

PROJECT REPORT

Phase II Environmental Site Assessment West Calumet Housing Complex East Chicago, IN 46312

Prepared For:

**East Chicago Housing Authority
4920 Larkspur Street
East Chicago, IN 46312**

Project Number:

17.1151.2

Date Submitted:

February 15, 2017

Prepared By:

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February 17, 2017

Mr. Javier Chavez
East Chicago Housing Authority
4920 Larkspur Street
East Chicago, IN 46312

**Re: Phase II Environmental Site Assessment
West Calumet Housing Complex
East Chicago, IN 46312
Project No. 17.1151.2**

Dear Mr. Chavez:

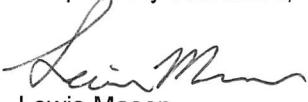
In accordance with your authorization, we have performed a Phase II Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1903-11 at West Calumet Housing Complex, East Chicago, Lake County, Indiana 46312, the property. The Phase II ESA was conducted to investigate and assess environmental conditions that may be of concern during the demolition of the improvements onsite.

The investigation included the advancement of thirty-eight (38) direct push soil borings onsite and the installation of four (4) permanent monitoring wells. In addition to the four (4) permanent monitoring wells, ten (10) temporary wells were also installed. Samples were analyzed for concentrations of Volatile Organic Compounds (VOCs), Poly-Nuclear Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls and Resource Conservation and Recovery Act (RCRA) Metals (based on soil boring location and contaminant source). This investigation focused on assessing the potential exposure and hazards associated with the demolition of the structure. Therefore, the focus is risk of worker exposure and the distribution of contamination offsite. This assessment was not intended to characterize the site for remedial purposes.

Please be advised that multiple Polynuclear Aromatic Hydrocarbons were identified in exceedance of Indiana Department of Environmental Management (IDEM) Remediation Closure Guide (RCG) Residential Direct Contact (RDC) Screening Levels (SLs) and Soil Migration to Groundwater (MTG) SLs in subsurface soils. Please be advised that metals were also identified in subsurface soils in exceedance of IDEM RCG SLs for MTG, Residential and Industrial direct contact. Additionally, Lead and Arsenic were identified in exceedance of IDEM RCG Excavation Worker Direct Contact SLs in subsurface soils. Concentrations as high as 45,000 mg/Kg and 5,200 mg/Kg, respectively were identified. PNAs and Metals were identified in groundwater above IDEM Residential Tap SLs. Volatile Organic Compounds and Polychlorinated Biphenyls were not identified in exceedance of IDEM RCG SLs in the soil and groundwater onsite.

I appreciate the opportunity to provide you this service. If you have any questions or comments regarding this report, or if I can be of any additional service, please call.

Respectfully submitted,


Lewis Mason

Field Technician

Attachments


Zachary K. Heine
Director of Operations

CERIFIED HAZARDOUS MATERIALS MANAGER
ZACHARY K. HEINE
16774
CHMM

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1.0 Executive Summary

This Phase II Environmental Site Assessment (ESA) was conducted to evaluate potential hazards associated with proposed demolition of the structures within the West Calumet Housing Complex, East Chicago, Lake County, IN 46312. This includes the demolition of on-grade residential structures, administration building, community center, maintenance garage and all other improvements therein associated. A Phase I ESA was completed for the subject site on January 17, 2017 by Amereco, Inc.

In developing the scope of this Phase II ESA, Amereco reviewed available public records on the Indiana Department of Environmental Management (IDEM) Virtual File Cabinet (VFC) for the subject site and surrounding properties and reviewed historic aerial, topographical and Sanborn ® maps. Recognized Environmental Conditions (RECs) have been identified onsite. The RECS identified during the Phase I ESA include:

- Historic Bulk Petroleum Storage Tanks Identified Onsite
- Historic Rail Spurs Identified Onsite
- Historic PCB Containing Equipment Identified Onsite
- Historic Bulk Oil Storage Identified Onsite
- Known Contamination of Lead and Arsenic in Onsite Soils
- Historic Metal Refining and Industrial Operations Identified on South Adjoining Site
- Historic Industrial Operations and Bulk Oil Storage Identified on Southeast Adjoining Site
- The USS Lead Refinery Superfund Site Located at 5300 Kennedy Avenue
- Possible Vapor Encroachment Condition on Subject Site

This Phase II ESA was conducted to further assess the nine (9) RECs, known contamination onsite and collect groundwater samples from established wells. This Phase II ESA included the advancement of thirty-eight (38) direct push soil borings, the installation of four (4) 2-inch permanent monitoring wells and ten (10), 1-inch temporary monitoring wells. The soil borings were advanced using a track mounted Geoprobe 66DT. Soil borings were advanced to depths between 4 and 12 feet below ground surface (bgs) depending on the REC. Groundwater was typically encountered at a depth of 4 to 5 feet bgs. A total of forty-nine (49) soil and thirty-four (34) groundwater samples were collected.

Samples were analyzed for concentrations of volatile organic compounds (VOCs), poly-nuclear aromatic hydrocarbons (PNAs), resource conservation and recovery act (RCRA) metals and polychlorinated biphenyls (PCBs) based on sample location and contamination source.

In summary, concentrations of RCRA Metals and PNAs have been identified in onsite soils and groundwater in exceedance of the IDEM Remediation Closure Guide (RCG) Screening Levels (SLs).

2.0 Introduction

Amereco performed this Phase II Environmental Site Assessment in accordance with the scope of work assigned. This assessment was prepared in general accordance with the American Society for Testing and Materials (ASTM) Standard E1903-11 – Standard Practices for Environmental Site Assessments: Phase II ESA Process. Additionally, this assessment was conducted in general accordance with the IDEM RCG.

2.1. Purpose

The primary purpose of this Phase II Environmental Site Assessment is to evaluate the subject site for environmental conditions that may hinder demolition of the existing structures onsite. This includes the evaluation of the Recognized Environmental Conditions and contamination identified in the Phase I ESA. The primary focus of this Phase II was to evaluate potential hazards posed during the demolition of improvements onsite. This not only includes buildings, but the network of utilities distributed throughout the site. Per the City of East Chicago, there are sewers onsite that are located at a depth of up to nine (9) feet below grade. Therefore, the site was characterized up to twelve (12) feet to ensure that worker exposure is being fully characterized.

This Phase II ESA was conducted to provide sufficient information regarding the nature and extent of contamination; however, it should not be interpreted as providing a final determination of the extent of contamination, nor a definitive conclusion that hazardous materials and/or petroleum products do or do not exist onsite.

2.2. Scope of Services

The specific scope of work conducted for this assessment included review of existing available information, field exploration, sampling, contaminant analysis, evaluation of results, and a discussion regarding conclusions, findings and recommendations.

Based on a review of historic site plans, available records on the IDEM VFC and the United States Environmental Protection Agency (US EPA) Superfund Administrative Records for US Smelter and Lead Refinery Inc., the primary focus of the Phase II includes: evaluation of the following historic onsite conditions: bulk storage of petroleum products, rail spurs, and PCB containing equipment. Secondary focuses include: known contamination of lead and arsenic in surface soils onsite, the southeast adjoining industrial operations and bulk oil storage, and the historic metal refining operations on the adjacent properties.

2.3. Special Terms and Conditions

No special terms or conditions were considered during the Phase II ESA. The findings and conclusions presented in this report apply only to the evaluation of the Recognized Environmental Conditions that have been identified within the Phase I ESA for the property. This includes by a review of the available documents on the US EPA Superfund Administrative Records for US Smelter and Lead Refinery Inc. for parcels contained within the subject site (West Calumet Housing Complex), and a review of the historical records for the surrounding sites.

2.4. Limitations and Exceptions of Assessment

Amereco Engineering has performed this Phase II Environmental Site Assessment under an agreement between Amereco Engineering and the East Chicago Housing Authority. This report is the property of Amereco Engineering and the East Chicago Housing Authority and was prepared for a specific use, purpose, and reliance as defined within the agreement. This report can also be relied upon by the U.S. Department of Housing and Urban Development (HUD). This report cannot be relied

upon or used by any other entity than described above without the written approval by Amereco Engineering.

This report, including the appendices attached, describes the results of Amereco Engineering's initial investigation to identify the past, present, or potential presence of hazardous materials and/or petroleum involving or affecting the subject property. The conclusions stated herein represent the material facts and conditions associated with the subject property.

The findings of this report are valid this date. Changes in the condition of the property can occur with passage of time, whether they are due to natural processes or human activities on this or adjacent properties. In addition, changes in the state-of-the-art and/or government codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control.

The final assessment of the potential for the existence of hazardous materials at the site should be considered a professional opinion based on the data obtained during the assessment and should not be considered a definitive statement that a hazardous material is or is not present in the area of study. These opinions have been derived in accordance with current standards of practice and no warranty is expressed or implied.

2.5. Limiting Conditions and Methodologies Used

Uncertainty cannot be eliminated from the environmental site assessment process. Additionally, sampling may or may not be representative of the concern onsite. The environmental site assessment process is based on professional judgment, when uncertainty is inevitable. Additional assessment may be capable of reducing uncertainty.

Phase II ESAs, in general, do not require an exhaustive assessment of environmental conditions impacting the subject site. A Phase II ESA is intended to provide a cost and time effective assessment of the subject site to assist in the decision-making process. Future assessments may be conducted to reduce the uncertainty. The decision for further site assessments is determined by the User and the level of uncertainty acceptable to the decision process.

3.0 Background

3.1. Site Description & Features

The subject site is approximately 40 acres in size located in East Chicago, Lake County, Indiana 46312. The subject site is occupied by the West Calumet Housing Complex. The site is supplied with underground electrical and natural gas (NIPSCO), as well as potable water, sanitary and storm sewer services through the City of East Chicago. The site consists of 107 residential structures, in addition to an administrative building, a community center and a maintenance building. The residential structures onsite include apartments, duplexes, townhomes and single family homes.

The main entrance to the housing complex is located on the south side of the subject site, accessible via 151st Street. An additional entrance is located on the east side of the subject site, leading in from 149th Place north of the community building. The complex is surrounded by an aluminum security fence, which is approximately 6 feet tall. Roadways throughout the site include Gladiola Avenue to the east, Magnolia Lane to the north, Aster Avenue to the west and 151st Place to the south. Larkspur Street runs diagonally through the site (southwest to northeast), connecting Aster and Gladiola Avenues. Jonquil Lane and 150th Place form a loop with Gladiola Avenue in the southeast portion of the site.

The maintenance building is located on the east side of the property, south of 149th Place, between McCook and Gladiola Avenues. Two paved parking lots are located on the north side of the building, with a large paved drive to the east. A small fenced enclosure, located on the south side of the maintenance building, is utilized for the safekeeping of equipment and building materials.

3.2. Physical Setting

The subject site is relatively flat. Storm water flows from the site to the housing complex roadways, where it is directed to storm sewer inlets. Based on a sewer system plan provided by the City of East Chicago, storm water is discharged to the canal on the west portion of the site.

3.3. Site History & Land Use

The subject site includes five (5) parcels. Historic Sanborn Maps indicated the site has operated as a metal refining plant since at least 1915. The site was developed into the West Calumet Housing Complex in the 1970's and has been utilized for multi-family low-income housing to date.

Facilities identified onsite during the metal refining operations include a pulverizing mill, white lead storage areas, a chemical laboratory, ore bins, machine shops, a lead and silver refinery, several transformer houses and other miscellaneous operations. A slag and coal dump was also identified to the southwest of the refinery, near the center of the site. The surrounding sites have also been occupied by numerous industrial operations in the past, including metal refineries. The site is included as part of the US Smelter and Lead Refinery Superfund Site, described as part of Zone 1, within Operable Unit 1. Extensive sampling and removal of shallow soils within and around the West Calumet Housing Complex has been ongoing since 2003.

