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May 01, 2023

Mr. James R. Curtis  
Chief, Geologic and Waste Assessment Unit  
Bureau of Design and Environment  
Illinois Department of Transportation  
2300 South Dirksen Parkway  
Springfield, IL 62764

IDOT Job No.: D-99-069-20  
District: 9  
County: Franklin  
Municipality: West Frankfort  
Route: FAP 873  
Marked: IL 149  
Street: IL 149  
From To/At: Interchange  
reconstruction along IL 149 at  
028-0039 over I-57 in West Frankfort

PTB: 172-027 (WSP 8)  
Work Order No.: 112  
BDE Sequence No.: 23299  
Requesting Agency: DOH  
Contract No.: 78814  
Section No.: (28-5)K-1  
ISGS PESA No.: 4062-COV  
Anticipated Letting Date: August 4, 2023  
Target PSI Completion: May 1, 2023  
IDOT Project Manager: Douglas Liniger

Dear Mr. Curtis:

Attached to this letter is the final preliminary site investigation (PSI) prepared by WSP USA, Inc. (WSP) for Work Order 112. WSP has incorporated IDOT review comments received on April 28, 2023. If you have any questions regarding this submittal, please contact me at (630) 728-0934.

Kind regards,

Dean Tiebout  
Program Manager  
DT  
Encl.  
cc: Jeff Hughes, WSP

ILLINOIS DEPARTMENT OF TRANSPORTATION

# PRELIMINARY SITE INVESTIGATION REPORT

FAP 873 (IL 149)

WEST FRANKFORT, FRANKLIN COUNTY,  
ILLINOIS

MAY 01, 2023





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FAP 873 (IL 149)  
WEST FRANKFORT, FRANKLIN  
COUNTY, ILLINOIS

ILLINOIS DEPARTMENT OF TRANSPORTATION

CONTRACT NO.: 172-027

WORK ORDER NO. 112

IDOT JOB NO.: D-99-069-20

BDE SEQUENCE NO.: 23299

SECTION NO.: (28-5)K-1

ROUTE: FAP 873

ISGS PESA NO.: 4062-COV

ANTICIPATED LETTING DATE: AUGUST 4, 2023

CONTRACT NO.: 78814

FINAL

DATE: MAY 2023

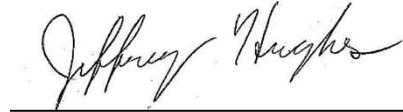
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# SIGNATURES

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## LIST OF ACRONYMS

bgs	below ground surface
CCDD	clean construction or demolition debris
CD-ROM	compact disk-read-only memory
COCs	contaminants of concern
E & E	Ecology and Environment, Inc.
GCGIER	groundwater component of the groundwater ingestion exposure route
GPS	global positioning system
IAC	Illinois Administrative Code
IDOT	Illinois Department of Transportation
ISGS	Illinois State Geological Survey
MACs	Maximum Allowable Concentrations of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regulated Fill Operations
MSA	metropolitan statistical area
NELAP	National Environmental Laboratory Accreditation Program
NRCS	Natural Resources Conservation Service
OSDs	Official Soil Series Descriptions
OSHA	Occupational Safety and Health Administration
PAHs	polyaromatic hydrocarbons
PESA	Preliminary Environmental Site Assessment
PID	photoionization detector
PSI	preliminary site investigation
PVLR	PESA Validation Letter Report
QC	quality control
RECs	recognized environmental conditions



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*LIST OF ACRONYMS (CONT.)*

ROs	remediation objectives
ROW	right-of-way
SCGIER	soil component of the groundwater ingestion exposure route
SILR	Site Inspection Letter Report
SOPs	standard operating procedures
SPLP	synthetic precipitation leaching procedure
SU	standard units
SVOCs	semi-volatile organic compounds
TACO	Tiered Approach to Corrective Action Objectives
TCLP	toxicity characteristic leaching procedure
US 150	US Route 150
USFO	uncontaminated soil fill operation
UST	underground storage tank
VOCs	volatile organic compounds
WSP	WSP USA, Inc.
WSS	Web Soil Survey

# 1 INTRODUCTION

This preliminary site investigation (PSI) report was prepared for the Illinois Department of Transportation (IDOT) pursuant to Work Order 112 issued to WSP USA, Inc., (WSP) under the IDOT Work Order Agreement for Consultant Services, PTB No. 172-027— Various Statewide Waste Assessments, Studies and Designs. WSP was tasked by IDOT to conduct the PSI for proposed construction in IDOT right-of-way (ROW) along IL 149 in West Frankfort, Franklin County, Illinois.

Field investigation activities were conducted by WSP in February 2023. The objectives of the investigation as defined in the IDOT-approved work plan dated February 02, 2023 (WSP 2023) are as follows:

- Determine the magnitude and the lateral and vertical extent of potential soil contamination within existing and proposed IDOT ROW in the planned construction area.
- Prepare a site investigation report with findings, conclusions, and recommendations as well as a remediation scope of work, based upon the results of chemical analysis of soil samples. The remediation scope of work will include an estimate of contaminated soil excavation quantities and an associated estimated cost for remediation.
- Assess the potential for surrounding IDOT ROW within the project area to be affected by contaminants migrating from affected areas and present recommendations to mitigate contaminant migration when the potential for migration is determined to be high.

This report presents the findings of WSP's investigation and consists of six sections. Section 2 provides pertinent site background information. Section 3 describes the procedures and sampling rationale used during the field investigation. Section 4 summarizes WSP's field investigation results, including observations, field measurements, sampling rationale, analytical results, and comparisons of the analytical results with regulatory standards. Section 5 provides conclusions of the investigation and recommendations for further investigation and contaminant migration reduction techniques, if necessary. Section 6 lists the references cited in this report.

## 2 SITE BACKGROUND

IDOT construction plans provided to WSP indicate that soil excavation is planned for sidewalk replacement, ditch work and new pavement. Excavation associated with the improvements is estimated to extend to a maximum depth of approximately 2 feet below ground surface (bgs). ROW acquisition is not proposed for this project.

The Illinois State Geological Survey (ISGS) prepared Preliminary Environmental Site Assessment (PESA) number 4062-COV for the project area to identify sites with recognized environmental conditions (RECs) that may potentially affect the project. Table 2-1 presents the site identified by ISGS, along with PESA findings and the proposed construction activities. Applicable background information about the site, taken directly from ISGS PESA 4062-COV, is included in Appendix A. The site investigation area is shown on Figure 2-1.

# 3 FIELD INVESTIGATION PROCEDURES

WSP followed a project-specific investigative work plan (WSP 2023) in accordance with IDOT-approved standard operating procedures (SOPs) to achieve the objectives stated in Section 1 for the project area. The field investigation for this project included screening and sampling soil at the sites identified in Section 2. This section describes the procedures used for screening, sample collection, equipment decontamination, quality assurance, and sample custody.

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## 3.1 SOIL BORING AND SAMPLING PROCEDURES

WSP advanced 14 borings in the proposed construction area. A summary of the sampling and analysis program for this PSI is presented in Table 3-1. Individual boring locations are identified with a unique alpha-numeric identification code. The first part of the boring identification is the site number designated by ISGS in the PESA (e.g., ISGS site #4062-COV-5 [Vacant Lot]). Following the ISGS site number is the boring identification number. Borings are numbered sequentially, with the initial boring designated -B01 (e.g., the initial boring at ISGS #4062-COV-5 is designated 4062-COV-05-B01).

Before advancing the borings, WSP personnel marked the proposed boring locations at the site and completed utility clearance. WSP used a global positioning system (GPS) receiver to record the actual location of each boring upon its completion.

WSP's Geoprobe® was equipped with a 4-foot-long, 2-inch diameter Macro-Core® sampler. Soil cores were collected from each boring by hydraulically pushing the Macro-Core® in 4-foot increments. At several locations, borings proposed to a maximum depth of 1 foot bgs were advanced using a stainless-steel hand auger. WSP used a new PVC Macro-Core® liner for each sample interval and decontaminated the Macro-Core® sampler and stainless-steel hand auger with an Alconox® and potable water solution between borings.

WSP used a calibrated photoionization detector (PID) to conduct headspace screening for volatile organic compounds (VOCs) on an aliquot of soil from each soil sample. The depth interval, recovery, soil description, headspace screening results, and any observations of staining and/or odors indicative of contamination were recorded for each Macro-Core® sample. Boring logs for this project are presented in Appendix B.

The field team collected 15 soil samples from the project area for laboratory analysis, including one duplicate sample. The samples were delivered to Eurofins Laboratories in University Park, Illinois (National Environmental Laboratory Accreditation Program [NELAP] number 100201) at the completion of sampling. Sample identification, documentation, and chain-of-custody were conducted in accordance with the approved SOPs during collection, transportation, storage, and analysis of samples.

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## 3.2 GROUNDWATER SAMPLING PROCEDURES

Groundwater samples were not proposed for collection for this PSI and WSP did not encounter groundwater in any of the PSI borings. Consequently, groundwater samples were not collected, and project area groundwater is not assessed in this report.

## 4 FIELD INVESTIGATION RESULTS

This section presents the results of WSP's field investigation and includes a discussion of project area geology and topography, significant field observations, sampling rationale, and laboratory analytical results relative to applicable criteria.

WSP's field observations and sample selection rationale are summarized by boring in Table 4-1. Soil samples collected for laboratory analysis were analyzed for VOCs, semi-volatile organic compounds (SVOCs), and total and toxicity characteristic leaching procedure (TCLP) metals listed in 35 Illinois Administrative Code (IAC) 1100, Subpart F. Selected samples were analyzed for individual metals by synthetic precipitation leaching procedure (SPLP) analysis, based on TCLP analysis results, as discussed below.

Laboratory results were reviewed by WSP for field and laboratory precision, accuracy, and completeness in accordance with procedures and quality control (QC) limits. A discussion of the analytical results is presented below, and a summary of detected analytes is presented in Appendix C. Laboratory data packages, including WSP's data review, are included as Appendix D.

The maximum detected concentrations of analytes in soil and a comparison with applicable reference concentrations are presented by site in Table 4-2. The detected analyte concentrations in soil are compared with the Maximum Allowable Concentrations of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regulated Fill Operations (MACs) presented in 35 IAC 1100, Subpart F and TACO Tier 1 Remediation Objectives (ROs) for residential ingestion and inhalation exposure presented in 35 IAC 742, Appendix B, Table A. When the MAC for an inorganic analyte is based on the Tiered Approach to Corrective Action Objectives (TACO) Class I soil component of the groundwater ingestion exposure route (SCGIER) presented in 35 IAC 742, Appendix B, Table C, the total concentration for the analyte is compared with the MAC, and the results of TCLP and SPLP analyses are independently compared with the TACO Class I SCGIER for the analyte found in 35 IAC 742, Appendix B, Table A. The analyte is considered to exceed the MAC if the total, TCLP, and SPLP results all exceed the applicable criteria.

When the MAC for a constituent is location-specific, the detected constituent concentration is also compared with the MAC for a metropolitan statistical area (MSA). Location-specific MACs have been established for arsenic, iron, manganese, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Analytes detected at concentrations above applicable reference concentrations are considered contaminants of concern (COCs). Table 4-3 presents a summary of COCs identified by boring and sample.

WSP also evaluated sample pH levels and the results of PID headspace screening pursuant to 35 IAC 1100.201(g) and 205(b)(1), respectively. Soil pH must be between 6.25 and 9.0 standard units (SU) for the soil to be accepted at a CCDD facility or USFO. In addition, loads of soil exhibiting PID readings above background cannot be accepted by a CCDD facility or USFO.

When one or more COCs are detected in a boring, aggregate areas of impacted soil are delineated without regard for property boundaries or planned excavation activities. The areal extent of impacted soil at an

individual boring is represented by a rectangle centered on the boring and extending from the centerline of the roadway to the construction limit. The rectangle will extend laterally one-half the distance between the affected boring and the next adjacent boring that does not contain a COC. If no adjacent borings are present, the impacted area will extend laterally a minimum of 50 feet in each direction.

When the estimated impacted area at a boring extends to an adjacent site, the impacts are also assumed for the applicable area of the adjacent site in the calculation of impacted construction quantities. The impacted soil excavation quantities for construction are calculated based on the assumption that the impacted soil extends from the ground surface to the proposed excavation depth for the construction feature within the impacted area.

WSP's field investigation was designed to provide an initial characterization of site conditions at pre-designated boring locations. The investigation was limited in terms of analytical parameters and the number of samples collected, based on the site information presented in ISGS PESA 4062-COV. Consequently, the findings and conclusions of this investigation are subject to revision if more site data become available.

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## 4.1 PROJECT AREA GEOLOGY AND TOPOGRAPHY

WSP advanced 14 soil borings for this project to a maximum depth of 2 feet bgs. Observations of subsurface materials in the project area are described for each of the soil borings in Appendix B. The following information was provided by ISGS PESA 4062-COV:

*The topmost bedrock unit in the project area has been mapped as Pennsylvanian-age rocks of the Shelburn-Patoka Formation, which in this area consist primarily of shales, limestones, and coals.*

*In the majority of the project area, the total thickness of surficial deposits has been mapped as approximately 15-30 meters (50-100 feet). In the south portion of the project area along the southeast I-55 on-ramp, the total thickness of surficial deposits has been mapped as approximately 8-15 meters (25-50 feet). In the west half of the project area, the topmost unit has been mapped as more than 6 meters (20 feet) of the loamy and sandy glacial deposits of the Glasford Formation, underlain by bedrock within 0 to 6 meters (0 to 20 feet) of the surface. In the east half of the project area, the topmost unit has been mapped as more than 6 meters (20 feet) of the clayey and silty deposits of the Carmi Member of the Equality Formation, underlain by bedrock within 0 to 6 meters (0 to 20 feet) of the surface*

*Along the project ROW, the NRCS has classified the Wynoose silt loam, bench, 0 to 2% slopes, as containing 33% to 100% hydric components. None of the other soils in the project area have been classified by NRCS as containing more than 33% hydric components. The NRCS has classified the Urban land, the Bulford silt loam, bench, 0 to 2% slopes, undrained, the Orthents, loamy, undulating, and the Orthents, loamy, hilly and very hilly, as non-prime farmland.*

*In the northern portion of the project area, surficial drainage is generally toward the north, in the direction of several unnamed tributaries to the Middle Fork of the Big Muddy River (including Site 4062-COV-11). In the southwest portion of the project area, surficial drainage is generally toward the southwest, in the direction of the Green River. In the southeast portion of the project area, surficial drainage is generally toward the south, in the direction of Pond Creek. However, since the project area is urbanized and storm drains and sewers are present, most surficial runoff will be controlled by the storm sewer system; such systems typically are designed to follow natural drainage patterns.*

The stratigraphy of the boreholes advanced during WSP's investigation revealed fill materials ranging in thickness from 0.5 to 0.75 feet, and including silty clay, silty loam, trace gravel, and trace slag in 2 of the 14 soil borings. Native materials encountered during the investigation consisted of brown silty clays and trace gravel. When native clayey silts were encountered, there was black mottling present in the soil. WSP did not encounter groundwater in any of the site borings.

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## 4.2 ISGS #4062-COV-5 (VACANT LOT)

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### 4.2.1 FIELD OBSERVATIONS AT ISGS #4062-COV-5

WSP advanced three borings (4062-COV-05-B01 through 4062-COV-05-B03) at ISGS #4062-COV-5 (Vacant Lot) (see Table 4-1 and Figure 4-2). VOCs were not detected during headspace screening of site soils, and sampling personnel did not observe odors or discoloration indicative of chemical contamination. WSP collected one sample from each boring for laboratory analysis.

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### 4.2.2 ANALYTICAL RESULTS FOR ISGS #4062-COV-5

VOCs were not detected in soil at the site (see Table 4-2). Nineteen SVOCs, primarily polycyclic aromatic hydrocarbons (PAHs) were detected in site soil. Twenty-one metals were detected in site soils, and barium, iron, and zinc were detected by TCLP analysis. SPLP analysis was not conducted, based on the TCLP analysis results. The sample pH levels ranged from 7.8 to 8.5 SU.

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### 4.2.3 NATURE AND EXTENT OF CONTAMINATION ABOVE APPLICABLE CRITERIA AT ISGS #4062-COV-5

Benzo(a)pyrene was identified as a COC in soil at the site (see Table 4-3). Benzo(a)pyrene was detected in sample 4062-COV-05-B02 (0-1) at a concentration above the most stringent MAC, but below the MSA and Chicago MACs.

No other COCs were identified at the site based on the evaluation criteria presented in Section 4.0. The sample pH levels were within the target range of 6.25 to 9.0 SU.

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### 4.2.4 IDOT CONSTRUCTION ACTIVITIES AT ISGS #4062-COV-5

Construction activity anticipated at this site includes sidewalk replacement and a new ditch. Excavation associated with the improvements is estimated to extend to a maximum depth of approximately one foot bgs. The assumed areas of impact and COCs are depicted on Figures 4-2 and 4-4. Table 4-4 presents an estimated volume of impacted soil within proposed construction excavation area that will require proper handling and disposal if removed from the site.

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## 4.3 ISGS #4062-COV-8 (ROW)

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### 4.3.1 FIELD OBSERVATIONS AT ISGS #4062-COV-8

WSP advanced nine borings (4062-COV-08-B01 through 4062-COV-08-B09) at ISGS #4062-COV-08 (ROW) (see Table 4-1 and Figures 4-2 and 4-3). VOCs were not detected during headspace screening of site soils, and sampling personnel did not observe odors or discoloration indicative of chemical contamination. WSP collected one sample from each boring for laboratory analysis.

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### 4.3.2 ANALYTICAL RESULTS FOR ISGS #4062-COV-8

Acetone, detected in the sample from boring 4062-COV-08-B08, was the only VOC detected in site soil, (see Table 4-2). Fifteen SVOCs, all PAHs, were detected in the soil. Twenty-one metals were detected in site soils, and four metals were detected by TCLP analysis. Based on the TCLP metals results, SPLP analysis was not conducted. The sample pH levels ranged from 7.2 to 8.2 SU.

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### 4.3.3 NATURE AND EXTENT OF CONTAMINATION ABOVE APPLICABLE CRITERIA AT ISGS #4062-COV-8

Benzo(a)pyrene and manganese were identified as COCs in soil at the site (see Table 4-3). Benzo(a)pyrene was detected at concentrations above the most stringent MAC, but below the MSA and Chicago MACs in samples 4062-COV-08-B06 (0-2) and 4062-COV-08-B09 (0-2). Total manganese was detected above applicable MACs in sample 4062-COV-08-B06 (0-2). Based on the IDOT approved work plan, samples were not analyzed for TCLP or SPLP manganese.

No other COCs were identified at the site based on the evaluation criteria presented in Section 4.0. The pH levels associated with the samples were within the target range of 6.25 to 9.0 SU.

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### 4.3.4 IDOT CONSTRUCTION ACTIVITIES AT ISGS #4062-COV-8

Construction activity anticipated at this site includes sidewalk replacement, a new ditch, and new pavement. Excavation associated with the improvements is estimated to extend to a maximum depth of approximately 2 feet bgs. The assumed areas of impact and COCs are depicted on Figures 4-2 through 4-5. Table 4-4 presents an estimated volume of impacted soil within proposed construction excavation areas that will require proper management if removed from the site.

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## 4.4 ISGS #4062-COV-14 (RESIDENTIAL BUILDING)

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### 4.4.1 FIELD OBSERVATIONS AT ISGS #4062-COV-14

WSP advanced two borings (4062-COV-14-B01 and 4062-COV-14-B02) at ISGS #4062-COV-14 (Residential Building) (see Table 4-1 and Figure 4-3). VOCs were not detected during headspace screening of site soils, and

sampling personnel did not observe odors or discoloration indicative of chemical contamination. WSP collected one sample from each boring for laboratory analysis. A duplicate sample was collected from boring 4062-COV-14-B02.

