/23/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-55	DU-43	0-2	2/24/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5651-56	DU-44	0-2	2/24/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All results are in parts per million
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
J = Estimated Result. Result is less than the reporting limit.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
S = Spike Recovery outside recovery limits

TABLE H-6
PCBs AND DIOXIN RELATED COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (inches below ground surface)	Date	PCBs (arochlor 1248)	PCBs (arochlor 1260)	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafulan)	2,3,4,7,8-PeCDF (pentafulan)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafulan)	2,3,4,6,7,8-HxCDF (hexafulan)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafulan)	1,2,3,4,7,8,9-HpCDF (Heptafulan)	1,2,3,4,6,7,8,9-OCDF (Octafulan)	TEQ
5527-44	DU-1	0-2	9/13/11	ND	ND	0.584J	0.372J	0.917J	1.58J	1.30J	51.5	1390	0.395J	0.214U	0.248J	0.498J	0.346U	0.504U	0.297U	7.23	0.569U	14.7	2.5
5527-45	DU-2	0-2	9/13/11	ND	ND	3.30	0.64J	1.31J	2.90J	2.88J	81.7	2640	0.562J	0.384J	1.74J	1.61J	1.19J	1.74J	0.497QU	12.3	0.887J	18.9	7.4
5527-46	DU-3	0-2	9/13/11	ND	ND	0.53J	0.484U	1.03U	1.8U	1.84U	93.1	3320	0.389J	0.375U	0.329U	0.645J	0.415U	0.583J	0.23U	10.2	0.845J	31.0	2.9
5527-47	DU-4	0-2	9/13/11	ND	ND	0.462J	0.424J	0.923J	1.45U	1.64J	69.2	3320	0.440J	0.299U	0.275J	0.213J	0.203U	0.405U	0.209U	2.43J	0.275U	4.61J	3.0
5527-48	DU-5	0-2	9/13/11	ND	ND	0.316U	0.536U	0.877U	1.23U	1.42J	55.9	2510	0.441J	0.278U	0.276U	0.268U	0.262U	0.262U	0.264U	2.1J	0.353	3.96J	1.6
5527-73	DU-6	0-2	9/14/11	ND	ND	1.08	0.437U	1.11J	1.51U	1.98J	98.6	7400E	0.37U	0.4U	0.259J	0.311U	0.246J	0.331J	0.226U	2.40J	0.397U	3.70J	4.8
5527-74	DU-7	0-2	9/15/11	ND	ND	0.916J	0.480J	1.03J	1.54J	1.99J	79.2	5710E	0.561J	0.444U	0.345J	0.458	0.428	0.486	0.299U	2.98J	0.359U	3.98J	4.7
5527-75	DU-8	0-2	9/15/11	ND	ND	0.525J	0.451J	0.788J	1.01J	1.18J	44.8	2540	0.638J	0.386U	0.394J	0.268J	0.296J	0.306J	0.183U	2.01J	0.237U	3.57J	2.8
5527-76	DU-9	0-2	9/15/11	ND	ND	0.608U	0.372U	0.781J	1.31J	1.17J	66.1	3430	0.601J	0.329	0.311J	0.264J	0.248J	0.258U	0.123U	4.72J	0.297U	16.0	2.4
5527-77	DU-10	0-2	9/15/11	ND	ND	0.935	0.323U	0.650J	0.899J	1.24J	43.3	1740	0.327J	0.228U	0.204J	0.260J	0.316	0.336J	0.345U	3.29J	0.345U	6.77J	2.4
5527-81	DU-11	0-2	9/16/11	ND	ND	0.365J	0.233U	0.877J	1.87J	1.58J	70.6	4890E	0.586J	0.262U	0.389J	0.413U	0.441J	0.536U	0.398U	3.42J	0.362U	5.0J	3.3
5527-82	DU-12	0-2	9/16/11	ND	ND	0.580J	0.494J	1.06U	1.64J	2.01J	80.9	4390E	0.698J	0.540J	0.51U	0.580J	0.515J	0.689J	0.245U	5.95	0.331U	12.3	4.0
5527-83	DU-13	0-2	9/16/11	ND	ND	0.346U	0.54U	1.28J	2.43J	1.93J	128	7310E	0.614J	0.364J	0.509J	0.696J	0.431J	0.589J	0.308U	10.7	0.516U	10.5	4.7
5527-84	DU-14	0-2	9/20/11	ND	ND	0.256J	0.549J	0.771J	1.87J	1.56J	65.8	3050	0.625J	0.276U	2.37J	1.14J	0.746J	1.46U	0.693U	6.83	0.557J	13.4	3.9
5527-84FD	DU-14 FD #1	0-2	9/20/11	ND	ND	0.297J	0.596J	1.05J	2.17J	1.76J	97.7	6590E	0.549J	0.00789U	1.48J	1.46J	0.780J	1.15J	0.0285U	14.5	0.622J	28.4	5.4
5527-85	DU-14 FD #2	0-2	9/20/11	ND	ND	0.222J	0.408J	0.546J	1.36J	0.954J	49.4	2570	0.524J	0.358U	1.10J	0.691J	0.559J	0.756J	0.331U	7.68	0.420J	14.5	2.9
5527-86	DU-15	0-2	9/20/11	ND	ND	0.308J	0.329J	0.750J	1.26J	1.17U	54.5	2580	0.386J	0.16U	0.363U	0.335J	0.253J	0.446J	0.205U	3.69J	0.466U	8.0J	2.4
5527-87	DU-16	0-2	9/20/11	ND	ND	0.619U	0.354J	0.857J	1.57J	1.83J	71.3	2950	0.365J	0.211U	0.214U	0.341J	0.309J	0.445J	0.231U	5.18	0.388J	10.4	2.7
5527-88	DU-17	0-2	9/20/11	ND	ND	0.282U	0.498J	1.29J	5.02	2.93J	160	5120E	0.224J	0.181U	0.341J	0.528J	0.489J	0.871J	0.298U	14.2	1.15J	43.3	5.1
5527-89	DU-18	0-2	9/20/11	ND	ND	0.228J	0.329J	0.534J	1.08J	0.936J	46.1	2340	0.354J	0.163U	0.164U	0.205J	0.228J	0.234J	0.179U	3.30J	0.297J	8.18J	2.1
5527-90	DU-19	0-2	9/20/11	ND	ND	0.753U	0.984U	4.29J	36.3	12.1J	5080	47700E	1.13J	1.14U	1.17U	1.8U	1.85U	6.16J	3.02U	293	7.73J	1920	75.5
5527-91	DU-20	0-2	9/20/11	ND	ND	0.533J	0.555J	1.35U	1.81J	2.25J	101	9110E	0.501J	0.292J	0.441J	0.316J	0.335J	0.412J	0.297U	3.03J	0.399U	4.59J	5.6
5527-91FD	DU-20 FD #1	0-2	9/20/11	ND	ND	0.634J	0.477J	1.28J	1.85J	1.82J	88.3	6060E	0.641J	0.21U	0.338J	0.357J	0.281J	0.381J	0.164U	2.94J	0.255J	4.82J	4.6
5527-92	DU-20 FD#2	0-2	9/20/11	ND	ND	0.459J	0.398J	0.905J	1.36J	1.65J	63.6	4000E	0.697J	0.174U	0.296J	0.248J	0.281J	0.326J	0.206U	2.37J	0.216U	3.58J	3.4
5527-78	DU-21	0-2	9/14/11	ND	ND	0.512J	0.628J	2.98J	3.55J	5.18	312	13900E	0.519J	0.356J	0.377J	0.358J	0.408J	0.369J	0.416U	2.51J	0.364U	4.19J	9.9
5527-79	DU-22	0-2	9/14/11	ND	ND	0.295J	0.454J	1.72J	2.65J	2.80J	110	2760	0.431J	0.297J	0.328J	0.774J	0.467J	0.591U	0.357U	8.38	1.19J	34.2	3.8
5527-80	DU-23	0-2	9/14/11	ND	ND	1.20	1.31J	2.56J	4.24J	4.51J	167	4470E	1.05	0.866J	1.1U	1.60J	1.25J	1.50J	0.502U	20.9	1.41J	45.5	7.6
5527-98	DU-24	0-2	9/20/11	ND	ND	0.568J	0.353J	0.418J	0.871J	0.853J	31.6	1880	0.281J	0.162U	0.233J	0.627J	0.305J	0.322J	0.187U	3.29J	0.266J	4.68J	2.3
5527-93	DU-25	0-2	9/20/11	ND	ND	2.63	0.476J	1.07J	1.58J	1.97J	63.5	3180	0.484J	0.240J	0.345J	0.407J	0.286J	0.495J	0.242U	3.53J	0.236U	5.05J	5.5
5527-94	DU-26	0-2	9/20/11	ND	ND	0.908J	0.272J	0.469J	0.527J	0.781J	29.7	2240	0.360J	0.146U	0.232J	0.215J	0.221J	0.237J	0.204U	1.35J	0.327U	1.91J	2.5
5527-95	DU-27	0-2	9/20/11	ND	ND	0.569J	0.346J	0.694J	1.40J	1.51J	76.0	4310E	0.558J	0.205U	0.203U	0.276J	0.256J	0.277J	0.27U	1.80J	0.288U	2.56J	3.5
5527-96	DU-28	0-2	9/20/11	ND	ND	0.318J	0.411J	0.653J	1.19J	1.18J	51.4	4080E	0.335J	0.206U	0.191U	0.199J	0.176J	0.273J	0.22U	2.77J	0.259U	6.88J	2.9
5527-97	DU-29	0-2	9/20/11	ND	ND	0.306J	0.350J	0.733J	1.17J	1.19J	42.3	2650	0.369J	0.302J	0.337J	0.343J	0.270J	0.325J	0.274J	2.55J	0.278U	5.56J	2.5
5527-99	DU-30	0-2	9/21/11	ND	ND	0.511J	0.372J	1.04J	1.67J	1.58J	57.5	1880	0.503J	0.168J	0.333J	0.450J	0.399J	0.489J	0.214U	5.85	0.423J	12.8	2.8
5527-100	DU-31	0-2	9/21/11	ND	ND	0.3U	0.318U	0.652J	1.21J	1.38J	40.7	1820	0.35U	0.217U	0.215U	0.244J	0.231J	0.230J	0.246U	3.11J	0.281U	5.92J	1.5
5527-101	DU-32	0-2	9/21/11	ND	ND	0.382J	0.441J	0.988J	1.66J	1.47J	66.8	3940E	0.509J	0.185J	0.417J	0.373J	0.331J	0.410J	0.284U	4.96	0.258U	8.46J	3.4
5527-102	DU-33	0-2	9/21/11	ND	ND	0.868J	0.286U	0.494U	0.515U	0.674J	21.0	1190	0.330J	0.225U	0.219U	0.225J	0.225J	0.288J	0.284U	1.77J	0.307U	3.12J	1.7
5527-103	DU-34	0-2	9/21/11	ND	0.34J	2040	16.6J	4.46U	20.1J	6.23J	445	4350	17.3	2.32U	2.18U	2.90J	3.57U	3.85J	3.04U	60.0	4.85J	220	2069
5527-104	DU-35	0-2	9/21/11	ND	0.19	532	1.71J	1.13U	3.47J	1.84J	44.5	1560	4.13J	0.471U	0.48U	0.6U	0.624U	0.695J	0.909	8.02J	1.25U	16.1J	536
5527-105	DU-36	0-2	9/21/11	ND	0.096	431	5.10J	17.2J	78.7	40.5	2270	12700	4.94	1.05U	1.23J	7.54J	6.40J	11.4J	2.24U	519	27.3	2280	486