3.4. Adjacent Property Use

Current Use of Adjoining Properties	
Direction	Use
North	Carrie Gosch Elementary School
East	Lake County Rehabilitation Center Residential
South	Scrap Metal Services, LLC Central States Marketing Co. Inc.
Southeast	Howard Industries, Inc.
West	Canal Former Industrial/Currently Vacant Lot

3.5. Summary of Previous Assessments

As mentioned above, the West Calumet Housing Complex is included as part of Zone 1 of Operable Unit 1 of the USS Lead Refinery Superfund Site. Review of the documents available within the Administrative Record for the USS Lead Refinery Superfund Site was conducted during the Phase I record review. Sampling of Zone 1, Operable Unit 1 was conducted between November 2014 and April 2015. Documents from the Administrative Record indicate that lead concentrations were identified within Zone 1 of Operable Unit 1 in exceedance of 91,100 mg/Kg. Arsenic concentrations, within the same area, were detected in exceedance of 3,530 mg/Kg. Near surface soil samples (collected specifically from the West Calumet Housing Complex) exhibited lead concentrations ranging from 5,000 to 45,000 mg/Kg. Lead dust cleanup began within the West Calumet residential building interiors in August 2016 in 113 units. There are no records of soil remedial activities occurring at the West Calumet Housing site. Activities appear to have been limited to cleanup of units and exposure prevention.

4.0 Phase II Activities

4.1. Scope of Assessment

4.1.1. Supplemental Record Review

As mentioned above, this site is included in the USS Lead Refinery Superfund Site. Elevated levels of lead and arsenic have been identified within the West Calumet Housing Complex during sampling activities conducted by the US EPA. An action memorandum, identified on the Administrative Record for the Superfund Site, provided a summary of activities, which was dated October 24, 2016. The memorandum was submitted by Douglas Ballotti, Acting Director for the US EPA Superfund Division. The memorandum indicated that lead concentrations were identified as high as 45,000 mg/Kg within the West Calumet Housing Complex. However, the memorandum did not specifically state concentrations of arsenic identified within the West Calumet Housing Complex. A copy of the memorandum is included in Appendix E of this Phase II ESA.

Results from lead and arsenic soil sampling by means of XRF analysis and laboratory analysis conducted between December 2014 and continuing into 2015 were identified on the USS Lead Superfund Site website. Review of these results indicate that the highest concentrations of lead and arsenic were identified in the front yard of AST1001 (presumably unit 1001 on Aster Avenue). A copy of these sampling results can be found in Appendix E of this report.

The soil sampling associated with the Superfund Site has been focused on surface soils located at two (2) feet or less below surface grade (bsg). This has focused on potential exposure by direct contact.

4.1.2. Conceptual Site Model & Sampling Plan

This site model takes into consideration the potential distributions of contaminants with respect to the properties, behaviors and fate and transport characteristics of the contaminant, in such as that being assessed. The sampling plan was designed to provide for the collection of potentially contaminated environmental media, if present, at locations and depths where the highest concentrations would or would likely occur. Sample locations for the subject site were primarily chosen based on the location of Recognized Environmental Conditions and historic bulk storage of hazardous materials identified onsite.

This Phase II ESA was performed in accordance with Amereco, Inc.'s Sampling Plan, dated January 23, 2017 (see Appendix D).

4.1.3. Chemical Testing Plan

The chemical testing plan was developed to detect the contaminants suspected to be present in the soil and groundwater collected and to satisfy the IDEM RCG requirements. A completed chain of custody (COC) accompanied each sample shipment to the laboratory. Chain of custody provides documentation regarding sample collection/handling, which identifies individuals involved in the chain of sample possession and a record of requested analytical parameters.

4.1.4. Deviations from the Sampling Plan

Two (2) of the water samples (WCG-018 and WCG-027) were not recorded on the chain of custody due to field error at the time the samples were submitted to the laboratory. The results of these two (2) water samples are included in the Tabular results in Appendix C, but the results are not considered valid. There were no other deviations from the Sampling Plan identified during this Phase II ESA.

4.2. Field Explorations & Methods

4.2.1. Test Pits

No test pits were excavated as part of this Phase II ESA.

4.2.2. Test Borings

A total of thirty-eight (38) soil borings were advanced on January 27, 31 and February 1, 2017. Soil borings were advanced using a track-mounted Geoprobe 66 DT, with direct push methods and Dual Core® sampling. Soil borings SB-26, SB-28 and SB-29 were advanced to a depth of 4 feet bsg, while the remaining soil borings were advanced to 12 feet bsg. The five (5) shallow soil borings (to a depth of 4 feet bsg) were advanced strictly to investigate the surface soils onsite in relation to the historic rail spurs. Soil boring equipment was decontaminated between each boring location using the triple rinse method and Alconox® solution. All decontamination water was collected in 55-gallon drums for disposal. A site plan depicting soil boring locations along with soil boring logs detailing all findings can be found in Appendix B.

Soils were screened using a MiniRAE 3000 Photo-Ionization Detector (PID) for VOCs and characterized using the Unified Soil Classification System (USCS). PID screening results and soil characteristics are included on the soil boring logs in Appendix B. Soil borings were backfilled with hydrated Benseal Bentonite Chips.

4.2.3. Monitoring Well Installations

This Phase II ESA also included the installation of four (4) permanent monitoring wells. The monitoring wells were installed and developed by Steven Travis, Well License #4023, in accordance with 312 IAC 13. All wells were installed using 5 foot length 4.25 inch hollow stem augers. All soil cuttings were placed in open-top 55 gallon drums for disposal. Permanent monitoring well construction included 10 feet of 2 inch diameter 0.010 inch slot well screen and 2 feet of 2 inch diameter well casing.

In addition to the four (4) permanent monitoring wells, ten (10) 1" temporary monitoring wells were installed in borings SB-04, SB-08, SB-10, SB-15, SB-16, SB-21, SB-22, SB-23, SB-31 and SB-34. The temporary PVC wells consisted of 5 feet of riser and 5 feet of 0.010 inch slot screen.

All tooling was decontaminated using Alconox® and the triple rinse method between each monitoring well location. All rinse water used in the decontamination process was placed in 55-gallon drums for disposal.

The monitoring wells were flush mount installed with 8 inch diameter steel manhole covers and concreted in place. An expandable well plug was installed in the top of the well casing. A well point was installed in the bottom of the well screen. Monitoring wells were backfilled with #6 washed well sand from the bottom of the well up 11 feet (approximately 1 foot above the top of the well screen). The remainder of the bore hole was backfilled with Benseal® medium bentonite chips to surface grade. A monitoring well construction diagram is included in Appendix A, Figure 9A.

The temporary monitoring wells were flush mount installed with 4 inch diameter aluminum manhole covers and concreted in place. An expandable well plug was installed in the top of the well casing. A well point was installed in the bottom of the well screen. The temporary monitoring wells were placed within the soil boring hole after all tooling was removed. Native sands were used to backfill the annular space around the monitoring well screens. Additionally, a minimal amount of #6 washed well sand was used to backfill the annular space to a depth of approximately 1 foot above the screen. The remainder of the annular space was backfilled with

Benseal® medium bentonite chips to surface grade. A temporary monitoring well construction diagram is included in Appendix A, Figure 9B.

4.2.4. Other

No other Field Exploration methods were utilized in conjunction with this project.

4.3. Sampling & Chemical Analyses

4.3.1. Soil

A total of forty-nine (49) soil samples were collected from the area with the highest PID reading, visual discoloration or odor. If no such area was identified, a sample was collected immediately above the water table.

All samples were collected within a few minutes of the soils' exposure by the boring equipment. All soil samples were collected and placed into laboratory supplied pre-cleaned 4 oz. jars. Samples collected for volatile analysis were also collected utilizing laboratory supplied Terra-Core 5035 40 mL sample vials with Sodium Bisulfate and Methanol preservatives. The sample jars were labeled, immediately placed into sealed bags and placed on ice. Sample locations and times were recorded on the Sample Log Form and on the Chain of Custody.

Disposable Nitrile gloves were worn by sampling personnel and were changed between each sample location. All sampling supplies were decontaminated using Alconox® and the triple rinse method.

Samples collected were submitted to STAT Analysis Corporation for analyses. Samples were analyzed for concentrations of one or more of the following: VOCs, PNAs, RCRA Metals and PCBs based on the scope of work and suspected contaminant source.

4.3.2. Groundwater

Groundwater was sampled using two different techniques, dependent on if the sample was collected from an established well or from a soil boring. Grab groundwater samples collected from soil borings were collected using a stainless steel check valve sampler and Teflon™ lined 3/8" O.D. 1/4" I.D. poly-ethylene tubing inserted through the center of the boring rods. New tubing was used between each boring location. Additionally, all sampling supplies were decontaminated between boring locations using the triple rinse method and Alconox® solution. A total of five (5) shallow soil borings were advanced to a depth of 4 feet bsg strictly to investigate the surface soils onsite in relation to the historic rail spurs. Therefore, groundwater samples were not collected from soil borings SB-05, SB-06, SB-26, SB-28 and SB-29.

The groundwater sampled from established monitoring wells used a low-flow (minimal drawdown) sample withdrawal method in conformance with the Micro-Purge Sampling Option; OLQ Technical Memorandum dated November 3, 2009 (Reformatted June 6, 2012). Samples were collected using a Solinst® Pump Controller (compressed Nitrogen), a Geotech® Pneumatic Stainless Steel Bladder Pump, and dedicated Teflon® coated ¼" O.D. Poly-Ethylene tubing. An inline flow cell with a multi-parameter probe (YSI 556 MPS) was used to monitor levels of Dissolved Oxygen (DO), Temperature, Specific Conductivity, Oxygen Reduction Potential, and Salinity. Sampling was conducted once parameters stabilized over three (3) consecutive readings. Multi-parameter data field logs from each sample location are included in Appendix B. Samples were collected at a rate of approximately 0.2 L/min.

All samples were placed in laboratory supplied 40 mL vials with hydrochloric acid preservative, 1 L amber jars (non-preserved) and 500 mL plastic containers with nitric acid preservative

(depending on sample analysis). A total of thirty-four (34) samples were collected: one (1) sample from each of the fourteen (14) newly installed monitoring/temporary wells, one (1) grab sample from each of the nineteen (19) soil borings and one (1) duplicate sample (WCG-012B duplicate of WCG-012A collected from MW-012). Additionally, five (5) Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples were also collected (WCG-003, WCG-019, WCG-022, WCG-025 and WCG-030).

Samples collected were submitted to STAT Analysis Corporation for analyses. Samples were analyzed for concentrations of one or more of the following: VOCs, PNAs, RCRA Metals and PCBs based on the scope of work and suspected contaminant source.

4.3.3. Other

No other samples were collected as part of this Phase II ESA.

5.0 Evaluation & Presentation of Results

5.1. Subsurface Conditions

5.1.1. Geological Setting

The subject site was identified by the Natural Resources Conservation Service (NRCS) Web Soil Survey as Urban Land. Onsite soil conditions consisted primarily of various fine to medium sands to a depth of approximately 12 feet BGS. Topsoil, approximately 3 to 6 inches thick, was identified overlaying the sand. Slag, gravel, brick fragments and other fill material (assumed to be associated with demolition debris and backfill material) was identified in most soil borings approximately 2 to 3 feet bgs. Soil boring logs are included in Appendix B.

Bedrock geology is unknown for the subject site. Bedrock was identified, using the Indiana Department of Natural Resources (DNR) Water Well Viewer, at 130 feet bgs in Well Log ID: 291777 located approximately 0.20 miles southwest of the subject site.

5.1.2. Hydrogeologic Conditions

The regional groundwater flow for the subject site is north northeast, as identified by the Potentiometric Surface Map of The Unconsolidated Aquifers of Lake County, Indiana. Groundwater was typically encountered at a depth of 5 feet BGS. Based on groundwater elevations collected during the well sampling event, site specific groundwater flow is west northwesterly. The groundwater flow is depicted in Appendix A, Figure 8.

5.1.3. Verification of Conceptual Site Model

The conceptual site model and sampling plan developed for the site were verified during the Phase II ESA. The CSM can be found in Appendix A, Figure 10A & 10B.