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#### *4.4.2 ANALYTICAL RESULTS FOR ISGS #4062-COV-14*

VOCs were not detected in soil at the site (see Table 4-2). Nineteen SVOCs, primarily PAHs, were detected in site soil. Twenty-one metals were detected in site soils, and barium, iron, and zinc were detected by TCLP analysis. SPLP analysis was not conducted, based on the TCLP analysis results. The sample pH levels ranged from 7.6 to 8.3 SU.

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#### *4.4.3 NATURE AND EXTENT OF CONTAMINATION ABOVE APPLICABLE CRITERIA AT ISGS #4062-COV-14*

Benzo(a)pyrene was identified as a COC in soil at the site (see Table 4-3). Benzo(a)pyrene was detected at concentrations above the most stringent MAC, but below the MSA and Chicago MACs in sample 4062-COV-14-B02 (0-1) and duplicate sample 4062-COV-14-B02 (0-1)D.

No other COCs were identified at the site based on the evaluation criteria presented in Section 4.0. The sample pH levels were within the target range of 6.25 to 9.0 SU.

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#### *4.4.4 IDOT CONSTRUCTION ACTIVITIES AT ISGS #4062-COV-14*

Construction activity anticipated at this site includes sidewalk replacement and a new ditch. Excavation associated with the improvements is estimated to extend to a maximum depth of approximately one foot bgs. The assumed areas of impact and COCs are depicted on Figures 4-3 and 4-5. Table 4-4 presents an estimated volume of impacted soil within proposed construction excavation areas that will require proper management if removed from the site.

# 5 CONCLUSIONS AND RECOMMENDATIONS

WSP's investigation has identified COCs in project area soils. The following sections summarize WSP's investigation findings and recommendation for classification and management of impacted soil based on the comparison with MACs and TACO Tier 1 ROs. WSP has included an uncontaminated soil certification form in Appendix E for each site where soil was found to meet the criteria for off-site management at a CCDD facility or USFO.

The field investigation was designed to provide an initial characterization of site conditions at pre-designated boring locations. The investigation was limited in terms of analytical parameters and the number of samples collected, based on the known history of the property. Consequently, the findings and conclusion of this investigation are subject to revision if more site data becomes available. Soil removed from outside the investigation area that exhibits discoloration or odor indicative of contamination should be sampled to determine the proper disposal classification.

WSP performed a desktop evaluation for natural and anthropogenic sources of manganese in the project area as part of the work plan for the project (WSP 2023). The site histories do not indicate current or past industrial processes associated with manganese. WSP reviewed the native soil types within the proposed construction area using the NRCS Web Soil Survey (WSS) and the NRCS Official Soil Series Descriptions (OSDs). The WSS area of interest and applicable OSDs area included in Appendix A.

The primary soil types identified at the sites are the Cisne silt loam, 0 to 2 percent slopes, and Bluford silt loam, 0 to 2 percent slopes (NRCS 2023).

Both the Cisne and Bluford formed in loess or other silty material on outwash plains. Of these, the typical pedons for the Cisne and Bluford series describe few to common fine iron-manganese accumulations or nodules in the B horizons.

Based on the review of the soil profiles, manganese concentrations detected in PSI samples appear to be naturally occurring and manganese is not considered to be a site-related contaminant of concern for the project.

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## 5.1 ESTIMATED SOIL MANAGEMENT VOLUMES AND COSTS

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### 5.1.1 ISGS #4062-COV-5 (VACANT LOT)

Benzo(a)pyrene was identified as a COC in soil at ISGS #4062-COV-05 (Vacant Lot). VOCs were not detected during headspace screening of site soil, and the soil pH levels were within the acceptable range for management at a CCDD facility or USFO.

Soil associated with boring 4062-COV-05-B02 (benzo(a)pyrene) may be managed on-site as fill. If it cannot be managed on-site, soil associated with the boring may be managed off-site as uncontaminated soil at a CCDD facility or USFO within an MSA.

COCs were not identified in soil associated with borings 4062-COV-05-B01 and 4062-COV-05-B03. Soil associated with these borings may be managed without restriction.

Costs estimated for the off-site disposal of soil are presented in Table 5-1. Based on the estimated construction excavation quantities presented in Table 4-4, WSP estimates that approximately 61 cubic yards of soil at the site may be managed off-site as uncontaminated soil to a CCDD facility or USFO if it cannot be managed on-site. The estimated soil management cost of \$6,755.00 includes costs associated with project construction reports, daily monitoring, laboratory analysis, and off-site disposal if a CCDD facility is not located in the vicinity of the project.

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### 5.1.2 ISGS #4062-COV-8 (ROW)

Manganese and benzo(a)pyrene were the COCs identified in soil at ISGS #4062-COV-08 (ROW). VOCs were not detected during headspace screening of site soil, and the soil pH levels were within the acceptable range for management at a CCDD facility or USFO.

Soil associated with boring 4062-COV-08-B06 (manganese, benzo(a)pyrene) may be managed on-site as fill. If soil cannot be used on-site as fill, it must be managed off-site as non-special waste, providing that a non-special waste certification is submitted by the generator according to the conditions set forth in 415 ILCS 5/22.48 and 415 ILCS 5/3.475. Site background information and the results of the PSI indicate that a non-special waste certification may be completed for soil associated with the boring.

Soil associated with boring 4062-COV-08-B09 (benzo(a)pyrene) may be managed on-site as fill. If it cannot be managed on-site, soil associated with the boring may be managed off-site as uncontaminated soil at a CCDD facility or USFO within an MSA.

COCs were not identified in soil associated with borings 4062-COV-08-B01 through 4062-COV-08-B05, 4062-COV-08-B07, and 4062-COV-08-B08. Soil associated with these borings may be managed without restriction.

Costs estimated for the off-site disposal of soil are presented in Table 5-1. Based on the estimated construction excavation quantities presented in Table 4-4, WSP estimates that approximately WSP estimates that approximately 49 cubic yards of soil estimated for excavation must be managed off-site as non-special waste if it cannot be managed on-site, and 76 cubic yards of soil at the site may be managed off-site as uncontaminated soil to a CCDD facility or USFO if it cannot be managed on-site. The estimated soil management cost of \$11,875.00 includes costs associated with project construction reports, daily monitoring, laboratory analysis, and soil disposal.

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### 5.1.3 ISGS #4062-COV-14 (RESIDENTIAL BUILDING)

Benzo(a)pyrene was identified as a COC in soil at ISGS #4062-COV-14 (Residential Building). VOCs were not detected during headspace screening of site soil, and the soil pH levels were within the acceptable range for management at a CCDD facility or USFO.

Soil associated with boring 4062-COV-14-B02 (benzo(a)pyrene) may be managed on-site as fill. If it cannot be managed on-site, soil associated with the boring may be managed off-site as uncontaminated soil at a CCDD facility or USFO within an MSA.

COCs were not identified in soil associated with boring 4062-COV-14-B01. Soil associated with this boring may be managed without restriction.

Costs estimated for the off-site disposal of soil are presented in Table 5-1. Based on the estimated construction excavation quantities presented in Table 4-4, WSP estimates that approximately 70 cubic yards of soil at the site may be managed off-site as uncontaminated soil to a CCDD facility or USFO if it cannot be managed on-site. The estimated soil management cost of \$7,475.00 includes costs associated with project construction reports, daily monitoring, laboratory analysis, and off-site disposal if a CCDD facility is not located in the vicinity of the project.

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## 5.2 SOIL MANAGEMENT AREAS AND APPLICABLE REGULATIONS

The following soil excavation areas should be managed in accordance with Article 669 of IDOT's Supplemental Specifications and Recurring Special Provisions as shown below.

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### 5.2.1 ISGS #4062-COV-05 (VACANT LOT)

ISGS Site 4062-COV-05 (Vacant Lot, 11000 block of IL 149, West Frankfort, Franklin County, Illinois) Station 687+00 to Station 688+50 (IL 149) 0 to 50 feet LT: The Engineer has determined this material meets the criteria of, and shall be managed in accordance with Article 669.05(a)(3). COC sampling parameter: benzo(a)pyrene.

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### 5.2.2 ISGS #4062-COV-08 (ROW)

ISGS Site 4062-COV-08 (ROW, I-57 M.M. 64.3 to 64.6, West Frankfort, Franklin County, Illinois) Station 696+50 to Station 697+46 (IL 149) 0 to 80 feet LT: The Engineer has determined this material meets the criteria of, and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameters: manganese, benzo(a)pyrene.

Station 697+00 to Station 698+50 (IL 149) 0 to 125 feet RT: The Engineer has determined this material meets the criteria of, and shall be managed in accordance with Article 669.05(a)(3). COC sampling parameter: benzo(a)pyrene.

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### 5.2.3 ISGS #4062-COV-14 (RESIDENTIAL BUILDING)

ISGS Site 4062-COV-14 (Residential Building, 1401 W. Main Street, West Frankfort, Franklin County, Illinois) Station 699+90 to Station 701+50 (IL 149) 0 to 50 feet LT: The Engineer has determined this material meets the criteria of, and shall be managed in accordance with Article 669.05(a)(3). COC sampling parameter: benzo(a)pyrene.

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## 5.3 RECOMMENDATIONS

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### *5.3.1 ADDITIONAL INVESTIGATIONS*

WSP does not recommend further investigation for this project. Soil in the project area has been characterized with regard to IDOT construction activities. Additional sampling may be required if soil is encountered that exhibits odor or discoloration indicative of contamination during construction excavation activities, or if activities extend beyond the previously investigated area. It is not anticipated that groundwater will be encountered during construction, but if any groundwater exhibiting odor or discoloration is encountered during construction activities, the water should be sampled to determine proper management requirements.

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### *5.3.2 PREVENTION OF ACCELERATED CONTAMINATED MIGRATION*

Soil containment and storm water runoff control measures are recommended to mitigate the migration of contaminants from any impacted soils that are stockpiled at the sites. If soil must be stockpiled, it should be stored in lined and covered roll-off boxes or segregated from other soils on storage pads designed to prevent migration of contaminants to unimpacted areas.

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### *5.3.3 COMPARISON OF DETECTED SOIL CONCENTRATIONS WITH TACO TIER 1 REMEDIAL OBJECTIVES FOR CONSTRUCTION WORKER EXPOSURE*

The COCs detected in site soil were compared with TACO Tier 1 ROs for construction worker exposure. No COCs were detected at concentrations above TACO Tier 1 ROs for construction worker exposure, and VOCs were not detected during headspace screening of site soils.

If soil unearthed during excavation activities exhibits PID readings, odors, or discoloration indicative of contamination, WSP recommends that the soil be sampled to determine appropriate worker protection measures during construction activities. The health and safety of construction workers is the sole responsibility of the construction contractor, and Occupational Safety and Health Administration (OSHA) regulations should be adhered to during construction activities.

## 6 REFERENCES

Illinois State Geological Survey (ISGS), April 13, 2023, *Preliminary Environmental Site Assessment, FAP 873 (IL 149) at I-57, West Frankfort, Franklin County.*

WSP USA, Inc., (WSP), February 2, 2023, *Work Plan Preliminary Site Investigation, FAP 873 (IL 149) West Frankfort, Franklin County, Illinois*, prepared by WSP USA, Inc., Chicago, Illinois.

# TABLES

TABLE 2-1 SUMMARY OF SITES AND PROPOSED CONSTRUCTION ACTIVITIES  
 FAP 873 (IL 149/I-57 Interchange)  
 West Frankfort, Franklin County, Illinois

Site	Recognized Environmental Conditions (RECs)	Planned Construction Activities	Planned Property Acquisition <sup>a</sup>
ISGS #4062-COV-5 (Vacant Lot)	Fill; VOCs, SVOCs, and metals.  <i>De minimis</i> conditions include potential transformer.	Sidewalk and new ditch. Maximum excavation depth is 1 foot bgs	None
ISGS #4062-COV-8 (ROW)	Former USTs; potential UST(s); evidence of chemical use; potential fill; spills; VOCs, SVOCs, and metals.  <i>De minimis</i> conditions include potential ACM.	Sidewalk, new ditch, and new pavement. Maximum excavation depth is 2 feet bgs	None
ISGS #4062-COV-14 (Residential Building)	Former AST; potential former chemical use; VOCs, SVOCs, and metals.  <i>De minimis</i> conditions include potential ACM and lead paint.	Sidewalk and new ditch. Maximum excavation depth is 1 foot bgs.	None

Key:

AST = Aboveground storage tank.

SVOC = Semivolatile organic compound

BGS = Below Ground Surface.

TCLP = Toxicity characteristic leaching procedure

ISGS = Illinois State Geological Survey.

UST = Underground storage tank.

ROW = Right-of-way.

VOC = Volatile organic compound.

TABLE 3-1 SUMMARY OF SAMPLING AND ANALYSIS PROGRAM  
 FAP 873 (IL 149)  
 West Frankfort, Franklin County, Illinois

Boring ID	Offset from Proposed Location <sup>a</sup>	Boring Depth (feet)	Matrix	Sample(s)	Parameters (Method) <sup>b</sup>			
					VOCs (8260B/5035)	SVOCs (8270D)	Total Metals (6010B/6020A/7471B)	TCLP Metals (1311/6010B/6020A/7470A) <sup>b</sup>
ISGS #4062-COV-05 (Vacant Lot)								
4062-COV-05-B01 <sup>c</sup>	--	1	Soil	4062-COV-05-B01 (0-1)	•	•	•	•
4062-COV-05-B02 <sup>c</sup>	--	1	Soil	4062-COV-05-B02 (0-1)	•	•	•	•
4062-COV-05-B03 <sup>c</sup>	--	1	Soil	4062-COV-05-B03 (0-1)	•	•	•	•
ISGS #4062-COV-08 (ROW)								
4062-COV-08-B01	--	2	Soil	4062-COV-08-B01 (0-2)	•	•	•	•
4062-COV-08-B02 <sup>c</sup>	--	2	Soil	4062-COV-08-B02 (0-2)	•	•	•	•
4062-COV-08-B03 <sup>c</sup>	--	2	Soil	4062-COV-08-B03 (0-2)	•	•	•	•
4062-COV-08-B04	--	2	Soil	4062-COV-08-B04 (0-2)	•	•	•	•
4062-COV-08-B05 <sup>c</sup>	--	2	Soil	4062-COV-08-B05 (0-2)	•	•	•	•
4062-COV-08-B06	--	2	Soil	4062-COV-08-B06 (0-2)	•	•	•	•
4062-COV-08-B07	--	2	Soil	4062-COV-08-B07 (0-2)	•	•	•	•
4062-COV-08-B08	--	2	Soil	4062-COV-08-B08 (0-2)	•	•	•	•
4062-COV-08-B09	--	2	Soil	4062-COV-08-B09 (0-2)	•	•	•	•
ISGS #4062-COV-14 (Residential Building)								
4062-COV-14-B01 <sup>c</sup>	--	1	Soil	4062-COV-14-B01 (0-1)	•	•	•	•
4062-COV-14-B02 <sup>c</sup>	--	1	Soil	4062-COV-14-B02 (0-1)	•	•	•	•
				4062-COV-14-B02 (0-1)D	•	•	•	•

Notes:

<sup>a</sup> Offsets are shown for borings moved a distance of 10 feet or greater from the proposed location.

TABLE 4-1 FIELD OBSERVATIONS AND SAMPLING RATIONALE  
 FAP 873 (IL 149)  
 West Frankfort, Franklin County, Illinois

Boring ID	Depth to Groundwater (feet)	Range of PID Readings (meter units)	Observed Evidence of Potential Contamination	Depth Interval(s) Sampled (feet)	Rationale
<b>ISGS #4062-COV-05 (Vacant Lot)</b>					
4062-COV-05-B01	--	None detected.	None observed.	0 - 1	Sample was collected within the proposed construction depth.
4062-COV-05-B02	--	None detected.	None observed.	0 - 1	Sample was collected within the proposed construction depth.
4062-COV-05-B03	--	None detected.	None observed.	0 - 1	Sample was collected within the proposed construction depth.
<b>ISGS #44062-COV-08 (ROW)</b>					
4062-COV-08-B01	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B02	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B03	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B04	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B05	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B06	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B07	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B08	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
4062-COV-08-B09	--	None detected.	None observed.	0 - 2	Sample was collected within the proposed construction depth.
<b>ISGS #4062-COV-14 (Residential Building)</b>					
4062-COV-14-B01	--	None detected.	None observed.	0 - 1	Sample was collected within the proposed construction depth.
4062-COV-14-B02	--	None detected.	None observed.	0 - 1	Sample was collected within the proposed construction depth.

Key:

BGS = Below ground surface. PID = Photoionization detector.  
 ISGS = Illinois State Geological Survey. -- = Groundwater was not encountered in the boring.

**Table 4-2 Detected Soil Analytes and Comparison with Applicable Criteria  
FAP 873 (IL 149)  
West Frankfort, Franklin County, Illinois**

Chemical	Maximum Detected Concentration	Maximum Allowable Concentrations		TACO Remediation Objectives	
		Most Stringent	Within an MSA	Construction Worker Exposure	Groundwater Protection (TCLP/SPLP)
<b>ISGS #4062-COV-5 (Vacant Lot)</b>					
<b>SVOCs (mg/Kg)</b>					
2-Methylnaphthalene	0.34	--	--	--	--
Acenaphthene	0.013	570	--	120,000	--
Acenaphthylene	0.013	--	--	--	--
Anthracene	0.031	12,000	--	610,000	--
Benzo(a)anthracene	0.17	0.9	1.8	170	--
Benzo(a)pyrene	<b>0.27</b>	0.09	2.1	17	--
Benzo(b)fluoranthene	0.42	0.9	2.1	170	--
Benzo(g,h,i)perylene	0.12	--	--	--	--
Benzo(k)fluoranthene	0.14	9.0	--	1,700	--
Bis(2-ethylhexyl) phthalate	0.18	46	--	4,100	--
Chrysene	0.28	88	--	17,000	--
Dibenz(a,h)anthracene	0.035	0.09	0.42	17	--
Dibenzofuran	0.21	--	--	--	--
Fluoranthene	0.3	3,100	--	82,000	--
Fluorene	0.0092	560	--	82,000	--
Indeno(1,2,3-cd)pyrene	0.11	0.9	1.6	170	--
Naphthalene	0.18	1.8	--	1.8	--
Phenanthrene	0.32	--	--	--	--
Pyrene	0.37	2,300	--	61,000	--
<b>Inorganics (mg/Kg)</b>					
Antimony	0.38	5.0	--	82	--
Arsenic	6.9	11.3	13	61	--
Barium	100	1,500	--	14,000	--
Beryllium	0.74	22	--	410	--
Boron	3.2	40	--	41,000	--
Cadmium	0.37	5.2	--	200	--
Calcium	51,000	--	--	--	--
Chromium	19.0	21	--	690	--
Cobalt	12.0	20	--	12,000	--
Copper	16.0	2,900	--	8,200	--
Iron	<b>18,000</b>	15,000	15,900	--	--
Lead	<b>170</b>	107	--	700	--
Magnesium	4,600	325,000	--	730,000	--
Manganese	480	630	636	4,100	--
Mercury	0.041	0.89	--	0.1	--
Nickel	18.0	100	--	4,100	--
Potassium	880	--	--	--	--
Selenium	0.74	1.3	--	1,000	--
Sodium	660	--	--	--	--
Vanadium	29.0	550	--	1,400	--
Zinc	93.0	5,100	--	61,000	--
<b>TCLP Metals (mg/L)</b>					
Barium	0.7	--	--	--	2.0
Iron	0.31	--	--	--	5.0

**Table 4-2 Detected Soil Analytes and Comparison with Applicable Criteria  
FAP 873 (IL 149)  
West Frankfort, Franklin County, Illinois**