TABLE H-6
PCBs AND DIOXIN RELATED COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (inches below ground surface)	Date	PCBs (arochlor 1248)	PCBs (arochlor 1260)	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafulan)	2,3,4,7,8-PeCDF (pentafulan)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafulan)	2,3,4,6,7,8-HxCDF (hexafulan)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafulan)	1,2,3,4,7,8,9-HpCDF (Heptafulan)	1,2,3,4,6,7,8,9-OCDF (Octafulan)	TEQ
5527-106	DU-37	0-2	9/21/11	ND	ND	5.16	0.312J	0.663U	1.18J	1.50J	59.2	4100E	0.498J	0.202U	0.287J	0.361J	0.277J	0.339J	0.32U	2.62J	0.326	4.47J	7.9
5527-107	DU-38	0-2	9/21/11	ND	ND	31.8	0.321J	0.521J	3.35J	1.46J	73.2	1640	0.731J	0.179U	0.282J	0.656J	0.425J	0.651J	0.209U	11.5	0.827J	28.0	34.4
5527-108	DU-39	0-2	9/21/11	ND	0.090	258	0.556J	1.98J	6.92	3.19J	157	2830	2.23	0.238J	0.724J	2.10J	0.989J	1.54J	0.475J	25.9	1.72J	59.8	263
5651-52	DU-40	0-2	2/23/12	NA	NA	183	2.88J	8.15	51.0	20.7	1310	12800E	10.6	3.26J	5.33	31.5	9.85	17.0	8.52	291	35.2	805	223.8
5651-53	DU-41	0-2	2/23/12	NA	NA	1380	3.01U	3.75U	24.9J	13.5J	664	10100	26.3	2.74U	2.85U	6.27J	4.03J	6.26J	3.14J	97.5	7.71	359	1400.6
5651-54	DU-42	0-2	2/23/12	NA	NA	857	3.20J	9.59J	59.5	28.3	2040	22500E	16.6	2.41J	5.26J	22.9	8.03J	12.9J	6.37JQ	304	32.5	1340	909.2
5651-55	DU-43	0-2	2/24/12	NA	NA	641	1.97U	2.72U	8.78J	5.75U	193	5350	7.35	1.5U	1.45U	2.65J	1.13U	1.65J	1.37U	25.3J	2.45U	48.7J	647.8
5651-56	DU-44	0-2	2/24/12	NA	NA	78.8	0.605U	1.67J	4.81J	3.81J	275	6630E	5.27	0.505U	0.569U	1.20J	0.883J	1.09J	0.404U	20.4	1.89J	82.0	85.9

Notes:
Dioxin Results in parts per trillion
All results except dioxin are in parts per million
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
J = Estimated Result. Result is less than the reporting limit.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
S = Spike Recovery outside recovery limits

TABLE H-7
DIOXIN RELATED COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Date	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafuran)	2,3,4,7,8-PeCDF (pentafuran)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafuran)	2,3,4,6,7,8-HxCDF (hexafuran)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafuran)	1,2,3,4,7,8,9-HpCDF (Heptafuran)	1,2,3,4,6,7,8,9-OCDF (Octafuran)	TEQ
5527-44	DU-1	9/13/11	0.584J	0.372J	0.917J	1.58J	1.30J	51.5	1390	0.395J	0.214U	0.248J	0.498J	0.346U	0.504U	0.297U	7.23	0.569U	14.7	2.5
5618-1	SU 1A	9/13/11	4.81	1.12U	2.35J	3.40J	3.71J	118	3250	0.779J	0.615U	4.44J	1.14J	2.08J	4.28J	0.458J	11.7	0.844J	17.6	10.5
5618-2	SU 1B	9/13/11	1.09	0.735J	1.30J	2.53J	2.65J	79.2	2200	0.444J	0.911J	0.969J	0.601J	0.750J	1.08J	0.266QU	7.98	0.610J	17.6	4.6
5618-3	SU 1C	9/13/11	1.04J	0.596J	1.22J	2.35J	2.24J	79.3	2320	0.349J	0.557J	0.377J	0.663J	0.461U	0.578J	0.147J	8.01	0.541J	19.0	4.1
5618-4	SU 1D	9/13/11	20.7	1.03J	2.34J	5.26J	4.22J	175	6750E	0.556J	0.835J	1.39J	2.87J	1.42J	1.89J	1.42JQ	21.9	2.30J	28.5	28.2
5527-45	DU-2	9/13/11	3.30	0.64J	1.31J	2.90J	2.88J	81.7	2640	0.562J	0.384J	1.74J	1.61J	1.19J	1.74J	0.497QU	12.3	0.887J	18.9	7.4
5618-5	SU 2A	9/13/11	0.767U	0.534J	0.996J	1.86J	1.88J	63.6	1580	0.337J	0.449J	0.330J	0.515J	0.424J	0.570J	0.106U	7.10	0.468J	13.8	3.2
5618-6	SU 2B	9/13/11	0.712J	0.608J	1.41J	2.28J	2.68J	108	4200	0.415J	0.322J	0.355J	0.552J	0.37U	0.606J	0.138U	4.10J	0.379J	6.66J	4.6
5618-7	SU 2C	9/13/11	0.954J	0.549J	1.49J	2.98J	2.73J	133	2530	0.389J	0.328J	0.362J	1.54J	0.845J	1.22J	0.310J	29.6	2.71J	72.3	5.2
5618-8	SU 2D	9/13/11	1.16	1.09J	1.58J	3.35J	3.04J	95.2	1440	0.496J	1.05J	0.718J	1.0J	0.725U	0.991J	0.227J	12.1	0.873J	28.3	5.1
5527-46	DU-3	9/13/11	0.53J	0.484U	1.03U	1.8U	1.84U	93.1	3320	0.389J	0.375U	0.329U	0.645J	0.415U	0.583J	0.23U	10.2	0.845J	31.0	2.9
5527-47	DU-4	9/13/11	0.462J	0.424J	0.923J	1.45U	1.64J	69.2	3320	0.440J	0.299U	0.275J	0.213J	0.203U	0.405U	0.209U	2.43J	0.275U	4.61J	3.0
5527-48	DU-5	9/13/11	0.316U	0.536U	0.877U	1.23U	1.42J	55.9	2510	0.441J	0.278U	0.276U	0.268U	0.262U	0.262U	0.264U	2.1J	0.353	3.96J	1.6
5527-73	DU-6	9/14/11	1.08	0.437U	1.11J	1.51U	1.98J	98.6	7400E	0.37U	0.4U	0.259J	0.311U	0.246J	0.331J	0.226U	2.40J	0.397U	3.70J	4.8
5527-74	DU-7	9/15/11	0.916J	0.480J	1.03J	1.54J	1.99J	79.2	5710E	0.561J	0.444U	0.345J	0.458	0.428	0.486	0.299U	2.98J	0.359U	3.98J	4.7
5527-75	DU-8	9/15/11	0.525J	0.451J	0.788J	1.01J	1.18J	44.8	2540	0.638J	0.386U	0.394J	0.268J	0.296J	0.306J	0.183U	2.01J	0.237U	3.57J	2.8
5527-76	DU-9	9/15/11	0.608U	0.372U	0.781J	1.31J	1.17J	66.1	3430	0.601J	0.329	0.311J	0.264J	0.248J	0.258U	0.123U	4.72J	0.297U	16.0	2.4
5527-77	DU-10	9/15/11	0.935	0.323U	0.650J	0.899J	1.24J	43.3	1740	0.327J	0.228U	0.204J	0.260J	0.316U	0.336J	0.345U	3.29J	0.345U	6.77J	2.4
5618-10	SU 10A	9/15/11	0.445J	0.532J	1.40J	2.43J	2.62J	124	5290E	0.514J	0.345U	0.357J	0.514J	0.386J	0.561J	0.178U	6.49	0.429J	16.4	4.8
5651-12	SU 10A	1/24/12	0.415J	0.569J	0.939J	1.77J	1.91J	58.5	4040	0.503J	0.235U	0.268J	0.244U	0.256J	0.358J	0.136U	4.06J	0.319U	8.12J	3.5
5618-11	SU 10B	9/15/11	0.658J	0.485J	1.25J	1.99J	2.03J	83.1	4700	0.375J	0.490J	0.388J	0.490J	0.427J	0.554J	0.318U	7.85	0.507J	17.7	4.3
5651-13	SU 10B	1/24/12	0.542J	0.596U	1.15J	1.92J	2.05J	75.2	6510E	0.462J	0.248J	0.317J	0.348J	0.325J	0.462J	0.25U	4.31J	0.298J	8.68J	4.2J
5618-12	SU 10C	9/15/11	6.98	0.718J	1.06J	1.88J	1.99J	70.6	5010	0.571J	0.368J	0.400J	0.480J	0.419J	0.411J	0.27U	3.22J	0.27U	5.95J	10.8
5651-14	SU 10C	1/24/12	1.05	0.505U	0.864J	1.35J	1.60J	50.0	3180	0.660J	0.192J	0.373	0.328U	0.379J	0.389J	0.18U	2.45J	0.181J	4.11J	3.2
5618-13	SU 10D	9/15/11	0.628J	0.502U	1.08J	1.79J	1.90J	104	4880	0.445	0.281U	0.372J	0.427J	0.266J	0.435J	0.389U	3.91J	0.6U	7.87J	4.0
5651-15	SU 10D	1/24/12	0.676U	0.489J	0.928J	1.49J	1.48J	53.4	4080E	0.733J	0.223J	0.417J	0.374J	0.310J	0.360J	0.152U	2.74J	0.215U	4.82J	3.1J
5527-81	DU-11	9/16/11	0.365J	0.233U	0.877J	1.87J	1.58J	70.6	4890E	0.586J	0.262U	0.389J	0.413U	0.441J	0.536U	0.398U	3.42J	0.362U	5.0J	3.3
5527-82	DU-12	9/16/11	0.580J	0.494J	1.06U	1.64J	2.01J	80.9	4390E	0.698J	0.540J	0.51U	0.580J	0.515J	0.689J	0.245U	5.95	0.331U	12.3	4.0
5527-83	DU-13	9/16/11	0.346U	0.54U	1.28J	2.43J	1.93J	128	7310E	0.614J	0.364J	0.509J	0.696J	0.431J	0.589J	0.308U	10.7	0.516U	10.5	4.7
5527-84	DU-14	9/20/11	0.256J	0.549J	0.771J	1.87J	1.56J	65.8	3050	0.625J	0.276U	2.37J	1.14J	0.746J	1.46U	0.693U	6.83	0.557J	13.4	3.9
5527-84FD	DU-14 FD #1	9/20/11	0.297J	0.596J	1.05J	2.17J	1.76J	97.7	6590E	0.549J	0.00789U	1.48J	1.46J	0.780J	1.15J	0.0285U	14.5	0.622J	28.4	5.4
5527-85	DU-14 FD #2	9/20/11	0.222J	0.408J	0.546J	1.36J	0.954J	49.4	2570	0.524J	0.358U	1.10J	0.691J	0.559J	0.756J	0.331U	7.68	0.420J	14.5	2.9
5527-86	DU-15	9/20/11	0.308J	0.329J	0.750J	1.26J	1.17U	54.5	2580	0.386J	0.16U	0.363U	0.335J	0.253J	0.446J	0.205U	3.69J	0.466U	8.0J	2.4
5527-87	DU-16	9/20/11	0.619U	0.354J	0.857J	1.57J	1.83J	71.3	2950	0.365J	0.211U	0.214U	0.341J	0.309J	0.445J	0.231U	5.18	0.388J	10.4	2.7
5527-88	DU-17	9/20/11	0.282U	0.498J	1.29J	5.02	2.93J	160	5120E	0.224J	0.181U	0.341J	0.528J	0.489J	0.871J	0.298U	14.2	1.15J	43.3	5.1
5527-89	DU-18	9/20/11	0.228J	0.329J	0.534J	1.08J	0.936J	46.1	2340	0.354J	0.163U	0.164U	0.205J	0.228J	0.234J	0.179U	3.30J	0.297J	8.18J	2.1
5527-90	DU-19	9/20/11	0.753U	0.984U	4.29J	36.3	12.1J	5080	47700E	1.13J	1.14U	1.17U	1.8U	1.85U	6.16J	3.02U	293	7.73J	1920	75.5
5527-91	DU-20	9/20/11	0.533J	0.555J	1.35U	1.81J	2.25J	101	9110E	0.501J	0.292J	0.441J	0.316J	0.335J	0.412J	0.297U	3.03J	0.399U	4.59J	5.6
5527-91FD	DU-20 FD #1	9/20/11	0.634J	0.477J	1.28J	1.85J	1.82J	88.3	6060E	0.641J	0.21U	0.338J	0.357J	0.281J	0.381J	0.164U	2.94J	0.255J	4.82J	4.6
5527-92	DU-20 FD#2	9/20/11	0.459J	0.398J	0.905J	1.36J	1.65J	63.6	4000E	0.697J	0.174U	0.296J	0.248J	0.281J	0.326J	0.206U	2.37J	0.216U	3.58J	3.4