All QA/QC procedures required by the IDEM RCG and RPG provided adequate information for data verification.

5.2. Analytical Data

5.2.1. Soil

The soil analytical results along with the applicable IDEM RCG Screening Levels can be found in Appendix C in tabular format. The tables below summarize the contaminants identified above applicable IDEM RCG Screening Levels.

Sample Location	Contaminant Detected and Results (parts per million (ppm))			
	Sample Depth (below ground surface)	Benz(a)anthracene	Benzo(a)pyrene	Dibenz(a,h)anthracene
WCS-006A	4 feet	1.8*	1.7	2.8*
WCS-014A	6 feet	--	0.23	--
QA/QC-S1	4 feet	--	0.47	--
<i>Residential Soil Exposure Direct Contact</i>		2.2	0.22	0.22
Migration to Groundwater SL*		0.85	4.7	2.6

The following inorganic contaminants were also identified above IDEM RCG Screening Levels in the following samples:

Sample Location	Contaminant Detected and Results (parts per million (ppm))					
	Sample Depth (below ground surface)	Arsenic	Cadmium	Lead	Selenium	Silver
WCS-005A	4 feet	5200	17*	45000	11*	--
WCS-006A	4 feet	220	11*	4600	--	17*
WCS-007A	4 feet	99	--	2400	--	--
WCS-007B	12 feet	6.2*	--	--	--	--
WCS-016A	4 feet	14	--	--	--	--
WCS-017A	4 feet	14	--	--	--	--
WCS-018A	4 feet	12	--	660	--	--
WCS-022A	2 feet	47	8.3*	1800	--	--
WCS-028A	6 feet	38	--	1000	--	--
WCS-029A	4 feet	--	16*	--	--	--
WCS-034A	4 feet	10	--	350*	--	--
WCS-038A	4 feet	--	--	560	--	--
QA/QC-S1	4 feet	160	9.9*	23000	--	25*
<i>Residential Soil Exposure Direct Contact</i>	9.5	99	400	550	550	
Industrial Soil Exposure Direct Contact	30	980	800	5800	5800	
Excavation Soil Exposure Direct Contact	920	1900	1000	9800	9800	
Migration to Groundwater SL*	5.9	7.5	270	5.3	16	

Notes: Italic = >RDCL
* = >MTG SL

Bold = >IDCL
-- = >Below RCG SLs

Underlined = >EDCL
= >Not Analyzed

5.2.2. Groundwater

The groundwater analytical results along with the applicable IDEM RCG Screening Levels can be found in Appendix C in tabular format. The following table summarizes groundwater samples exceeding the IDEM RCG Residential Tap Screening Levels.

Sample Collection Point	Contaminant Detected and Results (parts per billion (ppb))		
	Benz(a)anthracene	Benzo(a)pyrene	Naphthalene
WCG-009	--	--	9.9
WCG-012B	0.16	--	--
WCG-014	0.26	0.40	--
WCG-017	0.23	--	--
WCG-018	0.16	--	--
Res TAP GWSL	0.12	0.2	1.7

The following RCRA metals were identified above applicable IDEM RCG Residential Tap Screening Levels in the following samples.

Sample Collection Point	Contaminant Detected and Results (parts per billion (ppb))				
	Arsenic	Cadmium	Chromium	Lead	Mercury
WCG-001	87	9.8	--	26	--
WCG-007	19	--	--	37	--
WCG-008	290	--	680	1900	--
WCG-009	58	--	--	160	--
WCG-012A	--	--	--	48	--
WCG-012B	--	--	--	47	--
WCG-015	--	--	--	680	--
WCG-017	180	45	360	16000	2.2
WCG-018	560	14	290	8200	--
WCG-019	61	--	410	220	--
WCG-020	60	--	350	290	--
WCG-021	32	--	--	20	--
WCG-023	20	--	--	24	--
WCG-036	80	--	150	530	--
WCG-037	120	--	850	650	--
WCG-038	88	--	200	530	--
Res TAP GWSL	10	5	100	15	2

Notes: -- = < RCG SLs

5.2.3. Other

No other samples were collected as part of this Phase II ESA.

6.0 Discussion of Findings & Conclusions

This assessment was prepared in general accordance with the American Society for Testing and Materials (ASTM) Standard E1903-11 – Standard Practices for Environmental Site Assessments: Phase II ESA Process. Additionally, this assessment was conducted in general accordance with the IDEM Remediation Closure Guide. This report presents the results of the Environmental Assessment conducted at the property site.

6.1. Recognized Environmental Conditions

The purpose of this Phase II Environmental Site Assessment is to evaluate potential environmental conditions onsite that will impact proposed demolition activities at the subject site. The RECs previously identified onsite include:

- Historic Bulk Petroleum Storage Tanks Identified Onsite
- Historic Rail Spurs Identified Onsite
- Historic PCB Containing Equipment Identified Onsite
- Historic Bulk Oil Storage Identified Onsite
- Known Contamination of Lead and Arsenic in Onsite Soils
- Historic Metal Refining and Industrial Operations Identified on South Adjoining Site
- Historic Industrial Operations and Bulk Oil Storage Identified on Southeast Adjoining Site
- The USS Lead Refinery Superfund Site Located at 5300 Kennedy Avenue
- Possible Vapor Encroachment Condition on Subject Site

6.2. Evaluation of Media Quality

With respect to the Recognized Environmental Conditions assessed, soil borings were advanced at locations most likely to identify contamination if a leak or spill of petroleum products and/or hazardous materials has occurred.

6.3. Other Concerns

No other concerns were identified.

6.4. Conclusions / Objectives Met

Based on the findings of the subsurface investigation, exposure pathways were identified onsite. Specific hazards identified include subsurface soils, groundwater and soil vapors. These hazards will have to be addressed during the demolition of the structures present onsite. Of greatest concern are concentrations of lead and arsenic in onsite soils, both of which were identified in exceedance of the IDEM RCG Excavation Direct Contact Screening Levels.

Lead and arsenic were identified throughout the site at various depths and concentrations. The variability of locations, depths and concentrations indicates that lead and arsenic are distributed throughout the entirety. This is further substantiated by the conclusions of the USEPA Superfund investigations onsite. The highest concentrations of lead and arsenic identified onsite during this Phase II was identified in soil sample WCS-005 collected from soil boring SB-05. Soil boring SB-05 was advanced in the approximate location of a historic rail spur in the south central portion of the site. However, it is not believed that the rail spur is the sole source of this contamination, as the impact is site wide and from historical operations in the area.

Benz(a)anthracene and benzo(a)pyrene were identified in soil sample WCS-014A in exceedance of the IDEM RCG SLs. Additionally, benz(a)anthracene was identified in groundwater sample

WCG-014 in exceedance of the IDEM RCG SLs. Both samples were collected from soil boring SB-14 advanced in the location of the historic oil pump room. The historic oil pump room was identified on the historic Sanborn Maps to the southeast portion of the site. A release has been confirmed onsite and is suspected to be associated with the historic oil pump room and operations.

Benzo(a)anthracene was also identified in groundwater samples WCG-017 and WCG-018 in exceedance of the IDEM RCG SLs. Both samples were collected in the location of the historic print laboratory onsite as identified on the historic Sanborn Maps. Sample WCG-017 also contained mercury above IDEM RCG SLs, and the highest concentrations of cadmium and lead observed onsite. Potential sources of contamination include the historic print laboratory and offsite sources.

Naphthalene was identified in groundwater sample WCG-009 in exceedance of the IDEM RCG SLs. Sample WCG-009 was collected from soil boring SB-09 which was advanced in the approximate location of historic bulk fuel oil storage tanks. The tanks were identified, on historic Sanborn Maps from the area, at the corner of 150th Place and Jonquil Lane, near the southern portion of the site. A release has been confirmed onsite and is suspected to be associated with the historic bulk fuel oil storage and operations.

Trace levels of VOCs (Toluene) were identified in sample WCS-014B and WCS-019A. All other samples identified non-detectable concentrations of VOCs. Concentrations of PCBs were non-detectable in all samples analyzed.

7.0 Recommendations

Based on the findings of this Phase II ESA and review of the US EPA's Administrative Record of the USS Lead Refinery Superfund Site, it is my professional opinion that environmental hazards exist onsite and require attention prior to demolition of onsite improvements. Standards and protocols require implementation prior to demolition of the site. This must include, at a minimum: a Site Specific Health and Safety Plan for protection of workers; development of Site Specific Work Plan(s) to prevent worker exposure, mishandling of environmental impacted media, implementing design elements to mitigate potential exposure to adjoining property occupants; and, development of an Operations and Maintenance Program to ensure that environmental conditions are not exacerbated in the future, becoming a hazard to site visitors. Additionally, soils removed from the subject site during demolition should be evaluated for disposal. Concentrations of heavy metals have been identified in exceedance of hazardous waste levels.

This Phase II ESA did not fully define the extent and nature of the environmental impact. Additional investigation is recommended to identify the source area and delineate the contamination vertically and horizontally. However, this Phase II ESA does provide sufficient data for development of plans to protect human and environment health and safety during demolition activities.

If further definition of contamination extent is necessary for redevelopment, it is my professional recommendation that further investigation of petroleum related contaminants is recommended through means of advancing additional soil borings and additional wells, at varying depths. Based on historic sampling and this Phase II ESA, there has been a historic release of petroleum contaminants and metals onsite.

8.0 References

The following references were used in the preparation of this report:

ASTM International, Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process Designation E 1903-11.

ASTM International, Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions E2600-10.

Dean, Scott H. "Potentiometric Surface Map of the Unconsolidated Aquifers of Lake County, Indiana." *Indiana Department of Natural Resources*. Vol. Map 09-A. May 2015.

Google™ Earth 2016.

The Indiana Department of Environmental Management – Remediation Closure Guide, July 9, 2012.

The Indiana Department of Environmental Management – Remediation Program Guide, July 2012.

Indiana Virtual File Cabinet, accessed February 13, 2017:

- 80339090
- 80279685
- 80030141
- 29293857
- 28869585
- 28737424
- 27535414
- 44665448
- 44649700
- 21307196
- 48925724
- 51689046
- 22310756
- 32732019
- 67019755
- 70109707
- 19825186
- 80184825
- 25831097
- 44663652
- 45792609

The United States Environmental Protection Agency (US EPA) Superfund Administrative Records for US Smelter and Lead Refinery Inc., dated February 13, 2017.

The following document IDs were reviewed in entirety:

- 424351
- 363420
- 925312
- 929998

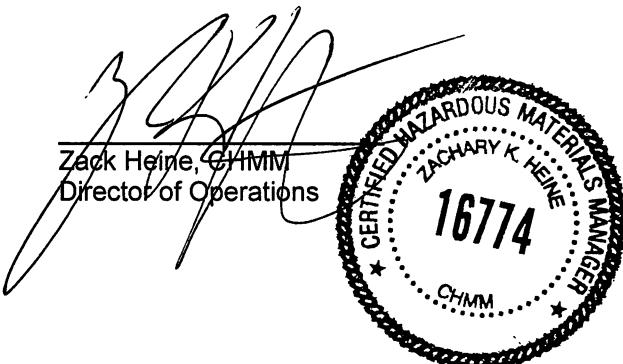
9.0 Signature(s) of Environmental Professional(s)

We have performed a Phase II Environmental Site Assessment at the West Calumet Housing Complex, East Chicago, Lake County, IN 46312, in conformance with the scope and limitations of ASTM Practice E1903-11.