Chemical	Maximum Detected Concentration	Maximum Allowable Concentrations		TACO Remediation Objectives	
		Most Stringent	Within an MSA	Construction Worker Exposure	Groundwater Protection (TCLP/SPLP)
<b>ISGS #4062-COV-5 (Vacant Lot)</b>					
<b>TCLP Metals (mg/L)</b>					
Zinc	0.038	--	--	--	5.0
<b>ISGS #4062-COV-8 (ROW)</b>					
<b>VOCs (mg/Kg)</b>					
Acetone	0.022	25	--	100,000	--
<b>SVOCs (mg/Kg)</b>					
2-Methylnaphthalene	0.072	--	--	--	--
Anthracene	0.018	12,000	--	610,000	--
Benzo(a)anthracene	0.092	0.9	1.8	170	--
Benzo(a)pyrene	<b>0.18</b>	0.09	2.1	17	--
Benzo(b)fluoranthene	0.22	0.9	2.1	170	--
Benzo(g,h,i)perylene	0.39	--	--	--	--
Benzo(k)fluoranthene	0.092	9.0	--	1,700	--
Chrysene	0.14	88	--	17,000	--
Dibenz(a,h)anthracene	0.054	0.09	0.42	17	--
Dibenzofuran	0.047	--	--	--	--
Fluoranthene	0.094	3,100	--	82,000	--
Indeno(1,2,3-cd)pyrene	0.24	0.9	1.6	170	--
Naphthalene	0.034	1.8	--	1.8	--
Phenanthrene	0.14	--	--	--	--
Pyrene	0.3	2,300	--	61,000	--
<b>Inorganics (mg/Kg)</b>					
Antimony	0.42	5.0	--	82	--
Arsenic	11.0	11.3	13	61	--
Barium	160	1,500	--	14,000	--
Beryllium	0.86	22	--	410	--
Boron	4.3	40	--	41,000	--
Cadmium	0.33	5.2	--	200	--
Calcium	16,000	--	--	--	--
Chromium	15.0	21	--	690	--
Cobalt	15.0	20	--	12,000	--
Copper	23.0	2,900	--	8,200	--
Iron	<b>20,000</b>	15,000	15,900	--	--
Lead	41.0	107	--	700	--
Magnesium	2,800	325,000	--	730,000	--
Manganese	<b>640</b>	630	636	4,100	--
Mercury	0.036	0.89	--	0.1	--
Nickel	20.0	100	--	4,100	--
Potassium	900	--	--	--	--
Selenium	0.76	1.3	--	1,000	--
Sodium	990	--	--	--	--
Vanadium	26.0	550	--	1,400	--
Zinc	89.0	5,100	--	61,000	--

**Table 4-2 Detected Soil Analytes and Comparison with Applicable Criteria  
FAP 873 (IL 149)  
West Frankfort, Franklin County, Illinois**

Chemical	Maximum Detected Concentration	Maximum Allowable Concentrations		TACO Remediation Objectives	
		Most Stringent	Within an MSA	Construction Worker Exposure	Groundwater Protection (TCLP/SPLP)
<b>ISGS #4062-COV-8 (ROW)</b>					
<b>TCLP Metals (mg/L)</b>					
Barium	0.99	--	--	--	2.0
Boron	0.073	--	--	--	2.0
Iron	1.1	--	--	--	5.0
Zinc	0.11	--	--	--	5.0
<b>ISGS #4062-COV-14 (Residential Building)</b>					
<b>SVOCs (mg/Kg)</b>					
2-Methylnaphthalene	0.41	--	--	--	--
Acenaphthene	0.027	570	--	120,000	--
Acenaphthylene	0.036	--	--	--	--
Anthracene	0.098	12,000	--	610,000	--
Benzo(a)anthracene	0.3	0.9	1.8	170	--
Benzo(a)pyrene	<b>0.35</b>	0.09	2.1	17	--
Benzo(b)fluoranthene	0.53	0.9	2.1	170	--
Benzo(g,h,i)perylene	0.13	--	--	--	--
Benzo(k)fluoranthene	0.2	9.0	--	1,700	--
Bis(2-ethylhexyl) phthalate	0.082	46	--	4,100	--
Chrysene	0.38	88	--	17,000	--
Dibenz(a,h)anthracene	0.012	0.09	0.42	17	--
Dibenzofuran	0.22	--	--	--	--
Fluoranthene	0.53	3,100	--	82,000	--
Fluorene	0.02	560	--	82,000	--
Indeno(1,2,3-cd)pyrene	0.11	0.9	1.6	170	--
Naphthalene	0.19	1.8	--	1.8	--
Phenanthrene	0.68	--	--	--	--
Pyrene	0.58	2,300	--	61,000	--
<b>Inorganics (mg/Kg)</b>					
Antimony	0.44	5.0	--	82	--
Arsenic	9.1	11.3	13	61	--
Barium	130	1,500	--	14,000	--
Beryllium	0.73	22	--	410	--
Boron	4.	40	--	41,000	--
Cadmium	3.1	5.2	--	200	--
Calcium	25,000	--	--	--	--
Chromium	15.0	21	--	690	--
Cobalt	8.5	20	--	12,000	--
Copper	34.0	2,900	--	8,200	--
Iron	<b>19,000</b>	15,000	15,900	--	--
Lead	<b>280</b>	107	--	700	--
Magnesium	2,700	325,000	--	730,000	--
Manganese	390	630	636	4,100	--
Mercury	0.078	0.89	--	0.1	--
Nickel	19.0	100	--	4,100	--
Potassium	1,000	--	--	--	--
Selenium	0.57	1.3	--	1,000	--

**Table 4-2 Detected Soil Analytes and Comparison with Applicable Criteria  
FAP 873 (IL 149)  
West Frankfort, Franklin County, Illinois**

Chemical	Maximum Detected Concentration	Maximum Allowable Concentrations		TACO Remediation Objectives	
		Most Stringent	Within an MSA	Construction Worker Exposure	Groundwater Protection (TCLP/SPLP)
<b>ISGS #4062-COV-14 (Residential Building)</b>					
<b>Inorganics (mg/Kg)</b>					
Sodium	270	--	--	--	--
Vanadium	20.0	550	--	1,400	--
Zinc	920	5,100	--	61,000	--
<b>TCLP Metals (mg/L)</b>					
Barium	1.2	--	--	--	2.0
Iron	0.5	--	--	--	5.0
Zinc	0.055	--	--	--	5.0

Maximum detected concentrations above the most stringent Maximum Allowable Concentration are shaded.

NOTE: Maximum Allowable Concentration refers to the values listed in the Summary of Maximum Allowable Concentrations of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regulated Fill Operations, 35 Ill. Adm. Code 1100.Subpart F dated 8/27/12. Total COC concentrations exceeding a MAC are highlighted; however, further evaluation is required to determine if the detected metals concentrations exceed the applicable MAC. For metals, total, TCLP and SPLP results are also evaluated to determine compliance with MACs.

**Key:**

- ISGS = Illinois State Geological Survey.
- MAC = Maximum Allowable Concentrations of Chemical Constituents in Uncontaminated Soil.
- mg/L = Milligrams per liter.
- mg/kg = Milligrams per kilogram.
- MSA = Metropolitan Statistical Area.
- = Not applicable or not specified. Groundwater protection objectives are shown for inorganics via TCLP/SPLP analyses.
- SPLP = Synthetic precipitation leaching procedure.
- SVOCs = Semi-volatile organic compounds.
- TACO = Tiered Approach to Corrective Action Objectives.
- TCLP = Toxicity characteristic leaching procedure.
- VOCs = Volatile organic compounds.

TABLE 4-3 SUMMARY OF SAMPLING AND ANALYSIS PROGRAM  
 FAP 873 (IL 149)  
 West Frankfort, Franklin County, Illinois

Boring ID	Range of PID Readings (meter units)	Sample(s)	pH	Contaminants of Concern <sup>a</sup>		Off-Site Management <sup>b</sup>	
				Above MSA MAC and/or TACO Tier 1 Soil Remediation Objective	Above Most Stringent MAC, Chicago MAC, or SCGIER Criteria Only	Eligible for CCDD or USFO?	Classification 669.05.*
<b>ISGS #4062-COV-05 (Vacant Lot)</b>							
4062-COV-05-B01	None detected	4062-COV-05-B01 (0-1)	7.8	None	None	Yes	Unrestricted
4062-COV-05-B02	None detected	4062-COV-05-B02 (0-1)	8.5	None	Benzo(a)pyrene	Yes, within an MSA	(a)(3)
4062-COV-05-B03	None detected	4062-COV-05-B03 (0-1)	8.5	None	None	Yes	Unrestricted
<b>ISGS #4062-COV-08 (ROW)</b>							
4062-COV-08-B01	None detected	4062-COV-08-B01 (0-2)	8.2	None	None	Yes	Unrestricted
4062-COV-08-B02	None detected	4062-COV-08-B02 (0-2)	7.9	None	None	Yes	Unrestricted
4062-COV-08-B03	None detected	4062-COV-08-B03 (0-2)	7.5	None	None	Yes	Unrestricted
4062-COV-08-B04	None detected	4062-COV-08-B04 (0-2)	8.1	None	None	Yes	Unrestricted
4062-COV-08-B05	None detected	4062-COV-08-B05 (0-2)	7.5	None	None	Yes	Unrestricted
4062-COV-08-B06	None detected	4062-COV-08-B06 (0-2)	7.5	Manganese	Benzo(a)pyrene	No	(a)(1)
4062-COV-08-B07	None detected	4062-COV-08-B07 (0-2)	7.9	None	None	Yes	Unrestricted
4062-COV-08-B08	None detected	4062-COV-08-B08 (0-2)	7.8	None	None	Yes	Unrestricted
4062-COV-08-B09	None detected	4062-COV-08-B09 (0-2)	7.2	None	Benzo(a)pyrene	Yes, within an MSA	(a)(3)
<b>ISGS #4062-COV-14 (Residential Building)</b>							
4062-COV-14-B01	None detected	4062-COV-14-B01 (0-1)	7.6	None	None	Yes	Unrestricted
4062-COV-14-B02	None detected	4062-COV-14-B02 (0-1)	7.9	None	Benzo(a)pyrene	Yes, within an MSA	(a)(3)
		4062-COV-14-B02 (0-1)D	8.3	None	Benzo(a)pyrene		

Notes:

<sup>a</sup> Contaminants of concern are defined as analytes that were detected at a concentration above one or more reference criteria. The following compounds and analytes have MACs for both MSAs and non-MSAs: arsenic, iron, manganese, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Exceedances of the SCGIER are considered to be MAC exceedances when the total metal concentration also exceeds the MAC.

<sup>b</sup> Soils that contain constituent concentrations below the most stringent MACs may be managed off site as "uncontaminated soil" pursuant to 35 IAC 11. Uncontaminated soil with a pH range of 6.25 to 9, and no PID readings above background levels may be managed off site to a Clean Construction and Demolition Debris (CCDD) facility or uncontaminated soil fill operation (USFO). When a constituent has a MAC based on a Metropolitan Statistical Area (MSA), soils that contain constituents below the applicable MACs for an MSA, exhibit a pH within the range of 6.25 to 9, and do not exhibit PID readings above background levels may be managed off site as "uncontaminated soil" to a CCDD or USFO within the MSA county, excluding Chicago. Soils containing constituents above MACs for an MSA that cannot be managed on site are estimated as non-special waste. Metals (excluding arsenic) are considered eligible for off-site management to a CCDD or USFO facility unless the detected total, TCLP, and SPLP concentrations exceed applicable comparison criteria.

Key:

CCDD = Clean Construction and Demolition Debris.

ISGS = Illinois State Geological Survey.

MAC = Maximum Allowable Concentrations of Chemical Constituents in

Uncontaminated Soil Used as Fill at Regulated Fill Operations.

MSA = Metropolitan Statistical Area.

PID = Photoionization detector.

SCGIER = Soil component of the groundwater ingestion exposure route.

SPLP = Synthetic precipitation leaching procedure.

TACO = Tiered Approach to Corrective Action Objectives.

TCLP = Toxicity characteristic leaching procedure.

TABLE 4-4 ESTIMATE OF IMPACTED SOIL WITHIN IDOT CONSTRUCTION AREAS  
 FAP 873 (IL 149)  
 West Frankfort, Franklin County, Illinois

Boring ID	Impacted Stationing	Contaminants of Concern		Construction Feature Within Impacted Soil Area	Excavation Dimension Assumption <sup>b</sup>	Estimated Volume and Classification of Impacted Soil (cubic yards) <sup>a</sup> Standard Specifications, Article 669.05						
		Above MSA MAC and/or TACO Tier 1 Soil Remediation Objective	Above Most Stringent MAC, Chicago MAC, or SCGIER Criteria Only			(a)(1)	(a)(2)	(a)(3)	(a)(4)	(a)(5)	(b)(1)	(c)
ISGS #4062-COV-05 (Vacant Lot)												
4062-COV-05-B02	Station 687+00 to Station 688+50 (IL 149), 0 to 50 feet LT	None	Benzo(a)pyrene	Sidewalk & Ditch	Volume estimates made using plans and volumes provided by IDOT	--	--	60.8	--	--	--	--
Total Volume of Impacted Soil in Construction Zone:						0.0	0.0	61.0	0.0	0.0	0.0	0.0
ISGS #4062-COV-08 (ROW)												
4062-COV-08-B06	Station 696+50 to Station 697+46 (IL 149), 0 to 80 feet LT	Manganese	Benzo(a)pyrene	Sidewalk, pavement & Ditch	Volume estimates made using plans and volumes provided by IDOT	49.0	--	--	--	--	--	--
4062-COV-08-B09	Station 697+00 to Station 698+50 (IL 149), 0 to 125 feet RT	None	Benzo(a)pyrene	Sidewalk, pavement & Ditch	Volume estimates made using plans and volumes provided by IDOT	--	--	75.9	--	--	--	--
Total Volume of Impacted Soil in Construction Zone:						49.0	0.0	76.0	0.0	0.0	0.0	0.0
ISGS #4062-COV-14 (Residential Building)												
4062-COV-14-B02	Station 699+90 to Station 701+50 (IL 149), 0 to 50 feet LT	None	Benzo(a)pyrene	Sidewalk & Ditch	Volume estimates made using plans and volumes provided by IDOT	--	--	70.4	--	--	--	--
Total Volume of Impacted Soil in Construction Zone:						0.0	0.0	70.0	0.0	0.0	0.0	0.0

Notes:

<sup>a</sup> Estimated excavation volumes are based on information in the PESA Response memo (Form BDE2735) and plan drawings provided by IDOT.

Key:

IDOT = Illinois Department of Transportation.

ISGS = Illinois State Geological Survey.

MAC = Maximum allowable concentration of chemical constituents in uncontaminated soil used as fill material at regulated fill operations.

SCGIER = Soil component of the groundwater ingestion exposure route.

TACO = Tiered Approach to Corrective Action Objectives

Table 5-1 ESTIMATED DISPOSAL COSTS FOR IMPACTED SOIL WITHIN IDOT CONSTRUCTION AREAS  
GENERAL COST BREAKDOWN FOR CONSTRUCTION ACTIVITIES  
FAP 873 (IL 149)  
West Frankfort, Franklin County, Illinois

Site	Pay Item/Cost per Unit														Total Cost (Rounded to nearest dollar)
	PRE-CONSTRUCTION REPORT <sup>a</sup> \$1,500.00 lump sum		CONSTRUCTION REPORT <sup>b</sup> \$1,500.00 lump sum		MONITORING <sup>c</sup> \$1,000.00 Per Day		NON-SPECIAL WASTE DISPOSAL <sup>d</sup> \$75.00 per cubic yard				NON-SPECIAL WASTE DISPOSAL <sup>e</sup> \$75.00 per cubic yard		SOIL DISPOSAL ANALYSIS <sup>f</sup> \$875.00 each		
							669.05(a)(1)		669.05(a)(5)		669.05(a)(1)				
	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
ISGS #4062-COV-05 (Vacant Lot)															
Subtotal for ISGS #4062-COV-05	0.33	\$500.00	0.33	\$500.00	0.3	\$305.00	0	\$0.00	0	\$0.00	61	\$4,575.00	1	\$875.00	\$6,755.00
ISGS #4062-COV-08 (ROW)															
Subtotal for ISGS #4062-COV-08	0.33	\$500.00	0.33	\$500.00	0.6	\$625.00	49	\$3,675.00	0	\$0.00	76	\$5,700.00	1	\$875.00	\$11,875.00
ISGS #4062-COV-14 (Residential Building)															
Subtotal for ISGS #4062-COV-14	0.33	\$500.00	0.33	\$500.00	0.4	\$350.00	0	\$0.00	0	\$0.00	70	\$5,250.00	1	\$875.00	\$7,475.00
PROJECT TOTALS	1	\$1,500.00	1	\$1,500.00	1.3	\$1,280.00	49	\$3,675.00	0	\$0.00	207	\$15,525.00	3	\$2,625.00	\$26,105.00

Notes:

<sup>a</sup> Costs for the Regulated Substances Pre-Construction Report are apportioned equally between the project sites.

<sup>b</sup> Costs for the Final Construction Report are apportioned equally between the project sites.

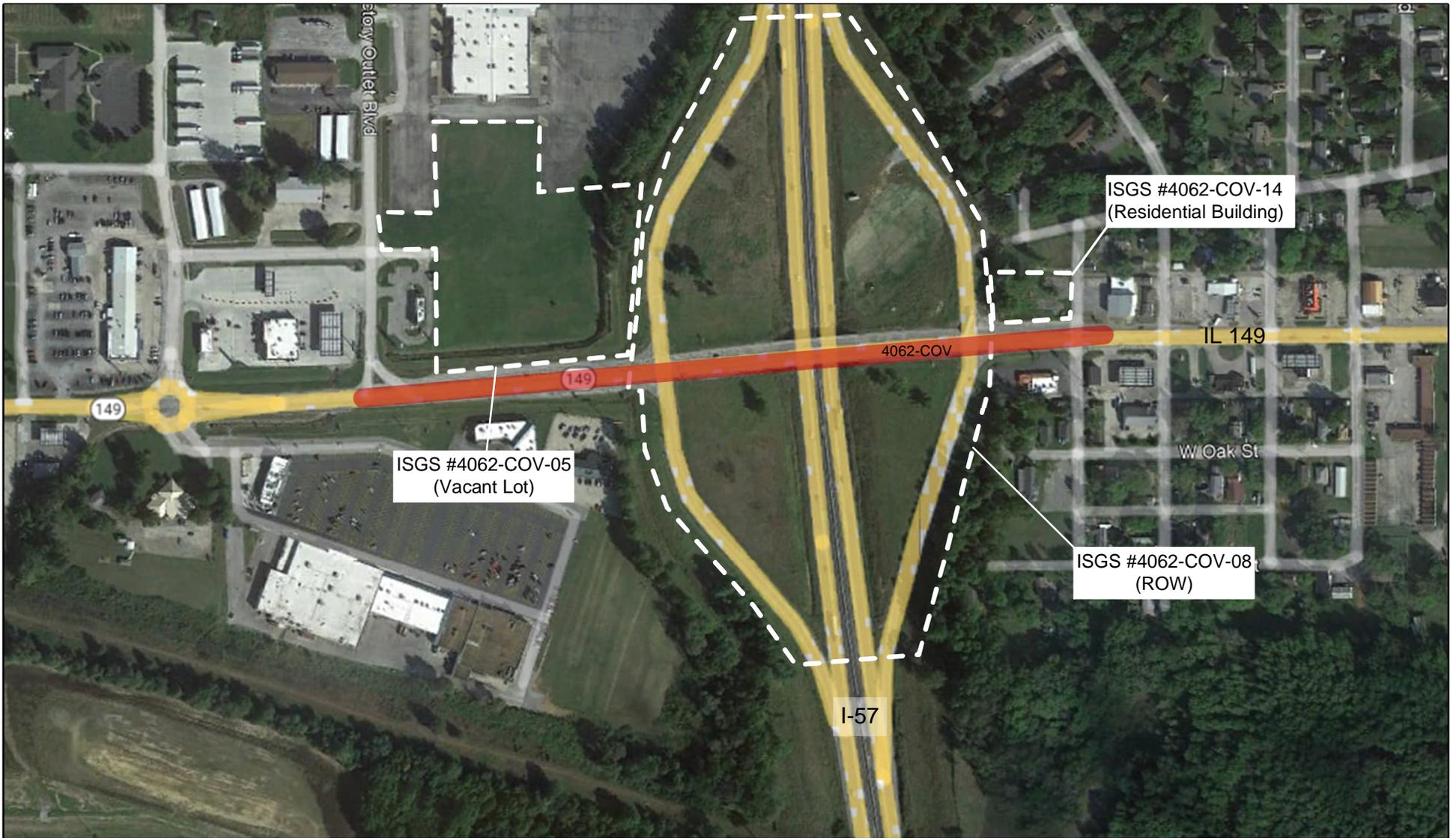
<sup>c</sup> Monitoring costs include labor (port-to-port), expenses, and equipment for air monitoring field oversight. The estimated number of days of field oversight were provided by IDOT.