TABLE H-7
DIOXIN RELATED COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Date	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafuran)	2,3,4,7,8-PeCDF (pentafuran)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafuran)	2,3,4,6,7,8-HxCDF (hexafuran)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafuran)	1,2,3,4,7,8,9-HpCDF (Heptafuran)	1,2,3,4,6,7,8,9-OCDF (Octafuran)	TEQ
5527-78	DU-21	9/14/11	0.512J	0.628J	2.98J	3.55J	5.18	312	13900E	0.519J	0.356J	0.377J	0.358J	0.408J	0.369J	0.416U	2.51J	0.364U	4.19J	9.9
5527-79	DU-22	9/14/11	0.295J	0.454J	1.72J	2.65J	2.80J	110	2760	0.431J	0.297J	0.328J	0.774J	0.467J	0.591U	0.357U	8.38	1.19J	34.2	3.8
5527-80	DU-23	9/14/11	1.20	1.31J	2.56J	4.24J	4.51J	167	4470E	1.05	0.866J	1.1U	1.60J	1.25J	1.50J	0.502U	20.9	1.41J	45.5	7.6
5527-98	DU-24	9/20/11	0.568J	0.353J	0.418J	0.871J	0.853J	31.6	1880	0.281J	0.162U	0.233J	0.627J	0.305J	0.322J	0.187U	3.29J	0.266J	4.68J	2.3
5527-93	DU-25	9/20/11	2.63	0.476J	1.07J	1.58J	1.97J	63.5	3180	0.484J	0.240J	0.345J	0.407J	0.286J	0.495J	ND	3.53J	ND	5.05J	5.5
5651-16	SU 25A	1/24/12	0.676U	0.489J	0.928J	1.49J	1.48J	53.4	4080E	0.733J	0.223J	0.417J	0.374J	0.310J	0.360J	0.152U	2.74J	0.215U	4.82J	3.7J
5651-17	SU 25B	1/24/12	1.26	0.798J	1.57J	2.43J	3.18J	91.6	4110E	0.633J	0.277J	0.521J	0.533J	0.452J	0.596J	0.147U	4.51J	0.379J	7.37J	5.4J
5651-18	SU 25C	1/24/12	2.53	0.581J	1.03J	1.60J	1.99J	68.1	5610E	0.567J	0.219J	0.358J	0.370J	0.376U	0.424J	0.184U	3.48J	0.280J	6.01	6.2
5651-19	SU 25D	1/24/12	12.0	0.559J	1.18J	1.69J	2.21J	59.7	4500E	0.642J	0.238J	0.343J	0.445J	0.343J	0.494U	0.186U	4.11J	0.258J	6.63J	15.3
5527-94	DU-26	9/20/11	0.908J	0.272J	0.469J	0.527J	0.781J	29.7	2240	0.360J	0.146U	0.232J	0.215J	0.221J	0.237J	0.204U	1.35J	0.327U	1.91J	2.5
5527-95	DU-27	9/20/11	0.569J	0.346J	0.694J	1.40J	1.51J	76.0	4310E	0.558J	0.205U	0.203U	0.276J	0.256J	0.277J	0.27U	1.80J	0.288U	2.56J	3.5
5527-96	DU-28	9/20/11	0.318J	0.411J	0.653J	1.19J	1.18J	51.4	4080E	0.335J	0.206U	0.191U	0.199J	0.176J	0.273J	0.22U	2.77J	0.259U	6.88J	2.9
5527-97	DU-29	9/20/11	0.306J	0.350J	0.733J	1.17J	1.19J	42.3	2650	0.369J	0.302J	0.337J	0.343J	0.270J	0.325J	0.274J	2.55J	0.278U	5.56J	2.5
5527-99	DU-30	9/21/11	0.511J	0.372J	1.04J	1.67J	1.58J	57.5	1880	0.503J	0.168J	0.333J	0.450J	0.399J	0.489J	0.214U	5.85	0.423J	12.8	2.8
5527-100	DU-31	9/21/11	0.3U	0.318U	0.652J	1.21J	1.38J	40.7	1820	0.35U	0.217U	0.215U	0.244J	0.231J	0.230J	0.246U	3.11J	0.281U	5.92J	1.5
5527-101	DU-32	9/21/11	0.382J	0.441J	0.988J	1.66J	1.47J	66.8	3940E	0.509J	0.185J	0.417J	0.373J	0.331J	0.410J	0.284U	4.96	0.258U	8.46J	3.4
5618-9	SU 32A	9/21/11	1.20J	0.549J	1.27J	2.34J	2.78J	92.4	3580	0.705J	0.534J	0.608J	0.749J	0.554J	0.695J	0.282U	7.07	0.413J	14.2	4.9
5618-9 FD	SU 32A FD	9/21/11	0.964J	0.629J	1.68U	2.65J	3.43J	155	6030E	0.456J	0.444J	0.468J	0.633J	0.494J	0.603J	0.228U	6.83	0.466J	13.4	6.1
5527-102	DU-33	9/21/11	0.868J	0.286U	0.494U	0.515U	0.674J	21.0	1190	0.330J	0.225U	0.219U	0.225J	0.225J	0.288J	0.284U	1.77J	0.307U	3.12J	1.7
5527-103	DU-34 (I)	9/21/11	2040I	16.6J	4.46U	20.1J	6.23J	445I	4350I	17.3I	2.32U	2.18U	2.90J	3.57U	3.85J	3.4U	60.0I	4.85J	220I	2069I
5618-14	SU 34A (I)	9/21/11	16900I	5.78U	21.1J	118J	34.4J	1240I	13000I	107I	17.3J	8.39J	18.6J	10.2J	16.9J	12.7U	282J	13.8J	620I	16964I
5651-20	SU 34A	1/24/12	0.649J	0.351J	0.814J	1.55J	1.46J	91.8	4360E	0.503J	0.175U	0.337J	0.300J	0.300J	0.327J	0.160J	5.78	0.329J	21.8	3.9J
5618-15	SU 34B (I)	9/21/11	6.26I	1.93J	6.76J	26.2I	13.3I	1750I	19900EI	3.28I	1.59J	1.83J	4.17J	1.80J	3.88J	0.749U	110I	12.7I	1070I	40I
5651-21	SU 34B	1/24/12	1.46	1.06J	1.17J	6.25	4.11J	410	6240E	5.56	0.307J	1.46J	2.02J	1.04J	1.18J	0.584J	19.6	1.49J	78.0	11.4
5618-16	SU 34C (I)	9/21/11	1.09J	0.580J	0.982J	3.14J	2.25J	201I	5510EI	0.699J	1.63J	0.429J	1.09J	0.434J	0.650J	0.251J	14.8I	1.27J	59.8I	6.7I
5651-22	SU 34C	1/24/12	2.39	0.370J	0.858J	3.02J	2.05J	182	4330E	3.19	0.247J	0.611J	0.717J	0.456J	0.566J	0.194J	9.20	0.705	41.0	7.3
5618-17	SU 34D (I)	9/21/11	2.34I	0.616J	1.40J	6.12J	2.71J	393I	10100EI	1.53I	0.774J	1.26J	2.43J	1.02J	1.57J	0.601J	33.8I	2.77J	131I	12.5I
5651-23	SU 34D	1/24/12	5770	4.92U	6.52U	73.1J	24.8J	1520	17500	47.1	5.04U	10.1J	41.9J	13.6J	17.4U	9.01U	415	443J	1120	5822
5527-104	DU-35	9/21/11	532	1.71J	1.13U	3.47J	1.84J	44.5	1560	4.13J	0.471U	0.48U	0.6U	0.624U	0.695J	0.909U	8.02J	1.25U	16.1J	536
5618-18	SU 35A	9/21/11	3960	2.91U	5.77U	24.4J	7.51J	338	6400	26.1J	11.1J	3.29U	6.54J	2.89U	3.64J	3.45U	64.9J	6.17U	141J	3974
5618-19	SU 35B	9/21/11	17.5	0.399J	1.33J	1.93J	2.32J	240	18500E	0.389J	0.402J	0.289J	0.505J	0.304J	0.392J	0.152J	4.75J	0.466J	13.2	26.7
5618-20	SU 35C	9/21/11	3.21	0.461J	1.18J	1.64J	1.79J	94.8	6590E	0.365J	0.227U	0.249U	0.547J	0.351J	0.416J	0.3U	4.74J	0.475U	9.28J	7.3
5618-21	SU 35D	9/21/11	5.05	0.947J	2.42J	3.64J	4.13J	200	13100E	0.566J	0.446J	0.426J	0.833J	0.607U	0.772J	0.379J	10.8	0.791J	23.1	13.5
5527-105	DU-36	9/21/11	431	5.10J	17.2J	78.7	40.5	2270	12700	4.94	1.05U	1.23J	7.54J	6.40J	11.4J	2.24U	519	27.3	2280	486
5618-22	SU 36A	9/21/11	4010	3.52J	4.84U	19.5J	8.43J	265	3950	34.8	2.96U	3.29U	5.72J	3.84U	3.94J	3.89U	61.7J	4.66U	138J	4026
5618-23	SU 36B	9/21/11	131	0.580J	1.34J	4.42J	3.23J	214	16000E	3.44	0.493J	0.422U	1.81J	0.872J	0.907J	0.343U	19.7	1.68J	53.8	138
5618-24	SU 36C	9/21/11	27.4J	93.9J	362	1800	755	54600	307000E	2.78U	5.74J	10.6J	145	136J	225	25.8J	13000	577	111000	1277
5618-25	SU 36D	9/21/11	11.7	2.08J	6.38J	19.0	15.0	492	6620E	0.543J	0.385J	0.562J	2.81J	2.27J	3.50J	0.597J	113	5.76J	323	27.2
5527-106	DU-37	9/21/11	5.16	0.312J	0.663U	1.18J	1.50J	59.2	4100E	0.498J	0.202U	0.287J	0.361J	0.277J	0.339J	0.32U	2.62J	0.326	4.47J	7.9
5527-107	DU-38	9/21/11	31.8	0.321J	0.521J	3.35J	1.46J	73.2	1640	0.731J	0.179U	0.282J	0.656J	0.425J	0.651J	0.209U	11.5	0.827J	28.0	34.4