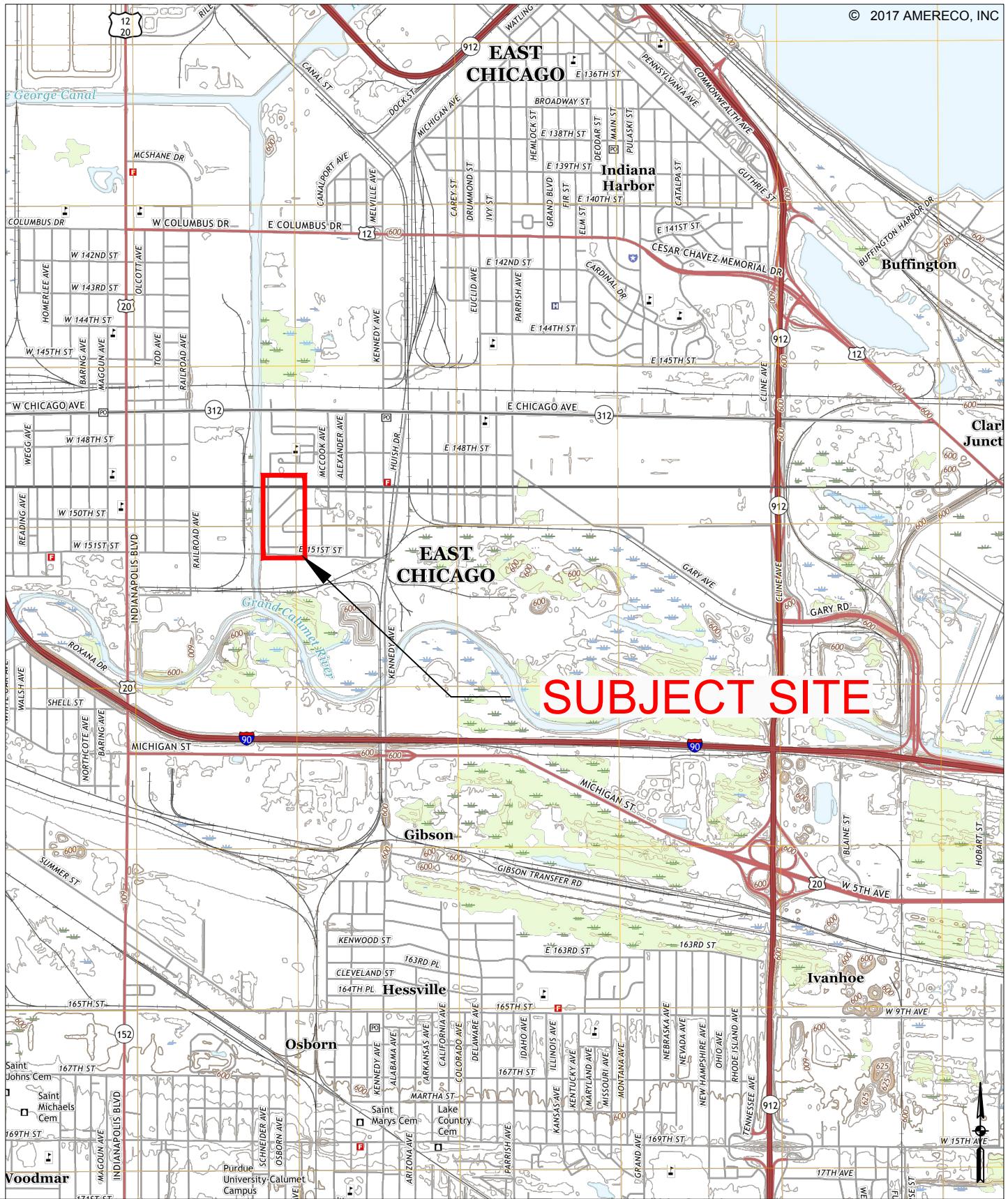
Lewis Mason
Field Technician

Zack Heine, CHMM
Director of Operations



APPENDIX A

**SITE LOCATION MAP
SCALE: NTS**



SITE LOCATION MAP	
PROJECT #:	16.1151.2
DRAWN BY:	A. WILKER
REVIEWED BY:	Z. HEINE
SCALE:	NTS
SHEET:	1
1	2/10/17 PHASE II ESA
NO.	DATE ISSUED FOR

**WEST CALUMET
HOUSING COMPLEX
EAST CHICAGO
HOUSING AUTHORITY**

EAST CHICAGO INDIANA



AMERECO, INC.

CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531

AMERECO, INC.

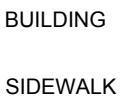
CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531

WEST CALUMET
HOUSING COMPLEX
EAST CHICAGO
HOUSING AUTHORITY
INDIANA

SITE MAP

PROJECT # 16.1151.2.4
SHEET # 2
DRAWN BY A. WILKER
REVIEWED BY Z. HEINE
SCALE: 1"=140'

LEGEND



SITE MAP
SCALE: 1"=140'

AMERECO, INC.

CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
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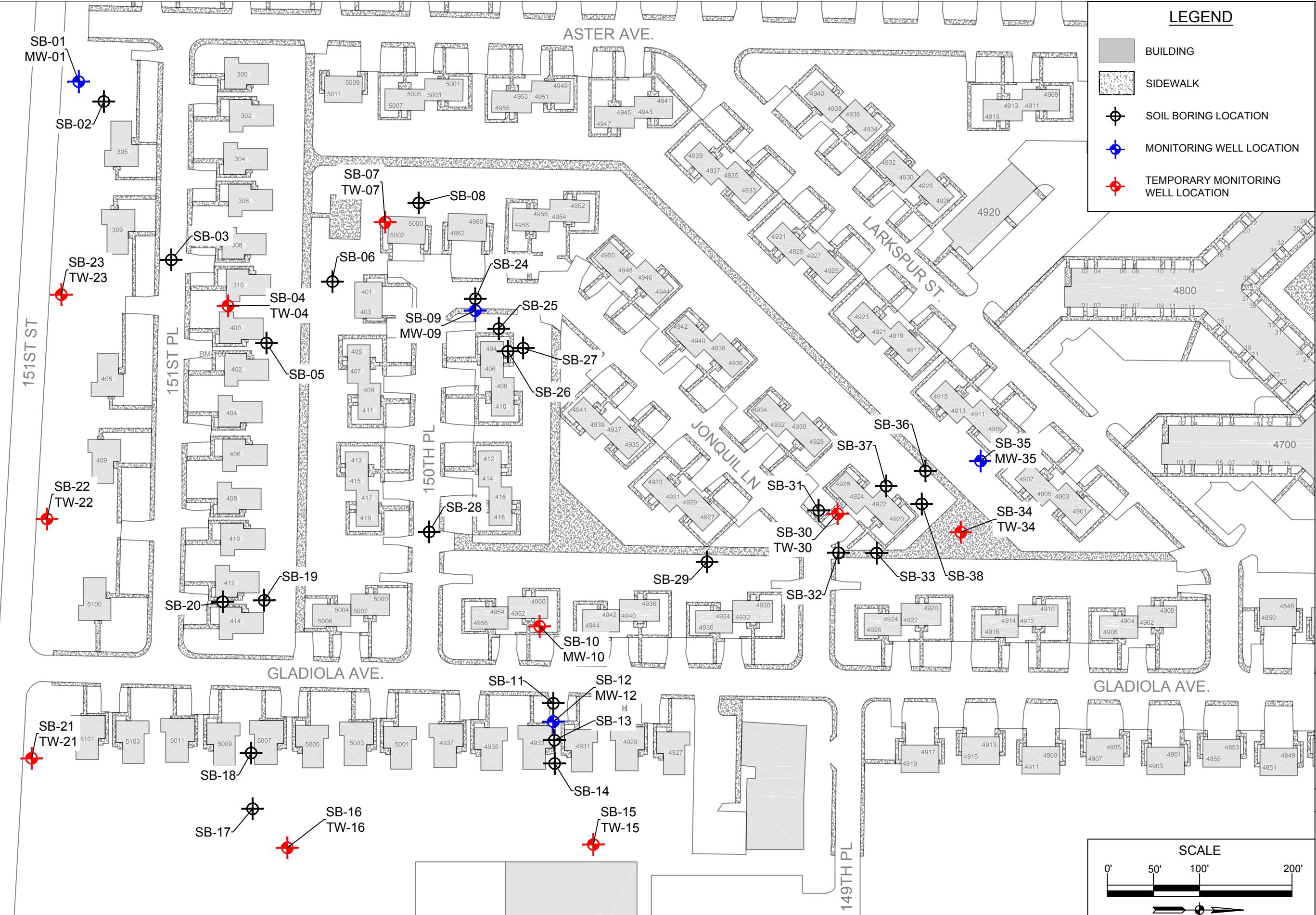
WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY

INDIANA

EAST CHICAGO

LEGEND

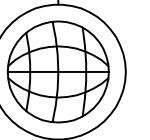
- BUILDING
- SIDEWALK
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TEMPORARY MONITORING WELL LOCATION



SOIL BORING & MW LOCATIONS		SHEET:
PROJECT #	NO. / DATE	
16.1151.2.4	1 02/10/17 PHASE II ESA	3
DRAWN BY: A. WILKER	ISSUED FOR: EAST CHICAGO	
REVIEWED BY: Z. HEINE		
SCALE: 1"=100'		

AMERECO, INC.

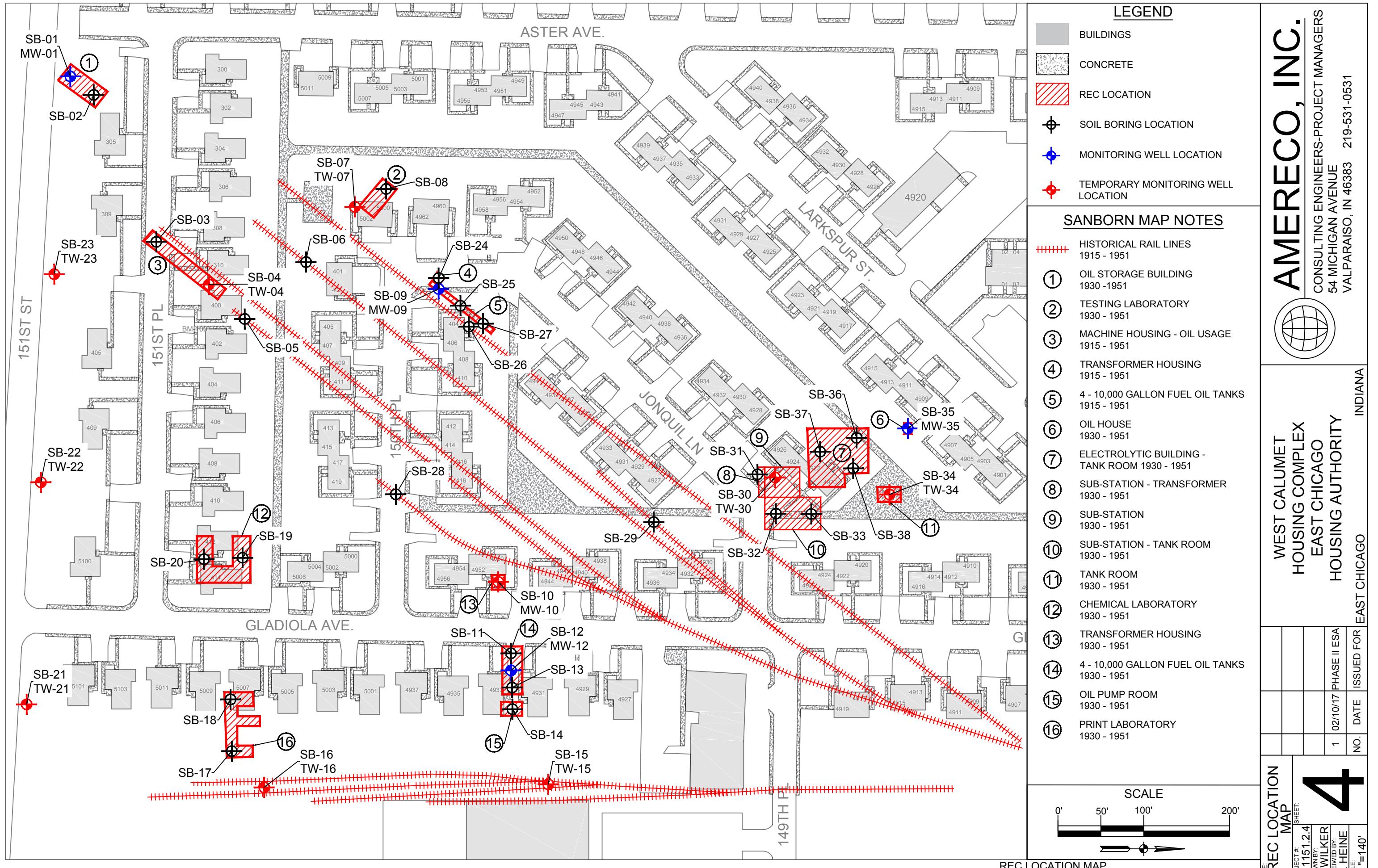
CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531