<sup>d</sup> Material must be managed to a non-special waste disposal facility if disposed off-site. Transportation costs are based on a generic 100-mile distance to the facility and a truck capacity of 14 cubic yards.

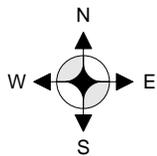
<sup>e</sup> Costs are included for off-site disposal as non-special waste for soil classified as 669.05(a)(2) through (a)(4) when a CCDD facility is not located within 60 miles of the project.

<sup>f</sup> Disposal Analysis Methods: EPA Methods 1311, 8260B, 8270C, 8081, 8151A, 9045C, 1030, and 9095A.

# FIGURES



**LEGEND**



- APPROXIMATE PESA SITE BOUNDARY

**4062-COV** - ISGS PESA AREA



**SITE INVESTIGATION AREA**



ROUTE: FAP 873 (IL 149)  
 CITY: West Frankfort  
 COUNTY: Franklin

SCALE:

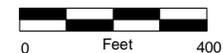


FIGURE NO:  
 2-1

<b>ALIGNMENT &amp; WAY ITEMS</b>	EXISTING	PROPOSED
ROAD		
SIDEWALK		
CENTERLINES		
BIKEPATH		
CURB AND GUTTER		
<b>RIGHT OF WAY ITEMS</b>		
LIMITS OF CONSTRUCTION		
ROW		
PERMANENT EASEMENT		
TEMPORARY EASEMENT		
APPROXIMATE PESA SITE		
<b>DRAINAGE ITEMS</b>		
STORM SEWER		
STORM SEWER REMOVAL		
MANHOLE		
CATCH BASIN		
FLOWLINE		
DITCH CHECK		
HEADWALL		
INLET		
SUMMIT		
ROADWAY DITCH FLOW		
SWALE		
CULVERT SECTION		
RIPRAP		
<b>TRAFFIC SIGNAL ITEMS</b>		
DOUBLE HANDHOLE		
CONTROLLER		
HEAVY-DUTY HANDHOLE		
HANDHOLE		
LIGHTING & CONDUIT		
LIGHT POST		
MAST ARM		
PUSHBUTTON POST		
PED. PUSHBUTTON DETECTOR		
PED. SIGNAL HEAD		
POWER POLE SERVICE		
PRIORITY VEH. DETECTOR		
SIGNAL HEAD		
SIGNAL HEAD W/BACKPLATE		
SIGNAL POST		

<b>LIGHTING</b>	EXISTING	PROPOSED
LIGHT UNIT COMB.		
ELECTRICAL GROUND		
HIGH MAST POLE (HALF SIZE)		
LIGHT UNIT-1		
LIGHT TOWER		
LIGHT POLE		
LIGHT POLE		

<b>INVESTIGATION ITEMS</b>	
BORING LOCATION (DEPTH PID pH)	1860-46-B01 (2-4' 25.2 8.8)
TEMPORARY MONITORING WELL LOCATIONS (DEPTH PID pH)	1860-46-B01 (2-4' 25.2 8.8)

**PTB# 176-027 WORK ORDER 112  
FAP 873 (IL 149)  
CITY OF WEST FRANKFORT,  
FRANKLIN COUNTY, ILLINOIS**

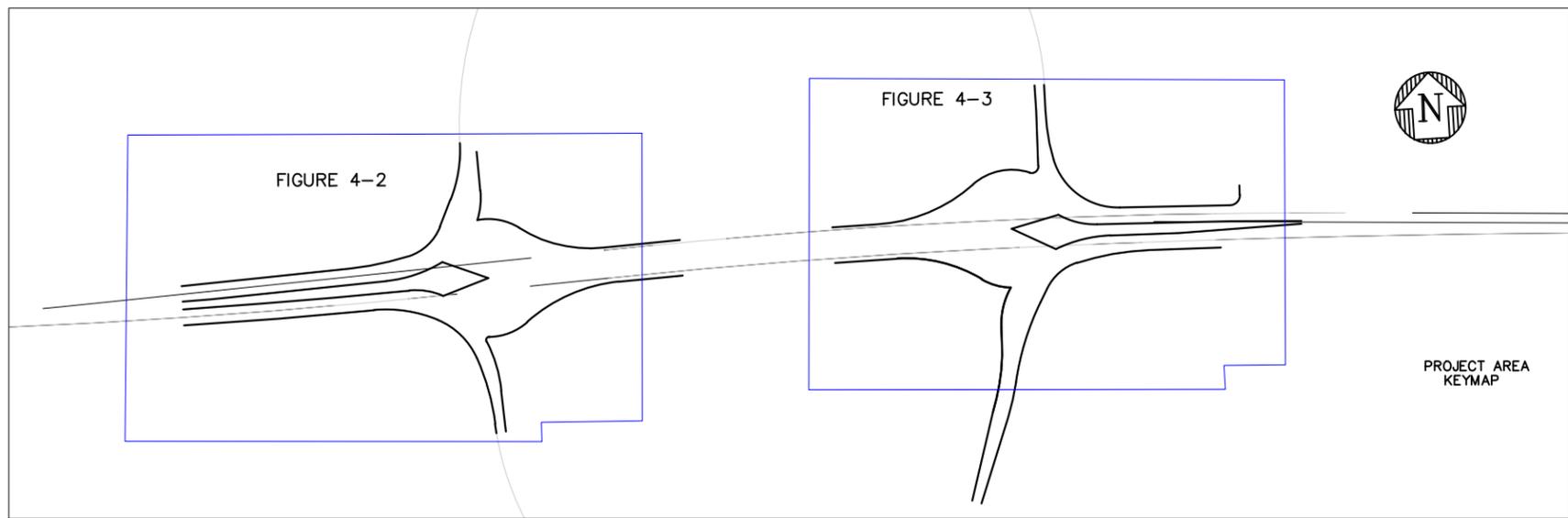
**ISGS #4062-COV  
INVESTIGATION SITES**  
ISGS #4062-COV- 5 (VACANT LOT)  
ISGS #4062-COV- 8 (ROW)  
ISGS #4062-COV- 14 (RESIDENTIAL BLDG.)  
ISGS #4062-COV- 32 (COMMERCIAL BUILDING AND RESIDENCE)

**REGULATED SUBSTANCES CLASSIFICATION**

**PID pH** Red Box around the text to indicates PID Exceeds background value or pH outside acceptable range for CCDD disposal

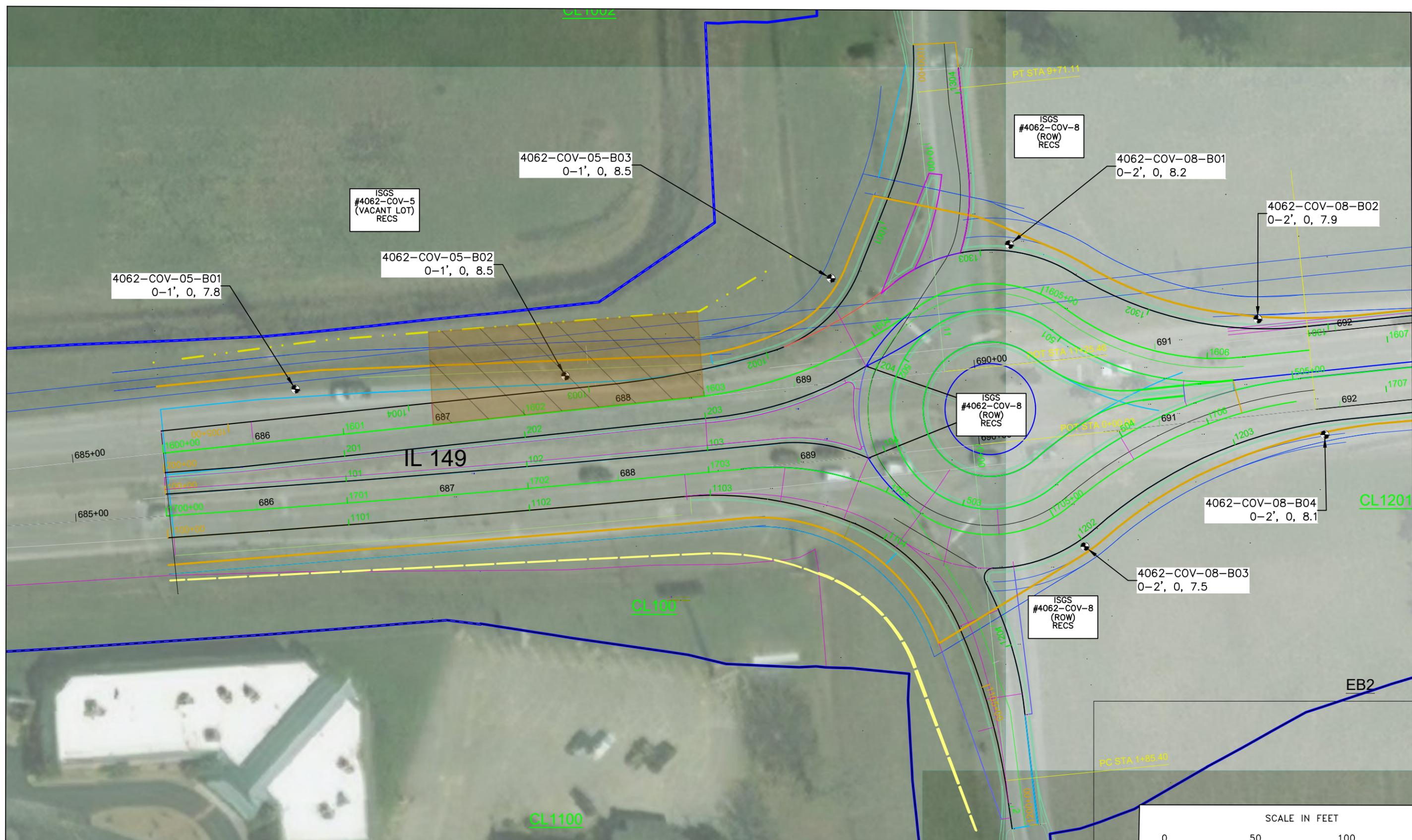
	669.05(a)(1)
	669.05(a)(2)
	669.05(a)(3)
	669.05(a)(4)
	669.05(a)(5)
	669.05(a)(6)
	669.05(b)(1)
	669.05(b)(2)
	669.05(c)
	669.05(d)
	WORK ZONE

**NOTE:**  
1. Additional detail and information regarding regulated substances management and disposal classifications can be found in the Standard Specifications for Road and Bridge Construction (SSRBC) Section 669.05  
2. This figure relies on color code depictions for soil management, please contact the DESU or AE for assistance.



ASSIGNED COORDINATE SYSTEM: NAD 83 STATE PLANE EAST U.S. FT.

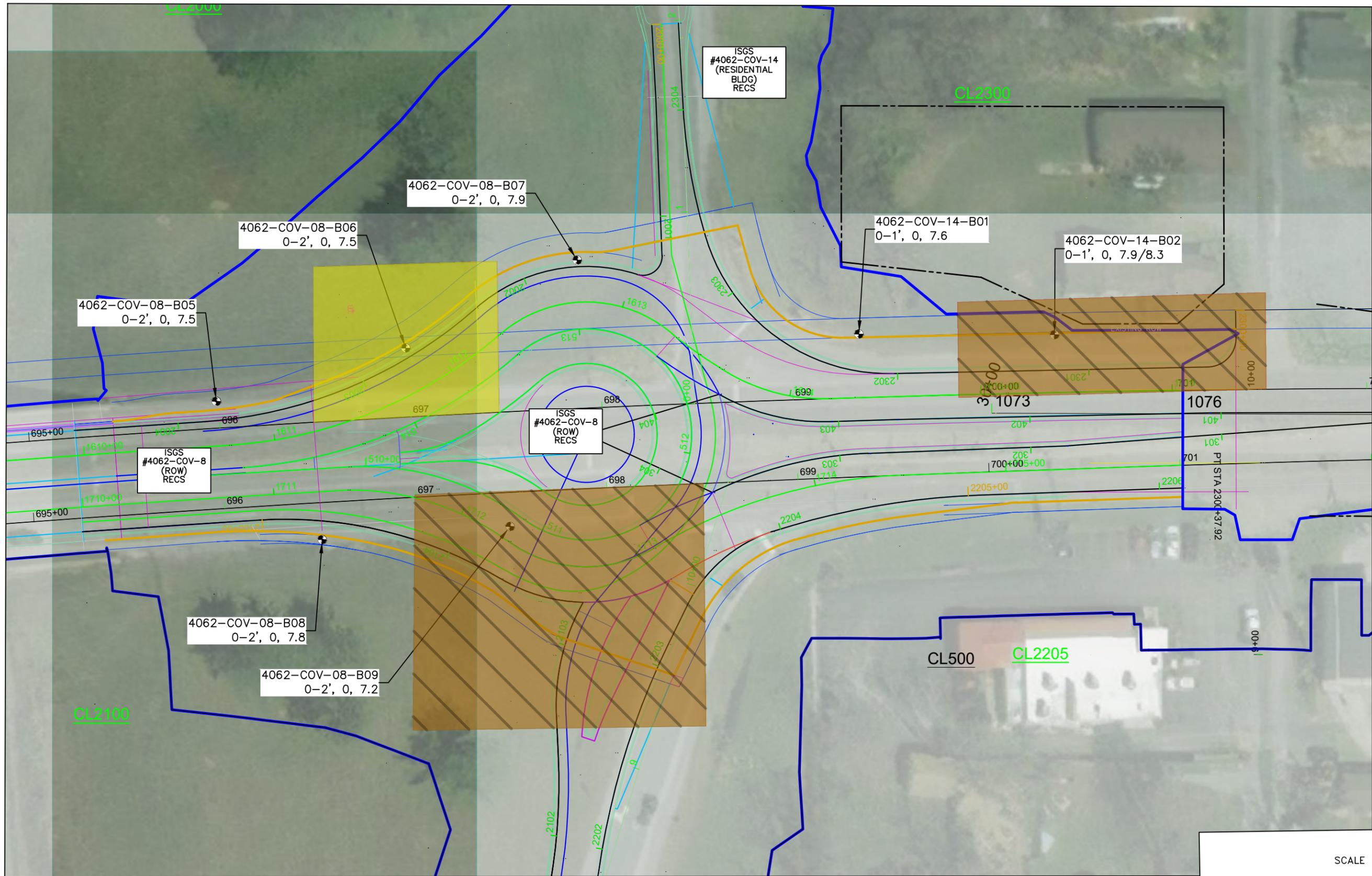
	DRAWN BY: V. GEE	DESIGNED BY: J. HUGHES	PTB/JOB: 172-027/ P-30-010-14	<b>GENERAL NOTES &amp; LEGEND FAP 873 (IL 149)</b>	IDOT PROJECT #: D-99-069-20	BDE SEQ. #: 23299	CITY: WEST FRANKFORT	DATE: 01/23/23	<b>FIGURE 4-1 REVISION 0</b>
	CHECKED BY: D. TIEBOUT	APPROVED BY: D. TIEBOUT	WORK ORDER: 112		ROUTE: FAP 873	CONTRACT #: 78814	COUNTY: FRANKLIN	SCALE: N/A	



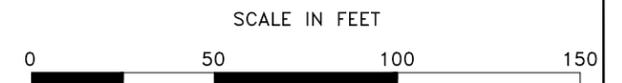
NOTE: SEE FIGURE 4-4 FOR CONTAMINANTS OF CONCERN



	DRAWN BY: V. GEE	DESIGNED BY: J HUGHES	PTB/JOB: 172-027/ P-30-010-14	<b>INVESTIGATION DATA SUMMARY</b> FAP 873 (IL 149) STA. 685+00 TO 692+00	IDOT PROJECT #: D-99-069-20	BDE SEQ. #: 23299	CITY: WEST FRANKFORT	DATE: 03/18/23	<b>FIGURE 4-2</b> REVISION 0
	CHECKED BY: D. TIEBOUT	APPROVED BY: D. TIEBOUT	WORK ORDER: 112		ROUTE: FAP 873	CONTRACT #: 78814	COUNTY: FRANKLIN	SCALE: 1" = 50'	



NOTE: SEE FIGURE 4-5 FOR CONTAMINANTS OF CONCERN



DRAWN BY: V. GEE	DESIGNED BY: J HUGHES	PTB/JOB: 172-027/ P-30-010-14
CHECKED BY: D. TIEBOUT	APPROVED BY: D. TIEBOUT	WORK ORDER: 112

**INVESTIGATION DATA SUMMARY**  
 FAP 873 (IL 149)  
 STA. 695+00 TO 702+00

IDOT PROJECT #: D-99-069-20	BDE SEQ. #: 23299
ROUTE: FAP 873	CONTRACT #: 78814

CITY: WEST FRANKFORT	DATE: 03/18/23
COUNTY: FRANKLIN	SCALE: 1" = 50'

**FIGURE 4-3**  
 REVISION 0

**CONTAMINANTS OF CONCERN**

SITE	ISGS #4062-COV-5 (Vacant Lot)			ISGS #4062-COV-8 (ROW)				Comparison Criteria					
	4062-COV-05-B01	4062-COV-05-B02	4062-COV-05-B03	4062-COV-08-B01	4062-COV-08-B02	4062-COV-08-B03	4062-COV-08-B04	MACs			TACO		
BORING	4062-COV-05-B01 (0-1)	4062-COV-05-B02 (0-1)	4062-COV-05-B03 (0-1)	4062-COV-08-B01 (0-2)	4062-COV-08-B02 (0-2)	4062-COV-08-B03 (0-2)	4062-COV-08-B04 (0-2)	Most Stringent	Within an MSA	Within Chicago	Residential	Construction Worker	SCGIER
SAMPLE	4062-COV-05-B01 (0-1)	4062-COV-05-B02 (0-1)	4062-COV-05-B03 (0-1)	4062-COV-08-B01 (0-2)	4062-COV-08-B02 (0-2)	4062-COV-08-B03 (0-2)	4062-COV-08-B04 (0-2)						
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
DEPTH (feet)	0-1	0-1	0-1	0-2	0-2	0-2	0-2						
pH	7.8	8.5	8.5	8.2	7.9	7.5	8.1						
PID (meter units)	--	--	--	--	--	--	--						
<b>SVOCs (mg/kg)</b>													
Benzo(a)pyrene	0.020 J	0.27 J †	0.024 J	ND U	ND U	ND U	0.0098 J	0.09	2.1	11	2.1	17	--
<b>Inorganics (mg/kg)</b>													
Iron	18,000 †m	16,000 †m	18,000 †m	16,000 †m	14,000	14,000	18,000 †m	15,000	15,900	--	--	--	--
Lead	38	170 †	31	22	14	10	13	107	--	--	400	700	--
<b>TCLP Metals (mg/L)</b>													
Iron	0.31 J	ND U	ND U	ND U	0.48	ND U	1.1	--	--	--	--	--	5
Lead	ND U	ND U	ND U	ND U	ND U	ND U	ND U	--	--	--	--	--	0.0075
<b>SPLP Metals (Not Analyzed)</b>													

**Key to Data Table**

MAC = Maximum Allowable Concentration of Chemical Constituent in Uncontaminated Soil Used as Fill Material At Regulated Fill Operations

mg/kg = Milligrams per kilogram.

mg/L = Milligrams per liter.