TABLE H-7
DIOXIN RELATED COMPOUNDS IN SURFACE SOIL
STRECKER FOREST SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Date	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafuran)	2,3,4,7,8-PeCDF (pentafuran)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafuran)	2,3,4,6,7,8-HxCDF (hexafuran)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafuran)	1,2,3,4,7,8,9-HpCDF (Heptafuran)	1,2,3,4,6,7,8,9-OCDF (Octafuran)	TEQ
5527-108	DU-39	9/21/11	258	0.556J	1.98J	6.92	3.19J	157	2830	2.23	0.238J	0.724J	2.10J	0.989J	1.54J	0.475J	25.9	1.72J	59.8	263
5651-52	DU-40	2/23/12	183	2.88J	8.15	51.0	20.7	1310	12800E	10.6	3.26J	5.33	31.5	9.85	17.0	8.52	291	35.2	805	223.8
5651-24	SU 40A	1/24/2012	48.2	2.02J	4.91	29.7	13.0	565	5650E	1.87	0.496J	1.28J	6.3	3.33J	5.42	1.35J	120	7.84	373	66
5651-25	SU 40B	1/24/2012	88.3	1.44J	3.30J	22.4	9.61	510	5250E	2.24	0.575J	1.85J	7.33	2.66J	4.21J	1.54J	106	7.02	333	104
5651-26	SU 40C	1/24/2012	294	1.56J	4.09J	41.6	10.6	1070	11100E	4.61	2.35J	7.17	47.1	11.6	18.1	12.4	313	42.0	727	331
5651-27	SU 40D	1/24/2012	186	6.95	7.26	44.6	21.1	1190	13300E	4.67	4.23J	4.92J	22.2	7.54	12.6	4.41JQ	2.51	23.3	786	226
5651-53	DU-41	2/23/2012	1380	3.01U	3.75U	24.9J	13.5J	664	10100	26.3	2.74U	2.85U	6.27J	4.03J	6.26J	3.14J	97.5	7.71	359	1400.6
5651-28	SU 41A	1/24/2012	2680	2.83U	4.69J	23.0J	11.2J	659	9520	23.9	3.4U	3.55U	4.19J	2.6U	3.83J	2.43U	88.4	5.42J	361	2699
5651-29	SU 41B	1/24/2012	184	1.57J	3.23J	13.9	7.85	456	9940E	17.2	12.7	4.29J	13.8	4.63J	3.26J	2.85J	63.1	8.30	277	202
5651-30	SU 41C	1/24/2012	72.1	1.10J	2.28J	9.68	4.64J	322	6720E	2.81	0.622U	0.676U	2.75J	1.29J	1.91J	0.799J	45.6	3.22J	188	82
5651-31	SU 41D	1/24/2012	110	7.32	27.2	113	67.2	3170E	22000E	2.86	0.706J	1.90J	14.1	8.90	17.1	2.87J	661	40.3	3210	190
5651-54	DU-42	2/23/2012	857	3.20J	9.59J	59.5	28.3	2040	22500E	16.6	2.41J	5.26J	22.9	8.03J	12.9J	6.37JQ	304	32.5	1340	909.2
5651-32	SU 42A	1/24/2012	1130	3.67J	5.27J	33.2	14.0J	897	10200	10.4	1.34QJ	2.64J	5.94J	3.30J	6.08J	1.53U	157	10.2J	845	1156
5651-33	SU 42B	1/24/2012	611	3.19J	7.12J	33.9	12.8J	1220	19000	6.95	1.15U	2.62J	9.70J	3.63J	6.59J	2.52J	201	19.6J	1740	644
5651-34	SU 42C	1/24/2012	44.6	1.21J	2.31J	11.9	5.72	405	13700E	0.913J	0.419J	0.895J	4.18J	1.76J	2.52J	1.24J	67.0	5.67	291	58
5651-35	SU 42D	1/24/2012	1120	8.39J	29.4	159	53.3	5230	60900E	14.5	11.7QU	15.0J	93.7	27.4	41.0	28.2	979	134	4840	1261
5651-55	DU-43	2/24/2012	641	1.97U	2.72U	8.78J	5.75U	193	5350	7.35	1.5U	1.45U	2.65J	1.13U	1.65J	1.37U	25.3J	2.45U	48.7J	647.8
5651-36	SU 43A	1/24/2012	0.847J	0.461J	0.897J	1.48J	1.43J	60.7	3620	0.605J	0.219U	0.352J	0.36U	0.292U	0.314J	0.229U	2.52J	0.235J	4.58J	3.6J
5651-37	SU 43B	1/24/2012	1.69	0.505J	1.15J	1.68J	1.86J	86.5	5890E	0.448J	0.35U	0.368U	0.378J	0.257U	0.388U	0.203U	2.94J	0.302U	6.09J	5.4J
5651-38	SU 43C	1/24/2012	11.6	0.709J	1.36J	2.16J	2.05J	91.9	4510E	0.755J	0.285U	0.489U	0.507U	0.398J	0.507J	0.189U	4.30J	0.334J	8.47J	15.4
5651-39	SU 43D	1/24/2012	2300	1.91J	2.23J	15.7J	6.90J	256	5070	20.5	1.18U	2.23J	3.02J	2.22J	3.11J	1.31U	51.5	3.41J	114	2313
5651-56	DU-44	2/24/2012	78.8	0.605U	1.67J	4.81J	3.81J	275	6630E	5.27	0.505U	0.569U	1.20J	0.883J	1.09J	0.404U	20.4	1.89J	82.0	85.9
5651-40	SU 44A	1/24/2012	0.431J	0.322J	0.948J	2.03J	1.48J	132	6810E	0.386J	0.184U	0.510J	0.538U	0.400J	0.364U	0.259U	7.46	0.467J	31.7	4.9J
5651-41	SU 44B	1/24/2012	0.646J	0.403J	0.682J	2.25J	1.26J	133	5140E	0.468J	0.233J	0.177U	0.628U	0654U	0.676U	0.839U	10.8	0.913J	50.9	4.6J
5651-42	SU 44C	1/24/2012	1.80	0.624J	1.29J	3.98J	2.20J	245	6870E	5.34	0.468U	0.838U	0.853J	0.642U	0.713J	0.267J	17.2	1.35J	87.4	8.7
5651-43	SU 44D	1/24/2012	214	1.01J	1.90J	8.12	4.87J	449	7510E	17.3	0.336J	1.45J	2.31J	1.50J	1.71J	0.592J	32.6	2.38J	137	226