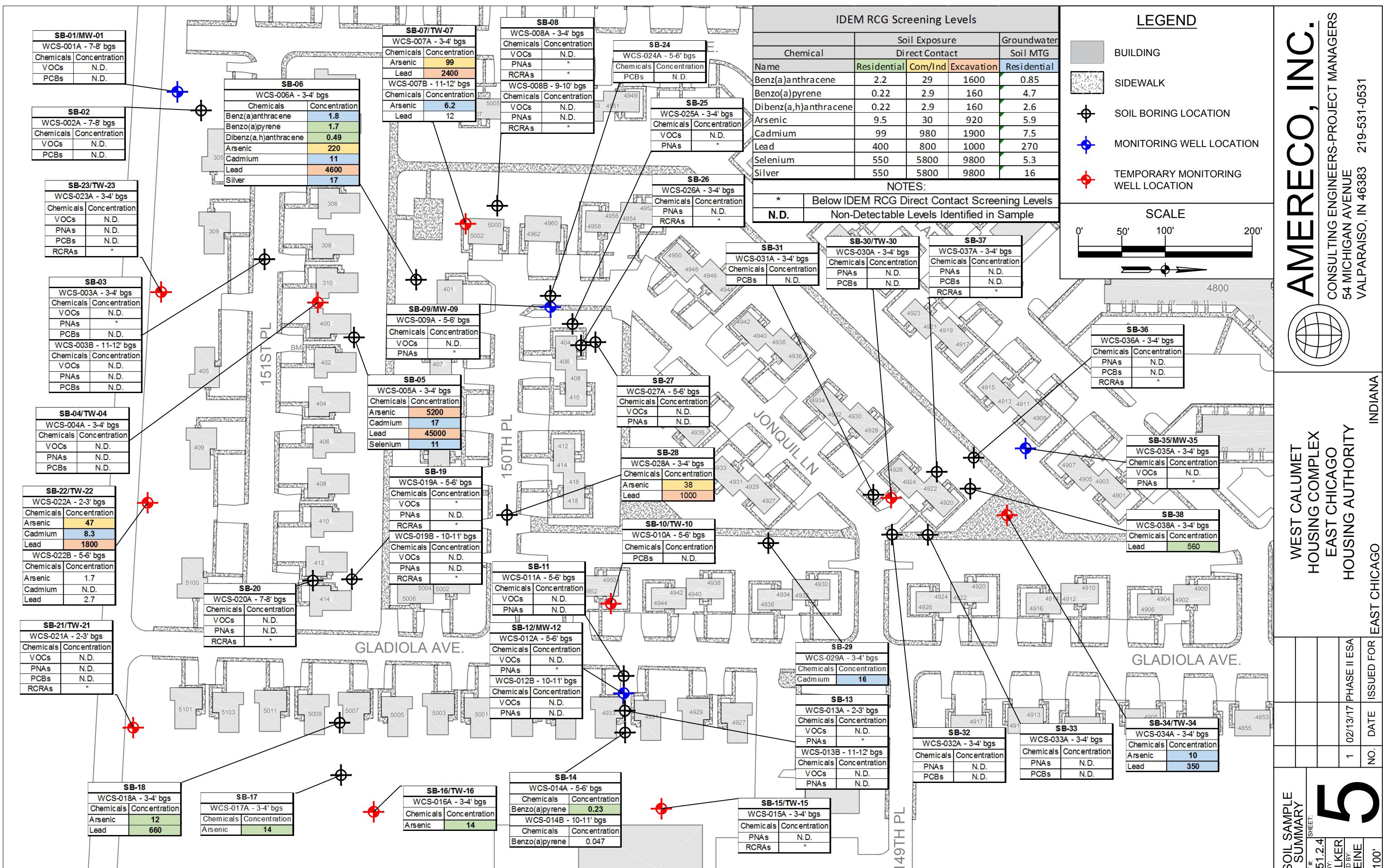
WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY

INDIANA

EAST CHICAGO

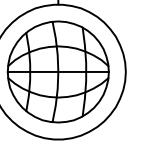


WEST CALUMET
HOUSING COMPLEX
EAST CHICAGO
HOUSING AUTHORITY
INDIANA



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CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531



INDIANA

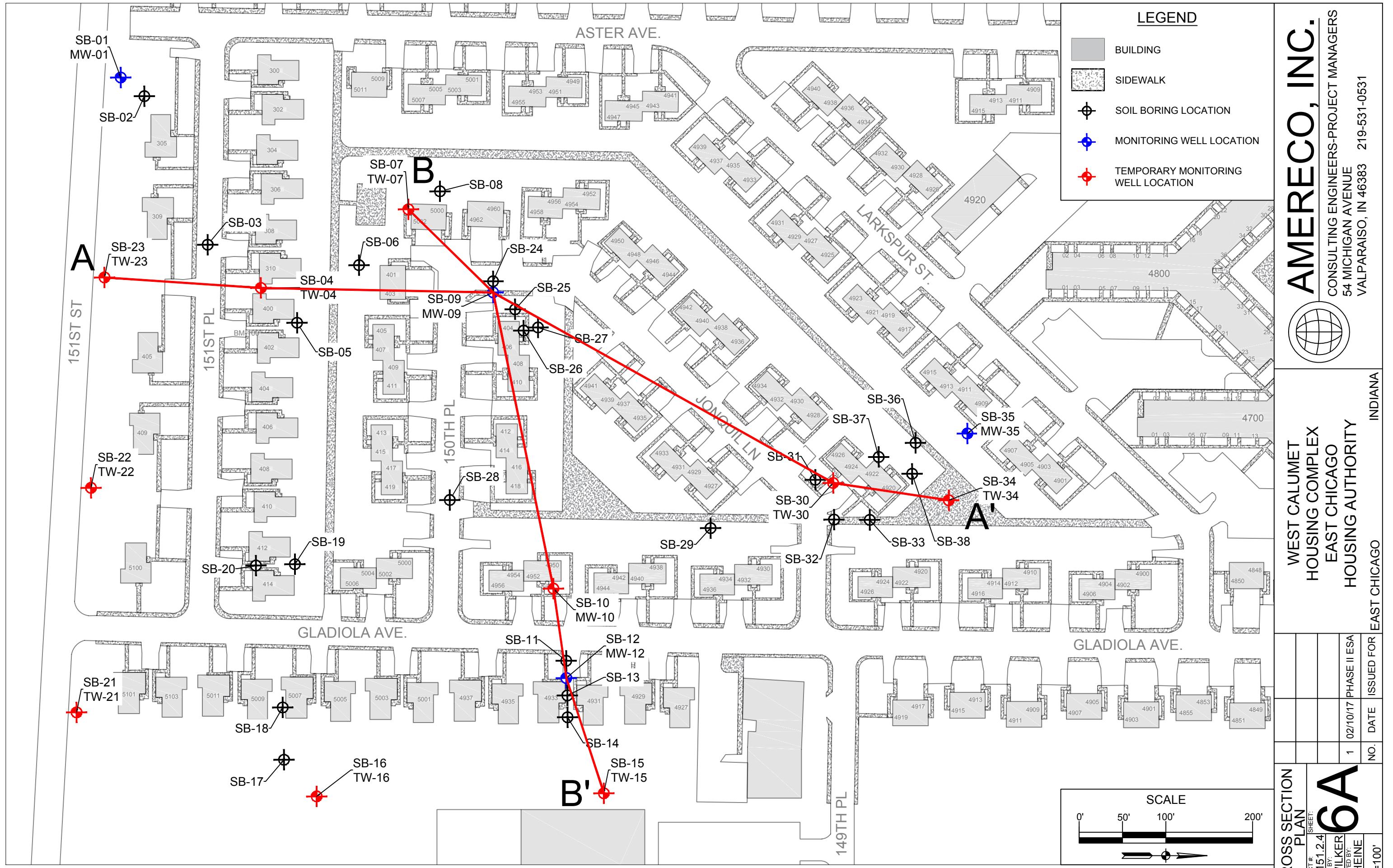
WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY

EAST CHICAGO

INDIANA

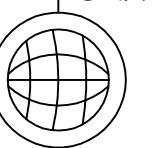
LEGEND

- BUILDING
- SIDEWALK
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TEMPORARY MONITORING WELL LOCATION



AMERECO, INC.

CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531



WEST CALUMET
HOUSING COMPLEX
EAST CHICAGO
HOUSING AUTHORITY

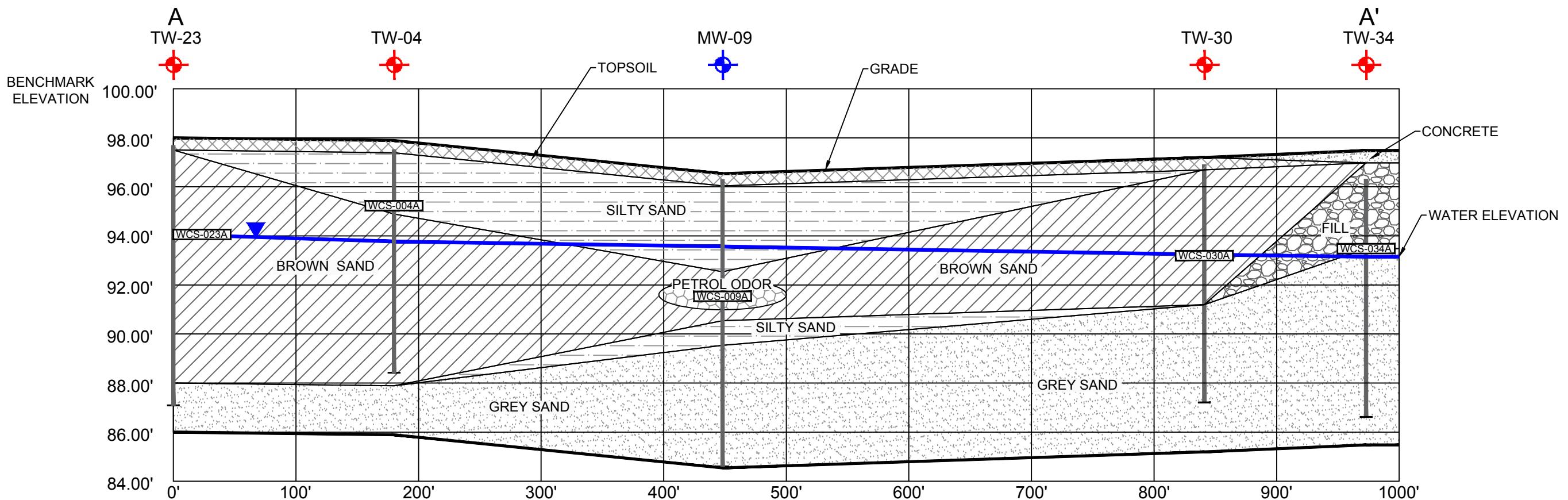
INDIANA

EAST CHICAGO

CROSS SECTION A-A'			
PROJECT #	16.1151.2.4	SHEET #	
DRAWN BY:	A. WILKER	REVISED BY:	
REVIEWED BY:	Z. HEINE	SCALE:	NTS
NO. DATE	1 02/15/17	ISSUED FOR	EAST CHICAGO

LEGEND

- MONITORING WELL LOCATION
- TEMPORARY MONITORING WELL LOCATION



*Note: Drawing not to scale. Vertical axis has been exaggerated for Informational Purposes.