MSA = Metropolitan Statistical Area

TACO = Tiered Approach to Corrective Action Objectives

TCLP = Toxicity Characteristic Leaching Procedure.

SCGIER = Soil Component of the Groundwater Ingestion Exposure Route

SPLP = Synthetic Precipitation Leaching Procedure.

  = Concentration exceeds the most Stringent MAC, but is below the MAC for an MSA.

ND = Not detected.

NA = Not analyzed.

J = Estimated value.

U = Analyte was analyzed for but not detected.

# = pH is less than 6.25 or greater than 9.0 standard units.

† = Concentration exceeds the most stringent MAC.

m = Concentration exceeds the MAC for an MSA.

\* = Concentration exceeds the MAC for Chicago corporate limits.

L = The detected concentration exceeds the TACO Tier 1 RO for the SCGIER.

  = Concentration exceeds applicable comparison criteria.



DRAWN BY: V. GEE	DESIGNED BY: J HUGHES	PTB/JOB: 172-027/ P-30-010-14
CHECKED BY: D. TIEBOUT	APPROVED BY: D. TIEBOUT	WORK ORDER: 112

CONTAMINANTS OF CONCERN  
FAP 873 (IL 149)  
STA. 685+00 TO 692+00

IDOT PROJECT #: D-99-069-20	BDE SEQ. #: 23299	CITY: WEST FRANKFORT	DATE: 03/18/23
ROUTE: FAP 873	CONTRACT #: 78814	COUNTY: FRANKLIN	SCALE: N/A

FIGURE  
4-4  
REVISION 0

**CONTAMINANTS OF CONCERN**

SITE	ISGS #4062-COV-8 (ROW)					ISGS #4062-COV-14 (Residential Building)			Comparison Criteria					
	4062-COV-08-B05	4062-COV-08-B06	4062-COV-08-B07	4062-COV-08-B08	4062-COV-08-B09	4062-COV-14-B01	4062-COV-14-B02		MACs			TACO		
BORING														
SAMPLE	4062-COV-08-B05 (0-2)	4062-COV-08-B06 (0-2)	4062-COV-08-B07 (0-2)	4062-COV-08-B08 (0-2)	4062-COV-08-B09 (0-2)	4062-COV-14-B01 (0-1)	4062-COV-14-B02 (0-1)	4062-COV-14-B02 (0-1)D						
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
DEPTH (feet)	0-2	0-2	0-2	0-2	0-2	0-1	0-1	0-1						
pH	7.5	7.5	7.9	7.8	7.2	7.6	7.9	8.3						
PID (meter units)	--	--	--	--	--	--	--	--	Most Stringent	Within an MSA	Within Chicago	Residential	Construction Worker	SCGIER
<b>SVOCs (mg/kg)</b>														
Benzo(a)pyrene	0.023 J	0.12 J †	0.049 J	0.011 J	0.18 J †	0.058 J	0.34 J †	0.35 J †	0.09	2.1	11	2.1	17	--
<b>Inorganics (mg/kg)</b>														
Iron	14,000	19,000 †m	16,000 †m	16,000 †m	20,000 †m	16,000 †m	14,000	19,000 †m	15,000	15,900	--	--	--	--
Lead	27	31	41	13	19	18	150 †	280 †	107	--	--	400	700	--
Manganese	520	640 †m	350	410	370	260	390	350	630	636	--	1,600	4,100	--
<b>TCLP Metals (mg/L)</b>														
Iron	0.24 J	0.23 J	ND U	0.60	ND U	0.50	ND U	ND U	--	--	--	--	--	5
Lead	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	--	--	--	--	--	0.0075
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	0.15
<b>SPLP Metals (Not Analyzed)</b>														

**Key to Data Table**

MAC = Maximum Allowable Concentration of Chemical Constituent in Uncontaminated Soil Used as Fill Material At Regulated Fill Operations  
 mg/kg = Milligrams per kilogram.  
 mg/L = Milligrams per liter.  
 MSA = Metropolitan Statistical Area  
 TACO = Tiered Approach to Corrective Action Objectives  
 TCLP = Toxicity Characteristic Leaching Procedure.  
 SCGIER = Soil Component of the Groundwater Ingestion Exposure Route  
 SPLP = Synthetic Precipitation Leaching Procedure.  
 [Yellow Box] = Concentration exceeds the most Stringent MAC, but is below the MAC for an MSA.

ND = Not detected.  
 NA = Not analyzed.  
 J = Estimated value.  
 U = Analyte was analyzed for but not detected.  
 # = pH is less than 6.25 or greater than 9.0 standard units.  
 † = Concentration exceeds the most stringent MAC.  
 m = Concentration exceeds the MAC for an MSA.  
 \* = Concentration exceeds the MAC for Chicago corporate limits.  
 L = The detected concentration exceeds the TACO Tier 1 RO for the SCGIER.  
 [Grey Box] = Concentration exceeds applicable comparison criteria.



DRAWN BY: V. GEE	DESIGNED BY: J HUGHES	PTB/JOB: 172-027/ P-30-010-14
CHECKED BY: D. TIEBOUT	APPROVED BY: D. TIEBOUT	WORK ORDER: 112

CONTAMINANTS OF CONCERN  
 FAP 873 (IL 149)  
 STA. 695+00 TO 702+00

IDOT PROJECT #: D-99-069-20	BDE SEQ. #: 23299
ROUTE: FAP 873	CONTRACT #: 78814

CITY: WEST FRANKFORT
COUNTY: FRANKLIN

DATE: 03/18/23
SCALE: N/A

FIGURE  
 4-5  
REVISION 0

# APPENDIX

# **A** ISGS PESA EXCERPTS AND SOIL DESCRIPTIONS

IDOT Sequence #: 23299  
IDOT Job #: D99-069-20

ISGS: 4062-COV  
IDOT District #: 9

**PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT**

**FINAL REPORT**

**DATE:** April 13, 2021

**IDOT DESIGN DATE:** June 1, 2021

**SURVEY TARGET DATE:** June 1, 2021

**DATE REQUEST RECEIVED:** November 25, 2020

**LOCATION:** FAP 873 (IL 149) at I-57, West Frankfort, Franklin County;  
West Frankfort quadrangle (USGS 7.5-minute topographic map), T7S, R2E, Sections 23 and 24.



### EXECUTIVE SUMMARY

This report presents the results of an environmental site assessment for the improvements to IL 149 at I-57, West Frankfort, Franklin County. This report was prepared on behalf of the Illinois Department of Transportation (IDOT) by the Illinois State Geological Survey (ISGS).

The following sites were examined for this project. The tables below list sites along the project for which recognized environmental conditions (RECs)\* were identified for each address or address range (Table 1); sites along the project for which only de minimis conditions were identified (Table 2); sites along the project for which no RECs or de minimis conditions were identified (Table 3); and sites adjoining but not on the project that were identified on environmental databases (Table 4). Further investigation of sites with RECs may be desired.

**Table 1. The following sites along the project were determined to contain RECs:**

Property name IDOT parcel #	ISGS site #	REC(s), including de minimis conditions	Regulatory database(s)	Land use
Commercial buildings NA	4062-COV-1	USTs; potential UST(s); potential monitoring wells; VOCs, SVOCs, and metals; potential natural gas pipeline, potential transformers; potential ACM and lead paint	UST	Commercial
Taco Bell NA	4062-COV-2	Fill; potential natural gas pipeline; potential transformer; potential ACM and lead paint	None	Commercial
West Frankfort Outlet Mall NA	4062-COV-4	Potential AST; VOCs, SVOCs, and metals; potential transformer; potential ACM and lead paint	None	Commercial
Vacant lot NA	4062-COV-5	Fill; VOCs, SVOCs, and metals; potential transformer	None	Vacant

ROW 17, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 41A, 42, 43, 44, 44A, 45, 46, 46A, 47, 52, and 52B	4062-COV-8	Former USTs; potential UST(s); evidence of chemical use; potential fill; spills; VOCs, SVOCs, and metals; potential ACM	RCRA, BOL, IEMA, municipal	Transportation
IDOT pump station 68	4062-COV-12	Potential UST(s); potential AST(s); potential chemical use; potential transformer; potential ACM and lead paint	None	Transportation
Residential building 53	4062-COV-14	Former AST; potential former chemical use; VOCs, SVOCs, and metals; potential ACM and lead paint	None	Residential
Commercial building 56 and 57	4062-COV-15	Potential UST(s); potential former chemical use; VOCs and metals; potential transformers; potential ACM and lead paint	None	Commercial
Phillips 66/Circle K gasoline station 59 and 60	4062-COV-20	USTs; potential UST(s); potential monitoring wells; potential former chemical use; potential transformer; potential ACM and lead paint	UST, municipal	Commercial

**Table 2. The following sites along the project were determined to contain de minimis conditions only:**

Property name IDOT parcel #	ISGS site #	De minimis condition(s)	Land use
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farmstead was present in the north part of the site that extended offsite to the north; the remainder of the site was under agricultural use. On the 1993 through 2017 aerial photos, the current building was present.

On the 2019 and 2021 aerial photographs, the current building was present.

The following information has been modified from ISGS #3850:

In the 1997 through 2020 city directories, various retail businesses were listed. No potential hazards were identified in association with any of the businesses listed.

During fieldwork for ISGS #2878 in 2014 and ISGS #3850 in 2020, the current shopping mall was present.

In one borehole completed at this site for PSI Andrews Engineering #6, work order #093, VOCs, SVOCs, and metals were detected. See PSI Andrews Engineering #6, work order #093, for details.

No data gaps were identified at this site.

The building on this site may contain friable asbestos-containing materials as a component of floor tiles, wall and pipe insulation, roof materials, patching or painting compounds, ceiling materials, or stove and furnace insulation. Lead paint was banned for residential use in the United States in 1978, but has not been banned for industrial and commercial use. Therefore lead paint may be present in this building.

The following RECs were identified at this site: Potential AST; VOCs, SVOCs, and metals detected in previous PSI testing.

The following de minimis conditions were identified at this site: Potential transformer; potential ACM and lead paint.

**Site 4062-COV-5 (2878-38, 2878V-23, 3850-11, 3935/A-COV-12). Vacant lot, 11000 block of IL 149, West Frankfort (northeast quadrant of IL 149 and Factory Outlet Boulevard; approximate IL 149 station 687+00 LT; Attachment 2, page 1).** This site is occupied by a vacant grassy lot. During fieldwork for ISGS #3850 in March 2020, one pole-mounted transformer was observed along the south side of the site, approximately midway along its length. This site did not appear on any of the regulatory lists checked for this project.

The following information has been modified from ISGS #3850:

On the 1876 through 1940 plat maps, the site was under individual ownership, with no buildings depicted. On the 1964 through 1988 plat maps, the north part of the site was under individual ownership, and the south part of the site was depicted as small tracts. On the 1993 and 1998 plat maps, the site was incorporated within West Frankfort. On the 1938 aerial photograph, the site was under agricultural use. On the 1952 and 1959 aerial photos, several residences were present in the southeast portion of the site, a northeast-southwest stream was present in the north part of the site, and the remainder of the site was under agricultural use. On the 1965 through 1988 aerial photos, the site had the previous

configuration, with the addition of an east-west oriented roadway through the center of the site. On the 1993 through 2017 aerial photos, the previous stream had been filled, and the entire site was occupied by a vacant grassy lot. The composition of the fill material is unknown. Additionally, on the 2010 through 2012 aerial photos, numerous parked vehicles were visible throughout the site.

On the 2019 and 2021 aerial photographs, the site was occupied by vacant grassy land.

In all four boreholes completed at this site for PSI Andrews Engineering #6, work order #093, VOCs, SVOCs, and/or metals were detected. See PSI Andrews Engineering #6, work order #093, for details.

The following data gap was identified at this site:

- The composition of the fill material is unknown.

Because there are no buildings present and no evidence of fill or demolition debris was visible, asbestos-containing materials and lead paint are unlikely to be present at this site.

The following RECs were identified at this site: Fill of unknown composition; VOCs, SVOCs, and metals detected in previous PSI testing.

The following de minimis condition was identified at this site: Potential transformer.

**Site 4062-COV-6 (2878-37, 2878V-22, 3850-32). Bonnie Café, 15 W. Frankfort Plaza, West Frankfort (southwest corner of I-57 and IL 149; approximate IL 149 station 689+00 RT; Attachment 2, page 1).** This site is occupied by a café. This site did not appear on any of the regulatory lists checked for this project.

The following information has been modified from ISGS #3850:

On the 1876 through 1977 plat maps, the site was under individual ownership, with no buildings depicted. On the 1988 through 1998 plat maps, the site was incorporated within West Frankfort. On the 1938 through 1971 aerial photographs, a residence was present in the south part of the site, and the remainder of the site was occupied by vacant grassy land with scattered trees. On the 1980 and 1982 aerial photos, the site was vacant, with a disturbed appearance. On the 1988 through 2017 aerial photos, the current building was present.

On the 2019 and 2021 aerial photographs, the current building was present.

The following information has been modified from ISGS #3850:

In the 1997 city directory, no listings were found. In the 2001 through 2020 city directories, a restaurant was listed.

During fieldwork for ISGS #2878 in 2014, a different restaurant was present. During fieldwork for ISGS #3850 in 2020, the current occupant was present.

No data gaps were identified at this site.

The building on this site may contain friable asbestos-containing materials as a component of floor tiles, wall and pipe insulation, roof materials, patching or painting compounds, ceiling materials, or stove and furnace insulation. Lead paint was banned for residential use in the United States in 1978, but has not been banned for industrial and commercial use. Therefore lead paint may be present in this building.

No RECs were identified at this site.

The following de minimis conditions were identified at this site: Potential ACM and lead paint.

**Site 4062-COV-7 (2878-35, 2878V-20, 3850-33). Vacant lot, 0-100 block of W. Frankfort Plaza, West Frankfort (southwest quadrant of I-57 and IL 149; approximate I-57 station 165+00 RT; Attachment 2, page 1).** This site is occupied by a vacant grassy and wooded lot. This site did not appear on any of the regulatory lists checked for this project.

On the 1876 through 1940 plat maps, the site was under individual ownership, with no buildings depicted. On the 1964 plat map, the south portion of the site was owned by a railroad company, and the north portion was under individual ownership, with no buildings depicted. On the 1970 through 1977 plat maps, the south portion of the site was depicted as small tracts, and the north portion was under individual ownership, with no buildings depicted. On the 1988 through 1998 plat maps, the site was incorporated within West Frankfort.

The following information has been modified from ISGS #3850:

On the 1938 through 1971 aerial photographs, the site was under agricultural use. On the 1980 and 1982 aerial photos, the site was vacant, with a disturbed appearance. On the 1988 through 2017 aerial photos, the site was occupied by a vacant grassy and wooded lot.

On the 2019 and 2021 aerial photographs, the site was occupied by a vacant grassy and wooded lot.

No data gaps were identified at this site.

Because there are no buildings present and no evidence of fill or demolition debris was visible, asbestos-containing materials and lead paint are unlikely to be present at this site.

No RECs were identified at this site.

The following de minimis condition was identified at this site: Likely past pesticide and/or herbicide use based on former agricultural land use.

**Site 4062-COV-8 (1662-2, 1662-G, 2878-1, 2878V-1, 3225-1, 3985-40, 3935/A-COV-B). ROW, I-57 M.M. 64.3 to 64.6, West Frankfort (I-57 at Main Street; approximate I-57 station 158+00 LT and RT; Attachment 2, page 2).** This site is occupied by the I-57 and IL 149/Main Street interchange, and associated ROW. Site features included one painted bridge carrying Main Street over I-57 (S.N. 028-0039), labeled as 8a on Attachment 2, page 2. I-57 is excavated below grade

throughout the project area. It is possible that fill may be present in the below-grade excavations. Sources of urban fill are typically unknown, and potential contaminants may be present in fill.

The following information has been modified from ISGS #3850:

On the 1876 and 1900 plat maps, the site was under individual ownership, with no buildings depicted. On the 1917 through 1940 plat maps, the Main Street ROW was present, and the remainder of the site was under individual ownership, with no buildings depicted. On the 1964 through 1998 plat maps, I-57 was depicted. On the 1938 aerial photograph, several residences and a gas station (in the area labeled as 8b on Attachment 2, page 2) were present in the central part of the site, and the remainder of the site was under agricultural use. On the 1952 and 1959 aerial photos, the site had the same configuration, with the addition of several commercial buildings in the central part of the site. On the 1965 through 2017 aerial photos, I-57 and the current bridge were present.

On the 2019 and 2021 aerial photographs, the current interchange was present.

The following information has been modified from ISGS #3850:

In the 1915 and 1920 city directories, no listings were found within the historic address range for this site. In the 1936 directory, individual names were listed. In the 1941 and 1943 directories, a gas station and individual names were listed. In the 1948 through 1960 directories, various retail and service businesses and individual names were listed, including a welding shop (1948), an auto repair shop (1948 to 1960), and a machining shop (1948 to 1960), which were all generally located in the area labeled as 8c on Attachment 2, page 2. No potential hazards were identified in association with any of the other occupants listed. In the 1965 through 2020 city directories, no listings were found. According to the IDOT bridge website, S.N. 028-0039 was originally constructed in 1963.

According to a 2007 interview with the West Frankfort Fire Chief completed for ISGS #1662, the USTs associated with the former gas station were removed during the construction of I-57. The USTs were in an area directly under I-57 approximately 25 m (82 ft) north of Main Street and 235 m (770 ft) west of Sophia Street. The contents and number of former USTs associated with the gas station were not discussed, and are unknown.

The City of West Frankfort had no records or additional information regarding this site.

The following listings are depicted in their approximate locations on Attachment 2, page 2.

8a. Under the name "ILDOT BRG 028 0039" and the address "IL 149 over I 57", this site appears on the inactive RCRA list (USEPA #ILR000003103). Under the name "IDOT", the address "Franklin Co Bridges & Hwy" appears on the BOL list (IEPA #0558995007). According to information in IEPA files, some information in this listing pertained to this site. According to IEPA files, in April 1995, IDOT registered this bridge with USEPA and IEPA as a generator of 100-1,000 kg/mo (220-2,200 lb/mo) of toxic wastes and wastes containing lead from bridge maintenance painting. No further information was available regarding this site in IEPA files for IEPA #0558995007.

8d. Under the name "Pam Transportation" and the address "I-57, SB", this site appears on the IEMA non-LUST list (IEMA #H-2010-0679). According to IEMA records, in June 2010, a release

of 265-285 liters (70-75 gallons) of diesel was reported from the saddle tank on a truck near milepost 64.5 along southbound I-57. The spill was listed as extending into the adjacent ditch. The cause of the release was listed as a vehicle accident. A consultant was hired for cleanup. No further information was available in IEMA records regarding IEMA #H-2010-0679.

8e. Under the name "Bodertown [sic] Transportation" and the address "I-57 southbound near mile marker 65", this site appears on the IEMA non-LUST list (IEMA #H-2019-1050). Under the name "Bordertown Transportation" and the address "I-57 SB near exit #65 off ramp", this site appears on the IEMA non-LUST list (IEMA #H-2019-1052). These two IEMA listings refer to a single spill. According to IEMA records, in October 2019, a release of 300 liters (80 gallons) of diesel was reported from the saddle tank on a truck near milepost 65 along the southbound I-57 exit ramp. The cause of the release was listed as a truck hitting road debris. The West Frankfort Fire Department responded to the incident, and a contractor was to be hired for cleanup. No further information was available in IEMA records regarding IEMA #H-2019-1050 or #H-2019-1052.

Potential hazards associated with metalworking and machining include VOCs, acids, bases, and metals. Historic gas stations commonly conducted auto repairs on the premises. Potential hazards associated with vehicle repair facilities include waste oil, lubricants, and transmission fluids; spent solvents; waste paints and thinners; sludge from parts-cleaning tanks; oily sludge from floor sumps; used antifreeze; used lead-acid batteries; and undocumented UST(s).