Notes:
Dioxin Results in parts per trillion
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
J = Estimated Result. Result is less than the reporting limit.
I = Result invalid.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
S = Spike Recovery outside recovery limits

**TABLE H-8
METALS IN SOIL
CALLAHAN SITE, WILDWOOD, MISSOURI**

Sample ID	Sample location	Depth (feet below ground surface)	Date	Arsenic	Barium	Cadmium	Chromium	Chromium VI	Lead	Mercury
5527-4	SB-25	0-2	9/12/11	6.1	140	3.9	76.4	NA	431	NA
5527-5	SB-25	4-6	9/12/11	5.2	142	7.6	142	NA	1040	NA
5527-6	SB-26	0-2	9/12/11	7.4	188	0.98J	64.1	NA	282	NA
5527-7	SB-26	5-7	9/12/11	7.4	146	ND	21.1	NA	46.5	NA
5527-2	SB-27	0-2	9/12/11	6.9	154	ND	73.5	NA	408	NA
5527-3	SB-27	6-8	9/12/11	5.9	122	ND	23.5	NA	122	NA
5527-1	SB-28	0-2	9/12/11	6.4	164J	ND	15.9J	NA	24.0	NA
5527-8	SB-29	0-2	9/12/11	9.3	101	ND	13.6	NA	21.6	NA
5527-9	SB-29	8-10	9/12/11	5.6	188	ND	14.8	NA	14.2	NA
5527-10	SB-30	0-2	9/12/11	10.0	104	ND	17.1	NA	17.1	NA
5527-11	SB-30	10-12	9/12/11	3.4	154	ND	23.2	NA	23.2	NA
5527-69	SB-34	0-2	9/15/11	7.0	154	0.90J	23.5	NA	116	NA
5527-70	SB-34	8-9	9/15/11	4.8	73.5	ND	13.6	NA	12.6	NA
5527-71	SB-35	0-2	9/15/11	6.5	138	0.84J	39.5	NA	222	NA
5527-72	SB-35	8-9	9/15/11	5.5	130	ND	22.3	NA	103	NA
5651-1	SB-40	0-2	1/24/12	ND	59.5	1.3	12.9	NA	13.2J	0.0292
5651-2	SB-40	2-4	1/24/12	ND	8.1	ND	ND	NA	ND	0.0198
5651-3	SB-40	4-6	1/24/12	ND	24.8	ND	18.2	NA	ND	0.0186
5651-4	SB-41	0-2.5	1/24/12	6.5	109	3.4	25.8	NA	20.4	0.0679
5651-5	SB-41	4-6	1/24/12	ND	68.6	2.0	13.5	NA	12.7	0.00930
5651-8	SB-41	12-13	1/24/12	ND	102	2.1	26.3	NA	77.4	0.0376
5651-7	SB-42	6-8	1/24/12	ND	219	2.8	17.9	NA	22.7	0.0319
5651-6	SB-42	10-12	1/24/12	ND	25.9	ND	8.6	NA	4.9	0.0139
5651-9	SB-44	8-11	1/24/12	ND	45.7	ND	6.9	NA	36.8	0.0328
5651-10	SB-46	4-6.5	1/24/12	ND	136	2.8	16.0	NA	27.5	0.0415
5527-12	DU-1	0-0.16	9/12/11	6.5	139	0.62J	23.5/27.8	<2.31	23.5	NA
5527-13	DU-2	0-0.16	9/12/11	4.7	75.6	1.3	20.9/28.4	<2.37	113	NA
5527-14	DU-3	0-0.16	9/12/11	5.1	154	0.57J	10.3/11.9	<2.28	42.4	NA
5527-109	Ditch Grab #1	0-1	9/21/11	6.3	239	1.7J	31.8	NA	170	NA
5527-110	Ditch Grab #2	0-1	9/21/11	5.9	140	1.3J	31.8	NA	107	NA
5527-111	Ditch Grab #3	0-1	9/21/11	6.5	116	ND	13.1	NA	33.0	NA
5527-112	Ditch Grab #4	0-1	9/21/11	3.4	164	ND	9.3	NA	28.6	NA
5651-11	Ditch Grab #5	0-1		ND	121	2.1	8.4	NA	38.4	0.0563
5527-113	MW-C01	13	9/22/11	NA	NA	NA	NA	NA	NA	NA

Notes:

All results are in parts per million

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

J = Estimated Result. Result is less than the reporting limit.

NA = Was not analyzed for.

ND = Analyte was not detected above specified detection limit.

Q = Quantitative Interference

S = Spike Recovery outside recovery limits

TABLE H-9
VOLATILE ORGANIC COMPOUNDS AND SEMI-VOLATILE ORGANIC COMPOUNDS IN SOIL
CALLAHAN SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	Acetone	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis-(2-ethylhexyl)phthalate	Biphenyl	2-Butanone (MEK)	Chrysene	2,4 Dimehtylphenol	Ethylbenzene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isophorone	Isopropylbenzene	Methyl Acetate	2-Methylnaphthalene	4-Methyl-2-Pentanone	2-Methylphenol	4-Methylphenol	Napthalene	Phenanthrene	Phenol	Pyrene	Toulene	1,1,2-Trichloroethane	Xylenes	
5527-4	SB-25	0-2	9/12/11	NA	ND	ND	ND	ND	10.0	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-5	SB-25	4-6	9/12/11	ND	ND	ND	ND	ND	24.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.67	0.34	ND	
5527-6	SB-26	0-2	9/12/11	NA	ND	ND	ND	ND	4.0	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-7	SB-26	5-7	9/12/11	NA	ND	ND	ND	ND	86.0	ND	ND	ND	ND	0.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.0	ND	5.6	
5527-2	SB-27	0-2	9/12/11	NA	ND	ND	ND	ND	3.8	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-3	SB-27	6-8	9/12/11	NA	ND	ND	ND	ND	14	ND	ND	ND	ND	1.1	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	3.5	
5527-1	SB-28	0-2	9/12/11	NA	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-8	SB-29	0-2	9/12/11	NA	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-9	SB-29	8-10	9/12/11	NA	ND	ND	ND	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5527-10	SB-30	0-2	9/12/11	NA	ND	ND	ND	ND	3.1	ND	ND	2.7	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-11	SB-30	10-12	9/12/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5527-69	SB-34	0-2	9/15/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	
5527-70	SB-34	8-9	9/15/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.019	ND	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	
5527-71	SB-35	0-2	9/15/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	
5527-72	SB-35	8-9	9/15/11	ND	ND	ND	ND	ND	1.7	0.88	ND	ND	ND	0.66J	ND	1.6	ND	1.1	ND	ND	ND	ND	ND	ND	ND	0.80	ND	ND	ND	ND	1.2J	
5651-1	SB-40	0-2	1/24/12	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5651-2	SB-40	2-4	1/24/12	0.048	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5651-3	SB-40	4-6	1/24/12	0.043	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	
5651-4	SB-41	0-2.5	1/24/12	NA	ND	ND	ND	ND	0.730	ND	NA	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5651-5	SB-41	4-6	1/24/12	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5651-8	SB-41	12-13	1/24/12	ND	ND	ND	ND	ND	3.10	ND	ND	ND	0.80	ND	ND	0.34	ND	ND	ND	ND	0.18	ND	0.59	1.5	0.43	ND	ND	ND	110	ND	17.0	
5651-7	SB-42	6-8	1/24/12	ND	ND	ND	ND	ND	2.0	ND	ND	ND	0.55	3.4	ND	0.63	ND	0.54	ND	ND	0.28	ND	0.77	1.1	0.54	0.18	0.20J	ND	36.0J	ND	14.9	
5651-6	SB-42	10-12	1/24/12	0.039	ND	ND	ND	ND	0.40	ND	0.036	ND	0.092	0.14	ND	ND	ND	ND	ND	ND	ND	0.045	ND	ND	ND	ND	ND	ND	0.69J	ND	0.52J	
5651-9	SB-44	8-11	1/24/12	ND	0.53	0.63	0.21	0.23	2.6	ND	ND	0.52	7.3	16.0	0.72	ND	0.23	14.0	ND	ND	0.29	ND	2.3	7.5	1.1	0.50	1.70J	0.67	16.0	ND	106	
5651-10	SB-46	4-6.5	1/24/12	0.069	ND	ND	ND	ND	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5527-12	DU-1	0-0.16	9/12/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-13	DU-2	0-0.16	9/12/11	NA	ND	ND	ND	ND	4.5	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-14	DU-3	0-0.16	9/12/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-109	Ditch Grab #1	0-1	9/21/11	NA	ND	ND	ND	ND	3.5	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-110	Ditch Grab #2	0-1	9/21/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-111	Ditch Grab #3	0-1	9/21/11	NA	ND	ND	ND	ND	0.21	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5527-112	Ditch Grab #4	0-1	9/21/11	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	
5651-11	Ditch Grab #5	0-1		0.66	ND	ND	ND	ND	ND	ND	0.088	ND	ND	ND	ND	ND	ND	ND	ND	0.19	ND	ND	ND	ND	ND	ND	ND	ND	0.048J	ND	ND	
5527-113	MW-C01	13	9/22/11	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	99.0J	ND	ND

Notes:
All results are in parts per million
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
J = Estimated Result. Result is less than the reporting limit.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
S = Spike Recovery outside recovery limits