CROSS SECTION A-A'
SCALE: NTS



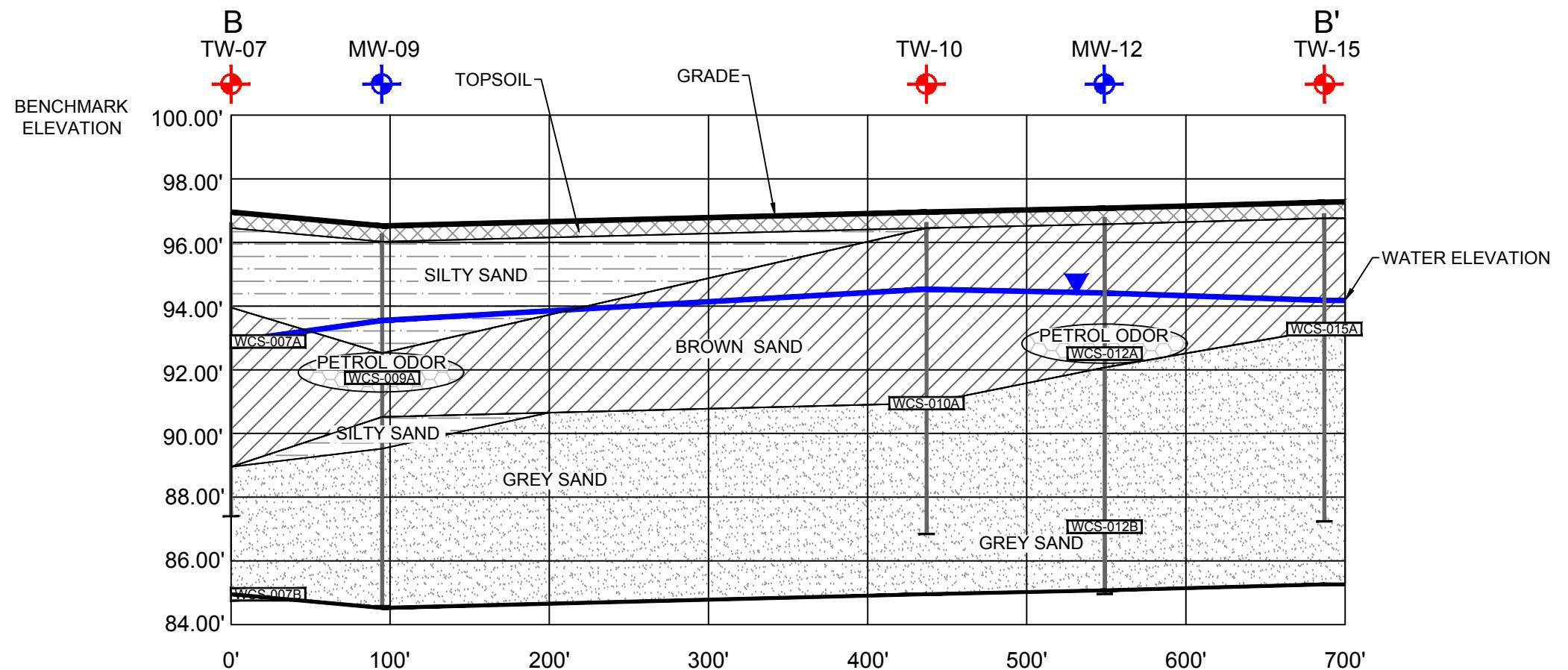
WEST CALUMET
 HOUSING COMPLEX
 EAST CHICAGO
 HOUSING AUTHORITY

INDIANA

EAST CHICAGO

CROSS SECTION B-B'		SHEET:
PROJECT #	16.1151.2.4	DRAWN BY:
REVIEWED BY:	A. WILKER	1 02/15/17 PHASE II ESA
SCALE:	Z. HEINE	NO. DATE ISSUED FOR
NTS		EAST CHICAGO

CC

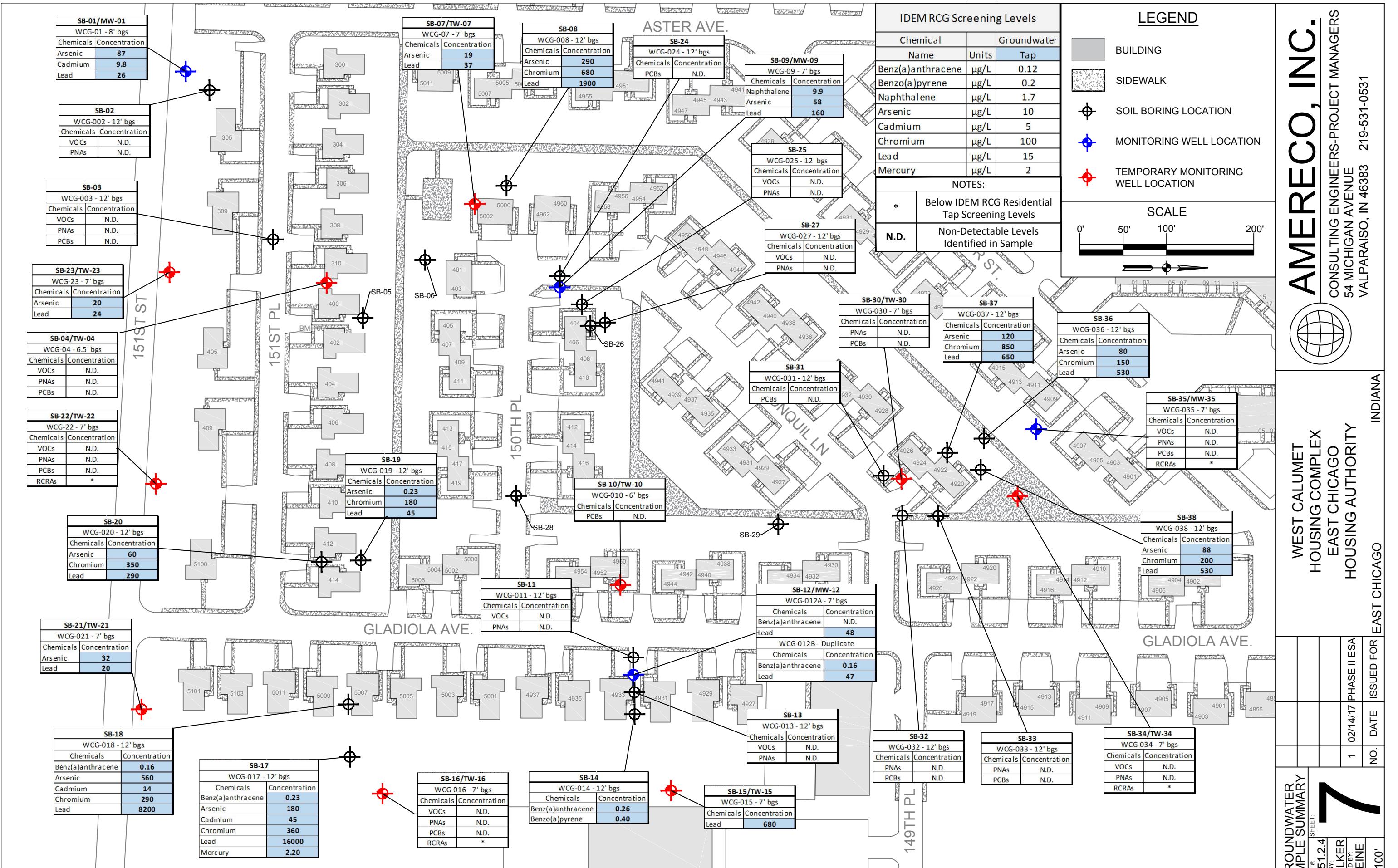


*Note: Drawing not to scale. Vertical axis has been exaggerated for Informational Purposes.

AMERECO, INC.

CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531

WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY INDIANA



AMERECO, INC.

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54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531

WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY

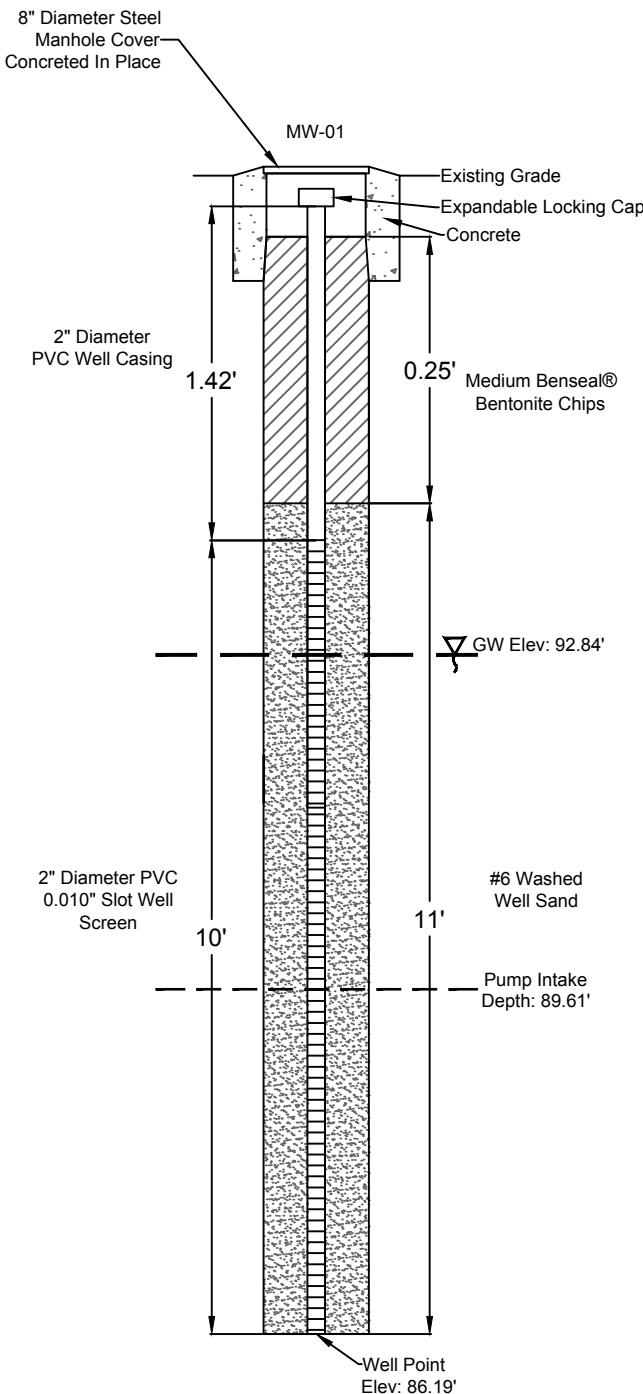
INDIANA

EAST CHICAGO

ISSUED FOR

GW ELEVATIONS		SHEET:
PROJECT #	16.1151.2.4	1
DRAWN BY:	A. WILKER	02/15/17 PHASE II ESA
REVIEWED BY:	Z. HEINE	NO. DATE ISSUED FOR
SCALE:	1"=100'	88





MW ID#	Water Elevation	Pump Intake	Well Depth
MW-01	92.84'	89.61'	86.19'
MW-09	93.57'	89.30'	84.52'
MW-12	94.43'	89.80'	84.98'
MW-35	94.11'	90.31'	85.21'

*Note: This Drawing Is Not To Scale. Dimensions Have Been Exaggerated For Information Purposes.