In two boreholes completed at this site for ISGS #1662 in July 2007, no VOCs were detected. See ISGS #1662 for details. In four boreholes completed at this site for PSI Andrews #6, work order #085, VOCs, SVOCs, and/or metals were detected in all four boreholes. See PSI Andrews #6, work order #085, for details.

The following data gaps were identified at this site:

- The composition of any fill material is unknown.
- The contents and number of former USTs associated with the former gas station are unknown.
- The status and locations of any undocumented UST(s) at this site are unknown.
- Evidence from aerial photographs and the IDOT bridge website indicates that this bridge has been present since before 1985, when lead paint was no longer used to paint bridges. This bridge has been painted. It is unknown if lead paint is present at this structure.

The structure on this site is painted and may contain friable asbestos-containing materials as a compound of painting or patching compounds. Evidence from aerial photographs and the IDOT bridge website indicates that this bridge has been present since before 1985, when lead paint was no longer used to paint bridges. This bridge has been painted. It is unknown if lead paint is present at this structure.

The following RECs were identified at this site: Former USTs; potential UST(s); evidence of chemical use; potential fill of unknown composition; spills; VOCs, SVOCs, and metals detected in previous PSI testing.

The following de minimis condition was identified at this site: Potential ACM.

**Site 4062-COV-9 (2878-44, 2878V-29, 3850-41). Vacant land, 0-100 block of Razer Drive, West Frankfort (west side of Razer Drive between Patricia Lane and St. Louis Street; approximate I-57 station 146+00 LT; Attachment 2, page 3).** This site is occupied by vacant grassy and tree-covered land. The majority of the site was not visible in street view imagery because of dense trees along I-57 and Razer Drive. This site did not appear on any of the regulatory lists checked for this project.

The following information has been modified from ISGS #3850:

On the 1876 through 1918 plat maps, the site was under individual ownership, with no buildings depicted. On the 1940 through 1998 plat maps, the site was incorporated within West Frankfort. On the 1938 through 1971 aerial photographs, the site was under agricultural use. On the 1980 through 2017 aerial photos, the site was occupied by vacant grassy land, with increased tree cover over time.

On the 2019 and 2021 aerial photographs, the site was occupied by vacant grassy and wooded land.

The following data gap was identified at this site:

- The majority of the site was not visible in street view imagery.

Because there are no buildings present and no evidence of fill or demolition debris was visible, asbestos-containing materials and lead paint are unlikely to be present at this site.

No RECs were identified at this site.

The following de minimis condition was identified at this site: Likely past pesticide and/or herbicide use based on former agricultural land use.

**Site 4062-COV-10 (2878-43, 2878V-28, 3850-44). Westbrook Village Apartments, 9-35 Razer Drive, West Frankfort (northwest quadrant of Razer Drive and St. Louis Street; approximate I-57 station 150+00 LT; Attachment 2, page 3).** This site is occupied by an apartment complex containing four residential buildings. During fieldwork for ISGS #3850 in March 2020, two pad-mounted transformers were observed, one near the north corner of the residential building at 9-15 Razer Drive, and one near the west corner of the residential building at 27-35 Razer Drive. An unnamed tributary to Big Muddy River (Site 4062-COV-11) crosses the central part of the site. This site did not appear on any of the regulatory lists checked for this project.

The following information has been modified from ISGS #3850:

On the 1876 through 1918 plat maps, the site was under individual ownership, with no buildings depicted. On the 1940 through 1998 plat maps, the site was incorporated within West Frankfort. On the 1938 through 1971 aerial photographs, the site was under agricultural use. On the 1980 and 1982 aerial photos, three of the current buildings were present. On the 1988 through 2017 aerial photos, all of the current buildings were present.

constructed before 1978. Lead paint was banned for residential use in the United States in 1978, and therefore lead paint may be present in these buildings.

No RECs were identified at this site.

The following de minimis conditions were identified at this site: Potential ACM and lead paint.

**Site 4062-COV-14 (1662-F, 2878-40, 2878V-25, 3225-3, 3850-50). Residential building, 1401 W. Main Street, West Frankfort (northwest corner of Main Street and Sophia Street; approximate Main Street station 700+50 LT; Attachment 2, page 3).** This site is occupied by a residential building with a detached garage. An unnamed tributary to Big Muddy River (Site 4062-COV-11) crosses the west portion of the site. This site did not appear on any of the regulatory lists checked for this project.

The following information has been modified from ISGS #3850:

On the 1876 through 1918 plat maps, the site was under individual ownership, with no buildings depicted. On the 1940 through 1998 plat maps, the site was incorporated within West Frankfort. On the 1938 aerial photograph, the site was under agricultural use. On the 1952 and 1959 aerial photos, the current residential building was present. On the 1971 through 2005 aerial photographs, the current residential building was present, and the current garage was present with an addition on the west end. On the 2007 through 2017 aerial photos, the current residential building and garage were present.

On the 2019 and 2021 aerial photographs, the current building and garage were present.

The following information has been modified from ISGS #3850:

In the 1915 through 1948 city directories, no listings were found. In the 1955 and 1960 city directories, an individual name was listed. In the 1965 through 1980 city directories, various retail businesses were listed, including a paint shop in 1965. No potential hazards were identified in association with any of the other occupants. In the 1984 and 1986 directories, no listings were found. In the 1991 through 2020 city directories, either individual names were listed or no listings were found.

During an interview completed for ISGS #1662 in 2007, a local resident stated that a previous building supply business at this site had an AST along the north edge of the site. No ASTs were visible in street view imagery or were present during fieldwork for ISGS #3850 in March 2020. The contents of the former AST are unknown.

In two boreholes completed at this site for PSI Andrews #6, work order #085, VOCs, SVOCs, and/or metals were detected in both boreholes. See PSI Andrews #6, work order #085, for details.

Potential hazards associated with paint businesses include VOCs and metals.

The following data gap was identified at this site:

- The contents of the former AST are unknown.

The buildings on this site may contain friable asbestos-containing materials as a component of floor tiles, wall and pipe insulation, roof materials, patching or painting compounds, ceiling materials, or stove and furnace insulation. Evidence from aerial photographs indicates that this residential building was constructed before 1978. Lead paint was banned for residential use in the United States in 1978, and therefore lead paint may be present in these buildings.

The following RECs were identified at this site: Former AST; potential former chemical use; VOCs, SVOCs, and metals detected in previous PSI testing.

The following de minimis conditions were identified at this site: Potential ACM and lead paint.

**Site 4062-COV-15 (1662-E, 2878-I, 3225-10). Commercial building, 1305 W. Main Street, West Frankfort (northeast corner of Main Street and Sophia Street; approximate Main Street station 702+50 LT; Attachment 2, page 3).** This site is occupied by a commercial building that appeared to be vacant. In street view imagery, three pole-mounted transformers were visible at the northwest corner of the site. This site did not appear on any of the regulatory lists checked for this project.

On the 1876 through 1918 plat maps, the site was under individual ownership, with no buildings depicted. On the 1940 through 1998 plat maps, the site was incorporated within West Frankfort. On the 1938 through 1959 aerial photographs, two residences were present. On the 1965 through 2006 aerial photographs, the current building was present, and two additional commercial buildings were present in the west half of the site. On the 2007 through 2014 aerial photographs, the current building and one of the additional commercial buildings were present. On the 2015 through 2021 aerial photographs, only the current building was present. In the 1915 and 1920 city directories, no listings were found. In the 1936 through 1948 city directories, individual names were listed. In the 1955 through 2010 city directories, an awning and ironworks business was listed. In the 2015 city directory, an auto repair shop was listed. In the 2020 city directory, no listings were found. During fieldwork for ISGS #1662 in 2007, an awning and ironworks business was present. During fieldwork for ISGS #3225 in 2016, the current building was vacant.

The City of West Frankfort had no records or additional information regarding this site.

In two boreholes completed at this site for PSI Andrews Engineering #6, work order #085, VOCs and metals were detected in both boreholes. See PSI Andrews Engineering #6, work order #085, for details.

Potential hazards associated with metal working shops include VOCs and metals. Potential hazards associated with vehicle repair facilities include waste oil, lubricants, and transmission fluids; spent solvents; waste paints and thinners; sludge from parts-cleaning tanks; oily sludge from floor sumps; used antifreeze; used lead-acid batteries; and undocumented UST(s).

The following data gap was identified at this site:

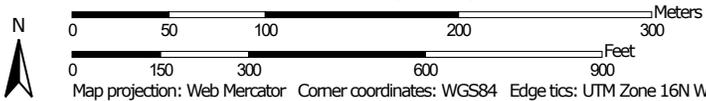
- The status and location of any undocumented UST(s) at this site are unknown.

The building on this site may contain friable asbestos-containing materials as a component of floor tiles, wall and pipe insulation, roof materials, patching or painting compounds, ceiling materials, or

Soil Map—Franklin County, Illinois  
(FAP 873 (IL 149))



Map Scale: 1:3,890 if printed on A landscape (11" x 8.5") sheet.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Illinois

Survey Area Data: Version 16, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 11, 2012—Sep 19, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2A	Cisne silt loam, 0 to 2 percent slopes	0.1	0.2%
533	Urban land	0.4	1.1%
640A	Bluford silt loam, bench, 0 to 2 percent slopes	1.7	4.1%
802B	Orthents, loamy, undulating	31.6	77.9%
802F	Orthents, loamy, hilly and very hilly	6.8	16.7%
<b>Totals for Area of Interest</b>		<b>40.6</b>	<b>100.0%</b>

LOCATION CISNE IL

Established Series  
Revised JBF-KAG-TJE  
09/2022

## CISNE SERIES

The Cisne series consists of very deep, poorly drained soils on till plains. They formed in loess and the underlying pedisegment. Slope ranges from 0 to 2 percent. Mean annual temperature is about 13 degrees C (55 degrees F), and mean annual precipitation is about 1067 millimeters (42 inches).

**TAXONOMIC CLASS:** Fine, smectitic, mesic Mollic Albaqualfs

**TYPICAL PEDON:** Cisne silt loam, in a nearly level cultivated field at an elevation of about 169 meters (556 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

**Ap**--0 to 20 centimeters (0 to 8 inches); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very dark gray (10YR 3/1) organic stains on faces of peds; few fine and medium iron-manganese nodules throughout; moderately acid; abrupt smooth boundary. [19 to 23 centimeters (7 to 9 inches) thick]

**Eg1**--20 to 33 centimeters (8 to 13 inches); grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate medium platy structure; friable; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common fine and medium distinct black (10YR 2/1) iron-manganese nodules throughout; strongly acid; clear smooth boundary.

**Eg2**--33 to 43 centimeters (13 to 17 inches); light gray (10YR 7/2) and light brownish gray (10YR 6/2) silt loam, very pale brown (10YR 8/2) dry; moderate medium platy structure; friable; common fine and medium prominent black (10YR 2/1) iron-manganese nodules throughout; strongly acid; abrupt smooth boundary. [The combined thickness of the Eg horizon is 20 to 31 centimeters (8 to 12 inches).]

**Bt/E**--43 to 48 centimeters (17 to 19 inches); gray (10YR 6/1) silty clay loam (Bt); moderate fine angular blocky structure; friable; common prominent light gray (10YR 7/1) (dry) clay depletions on faces of peds (E); common medium prominent yellowish red (5YR 4/6) masses of oxidized iron in the matrix; common fine and medium prominent black (10YR 2/1) iron-manganese nodules throughout; strongly acid; clear smooth boundary. [0 to 8 centimeters (0 to 3 inches) thick]

**Btg1**--48 to 71 centimeters (19 to 28 inches); grayish brown (10YR 5/2) silty clay loam; strong fine prismatic structure parting to strong fine angular blocky; firm; many distinct gray (10YR 5/1) clay films on faces of peds; common medium prominent yellowish red (5YR 4/6) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

**Btg2**--71 to 94 centimeters (28 to 37 inches); grayish brown (10YR 5/2) silty clay loam; moderate medium angular blocky structure; firm; common distinct gray (10YR 5/1) clay films on faces of peds; common medium distinct dark yellowish brown (10YR 4/4) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary. [The combined thickness of the Btg horizons is 33 to 78 centimeters (13 to 31 inches).]

**2Btg3**--94 to 109 centimeters (37 to 43 inches); light brownish gray (2.5Y 6/2) silty clay loam; weak coarse angular blocky structure; firm; few faint gray (10YR 5/1) clay films on faces of peds; common medium and

coarse distinct dark yellowish brown (10YR 4/4) masses of oxidized iron in the matrix; about 15 percent sand; few pebbles; strongly acid; gradual smooth boundary. [15 to 38 centimeters (6 to 15 inches) thick]

**2BCg**--109 to 152 centimeters (43 to 60 inches); light brownish gray (2.5Y 6/2) silty clay loam; weak coarse angular blocky structure; firm; common coarse distinct dark yellowish brown (10YR 4/4) masses of oxidized iron in the matrix; about 15 percent sand in upper part and the content of sand increases with increasing depth; few pebbles; moderately acid; gradual smooth boundary. [0 to 36 centimeters (0 to 14 inches) thick]

**2Cg**--152 to 200 centimeters (60 to 79 inches); dark grayish brown (10YR 4/2) silt loam; massive; firm; many coarse prominent gray (N 6/) and light gray (N 7/) iron depletions in the matrix; few fine and medium iron-manganese concretions throughout; about 20 percent sand; few pebbles (about 2 percent); slightly acid.

**TYPE LOCATION:** Jasper County, Illinois; about 3.2 kilometers (2 miles) west of Newton; 1,960 feet west and 420 feet south of northeast corner of sec 3, T. 6 N., R. 9 E. of the third Principal Meridian; 2.77 meters (9 feet) north and 7.62 meters (25 feet) east of the southwest corner of plot 309 at the Newton Experiment Station.

USGS topographic quadrangle--Newton, Illinois

Latitude 38.9934938

Longitude -88.1952517

Datum--WGS84

Coordinate source--estimated from GIS layer

#### **RANGE IN CHARACTERISTICS:**

Thickness of the dark surface layer--18 to 23 centimeters (7 to 9 inches)

Thickness of the loess--76 to 140 centimeters (30 to 55 inches)

Depth to the top of the argillic horizon--41 to 53 centimeters (16 to 21 inches)

Depth to the base of the argillic horizon--102 to 165 centimeters (40 to 65 inches)

Particle-size control section--averages 35 to 42 percent clay

Ap or A horizon--

Hue--10YR

Value--2 to 3 (4 or 5 dry)

Chroma--1 to 3

Texture--silt loam

Sand content--5 to 15 percent

Reaction--strongly acid to slightly alkaline

Eg horizon--

Hue--10YR or 2.5Y

Value--4 to 7

Chroma--1 or 2

Texture--silt loam or silt

Sand content--5 to 10 percent

Reaction--very strongly acid to moderately acid, ranging to neutral in areas that have been limed

B/E, BE, or EB horizon--

Hue--10YR or 2.5Y

Value--5 or 6

Chroma--1 or 2

Redoximorphic features--hue of 5YR, 7.5YR, or 10YR, value of 4 or 5, and chroma of 3 to 8

Texture--silt loam or silty clay loam

Reaction--very strongly acid to moderately acid

Some pedons have a BE horizon that is less than 8 centimeters (3 inches) thick.

Btg horizon--

Hue--10YR or 2.5Y

Value--4 to 6

Chroma--1 or 2

Redoximorphic features--hue of 5YR, 7.5YR, or 10YR, value of 4 to 6, and chroma of 1 to 8

Texture--silty clay loam or silty clay

Clay content--averages 37 to 42 percent, ranging from 33 to 45 percent in individual subhorizons

Sand content--averages 4 to 10 percent

Reaction--very strongly acid to moderately acid

2Btg or 2BCg horizon--

Hue--10YR or 2.5Y

Value--4 to 6

Chroma--1 or 2

Texture--silty clay loam, clay loam, loam, or silt loam

Sand content--averages 15 to 30 percent, ranging from 10 to 45 percent in individual subhorizons

Rock fragment content--0 to 10 percent

Reaction--strongly acid to slightly acid

2Cg horizon--

Hue--10YR or 2.5Y

Value--3 to 6

Chroma--1 or 2

Texture--silty clay loam, clay loam, loam, or silt loam

Sand content--averages 15 to 45 percent

Rock fragment content--2 to 15 percent

Reaction--neutral to moderately acid

Some pedons have a 3Ab or 3Btgb horizon which has similar properties as the 2Cg horizon.

#### COMPETING SERIES:

[Brooklyn](#) soils are typically stratified in the lower part of the series control section.

[Cowden](#) and [Denny](#) soils average less than 10 percent sand in the lower part of the series control section.

[Smileyville](#) soils average more than 42 percent clay in the particle-size control section.

#### GEOGRAPHIC SETTING:

Cisne soils are on broad ground moraines on till plains of Illinoian age. Slope ranges from 0 to 2 percent. The soils formed in 76 to 140 centimeters (30 to 55 inches) of loess and the underlying pedisegment. The loess is late Wisconsin age Peoria Loess and the underlying material is early Wisconsin age pedisegment or Roxana Silt which overlies a Sangamon age paleosol in Illinoian till. In some pedons the pedisegment includes pebbles of the Illinoian till concentrated by erosion or reworked material derived from the upper horizons of the Sangamon paleosol.

Mean annual temperature--8 to 14 degrees C (53 to 57 degrees F)

Mean annual precipitation--965 to 1219 millimeters (38 to 48 inches)

Frost-free period--175 to 200 days

Elevation--122 to 213 meters (400 to 700 feet) above mean sea level

#### GEOGRAPHICALLY ASSOCIATED SOILS:

[Hoyleton](#) soils are somewhat poorly drained and are on higher positions nearby.

[Huey](#) soils have a natric horizon and are on similar or slightly lower positions nearby or are mixed in an intricate pattern with Cisne soils on similar positions.

[Wynoose](#) soils have a moist color value of 4 or more in the surface layer and are on similar positions nearby or

on narrower interfluves that are closer to dissected parts of the till plain.

**DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY:**

Drainage class--poorly drained

Water table--depth to the top of an apparent water table is within 30 centimeters (1 foot) of the surface at some time between January and May in normal years.

Saturated hydraulic conductivity class--moderately high to low

Permeability class--slow or very slow

**USE AND VEGETATION:**

Most areas of Cisne soils are used to grow corn, soybeans, and wheat. Native vegetation is prairie grasses with some widely spaced trees in places.

**DISTRIBUTION AND EXTENT:**

MLRAs 113 and 114 in southern Illinois. The series is extensive.

**SOIL SURVEY REGIONAL OFFICE (SSRO) RESPONSIBLE:** Indianapolis, Indiana

**SERIES ESTABLISHED:** Washington County, Illinois, 1927

**REMARKS:**

Typical Pedon Taxonomic Features--

Ochric epipedon--from the surface to a depth of 43 centimeters (Ap, Eg1, and Eg2 horizons). The upper portion meets the requirements of a mollic epipedon except for thickness; the lower portion commonly has less than 50 percent base saturation

Albic horizon--from a depth of 20 to 43 centimeters (Eg1 and Eg2 horizons)

Argillic horizon--from a depth of 43 to 109 centimeters (B/E, Btg1, Btg2, and 2Btg3 horizons)

Abrupt textural change from the Eg2 horizon to the Btg1 horizon

Aquic conditions--redoximorphic features present in all horizons below the Ap horizon

A bench phase is recognized for soils on structural benches that occur along some major tributaries of the Mississippi River.

A mine-sinks phase is recognized for soils in areas of Perry County that have subsided due to subsurface mine wall collapse. In these areas, the mine-sink phase of Cisne soils has a perched water table as much as 183 centimeters (6 feet) above the surface to 30 centimeters (1 foot) below the surface at some time between February and July in normal years.

Taxonomic Version--Keys to Soil Taxonomy, Twelfth Edition, 2014

**ADDITIONAL DATA:**

Characterization data is available from the NRCS-NSSC Kellogg Soil Survey Laboratory, Lincoln, Nebraska.