TABLE H-10
PCBs AND DIOXIN RELATED COMPOUNDS IN SOIL
CALLAHAN SITE, WILDWOOD, MISSOURI

Sample ID	Sample location	Depth (feet below ground surface)	Date	PCBs (arochlor 1248)	PCBs (aroclor 1254)	PCBs (arochlor 1260)	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexadioxin)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafulan)	2,3,4,7,8-PeCDF (pentafulan)	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafulan)	2,3,4,6,7,8-HxCDF (hexafulan)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF (Heptafulan)	1,2,3,4,7,8,9-HpCDF (Heptafulan)	1,2,3,4,6,7,8,9-OCDF (Octafulan)	TEQ
5527-4	SB-25	0-2	9/12/11	ND	ND	0.041	1.01	0.603J	0.968J	3.88J	2.91J	132	6220E	0.728J	0.207U	0.559J	0.808JQ	0.422J	1.33J	0.449U	7.99	0.462J	19.2	6.2
5527-5	SB-25	4-6	9/12/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-6	SB-26	0-2	9/12/11	ND	ND	0.1	1.46	0.478JQ	1.06J	3.40J	2.48J	139	6830E	0.682J	0.269U	0.557J	0.731JQ	0.437J	0.721J	0.237U	7.52	0.529J	17.3	6.6
5527-7	SB-26	5-7	9/12/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-2	SB-27	0-2	9/12/11	ND	ND	0.061	0.502J	0.644J	0.916J	2.45J	2.21J	95.1	4890E	0.944	0.429J	0.616J	0.761J	0.419U	0.687J	0.376U	4.91	0.536J	12.7	4.6
5527-3	SB-27	6-8	9/12/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-1	SB-28	0-2	9/12/11	ND	ND	ND	1.22	0.309U	0.615J	1.39J	1.15J	56.9	1980	0.330J	0.211J	0.245J	0.304U	0.243J	0.343J	0.254U	6.15	0.385J	18.3	3.0
5527-8	SB-29	0-2	9/12/11	ND	ND	ND	0.806J	0.468J	1.39J	2.59J	2.66J	179	15100E	0.292J	0.140J	0.136J	0.244U	0.253J	0.464J	0.349U	10.8	0.547J	27.0	8.5
5527-9	SB-29	8-10	9/12/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-10	SB-30	0-2	9/12/11	ND	ND	ND	0.161U	0.215J	0.849J	1.11J	1.38J	164	16100E	0.243J	0.103U	0.106J	0.251QU	0.161U	0.178U	0.26U	1.30J	0.349U	3.40J	7.1
5527-11	SB-30	10-12	9/12/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-69	SB-34	0-2	9/15/11	ND	ND	ND	0.894J	0.963J	1.17J	3.56J	2.56J	115	4370E	0.503U	0.616U	1.07J	0.679J	0.587J	0.899J	0.265U	6.95	0.529J	19.1	5.7
5527-70	SB-34	8-9	9/15/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-71	SB-35	0-2	9/15/11	ND	ND	ND	0.992	0.783J	0.903J	5.56	2.67J	114	3920E	0.781J	0.876U	0.956J	1.73J	1.23J	1.60J	0.473U	11.9	0.929J	21.7	6.0
5527-72	SB-35	8-9	9/15/11	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-1	SB-40	0-2	1/24/12	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-2	SB-40	2-4	1/24/12	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-3	SB-40	4-6	1/24/12	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-4	SB-41	0-2.5	1/24/12	ND	ND	0.014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-5	SB-41	4-6	1/24/12	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-8	SB-41	12-13	1/24/12	ND	0.023	0.027	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-7	SB-42	6-8	1/24/12	ND	ND	0.033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-6	SB-42	10-12	1/24/12	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-9	SB-44	8-11	1/24/12	ND	0.015	0.040	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5651-10	SB-46	4-6.5	1/24/12	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-12	DU-1	0-0.16	9/12/11	ND	ND	ND	0.374U	0.420J	0.668J	2.07J	1.37J	72.2	2340	0.456J	0.297J	0.281J	0.359JQ	0.263U	0.50J	0.277U	6.97	0.693J	31.1	2.6
5527-13	DU-2	0-0.16	9/12/11	ND	ND	ND	0.42U	0.860J	1.54J	7.47	4.0J	166	2190	0.371J	0.299U	0.597J	1.12JQ	0.888J	1.57J	0.386J	21.3	1.39J	69.0	5.5
5527-14	DU-3	0-0.16	9/12/11	ND	ND	ND	0.324U	0.658J	1.61J	3.26J	3.11J	117	2220	0.313J	0.290J	0.593J	0.597J	0.675J	1.16J	0.416J	16.4	1.53J	54.8	4.1
5527-109	Ditch Grab #1	0-1	9/21/11	0.24	ND	ND	0.529J	0.362J	0.489J	1.81J	1.34J	45.6	1820	0.893	0.228U	0.397J	0.426J	0.254J	1.08J	0.317U	4.25J	0.301U	9.18	2.7
5527-110	Ditch Grab #2	0-1	9/21/11	0.047	ND	ND	0.404J	0.382J	0.463J	1.25J	0.844J	30.2	1310	0.384J	0.207U	0.290J	0.257J	0.195U	0.570J	0.205U	2.70J	0.282J	6.92J	2.0
5527-111	Ditch Grab #3	0-1	9/21/11	ND	ND	ND	0.192J	0.353J	0.455J	0.743J	0.862J	28.2	1430	0.426J	0.144U	0.244J	0.239J	0.166U	0.177J	0.225U	1.49J	0.384U	2.14J	1.6
5527-112	Ditch Grab #4	0-1	9/21/11	ND	ND	ND	0.323J	0.295J	0.316J	0.731J	0.728J	16.7	462	0.683J	0.243U	0.387J	0.254J	0.307J	0.313J	0.186U	2.32J	0.228U	3.96J	1.4
5651-11	Ditch Grab #5	0-1		ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5527-113	MW-C01	13	9/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Dioxin Results in parts per trillion

All results except dioxin are in parts per million

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

J = Estimated Result. Result is less than the reporting limit.

NA = Was not analyzed for.

ND = Analyte was not detected above specified detection limit.

Q = Quantitative Interference

S = Spike Recovery outside recovery limits

TABLE H-11
VOLATILE ORGANIC COMPOUNDS AND SEMI-VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
STRECKER FOREST AND CALLAHAN SITES, WILDWOOD, MISSOURI

Sample location	Date	Barium	Benzene	Bis-(2-ethylhexyl)phthalate	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroethane	Chloroform	Chloromethane	1,2-Dichlorobenzene	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene	p-Isopropyltoluene	Methylene Chloride	2-Methylnaphthalene	Napthalene	n-Propylbenzene	Tetrachloroethene	Toulene	1,1,1-Trichloroethane	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride	Xylenes
MW-01	10/15/09	NA	ND	4.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15 J B	ND	ND	ND	ND	ND	ND	ND	ND	0.06 J
MW-01	11/1/11	39J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02	10/15/09	NA	ND	5.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19 J	ND	ND	ND	ND	ND	ND	ND	ND	0.073 J
MW-02	11/1/11	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-02 (dup)	11/1/11	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-03	11/3/09	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16 JB	ND	ND	ND	ND	ND	ND	ND	ND	0.093 J
MW-03	11/1/11	60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-04	10/19/09	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.089 J	ND	ND	ND	ND	ND	ND	0.16 JB	ND	0.061 J	ND	ND	0.22 J	ND	ND	ND	0.038 J
MW-04	11/2/11	65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-05	11/5/09	NA	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	0.24 J	0.096 J	4.5	ND	ND	ND	ND	ND	ND	ND	ND	0.37 J	ND	0.18J	1.9	ND	ND	ND	0.039 J TB
MW-05	11/2/11	92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-06	11/13/09	NA	0.51 J	ND	19 J	4.6 J	1.5 J	3.5 J	ND	ND	1.1 J	2.1 J	ND	10 J	ND	160	25	1.8 J	7.2 J B	15	290 B/300 D/260 E	27	ND	4.8 J FB	ND	4.2 J	180	25	3.5 J	790
MW-06 (dup)	11/13/09	NA	0.43 J	ND	29	6.2 J	1.8 J	4.3 J	ND	ND	1.6 J	2.4 J	ND	12	0.84 J	190	34	2.4 J	3.9 J B	13	390 B/240 D/220 E	34	ND	4.9 J	ND	5.1 J	240	31	3.9 J	950
MW-06	11/3/11	365	ND	ND	ND	ND	ND	5.5	ND	ND	ND	ND	ND	ND	ND	48	17	ND	ND	ND	110	ND	ND	ND	ND	ND	ND	ND	ND	184
MW-07	11/3/09	NA	ND	1.8 J	ND	ND	ND	ND	ND	ND	ND	ND	0.05 J	0.066 J	ND	0.045 J	ND	ND	ND	ND	0.14 J B TB	ND	0.09 J	0.28 J	ND	0.5 J	ND	ND	ND	0.087 J TB
MW-07	11/2/11	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-08	11/2/11	59	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-09	11/2/11	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	11/2/11	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-C01	11/3/11	64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-C02	11/3/11	56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-C03	11/3/11	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Rinsate	11/2/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Blank	11/1/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
Identified Contaminants results in µg/L
B = The associated method blank contains analyte at a level above method detection limit
E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.
FB = Compound detected in associated Field (rinsate) Blank.
J = Estimated Result. Result is less than the reporting limit.
NA = Was not analyzed for.
ND = Analyte was not detected above specified detection limit.
Q = Quantitative Interference
S = Spike Recovery outside recovery limits
TB = Compound detected in associates Trip Blank