**Note: Installed with 8.25" O.D. Hollow Stem Augers

***Note: All 2" Monitoring Wells constructed similar.

TITLE: MW CONST. DIAGRAM			
PROJECT #: 16.1151.4.2	SHEET: 9A		
DRAWN BY: A. WILKER			
REVIEWED BY: Z. HEINE			
SCALE: NTS			

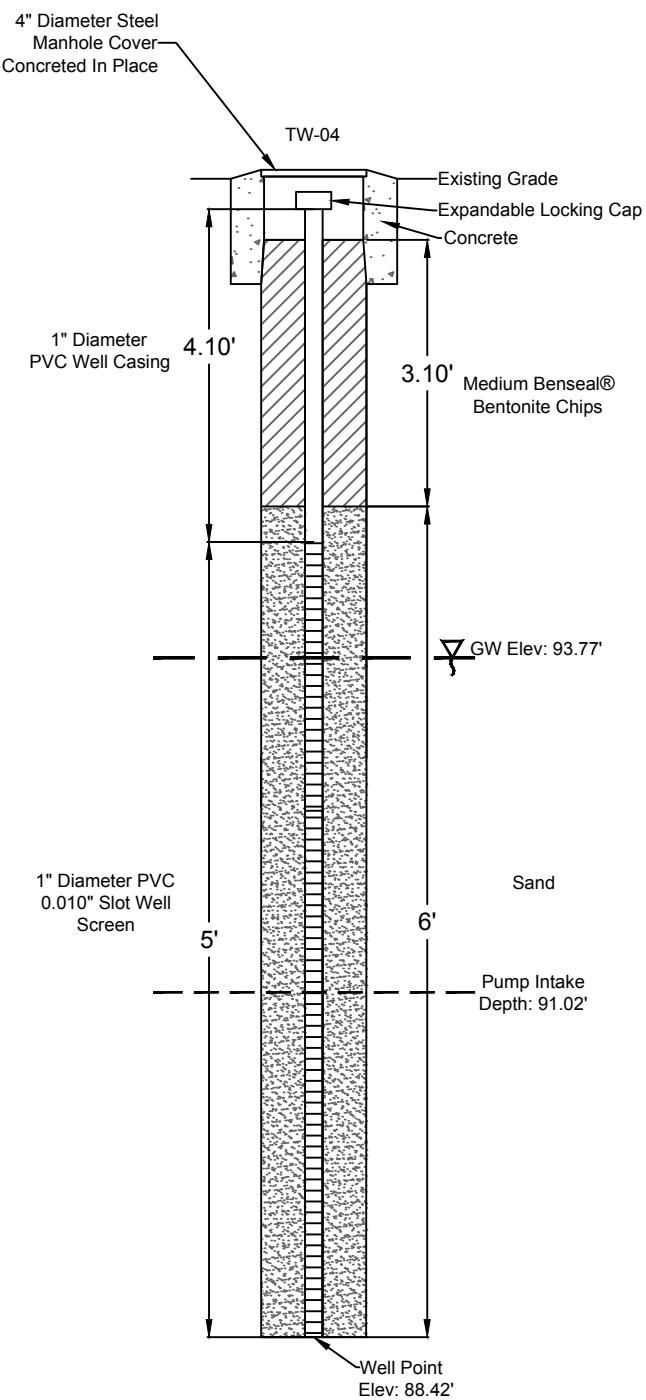
**WEST CALUMET
HOUSING COMPLEX
EAST CHICAGO
HOUSING AUTHORITY**

EAST CHICAGO INDIANA



AMERECO, INC.

CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531



TW ID#	Water Elevation	Pump Intake	Well Depth
TW-04	93.77'	91.02'	88.42'
TW-07	92.91'	89.64'	87.42'
TW-10	94.55'	90.65'	86.86'
TW-15	94.20'	90.28'	87.26'
TW-16	93.87'	90.27'	86.56'
TW-21	93.85'	90.20'	86.60'
TW-22	94.39'	90.74'	87.07'
TW-23	94.06'	90.69'	87.09'
TW-30	93.24'	89.91'	87.21'
TW-34	93.15'	89.32'	86.62'

*Note: This Drawing Is Not To Scale. Dimensions Have Been Exaggerated For Information Purposes.

**Note: Installed within 2.25" Diameter Soil Boring

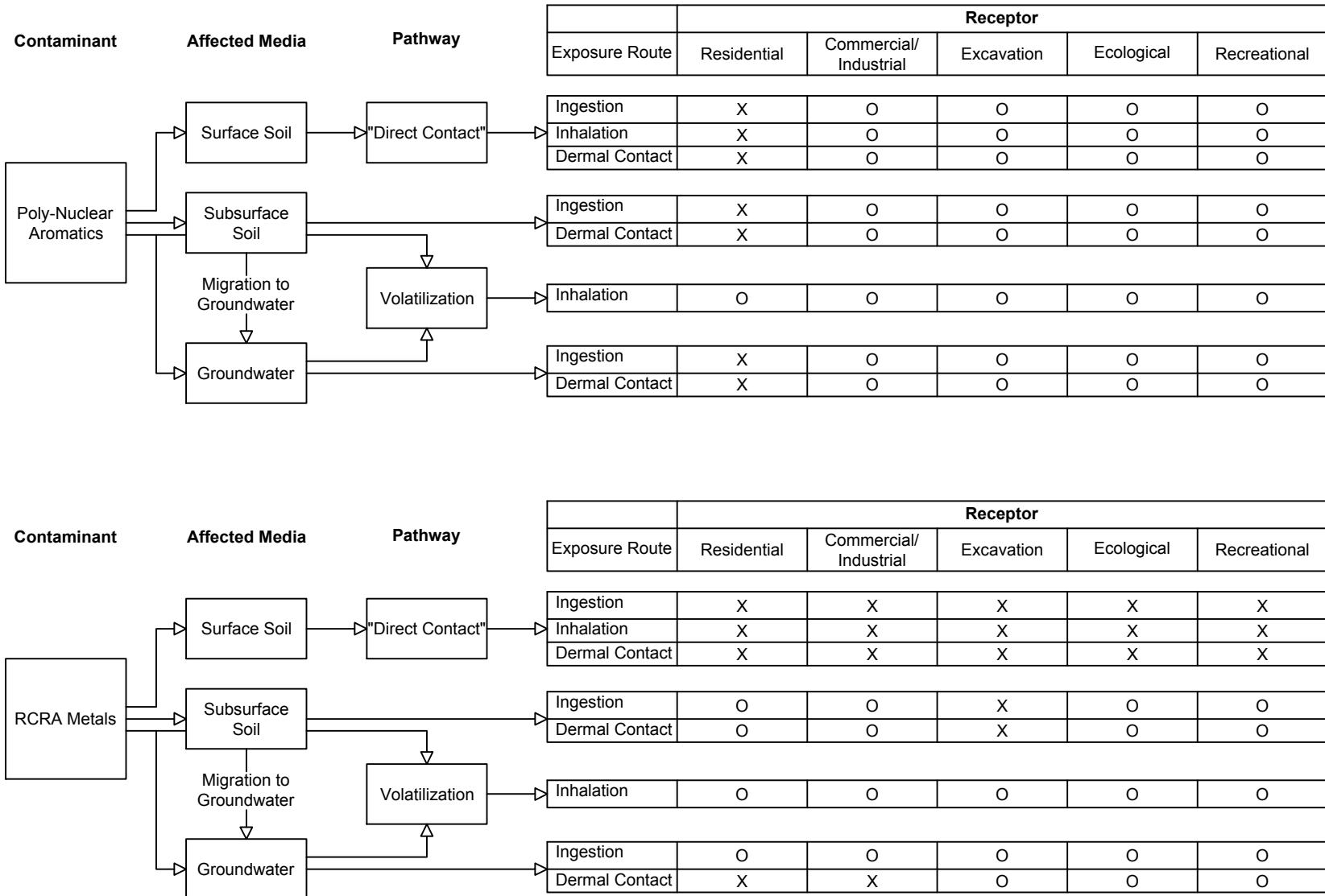
***Note: All 1" Temporary Wells constructed similar.

TITLE: TW CONST. DIAGRAM				WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY EAST CHICAGO INDIANA	 AMERECO, INC. <small>CONSULTING ENGINEERS-PROJECT MANAGERS</small> 54 MICHIGAN AVENUE VALPARAISO, IN 46383 219-531-0531
PROJECT #:	SHEET:				
16.1151.4.2	9B				
DRAWN BY:					
A. WILKER					
REVIEWED BY:					
Z. HEINE					
SCALE:	NTS				
NO.	DATE	ISSUED FOR			

CONCEPTUAL SITE PLAN - PNAs & RCRA METALS

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TITLE: CONCEPTUAL SITE PLAN - PNA & RCRA	
PROJECT #: 16.1151.2.4	
DRAWN BY: A. WILKER	
REVIEWED BY: Z. HEINE	
SCALE: NTS	
SHEET: 10A	
1	2/14/17
NO.	DATE
ISSUED FOR: PHASE II ESA	
EAST CHICAGO	
WEST CALUMET HOUSING COMPLEX EAST CHICAGO HOUSING AUTHORITY	
INDIANA	



O = Pathway evaluated and found incomplete

X = Pathway potentially complete, mitigation may be necessary

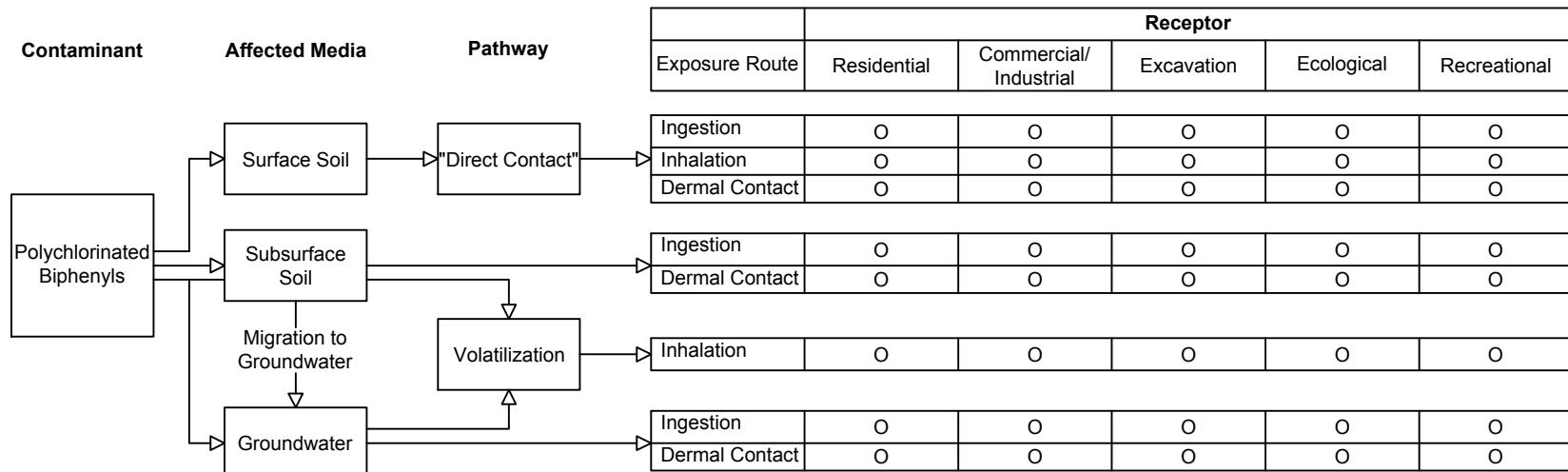
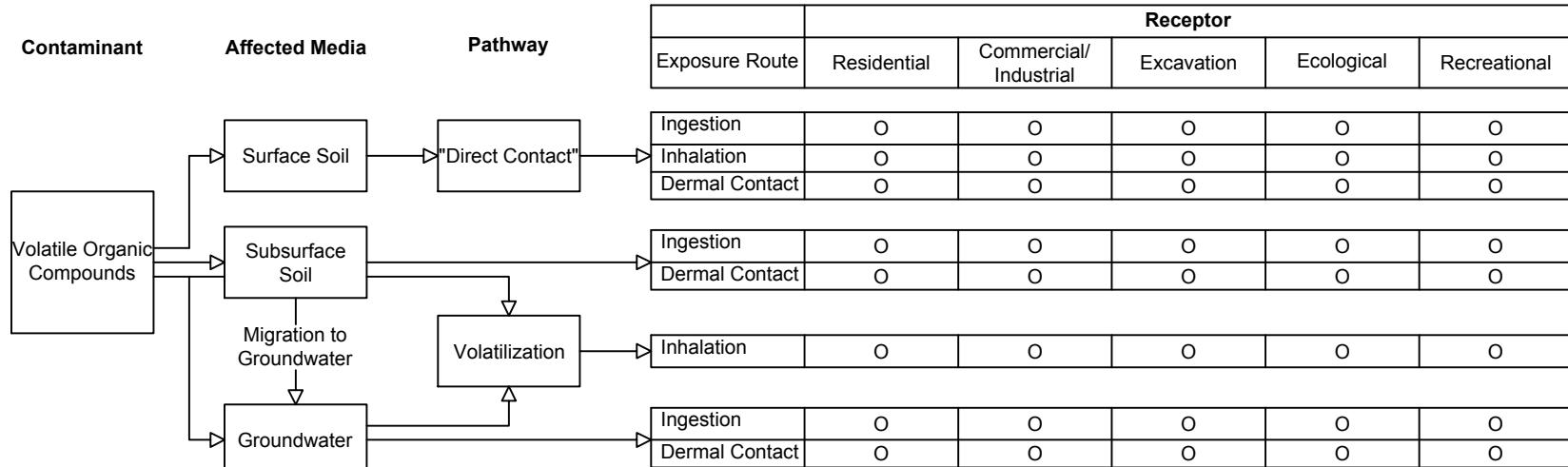
CONCEPTUAL SITE PLAN - VOCs & PCBs