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National Cooperative Soil Survey  
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LOCATION BLUFORD IL

Established Series  
Revised CCC-SEW-TJE  
09/2022

## BLUFORD SERIES

The Bluford series consists of very deep, somewhat poorly drained soils on till plains. They formed in loess and the underlying pedisegment. Slope ranges from 0 to 7 percent. Mean annual temperature is about 12 degrees C (54 degrees F.), and mean annual precipitation is about 1067 millimeters (42 inches).

**TAXONOMIC CLASS:** Fine, smectitic, mesic Aeric Fragic Epiaqualfs

**TYPICAL PEDON:** Bluford silt loam, on a southwest-facing slope of about 2 percent in a cultivated field at an elevation of about 167 meters (549 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

**Ap**--0 to 18 centimeters (0 to 7 inches); brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; very friable; few very fine roots; few fine spherical iron-manganese nodules throughout; neutral; abrupt smooth boundary. [15 to 25 centimeters (6 to 10 inches) thick]

**E1**--18 to 38 centimeters (7 to 15 inches); light brownish gray (10YR 6/2) silt loam, white (2.5Y 8/1) dry; moderate medium platy structure; very friable; few very fine roots; many medium distinct yellowish brown (10YR 5/4) and few medium faint brown (10YR 5/3) masses of oxidized iron in the matrix; common fine spherical iron-manganese nodules throughout; very strongly acid; clear smooth boundary.

**E2**--38 to 51 centimeters (15 to 20 inches); pale brown (10YR 6/3) silt loam, pale yellow (2.5Y 8/2) dry; moderate medium platy structure parting to moderate very fine subangular blocky; very friable; few very fine roots; common prominent white (10YR 8/1) (dry) silt coatings on faces of peds; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; very strongly acid; clear smooth boundary. [8 to 36 centimeters (3 to 14 inches) thick]

**Btg**--51 to 89 centimeters (20 to 35 inches); grayish brown (10YR 5/2) silty clay; moderate medium subangular blocky structure; firm; few very fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; common medium faint gray (10YR 5/1) iron depletions in the matrix; common medium distinct dark yellowish brown (10YR 4/4) and many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron on faces of peds and in pores; few fine spherical iron-manganese nodules throughout; very strongly acid; clear smooth boundary. [31 to 64 centimeters (12 to 25 inches) thick]

**2Btgx**--89 to 107 centimeters (35 to 42 inches); grayish brown (10YR 5/2) silty clay loam; moderate coarse prismatic structure; firm; few faint grayish brown (10YR 5/2) clay films and common prominent white (10YR 8/1) silt coatings on faces of peds; few fine faint gray (10YR 6/1) iron depletions and common medium distinct dark yellowish brown (10YR 4/4) masses of oxidized iron in the matrix; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron on faces of peds and in pores; few fine spherical iron-manganese nodules throughout; brittle; very strongly acid; gradual smooth boundary. [15 to 61 centimeters (6 to 24 inches) thick]

**2Btg**--107 to 152 centimeters (42 to 60 inches); gray (10YR 5/1) silty clay loam; weak coarse prismatic structure; very firm; few faint dark gray (10YR 4/1) clay films in root channels; common medium distinct

yellowish brown (10YR 5/4) and common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine spherical iron-manganese nodules throughout; about 1 percent gravel; very strongly acid. [0 to 102 centimeters (0 to 40 inches) thick]

**TYPE LOCATION:** Crawford County, Illinois; about 1,585 feet south and 925 feet west of the northeast corner of sec. 16, T. 8 N., R. 13 W.

USGS topographic quadrangle--Annapolis, Illinois

Latitude 39.1396398

Longitude -87.8577450

Datum--WGS84

Coordinate Source--estimated from GIS layer

**RANGE IN CHARACTERISTICS:**

Depth to horizon with fragic soil properties--61 to 122 centimeters (24 to 48 inches)

Thickness of the loess--76 to 140 centimeters (30 to 55 inches)

Particle-size control section--averages 35 to 42 percent clay and less than 8 percent sand

Ap or A horizon--

Hue--10YR

Value--3 to 5 (6 or 7 dry)

Chroma--1 to 3

Texture--silt loam

Reaction--very strongly acid or strongly acid and ranges to neutral in areas that have been limed

E horizon--

Hue--10YR

Value--4 to 6

Chroma--2 to 4, with some part of the E horizon having a chroma of 3 or 4

Texture--silt loam

Reaction--very strongly acid to neutral

Some pedons have a BE horizon.

Bt and/or Btg horizon--

Hue--10YR or 2.5Y

Value--4 to 6

Chroma--1 to 3

Texture--silty clay loam or silty clay

Reaction--very strongly acid to slightly acid

Other features--silt coatings on the faces of peds are dominantly in the upper part of the Btg horizon and range from gray to white

2Btgx horizon--

Hue--7.5YR, 10YR, or 2.5Y

Value--4 to 6

Chroma--1 or 2, with multicolored horizons ranging to 8

Texture--silt loam, loam, silty clay loam, or clay loam

Fragic soil properties--Consistence is firm, very firm, or extremely firm, and is slightly brittle or brittle in 30 to 60 percent of the volume of one or more subhorizons; prisms, polygons, or other structural units typically have horizontal dimensions of less than 10 centimeters (4 inches) in diameter, but some pedons have very coarse structure below a depth of 102 centimeters (40 inches).

Sand content--15 to 30 percent

Reaction--very strongly acid to moderately acid

2Btg or 2BCg horizon--  
 Hue--10YR or 2.5Y  
 Value--4 to 6  
 Chroma--1 or 2, with multicolored horizons ranging to 6  
 Texture--silty clay loam, silt loam, or loam  
 Rock fragment content--0 to 5 percent  
 Reaction--very strongly acid to moderately acid

3Agb or 3Btgb horizon, where it occurs within 200 centimeters--  
 Hue--7.5YR, 10YR, 2.5Y, or 5Y  
 Value--4 to 6  
 Chroma--1 or 2  
 Texture--silty clay loam, clay loam, silt loam, or loam; sand content ranges from 15 to 40 percent  
 Rock fragment content--0 to 5 percent  
 Reaction--moderately acid to slightly alkaline

#### **COMPETING SERIES:**

There are no other series in this family.

#### **GEOGRAPHIC SETTING:**

Bluford soils are on ground moraines on till plains of Illinoian age. Slope ranges from 0 to 7 percent. Bluford soils formed in 76 to 140 centimeters (30 to 55 inches) of loess and the underlying pedisegment. The loess is late Wisconsin age Peoria Loess and underlying material is early Wisconsin age pedisegment or Roxana Silt which overlies a strongly developed Sangamon age paleosol in Illinoian till. In some pedons, this paleosol occurs within a depth of 200 centimeters.

Mean annual temperature--12 to 14 degrees C (54 to 57 degrees F)  
 Mean annual precipitation--965 to 1219 millimeters (38 to 48 inches)  
 Frost-free period--180 to 200 days  
 Elevation--107 to 213 meters (350 to 700 feet) above mean sea level

#### **GEOGRAPHICALLY ASSOCIATED SOILS:**

The moderately well drained [Ava](#) soils and the poorly drained [Wynoose](#) soils are in a drainage sequence with the Bluford soils. Ava soils are on nearby side slopes below or on convex crests above the Bluford soils. Wynoose soils are on slightly lower positions.

[Hickory](#) soils are well drained, fine-loamy, and are on side slopes below.

[Hoyleton](#) soils are somewhat poorly drained, are mollic intergrades, and are on similar positions nearby or on broader interfluvial areas that are farther from dissected parts of the till plain.

#### **DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY:**

Drainage class--somewhat poorly drained  
 Water table--depth to the top of an apparent water table ranges from 15 to 61 centimeters (0.5 to 2 feet) between January and May in normal years  
 Saturated hydraulic conductivity class--moderately high  
 Permeability class--moderately slow

#### **USE AND VEGETATION:**

Most areas of Bluford soils are cultivated. Soybeans, corn, and wheat are the common crops. Native vegetation is deciduous forest consisting mainly of oak and hickory species.

#### **DISTRIBUTION AND EXTENT:**

MLRA 113 in southern Illinois. The series is extensive.

**SOIL SURVEY REGIONAL OFFICE (SSRO) RESPONSIBLE:** Indianapolis, Indiana

**SERIES ESTABLISHED:** Washington County, Illinois, 1927

**REMARKS:**

Typical Pedon Taxonomic Features--

Ochric epipedon--from the surface to a depth 51 centimeters (Ap and E horizons)

Argillic horizon--from a depth of 51 to 152 centimeters (Btg, 2Btgx, and 2Btg horizons)

Fragic soil properties--brittleness from a depth of 89 to 107 centimeters (2Btgx horizon)

Aquic conditions--redoximorphic features in all horizons below a depth of 18 centimeters

A bench phase is recognized for soils on structural benches that occur along some of the major tributaries of the Mississippi River.

Taxonomic Version--Keys to Soil Taxonomy, Twelfth Edition, 2014

**ADDITIONAL DATA:**

Characterization data is available from the NRCS-NSSC Kellogg Soil Survey Laboratory, Lincoln, Nebraska.

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National Cooperative Soil Survey  
U.S.A.

# APPENDIX

## **B** BORING LOGS











# Illinois Department of Transportation

## Geoprobe Boring Log Number: 4062-COV-08-B01

PROJECT: <b>FAP 873 (IL 149)</b>	EQUIPMENT: <b>Geoprobe 5410</b>
SITE LOCATION: <b>West Frankfort, Franklin County, Illinois</b>	OPERATOR: <b>T. Pachowicz</b>
SITE NAME: <b>ISGS #4062-COV-08; ROW</b>	SAMPLING METHOD: <b>Macro-core</b>
JOB NUMBER: <b>EE1009008.0112</b>	DATE DRILLED: <b>2/23/2023</b>
GEOLOGIST: <b>A. Plath</b>	TOTAL DEPTH: <b>2 feet</b>
LOCATION: <b>N37.89792539970; W88.94768708990</b>	

☒ Water level during drilling, if encountered  
 Boring continuously sampled using a 2-inch diameter sampler, 4 feet in length.  
 Soil headspace readings conducted at 2-foot intervals.

DEPTH (Feet)	GRAPHIC LOG	SOIL DESCRIPTION	REC. (%)	PID Meter Units	SOIL INTERVAL COLLECTED FOR LABORATORY CHEMICAL ANALYSIS
0		Fill: Brown, silty clay, trace gravel, trace slag, dry	100	0.0	0 to 2-foot depth interval soil sample collected for VOCs, SVOCs, metals, pH and TCLP* analysis.  * SPLP metals analysis will be conducted on sample-specific basis for special metals based on the results of TCLP.
1		Silty Clay: Brown, trace gravel, black mottles, dry			
2					



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# Illinois Department of Transportation

## Geoprobe Boring Log Number: 4062-COV-08-B04

PROJECT: <b>FAP 873 (IL 149)</b>	EQUIPMENT: <b>Geoprobe 5410</b>
SITE LOCATION: <b>West Frankfort, Franklin County, Illinois</b>	OPERATOR: <b>T. Pachowicz</b>
SITE NAME: <b>ISGS #4062-COV-08; ROW</b>	SAMPLING METHOD: <b>Macro-core</b>
JOB NUMBER: <b>EE1009008.0112</b>	DATE DRILLED: <b>2/23/2023</b>
GEOLOGIST: <b>A. Plath</b>	TOTAL DEPTH: <b>2 feet</b>
LOCATION: <b>N37.89763236480; W88.94708457550</b>	

Water level during drilling, if encountered  
 Boring continuously sampled using a 2-inch diameter sampler, 4 feet in length.  
 Soil headspace readings conducted at 2-foot intervals.

DEPTH (Feet)	GRAPHIC LOG	SOIL DESCRIPTION	REC. (%)	PID Meter Units	SOIL INTERVAL COLLECTED FOR LABORATORY CHEMICAL ANALYSIS
0		Fill: Brown, silty loam, little gravel, trace slag, dry	100	0.0	0 to 2-foot depth interval soil sample collected for VOCs, SVOCs, metals, pH and TCLP* analysis.  * SPLP metals analysis will be conducted on sample-specific basis for special metals based on the results of TCLP.
1		Silty Clay: Brown, trace gravel, black mottles, dry			
2					



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# Illinois Department of Transportation

## Geoprobe Boring Log Number: 4062-COV-08-B06

PROJECT: <b>FAP 873 (IL 149)</b>	EQUIPMENT: <b>Geoprobe 5410</b>
SITE LOCATION: <b>West Frankfort, Franklin County, Illinois</b>	OPERATOR: <b>T. Pachowicz</b>
SITE NAME: <b>ISGS #4062-COV-08; ROW</b>	SAMPLING METHOD: <b>Macro-core</b>
JOB NUMBER: <b>EE1009008.0112</b>	DATE DRILLED: <b>2/23/2023</b>
GEOLOGIST: <b>A. Plath</b>	TOTAL DEPTH: <b>2 feet</b>
LOCATION: <b>N37.89799629880; W88.94534672180</b>	

Water level during drilling, if encountered  
 Boring continuously sampled using a 2-inch diameter sampler, 4 feet in length.  
 Soil headspace readings conducted at 2-foot intervals.

DEPTH (Feet)	GRAPHIC LOG	SOIL DESCRIPTION	REC. (%)	PID Meter Units	SOIL INTERVAL COLLECTED FOR LABORATORY CHEMICAL ANALYSIS
0		Fill: Brown, silty loam, little gravel, dry	100	0.0	0 to 2-foot depth interval soil sample collected for VOCs, SVOCs, metals, pH and TCLP* analysis.  * SPLP metals analysis will be conducted on sample-specific basis for special metals based on the results of TCLP.
1		Silty Clay: Brown, trace gravel, black mottles, dry			
2					



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# Illinois Department of Transportation

## Geoprobe Boring Log Number: 4062-COV-08-B08

PROJECT: **FAP 873 (IL 149)**  
 SITE LOCATION: **West Frankfort, Franklin County, Illinois**  
 SITE NAME: **ISGS #4062-COV-08; ROW**  
 JOB NUMBER: **EE1009008.0112**  
 GEOLOGIST: **A. Plath**  
 LOCATION: **N37.89773954740; W88.94550142550**

EQUIPMENT: **Geoprobe 5410**  
 OPERATOR: **T. Pachowicz**  
 SAMPLING METHOD: **Macro-core**  
 DATE DRILLED: **2/23/2023**  
 TOTAL DEPTH: **2 feet**

☒ Water level during drilling, if encountered  
 Boring continuously sampled using a 2-inch diameter sampler, 4 feet in length.  
 Soil headspace readings conducted at 2-foot intervals.

DEPTH (Feet)	GRAPHIC LOG	SOIL DESCRIPTION	REC. (%)	PID Meter Units	SOIL INTERVAL COLLECTED FOR LABORATORY CHEMICAL ANALYSIS
0		Fill: Brown, silty loam, little gravel, dry	100	0.0	0 to 2-foot depth interval soil sample collected for VOCs, SVOCs, metals, pH and TCLP* analysis.  * SPLP metals analysis will be conducted on sample-specific basis for special metals based on the results of TCLP.
1		Silty Clay: Brown, trace gravel, black mottles, dry			
2					



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# Illinois Department of Transportation

## Geoprobe Boring Log Number: 4062-COV-08-B09

PROJECT: <b>FAP 873 (IL 149)</b>	EQUIPMENT: <b>Geoprobe 5410</b>
SITE LOCATION: <b>West Frankfort, Franklin County, Illinois</b>	OPERATOR: <b>T. Pachowicz</b>
SITE NAME: <b>ISGS #4062-COV-08; ROW</b>	SAMPLING METHOD: <b>Macro-core</b>
JOB NUMBER: <b>EE1009008.0112</b>	DATE DRILLED: <b>2/23/2023</b>
GEOLOGIST: <b>A. Plath</b>	TOTAL DEPTH: <b>2 feet</b>
LOCATION: <b>N37.89775713900; W88.94515736250</b>	

Water level during drilling, if encountered  
 Boring continuously sampled using a 2-inch diameter sampler, 4 feet in length.  
 Soil headspace readings conducted at 2-foot intervals.

DEPTH (Feet)	GRAPHIC LOG	SOIL DESCRIPTION	REC. (%)	PID Meter Units	SOIL INTERVAL COLLECTED FOR LABORATORY CHEMICAL ANALYSIS
0		Fill: Brown, silty loam, little gravel, dry	100	0.0	0 to 2-foot depth interval soil sample collected for VOCs, SVOCs, metals, pH and TCLP* analysis.  * SPLP metals analysis will be conducted on sample-specific basis for special metals based on the results of TCLP.
1		Silty Clay: Brown, trace gravel, black mottles, dry			
2					



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# APPENDIX

## **C** SUMMARY OF ANALYTICAL RESULTS

A decorative white diagonal shape, resembling a stylized 'V' or a folded corner, is positioned in the bottom-left area of the page. It consists of two white triangular sections meeting at a point, with the hypotenuse of the triangles forming a diagonal line.

**Analytical Data Summary**  
**PTB #172-27; Work Order 112 - IDOT Job # D-99-069-20**

**Key to Data Tables**

- MAC = Maximum Allowable Concentration of Chemical Constituent in Uncontaminated Soil Used as Fill Material At Regulated Fill Operations
- mg/kg = Milligrams per kilogram.
- mg/L = Milligrams per liter.
- MSA = Metropolitan Statistical Area
- TACO = Tiered Approach to Corrective Action Objectives
- TCLP = Toxicity Characteristic Leaching Procedure.
- SCGIER = Soil Component of the Groundwater Ingestion Exposure Route
- SPLP = Synthetic Precipitation Leaching Procedure.
- ND = Not detected.
- NA = Not analyzed or not applicable.
  - J = Estimated value.
  - U = Analyte was analyzed for but not detected.
- PID = Photoionization detector.
  - = No PID readings detected above background (within instrument margin of error).

**Criteria Qualifiers and Shading**

- # = pH is less than 6.25 or greater than 9.0 standard units.
- † = Concentration exceeds the most stringent MAC.
- m = Concentration exceeds the MAC for an MSA.
- \* = Concentration exceeds the MAC for Chicago corporate limits.
- L = The detected TCLP/SPLP concentration exceeds the TACO Tier 1 RO for the SCGIER.
-  = Concentration exceeds the most stringent MAC, but is below the MAC for an MSA.
-  = Concentration exceeds applicable comparison criteria.