TABLE H-12
DIOXIN RELATED COMPOUNDS IN GROUNDWATER
STRECKER FOREST AND CALLAHAN SITES, WILDWOOD, MISSOURI

Sample location	Date	2,3,7,8-TCDD (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDD (pentadioxin)	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD (hexafuran)	1,2,3,7,8,9-HxCDD (hexadioxin)	1,2,3,4,6,7,8-HpCDD (Heptadioxin)	1,2,3,4,6,7,8,9-OCDD (Octadioxin)	2,3,7,8-TCDF (Tetrachlorodibenzo-p-dioxin)	1,2,3,7,8-PeCDF (pentafulan)	2,3,4,7,8-PeCDF	1,2,3,4,6,7,8-HxCDF	1,2,3,6,7,8-HxCDF (hexafuran)	2,3,4,6,7,8-HxCDF (hexafuran)	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8,9-HpCDF (Heptafuran)	1,2,3,4,7,8,9-HpCDF (Heptafuran)	1,2,3,4,6,7,8,9-OCDF (Octafuran)	TEQ
MW-01	10/15/09	ND	ND	ND	ND	ND	ND	0.019 Q J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-01	11/1/11	1.44U	1.71U	2.17U	2.3U	2.37U	2.96U	5.43U	1.28U	0.91U	1.03J	1.33U	1.33U	1.36U	1.8U	1.74U	2.49U	4.15U	<2.06J
MW-02	10/15/09	ND	ND	ND	ND	ND	0.0048 J	0.26 B	ND	ND	ND	0.0022 J	0.0015 Q J	ND	ND	0.017 J	ND	0.027 J	
MW-02	11/1/11	1.16U	1.04U	1.37U	1.43U	1.49U	2U	6.92J	1.42U	0.811U	0.839U	1.11U	1.114U	1.13U	1.39U	1.09U	1.57U	3.87U	<1.19J
MW-02 (dup)	11/1/11	1.25U	0.86U	1.44U	1.48U	1.55U	1.77U	9.93J	1.21U	0.798U	0.759U	0.672U	0.666U	0.71U	1.01U	1.02U	1.52U	3.01	<1.28J
MW-03	11/3/09	ND	ND	ND	ND	ND	ND	0.038 J TB FB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-03	11/1/11	1.22U	0.924U	1.08U	1.12U	1.17U	1.64U	2.37U	1.31U	0.636U	0.629U	0.651U	0.64U	0.681U	0.904U	0.8U	1.21U	2.61U	<1.23 (ND)
MW-04	10/19/09	ND	ND	ND	ND	ND	ND	0.11 TB FB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-04	11/2/11	0.935U	0.791U	1.46U	1.48U	1.56U	1.38U	7.08J	0.972U	0.588U	0.779J	0.699U	0.732U	0.727U	0.977U	0.8U	1.19U	2.13U	<1.20J
MW-05	11/5/09	ND	ND	ND	ND	ND	ND	0.011 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-05	11/2/11	1.25U	1.02U	1.4U	1.45U	1.51U	2.61U	10.8J	1.42U	0.747U	0.733U	0.868U	0.903U	0.96U	1.28U	1.13U	1.63U	2.93U	<1.28J
MW-06	11/13/09	0.0044 Q J	ND	ND	ND	ND	ND	0.15 FB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-06 (dup)	11/13/09	0.019 Q	ND	ND	ND	ND	ND	0.024 Q J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-06	11/3/11	11.8	1.02U	1.5U	1.58U	1.64U	2.29U	7.81J	1.69U	0.895U	0.954U	0.971U	0.984U	0.975U	1.42U	1.21U	1.83U	3.59U	11.8274
MW-07	11/3/09	ND	ND	ND	ND	ND	ND	0.0066 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-07	11/2/11	1.27U	0.807U	1.29U	1.37U	1.41U	1.5U	3.15U	1.23U	0.729U	0.702U	0.683U	0.663U	0.658U	0.909U	0.801U	1.2U	3.06U	<1.28 (ND)
MW-08	11/2/11	1.04U	0.847U	1.12U	1.11U	1.18U	1.63U	2.93U	1.05U	0.511U	0.824J	0.563U	0.579U	0.598U	0.783U	0.763U	1.11U	2.12U	<1.31J
MW-09	11/2/11	1.03U	0.979U	1.82U	1.92U	1.98U	1.98U	9.26J	1.27U	0.786U	0.919U	0.974U	0.96U	1.08U	1.44U	1.08U	1.65U	3.08U	<1.35J
MW-10	11/2/11	1.27U	0.837U	1.19U	1.23U	1.28U	1.39U	4.22J	1.33U	0.793U	0.799U	0.826U	0.817U	0.817U	1.09U	0.848U	1.2U	2.29U	<1.29J
MW-C01	11/3/11	1.1U	0.956U	1.22U	1.25U	1.31U	2.36U	61.7J	1.21U	0.766U	0.762U	0.837U	0.877U	0.93U	1.21U	1.11U	1.67U	2.69U	<1.18J
MW-C02	11/3/11	1.44U	1.29U	1.8U	1.76U	1.89U	2.24U	8.29J	1.65U	0.908U	0.923U	0.938U	0.921U	0.943U	1.28U	1.16U	1.74U	3.52U	<1.47J
MW-C03	11/3/11	1.24U	0.865U	1.24U	1.36U	1.38U	1.83U	8.96J	1.29U	0.643U	0.684U	0.606U	0.606U	0.639U	0.887U	0.987U	1.61U	2.94U	<1.27J
Rinsate	11/2/11	1.05U	0.764U	1.09U	1.14U	1.18U	1.49U	5.13J	1.16U	0.621U	0.597U	0.609U	0.614U	0.616U	0.838U	0.695U	1.01U	2.51U	<1.07J
Field Blank	11/1/11	1.3U	0.85U	1.2U	1.27U	1.31U	1.52U	2.73U	1.15U	0.728U	0.728U	0.617U	0.633U	0.662U	0.904U	1.01U	1.48U	2.46U	<1.31 (ND)

Notes:

Identified Contaminants results in µg/L except Dioxin

Dioxin Results in parts per quadrillion (pq/L).

B = The associated method blank contains analyte at a level above method detection limit

E = Estimated result. Concentration of the target analyte exceeds the instrument calibration range.

FB = Compound detected in associated Field (rinsate) Blank.

J = Estimated Result. Result is less than the reporting limit.

NA = Was not analyzed for.

ND = Analyte was not detected above specified detection limit.

Q = Quantitative Interference

S = Spike Recovery outside recovery limits

TB = Compound detected in associates Trip Blank

APPENDIX I
INDOOR DUST EVALUATION




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 09 2012

MEMORANDUM

SUBJECT: Evaluation of Indoor Dust Data
Proposed Strecker Forest Subdivision
Wildwood, Missouri

FROM: Mike Beringer 
Branch Chief
ENSV/EAMB

TO: Gene Gunn
Branch Chief
SUPR/SPEB

As requested, potential health risks to workers involved in the demolition of three abandoned structures located on the proposed Strecker Forest subdivision (Strecker Forest) in Wildwood, Missouri, were evaluated. The levels of dioxins and furans in six indoor dust samples collected from the former Primm residence and former Dozier residence and garage were reviewed. Based on the indoor dust data, demolition of these three structures would not present significant health risks from exposure to dioxins and furans. Please contact me if you have questions or need further assistance.

Site Background

The former Primm residence and the former Dozier residence and garage are abandoned structures that are anticipated to be demolished. These three uninhabited structures are located on the proposed Strecker Forest subdivision on a tract of land adjacent to the Ellisville Superfund Site, located in Wildwood, Missouri. There have been concerns expressed that dioxins and furans inside the structures could pose significant health risks to workers during demolition activities. On September 22, 2011, six indoor dust samples, including one field duplicate, were collected from interior surfaces within the structures. Each sample was analyzed for dioxins and furans using high resolution gas chromatography/mass spectrometry. The objective of this document is to use the dust data to determine whether the demolition of the former Primm residence and former Dozier residence and garage would present significant health risks to the workers from exposure to dioxins and furans.

Sample Results

At the former Primm residence, the U.S. Environmental Protection Agency (EPA) collected dust samples from the 1st floor kitchen/dining area (one sample and one field duplicate) and the 2nd floor foyer/den area (one sample). At the former Dozier residence, the EPA collected dust samples from the

1st floor kitchen/dining area (one sample), the 2nd floor foyer/den area (one sample), and the detached garage (one sample). The five samples obtained from the former homes were collected from the floors, while the sample obtained from the garage was collected from the window sills, shelves, and ledges.

Each of the samples was analyzed for the 17 types of dioxins and furans that may present a potential health concern. The dioxin Toxic Equivalent (TEQ) concentration was then calculated from the results of the dioxin and furan analyses in accordance with Agency protocol (USEPA, 2010). Table 1 provides the results of the dioxin and furan analyses for the six samples and the corresponding dioxin TEQ concentration for each sample.

The TEQ concentrations detected in the six dust samples range from 10.3 to 84.4 parts per trillion (ppt), or picograms of dioxin per gram of soil. The practical quantification limits (PQLs) achieved by the laboratory were below the EPA's health-based screening levels, demonstrating that analytical detection limits were capable of measuring concentrations that could present a concern for human health.

Evaluation of Potential Health Risks to Demolition Workers

This evaluation considered whether adult workers involved in demolition of the three abandoned structures would be exposed to levels of dioxins and furans that could pose significant health risks. Although the structures are located in a residential area, nearby residents are located a substantial distance away from where the demolition would occur, and as a result, their potential exposure would be far less than the potential worker exposure. Both non-cancer and cancer health risks were examined by comparing levels of concern with concentrations of dioxins and furans measured in indoor dust samples. These levels were calculated using the equations found in Section 4 of the User's Guide for the EPA's Regional Screening Levels (RSLs) (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm), along with the exposure variables and toxicity values discussed below.

The routes of exposure evaluated were incidental ingestion and dermal contact with contaminated dust. In general, the inhalation or breathing of contaminated dust is not a significant contributor to overall exposure. It was assumed that heavy equipment would be used to raze the two houses and one garage and remove the debris from the site. Although it is likely that demolition and removal could be accomplished in one or two days, the reasonable maximum duration of the project was conservatively estimated to be 10 days. Demolition work was assumed to continue throughout the weekend. Therefore, an averaging time of 10 days was used to examine potential non-cancer risks over the duration of the project. In accordance with Agency guidance, potential cancer risks from a 10 day exposure were evaluated over a typical lifetime of 70 years (USEPA, 2002).

For many of the variables, the EPA's standard exposure parameters for a construction worker were used (Exhibit 1-2 of USEPA, 2002). Even though the demolition workers at Strecker Forest might wear work clothes and gloves to protect themselves from flying debris or might work within an enclosed cab during demolition activities, high dust contact rates for a typical construction worker were assumed so as to be protective of worker health.

A cancer slope factor (CSF) was used to estimate the increased risk of developing cancer from exposure to potentially carcinogenic chemicals. To examine potential cancer risks at Strecker Forest, the CSF for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) of 1.56×10^5 (mg/kg-day)⁻¹ from the EPA's Office of Health and Environmental Assessment (USEPA, 1984) was used. A level of concern was derived based on a target cancer risk of 1 in 10,000 (USEPA, 1991).

When evaluating potential non-cancer health risks, the EPA assumes that a dose or exposure level exists below which adverse non-cancer health effects are unlikely to occur (USEPA, 1989). This analysis of potential non-cancer health risks from exposure to dioxins and furans by demolition workers at Strecker Forest used the acute Minimal Risk Level of 0.0002 µg/kg-day, which is available from the Agency for Toxic Substances and Disease Registry (ATSDR) at <http://www.atsdr.cdc.gov/mrls/index.asp>. This value is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over 1 to 14 days of exposure.