**PTB #172-27; Work Order 112 - IDOT Job # D-99-069-20**  
**CONTAMINANTS OF CONCERN**

SITE	ISGS #4062-COV-5 (Vacant Lot)			Comparison Criteria					
	4062-COV-05-B01	4062-COV-05-B02	4062-COV-05-B03	MACs			TACO		
SAMPLE	4062-COV-05-B01 (0-1)	4062-COV-05-B02 (0-1)	4062-COV-05-B03 (0-1)	Most Stringent	Within an MSA	Within Chicago	Residential	Construction Worker	SCGIER
MATRIX	Soil	Soil	Soil						
DEPTH (feet)	0-1	0-1	0-1						
pH	7.8	8.5	8.5						
PID (meter units)	--	--	--						
<b>VOCs (None Detected)</b>									
<b>SVOCs (mg/kg)</b>									
2-Methylnaphthalene	0.0077 J	0.34	0.015 J	--	--	--	--	--	--
Acenaphthene	ND U	0.013 J	ND U	570	--	0.94	4,700	120,000	--
Acenaphthylene	ND U	0.013 J	0.0058 J	--	--	0.25	--	--	--
Anthracene	ND U	0.031 J	ND U	12,000	--	2.6	23,000	610,000	--
Benzo(a)anthracene	0.011 J	0.17	0.018 J	0.9	1.8	11	1.8	170	--
Benzo(a)pyrene	0.020 J	0.27 J †	0.024 J	0.09	2.1	11	2.1	17	--
Benzo(b)fluoranthene	0.029 J	0.42 J	0.036 J	0.9	2.1	13	2.1	170	--
Benzo(g,h,i)perylene	ND UJ	0.12 J	0.019 J	--	--	4.4	--	--	--
Benzo(k)fluoranthene	ND UJ	0.14 J	ND U	9	--	8.1	9	1,700	--
Bis(2-ethylhexyl) phthalate	ND U	0.18 J	ND U	46	--	--	46	4,100	--
Chrysene	0.012 J	0.28	0.025 J	88	--	11	88	17,000	--
Dibenz(a,h)anthracene	ND UJ	0.035 J	ND U	0.09	0.42	1	0.42	17	--
Dibenzofuran	ND U	0.21	ND U	--	--	--	--	--	--
Fluoranthene	0.018 J	0.30	0.029 J	3,100	--	28	3,100	82,000	--
Fluorene	ND U	0.0092 J	ND U	560	--	1.1	3,100	82,000	--
Indeno(1,2,3-cd)pyrene	ND UJ	0.11 J	0.014 J	0.9	1.6	5.8	1.6	170	--
Naphthalene	ND U	0.18	0.0089 J	1.8	--	0.26	170	1.8	--
Phenanthrene	0.017 J	0.32	0.028 J	--	--	15	--	--	--
Pyrene	0.020 J	0.37	0.026 J	2,300	--	18	2,300	61,000	--
<b>Inorganics (mg/kg)</b>									
Antimony	ND U	ND U	0.38 J	5	--	--	31	82	--
Arsenic	6.9	6.6	6.7	11.3	13	--	13	61	--
Barium	90	98	100	1,500	--	--	5,500	14,000	--
Beryllium	0.73	0.74	0.67	22	--	--	160	410	--
Boron	1.9 J	3.2	1.7 J	40	--	--	16,000	41,000	--
Cadmium	0.25	0.37	0.23	5.2	--	--	78	200	--
Calcium	5,000	51,000	6,900	--	--	--	--	--	--
Chromium	19	16	11	21	--	--	230	690	--
Cobalt	5.2	6.2	12	20	--	--	4,700	12,000	--
Copper	15	16	13	2,900	--	--	2,900	8,200	--
Iron	18,000 †m	16,000 †m	18,000 †m	15,000	15,900	--	--	--	--
Lead	38	170 †	31	107	--	--	400	700	--
Magnesium	1,800	4,600	3,400	325,000	--	--	--	730,000	--
Manganese	290	290	480	630	636	--	1,600	4,100	--
Mercury	0.041	0.027	0.023	0.89	--	--	10	0.1	--
Nickel	13	15	18	100	--	--	1,600	4,100	--
Potassium	810	840	880	--	--	--	--	--	--
Selenium	0.74	0.42 J	0.42 J	1.3	--	--	390	1,000	--
Sodium	460	660	38 J	--	--	--	--	--	--
Vanadium	29	21	16	550	--	--	550	1,400	--
Zinc	84	93	65	5,100	--	--	23,000	61,000	--
<b>TCLP Metals (mg/L)</b>									
Barium	0.54	0.67	0.70	--	--	--	--	--	2
Iron	0.31 J	ND U	ND U	--	--	--	--	--	5
Lead	ND U	ND U	ND U	--	--	--	--	--	0.0075
Zinc	0.038 J	0.027 J	0.030 J	--	--	--	--	--	5
<b>SPLP Metals (Not Analyzed)</b>									

PTB #172-27; Work Order 112 - IDOT Job # D-99-069-20

CONTAMINANTS OF CONCERN

SITE	ISGS #4062-COV-8 (ROW)									Comparison Criteria					
	4062-COV-08-B01	4062-COV-08-B02	4062-COV-08-B03	4062-COV-08-B04	4062-COV-08-B05	4062-COV-08-B06	4062-COV-08-B07	4062-COV-08-B08	4062-COV-08-B09	MACs			TACO		
SAMPLE	4062-COV-08-B01 (0-2)	4062-COV-08-B02 (0-2)	4062-COV-08-B03 (0-2)	4062-COV-08-B04 (0-2)	4062-COV-08-B05 (0-2)	4062-COV-08-B06 (0-2)	4062-COV-08-B07 (0-2)	4062-COV-08-B08 (0-2)	4062-COV-08-B09 (0-2)	Most Stringent	Within an MSA	Within Chicago	Residential	Construction Worker	SCGIER
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
DEPTH (feet)	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2						
pH	8.2	7.9	7.5	8.1	7.5	7.5	7.9	7.8	7.2						
PID (meter units)	--	--	--	--	--	--	--	--	--						
<b>VOCs (mg/kg)</b>															
Acetone	ND U	ND U	ND U	ND U	ND U	ND U	ND U	0.022	ND U	25	--	--	70,000	100,000	--
<b>SVOCs (mg/kg)</b>															
2-Methylnaphthalene	0.010 J	ND U	ND U	ND U	0.063 J	0.033 J	0.072 J	0.012 J	0.0096 J	--	--	--	--	--	--
Anthracene	ND U	ND U	ND U	ND U	0.010 J	0.016 J	0.018 J	ND U	0.012 J	12,000	--	2.6	23,000	610,000	--
Benzo(a)anthracene	ND U	ND U	ND U	0.0059 J	0.021 J	0.092	0.042	ND U	0.055	0.9	1.8	11	1.8	170	--
Benzo(a)pyrene	ND U	ND U	ND U	0.0098 J	0.023 J	0.12 J †	0.049 J	0.011 J	0.18 J †	0.09	2.1	11	2.1	17	--
Benzo(b)fluoranthene	ND U	ND U	ND U	ND U	0.024 J	0.084 J	ND UJ	ND U	0.22 J	0.9	2.1	13	2.1	170	--
Benzo(g,h,i)perylene	ND U	ND U	ND U	ND U	0.016 J	0.080 J	ND UJ	ND U	0.39 J	--	--	4.4	--	--	--
Benzo(k)fluoranthene	ND U	ND U	ND U	ND U	ND UJ	ND UJ	ND UJ	ND U	0.092 J	9	--	8.1	9	1,700	--
Chrysene	ND U	ND U	ND U	ND U	0.022 J	0.14	0.043	ND U	0.067	88	--	11	88	17,000	--
Dibenz(a,h)anthracene	ND U	ND U	ND U	ND U	ND UJ	ND UJ	ND UJ	ND U	0.054 J	0.09	0.42	1	0.42	17	--
Dibenzofuran	ND U	ND U	ND U	ND U	ND U	ND U	0.047 J	ND U	ND U	--	--	--	--	--	--
Fluoranthene	ND U	ND U	ND U	ND U	0.021 J	0.045	0.044	0.013 J	0.094	3,100	--	28	3,100	82,000	--
Fluorene	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	ND U	560	--	1.1	3,100	82,000	--
Indeno(1,2,3-cd)pyrene	ND U	ND U	ND U	ND U	ND UJ	ND UJ	ND UJ	ND U	0.24 J	0.9	1.6	5.8	1.6	170	--
Naphthalene	ND U	ND U	ND U	ND U	0.024 J	0.011 J	0.034 J	0.0063 J	ND U	1.8	--	0.26	170	1.8	--
Phenanthrene	0.011 J	0.0070 J	ND U	0.0078 J	0.077	0.088	0.14	0.011 J	0.058	--	--	15	--	--	--
Pyrene	ND U	ND U	ND U	ND U	0.051	0.30	0.085	0.012 J	0.12	2,300	--	18	2,300	61,000	--
<b>Inorganics (mg/kg)</b>															
Antimony	0.26 J	0.29 J	ND U	0.29 J	0.33 J	0.36 J	0.34 J	0.26 J	0.42 J	5	--	--	31	82	--
Arsenic	6.6	5.0	6.8	6.1	6.4	8.0	11	5.2	8.4	11.3	13	--	13	61	--
Barium	110	100	40	76	140	100	120	110	160	1,500	--	--	5,500	14,000	--
Beryllium	0.74	0.66	0.47	0.77	0.64	0.86	0.77	0.69	0.82	22	--	--	160	410	--
Boron	1.1 J	1.6 J	1.1 J	1.0 J	2.6 J	2.2 J	4.3	0.60 J	1.4 J	40	--	--	16,000	41,000	--
Cadmium	ND U	ND U	ND U	ND U	ND U	0.27	0.33	ND U	0.24	5.2	--	--	78	200	--
Calcium	16,000	2,900	1,300	2,000	3,800	5,700	11,000	2,900	3,400	--	--	--	--	--	--
Chromium	12	13	12	13	13	15	13	13	14	21	--	--	230	690	--
Cobalt	8.4	8.3	2.9	9.4	10	15	7.4	8.9	8.9	20	--	--	4,700	12,000	--
Copper	12	11	5.3	12	15	17	23	11	15	2,900	--	--	2,900	8,200	--
Iron	16,000 †m	14,000	14,000	18,000 †m	14,000	19,000 †m	16,000 †m	16,000 †m	20,000 †m	15,000	15,900	--	--	--	--
Lead	22	14	10	13	27	31	41	13	19	107	--	--	400	700	--
Magnesium	2,800	2,100	1,300	1,800	1,300	2,000	1,800	1,700	2,000	325,000	--	--	--	730,000	--
Manganese	350	350	120	280	520	640 †m	350	410	370	630	636	--	1,600	4,100	--
Mercury	0.022	0.028	0.013 J	0.036	0.026	0.028	0.036	0.026	0.026	0.89	--	--	10	0.1	--
Nickel	17	20	7.7	15	12	16	16	17	19	100	--	--	1,600	4,100	--
Potassium	570	570	590	670	680	830	900	460	700	--	--	--	--	--	--
Selenium	0.48 J	ND U	0.67	ND U	0.65	0.76	0.47 J	ND U	0.44 J	1.3	--	--	390	1,000	--
Sodium	180	180	65	960	210	350	250	770	990	--	--	--	--	--	--
Vanadium	20	21	26	22	23	26	22	18	22	550	--	--	550	1,400	--
Zinc	49	49	22	46	60	70	89	42	85	5,100	--	--	23,000	61,000	--
<b>TCLP Metals (mg/L)</b>															
Barium	0.84	0.61	0.12 J	0.41 J	0.64	0.47 J	0.99	0.57	0.81	--	--	--	--	--	2
Boron	ND UJ	0.073 J	ND UJ	ND UJ	ND UJ	0.059 J	ND UJ	ND UJ	ND UJ	--	--	--	--	--	2
Iron	ND U	0.48	ND U	1.1	0.24 J	0.23 J	ND U	0.60	ND U	--	--	--	--	--	5
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	0.15
Zinc	0.11 J	ND U	0.023 J	0.021 J	0.040 J	ND U	ND U	0.040 J	0.029 J	--	--	--	--	--	5
<b>SPLP Metals (Not Analyzed)</b>															

**PTB #172-27; Work Order 112 - IDOT Job # D-99-069-20  
CONTAMINANTS OF CONCERN**

SITE	ISGS #4062-COV-14 (Residential Building)			Comparison Criteria					
	4062-COV-14-B01	4062-COV-14-B02		MACs			TACO		
BORING	4062-COV-14-B01	4062-COV-14-B02 (0-1)	4062-COV-14-B02 (0-1)D	Most Stringent	Within an MSA	Within Chicago	Residential	Construction Worker	SCGIER
SAMPLE	4062-COV-14-B01 (0-1)	4062-COV-14-B02 (0-1)	4062-COV-14-B02 (0-1)D						
MATRIX	Soil	Soil	Soil						
DEPTH (feet)	0-1	0-1	0-1						
pH	7.6	7.9	8.3						
PID (meter units)	--	--	--						
<b>VOCs (None Detected)</b>									
<b>SVOCs (mg/kg)</b>									
2-Methylnaphthalene	0.040 J	0.41	0.24	--	--	--	--	--	--
Acenaphthene	ND U	0.027 J	0.020 J	570	--	0.94	4,700	120,000	--
Acenaphthylene	ND U	ND U	0.036 J	--	--	0.25	--	--	--
Anthracene	0.016 J	0.098	0.092	12,000	--	2.6	23,000	610,000	--
Benzo(a)anthracene	0.035 J	0.29	0.30	0.9	1.8	11	1.8	170	--
Benzo(a)pyrene	0.058 J	0.34 J †	0.35 J †	0.09	2.1	11	2.1	17	--
Benzo(b)fluoranthene	ND UJ	0.53 J	0.50 J	0.9	2.1	13	2.1	170	--
Benzo(g,h,i)perylene	0.039 J	0.13 J	0.13 J	--	--	4.4	--	--	--
Benzo(k)fluoranthene	ND UJ	0.17 J	0.20 J	9	--	8.1	9	1,700	--
Bis(2-ethylhexyl) phthalate	ND U	0.082 J	ND U	46	--	--	46	4,100	--
Chrysene	0.047	0.38	0.33	88	--	11	88	17,000	--
Dibenz(a,h)anthracene	ND UJ	0.012 J	ND UJ	0.09	0.42	1	0.42	17	--
Dibenzofuran	ND U	0.22	0.11 J	--	--	--	--	--	--
Fluoranthene	0.026 J	0.52	0.53	3,100	--	28	3,100	82,000	--
Fluorene	ND U	0.017 J	0.020 J	560	--	1.1	3,100	82,000	--
Indeno(1,2,3-cd)pyrene	ND UJ	0.11 J	0.11 J	0.9	1.6	5.8	1.6	170	--
Naphthalene	0.016 J	0.19	0.11	1.8	--	0.26	170	1.8	--
Phenanthrene	0.087	0.68	0.47	--	--	15	--	--	--
Pyrene	0.072	0.58	0.54	2,300	--	18	2,300	61,000	--
<b>Inorganics (mg/kg)</b>									
Antimony	ND U	0.44 J	0.39 J	5	--	--	31	82	--
Arsenic	5.6	8.0	9.1	11.3	13	--	13	61	--
Barium	120	130	100	1,500	--	--	5,500	14,000	--
Beryllium	0.72	0.67	0.73	22	--	--	160	410	--
Boron	1.2 J	3.5	4.0	40	--	--	16,000	41,000	--
Cadmium	ND U	3.1 J	0.83 J	5.2	--	--	78	200	--
Calcium	2,800	11,000 J	25,000 J	--	--	--	--	--	--
Chromium	12	14	15	21	--	--	230	690	--
Cobalt	7.6	8.5	7.0	20	--	--	4,700	12,000	--
Copper	12	20	34	2,900	--	--	2,900	8,200	--
Iron	16,000 †m	14,000	19,000 †m	15,000	15,900	--	--	--	--
Lead	18	150 †	280 †	107	--	--	400	700	--
Magnesium	1,500	1,500	2,700	325,000	--	--	--	730,000	--
Manganese	260	390	350	630	636	--	1,600	4,100	--
Mercury	0.032	0.078	0.041	0.89	--	--	10	0.1	--
Nickel	19	17	19	100	--	--	1,600	4,100	--
Potassium	640	880	1,000	--	--	--	--	--	--
Selenium	0.38 J	0.51 J	0.57 J	1.3	--	--	390	1,000	--
Sodium	73	260	270	--	--	--	--	--	--
Vanadium	20	19	17	550	--	--	550	1,400	--
Zinc	54	920 J	160 J	5,100	--	--	23,000	61,000	--
<b>TCLP Metals (mg/L)</b>									
Barium	0.78	1.2	0.95	--	--	--	--	--	2
Iron	0.50	ND U	ND U	--	--	--	--	--	5
Lead	ND U	ND U	ND U	--	--	--	--	--	0.0075
Zinc	ND U	0.052 J	0.055 J	--	--	--	--	--	5
<b>SPLP Metals (Not Analyzed)</b>									

# APPENDIX

## **D** LABORATORY DATA PACKAGES AND SITE PHOTOGRAPHS

# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-05  
(Vacant Lot)  
Date: 2/23/2023  
Direction: West  
Time: 1551

Description: Orange cone and placard indicate location of boring ISGS #4062-COV-05-B01



Site: ISGS #4062-COV-05  
(Vacant Lot)  
Date: 2/23/2023  
Direction: West  
Time: 1550

Description: Orange cone and placard indicate location of boring ISGS #4062-COV-05-B02



# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-05  
(Vacant Lot)  
Date: 2/23/2023  
Direction: East  
Time: 1548

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-05-B03



Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1516

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-08-B01

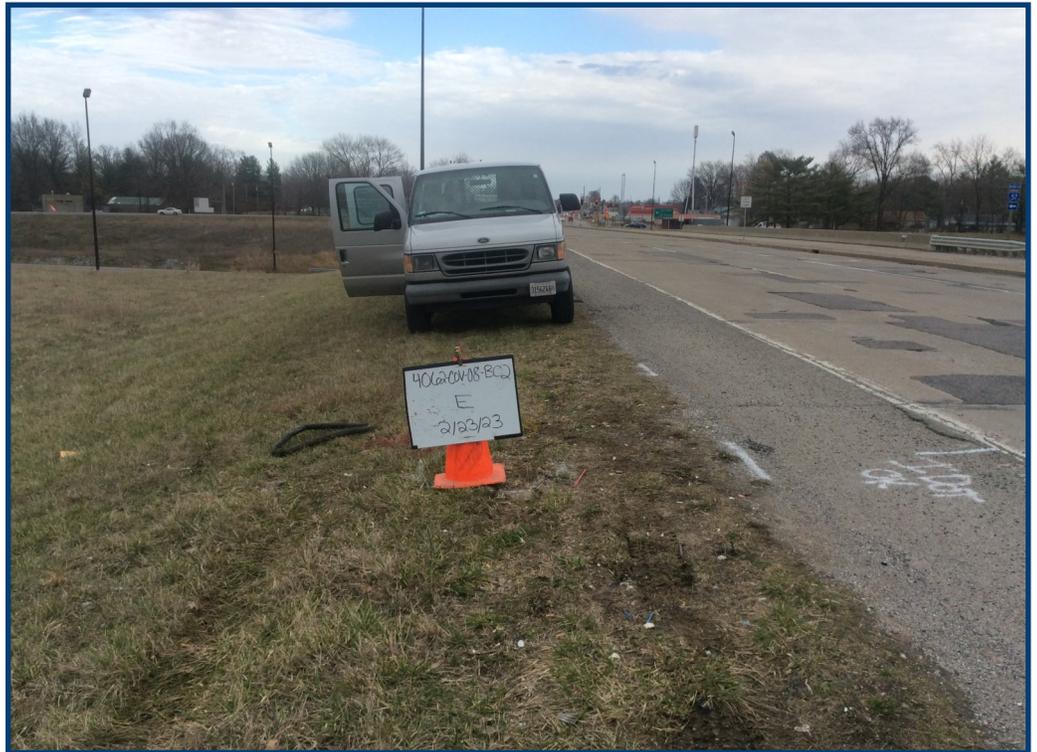


# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1515

Description: Orange cone and placard indicate location of boring ISGS #4062-COV-08-B02



Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: West  
Time: 1615

Description: Orange cone and placard indicate location of boring ISGS #4062-COV-08-B03



# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1616

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-08-B04



Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1453

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-08-B05



# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1453

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-08-B06



Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1451

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-08-B07



# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1351

Description: Orange cone and placard indicate location of boring ISGS #4062-COV-08-B08



Site: ISGS #4062-COV-08  
(ROW)  
Date: 2/23/2023  
Direction: East  
Time: 1352

Description: Orange cone and placard indicate location of boring ISGS #4062-COV-08-B09



# PHOTOGRAPHIC RECORD

Work Order No: 112  
Route: FAP 873 (IL 149)  
Contract Number: PTB 172-027  
IDOT Project Number: D-99-069-20

Site: ISGS #4062-COV-14  
(Residential)  
Date: 2/23/2023  
Direction: East  
Time: 1447

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-14-B01



Site: ISGS #4062-COV-14  
(Residential)  
Date: 2/23/2023  
Direction: East  
Time: 1448

Description: Orange cone and placard indicate location of boring  
ISGS #4062-COV-14-B02



# APPENDIX

# E

UNCONTAMINATED  
SOIL CERTIFICATION  
FORMS