Levels of concern for cancer and non-cancer adverse health effects were calculated by applying the exposure and toxicity values discussed above into the equations found at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm. For cancer risks, the level of concern for demolition workers is a dioxin TEQ concentration in dust of 318,700 ppt. For non-cancer health effects, the level of concern for demolition workers is a dioxin TEQ concentration in dust of 38,900 ppt. The highest dioxin TEQ concentration measured in the six indoor dust samples collected from Strecker Forest is 84.4 ppt. Because the concentrations of dioxins and furans in the three abandoned residences are far below the levels of concern for a worker involved in demolishing these structures, cancer and non-cancer risks are negligible. To conclude, the former Primm residence and former Dozier residence and garage could be demolished safely, without presenting significant health risks to the workers or residents from exposure to dioxins and furans. Based on these findings, no special precautions or additional protective gear would be required to conduct demolition of abandoned structures at Strecker Forest.

References

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- U.S. EPA. 1989. *Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual - Part A*. Office of Emergency and Remedial Response, Washington, D.C. EPA/540/1-89/002.
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- U.S. EPA. 2002. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*. Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Publication 9355.4-2
- U.S. EPA. 2010. *Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds*. Risk Assessment Forum, Washington, D.C. EPA/600/R-10/005.

Table 1. Concentrations of Dioxins and Furans Detected in Indoor Dust Samples Collected at Strecker Forest.

CAS No.	Compound	Former Primm 1st Floor (ppt)	Former Primm 1st Floor Dup. (ppt)	Former Primm 2nd Floor (ppt)	Former Dozier 1st Floor (ppt)	Former Dozier 2nd Floor (ppt)	Former Dozier Garage (ppt)
1746-01-6	2,3,7,8-TCDD	1.33 J	1.50 J	1.48 J	3.53	1.09 J	9.73
40321-76-4	1,2,3,7,8-PeCDD	1.83 J	2.33 J	2.30 J	3.11 J	1.73 J	14.4
39227-28-6	1,2,3,4,7,8-HxCDD	3.38 J	4.40 J	4.33 J	9.24 J	3.46 J	13.0
57653-85-7	1,2,3,6,7,8-HxCDD	7.66 J	9.61 J	9.09 J	37.7	16.3	36.8
19408-74-3	1,2,3,7,8,9-HxCDD	8.45 J	8.50 J	9.71 J	17.0	6.41 J	18.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	227	283	291	3260	611	745
3268-87-9	1,2,3,4,6,7,8,9-OCDD	2300	3500	3470	75800 E	11700 E	6840
51207-31-9	2,3,7,8-TCDF	2.10	2.34	1.40 J	14.3	3.31	7.97
57117-41-6	1,2,3,7,8-PeCDF	1.77 J	1.63 J	0.771 J	6.55 J	1.33 J	13.4
57117-31-4	2,3,4,7,8-PeCDF	2.01 J	2.61 J	0.990 J	12.6	2.02 J	38.1
70648-26-9	1,2,3,4,7,8-HxCDF	2.56 J	3.18 J	2.03 J	12.3	6.16 J	37.9
57117-44-9	1,2,3,6,7,8-HxCDF	2.73 J	3.95 J	2.05 J	14.2	3.95 J	35.6
60851-34-5	2,3,4,6,7,8-HxCDF	3.18 J	4.49 J	3.16 J	19.9	6.03 J	39.3
72918-21-9	1,2,3,7,8,9-HxCDF	0.788 J	0.739 J	0.364 J	2.32 J	0.749 J	10.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	36.2	45.8	48.3	532	108	306
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.47 J	2.45 J	3.05 J	19.7	14.8	16.2
39001-02-0	1,2,3,4,6,7,8,9-OCDF	80.8 J	110	131	809	289	523
Dioxin Toxic Equivalent (TEQ)		10.3 J	12.8 J	11.8 J	84.4	19.0 J	68.7

Comments:

E: Value is estimated. Concentration of the target analyte exceeds the instrument calibration range.

J: Value is estimated.

ppt: parts per trillion

APPENDIX J

DATA VERIFICATION

Strecker-Forest Dioxin Site Third Party Data Verification

Over the course of a number of months in late 2011 and early 2012, environmental soil samples were collected at the Strecker-Forest site in Ellisville, MO for the purpose of having them analyzed for the presence of dioxin & furans. These samples were sent to a contract laboratory (Cape Fear Analytical) in Wilmington, NC for dioxin & furan analysis by EPA Method 1613B. The laboratory analyzed each sample set and provided the analytical data to the EPA Region 7 (R7) Project Manager. As a part of R7's oversight of contract lab data, the EPA Project Manager within the Superfund program requested that the contract lab data be reviewed by R7 lab personnel. As a result, the R7 lab on-site Environmental Services Assistance Team (ESAT) contractor was requested to conduct a high-level data verification of the reported data. Since multiple packages were verified over a several month period, the findings of each are outlined below.

General Comments

ESAT was requested to verify the reported analytical results including proper qualification of data outliers, verify method 1613B was followed, confirm appropriate QC was performed at the expected frequencies, and identify data from any samples that should be qualified differently from that identified in the laboratory's analytical results summary forms. The review was conducted in accordance with *EPA Region 7 SOP 2430.3H* for validation of organic Contract Laboratory Program (CLP) data packages. As the data were generated using Method 1613B method, some professional judgment was required in evaluation of the data versus SOP requirements.

The subject data were reviewed and verified based only on the summary reports provided by Cape Fear Analytical LLC for each data package. Only minor discrepancies were noted, as discussed below. Overall data quality and completeness were acceptable based on the summary forms provided. Appropriate samples and analyses were performed along with QC at the expected frequency.

Samples with results between the estimated detection limit (EDL) and the practical quantitation limit (PQL) were qualified as estimated (i.e. flagged with "J" data qualifier) by Cape Fear. Typically, R7 lab analysts would only report analytical results down to the PQL with a "U" code and be considered a non-detect result.

Cape Fear Analytical Data Package (10/18/2011)

1. The one surrogate which was high in a diluted sample (100X) would not result in any data qualification based on Region 7 protocols.
2. Several matrix spike/matrix spike duplicate recovery outliers were noted and are suspected of being due to matrix interferences. Since the LCS/LCSD results were within control limits, per the case narrative, no data would be qualified.
3. One LCSD result for 1,2,3,4,6,7,8-HpCDF (128% vs 82-122%) was above the upper control limit and would be qualified as estimated ("J"-coded) in samples 5527-39, -44, and -45 based on the analytical batch information provided.
4. Several target compounds were above the calibration range and should have the final result reported from a sample dilution or qualified as estimated (J-coded).
5. Based on the Method Blank Summary Forms, 2,3,7,8-TCDF should be qualified (U-coded) in samples 5527-114 and -117 due to blank contamination.

Cape Fear Analytical Data Package (11/18/2011)

1. Based on the case narrative, no matrix spike/matrix spike duplicate (MS/MSD) analysis was required for this SDG. However, R7 procedures would require lab personnel to analyze a MS/MSD with each analytical batch unless directed otherwise or if there was not sufficient sample available.

Cape Fear Analytical Data Package (12/15/2011)

1. One surrogate which was high was in a diluted sample (50X) should not result in any data qualification based on Region 7 protocols. One surrogate (13C-OCDD) was low (12% vs 17-157%) and would result in qualification of associated positive hits as estimated (J-coded) and non-detects as estimated (UJ-coded). However, the case narrative states that signal-to-noise and ion ratio met acceptance criteria.
2. Several MS/MSD outliers were found (percent recovery and relative percent difference) and are suspected of being due to matrix interferences. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) sample results were within applicable control limits and, as indicated in the case narrative, no data would be qualified.
3. 1,2,3,4,6,7,8,9-OCDD in several samples was above the calibration range and analytical results should be reported from diluted samples with result that fall within the calibration range. If no dilution was performed or was not possible, analytical results above the calibration range should be qualified as estimated (J-coded).
4. Samples 5618 -14 (50X), -18 (20X), -22 (20X), and -24 (20X) were analyzed at dilutions and have elevated reporting limits as a result.
5. Samples 5618 -14, -15, -17, -22, and -23 were reanalyzed for 2,3,7,8-TCDF.
6. 1,2,3,7,8,9-HxCDF in samples 5618 -2 and -4 was identified as quantitative interference.
7. Based on the Method Blank Summary Forms, no data should be qualified due to blank contamination.

Cape Fear Analytical Data Package (02/21/2012) & (03/12/2012)

1. The data set from March 2012 was a re-extraction/re-analysis of the samples due to a LCS failure in the original analytical batch from February 2012.
2. One high surrogate recovery, in the February 2012 data set, in a diluted sample (100X) should not result in any data qualification based on Region 7 protocols.
3. Several MS/MSD outliers were found (percent recovery and relative percent difference) and are suspected of being due to matrix interferences. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) sample results were within applicable control limits and, as indicated in the case narrative, no data would be qualified.
4. 1,2,3,4,6,7,8,9-OCDD in several samples in both the February and March data sets and 1,2,3,4,6,7,8-HpCDD in sample 5651-31 was above the calibration range and analytical results should be reported from diluted samples with result that fall within the calibration range. If no dilution was performed or was not possible, analytical results above the calibration range should be qualified as estimated (J-coded).
5. Samples 5651 -23 (20X), -28 (10X), -32 (5X), -33 (5X), -35 (5X), -39 (10X), -44 (2X), -46 (100X), and -55 (5X) were analyzed at dilutions and have elevated reporting limits as a result.
6. Several samples in both the February and March data sets were reanalyzed for 2,3,7,8-TCDF.
7. 1,2,3,7,8,9-HxCDF in samples 5651 -27 and -54 and 1,2,3,7,8-PeCDF in samples 5651 -32 and -35 were identified as quantitative interference.
8. Based on the Method Blank Summary Forms, 2,3,7,8-TCDF in samples 5651-47, -47RE, -48, -48RE, -50, -50RE, and -56RE, per R7 protocols, should be U-coded due to sample concentrations not being greater than ten times the blank contamination.

APPENDIX K

EPA ADVANCED KAPLAN-MEIER TOXICITY EQUIVALENCE CALCULATOR TABLES