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TITLE: CONCEPTUAL SITE PLAN-VOC & PCB	
PROJECT #: 16.1151.2.4	
DRAWN BY: A. WILKER	
REVIEWED BY: Z. HEINE	
SHEET: 10B	
1	2/14/17
NO.	DATE
ISSUED FOR: PHASE II ESA	
EAST CHICAGO	
INDIANA	

WEST CALUMET
HOUSING COMPLEX
EAST CHICAGO
HOUSING AUTHORITY

AMERECO, INC.
CONSULTING ENGINEERS-PROJECT MANAGERS
54 MICHIGAN AVENUE
VALPARAISO, IN 46383 219-531-0531



O = Pathway evaluated and found incomplete

X = Pathway potentially complete, mitigation may be necessary

APPENDIX B

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-01

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 8'
Static Water Level: 4.77'

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/27/2017
Drilling Method:	Dual Tube	Boring End Date:	1/27/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	12'	Well Length:	12'
Casing Depth:	12'	Well Diameter:	2"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil - Silty Sand (3" Slag at 2')		75	
2		0.4				
3						
4		0.5				
5				SM		
6		0.5			100	
7	S-001A					
8		0.5	Light Brown Very Fine to Fine Sand			
9						
10		0.5		SM		
11						
12		0.4		SM		
13					100	
14						
15						
16			Dark Brown Fine to Medium Sand			
17						
18						
19						
20						
21						
22						
23			End of Boring			
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
Notes:						

**Amereco
Engineering**

204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-02

Project: West Calumet Housing Complex

Location: East Chicago

Water Level Data

First Encountered: 9'
Static Water Level: N/A

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type: 6610DT Boring Start Date: 1/27/2017

Drilling Method: Dual Tube Boring End Date: 1/27/2017

Sample Type: Direct Push Backfill Type: Cuttings/Bentonite

Casing Length: N/A Well Length: N/A

Casing Depth: N/A Well Diameter: N/A

Drilling Company: Amereco INC. Representative : Greg Koliboski

Well License # : 2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil Sand with intermittent slag and brick fragments (~2" Slag at 3')	Silty	75	
2		1.0				
3						
4		0.5				
5						
6		0.7			100	
7						
8	WCS-002	1.0				
9			Light Brown Very Fine to Fine Sand	SM	100	
10		0.7				
11						
12		0.9				
13						
14						
15						
16						
17						
18						
19			Gray Very Fine to Medium Sand	SM		
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-03</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago</u>				
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>N/A</u>			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>1/27/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>1/27/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>N/A</u> Well Length: <u>N/A</u> Casing Depth: <u>N/A</u> Well Diameter: <u>N/A</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License # : <u>2059</u>				
Legend <u>SS</u> = Soil Sample <u>GW</u> = Groundwater Sample <u>SG</u> = Soil Gas Sample <u>PP</u> = Pocket Pentrometer <u>REC</u> = Percent Recovery							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			Asphalt/Gravel				
2		0.5					
3							
4	S-003A	0.7	Fine Silty Sand with Intermittent Slag				
5			Brown Very Fine Sand, Well Sorted		SM		
6		0.3					
7							
8		0.3	Brown Very Fine to Fine Sand		SM		
9							
10		0.3					
11			Fine to Medium Gray Sand		SM		
12	S-003B	1.1					
13							
14							
15							
16							
17							
18							
19							
20							
21							
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36							
			End of Boring				
Notes:							

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-04

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 4'
Static Water Level: 3.75'

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/27/2017
Drilling Method:	Dual Tube	Boring End Date:	1/27/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	10'	Well Length:	10'
Casing Depth:	10'	Well Diameter:	1"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil - 2" Slag			
2		0.5	Silty Sand with Intermittent Slag		75	
3	WCS-004					
4		0.8				
5				SM		
6		0.7	Light Brown Very Fine Sand		100	
7						
8		0.5		SM		
9						
10		0.5	Brown Very Fine to Fine Sand		100	
11				SM		
12		0.6				
13						
14			End of Boring			
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-05				
Project: _____ Location: _____			West Calumet Housing Complex East Chicago				
Water Level Data First Encountered: 5' Static Water Level: N/A			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 1/27/2017 Drilling Method: Dual Tube Boring End Date: 1/27/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski Well License # : 2059				
Legend SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			6" Topsoil				
2		0.7	Silty Fine Sand and Slag			75	
3							
4	WCS-005A	1.0	Brown Very Fine to Fine Sand		SM		
5							
6		0.8	Brown Fine to Medium Sand		SM	100	
7							
8		0.9					
9			Brown Very Fine to Fine Sand		SM		
10		0.3				100	
11			Gray Very Fine to Fine Sand		SM		
12		0.3					
13			End of Boring				
14							
15							
16							
17							
18							
19							
20							
21							
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Notes:							

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number: SB-06

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 5'
Static Water Level: N/A

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type: 6610DT Boring Start Date: 1/27/2017
Drilling Method: Dual Tube Boring End Date: 1/27/2017
Sample Type: Direct Push Backfill Type: Cuttings/Bentonite
Casing Length: N/A Well Length: N/A
Casing Depth: N/A Well Diameter: N/A
Drilling Company: Amereco INC. Representative : Greg Koliboski
Well License # : 2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil			
2		1.3	Fine Silty Sand with Occasional Slag		50	
3						
4	WCS-006A	1.5				
5				SM		
6		1.2	Very Fine to Fine Brown Sand		100	
7						
8		1.4		SM		
9						
10		0.8	Fine to Medium Brown Sand		100	
11				SM		
12		0.9				
13						
14			End of Boring			
15						
16						
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Notes:

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-07

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 5'
Static Water Level: 3.73'

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/27/2017
Drilling Method:	Dual Tube	Boring End Date:	1/27/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	10'	Well Length:	10'
Casing Depth:	10'	Well Diameter:	1"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil			
2		0.6	Fine Silty Sand with Occasional Slag		75	
3						
4	WCS-007A	0.8				
5				SM		
6		1.0	Very Fine to Fine Brown Sand		100	
7				SM		
8		0.6		SM		
9						
10		0.6	Fine to Medium Brown Sand		100	
11				SM		
12	WCS-007B	1.0		SM		
13						
14			Gray Very Fine to Fine Sand			
15						
16						
17						
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19						
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Notes:

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-08

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 5'
Static Water Level: N/A

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/27/2017
Drilling Method:	Dual Tube	Boring End Date:	1/27/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil + 1" Slag			
2		1.5	Light Brown Fine to Medium Sand		75	
3				SM		
4	WCS-008A	1.6				
5						
6		2.0	Gray Very Fine to Fine Sand		100	
7				SM		
8		1.5				
9						
10	WCS-008B	2.2	Gray Fine to Medium Sand		100	
11				SM		
12		1.2				
13						
14			End of Boring			
15						
16						
17						
18						
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-09 Project: West Calumet Housing Complex Location: East Chicago					
Water Level Data First Encountered: 6' Static Water Level: 2.73' Legend SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 1/27/2017 Drilling Method: Dual Tube Boring End Date: 1/27/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: 12' Well Length: 12' Casing Depth: 12' Well Diameter: 2" Drilling Company: Amereco INC. Representative : Greg Koliboski Well License # : 2059					
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP	
1			6" Topsoil					
2		2.4	Silty Fine Sand with Slag and Gravel			100		
3								
4		10.4						
5	WCS-009A		Oily Sheen at 5'	Very Fine	SM			
6		4.5	to Fine Brown Sand			100		
7			Fine Silty Sand with Concrete Fragments		SM			
8		2.0	Very Fine to Fine Gray Sand		SM			
9			Fine to Medium Gray Sand		SM			
10		2.4					SM	100
11			Very Fine Gray Sand					
12		1.5						
13			End of Boring					
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Notes:								

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-10

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 6'
Static Water Level: 2.10'

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type: 6610DT Boring Start Date: 1/31/2017
Drilling Method: Dual Tube Boring End Date: 1/31/2017
Sample Type: Direct Push Backfill Type: Cuttings/Bentonite
Casing Length: 10' Well Length: 10'
Casing Depth: 10' Well Diameter: 1"
Drilling Company: Amereco INC. Representative : Greg Koliboski
Well License # : 2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil - 3" Slag/Gravel/Fill			
2		1.0	Very Fine to Fine Light Brown Sand		75	
3				SM		
4		1.2				
5				SM		
6	WCS-010A	3.6	Very Fine to Fine Brown Sand		100	
7			Fine to Medium Gray Sand	SM		
8		0.6	Very Fine to Fine Gray Sand	SM		
9			Fine to Medium Gray Sand			
10		2.3		SM	100	
11						
12		1.7	Very Fine Gray Sand	SM		
13			End of Boring			
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-11				
Project: West Calumet Housing Complex							
Location: East Chicago							
Water Level Data First Encountered: 6' Static Water Level: N/A			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 1/31/2017 Drilling Method: Dual Tube Boring End Date: 1/31/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski Well License # : 2059				
Legend SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			6" Topsoil with 1" Slag and Sand				
2		0.5	Light Brown Very Fine to Fine Sand			75	
3					SM		
4		1.0					
5			Brown Very Fine Sand		SM	100	
6	WCS-011A	2.9					
7					SM		
8		1.1	Gray Very Fine to Fine Gray Sand			100	
9					SM		
10		1.1					
11					SM		
12		0.8					
13			End of Boring				
14							
15							
16							
17							
18							
19							
20							
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Notes:							

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-12

Project: West Calumet Housing Complex
Location: East Chicago

Water Level Data

First Encountered: 6'
Static Water Level: 2.37'

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/31/2017
Drilling Method:	Dual Tube	Boring End Date:	1/31/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	12'	Well Length:	12'
Casing Depth:	12'	Well Diameter:	2"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID
1		
2		1.0
3		
4		0.8
5	WCS-012A	
6		1.1
7		
8		0.8
9		
10	WCS-012B	1.2
11		
12		0.6
13		
14		
15		
16		
17		
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35		
36		

Description

USCS

REC (%)

PP

3" Topsoil

Brown Very Fine to Fine Sand
3" Gravel/Sand Fill
Oily
Sheen at 5'

Gray Very Fine to Fine Sand

End of Boring

Notes:

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

			Boring Number:	SB-13			
Project:			West Calumet Housing Complex				
Location:			East Chicago				
Water Level Data			Drilling Information				
First Encountered: 5'			Drilling Rig Type: 6610DT	Boring Start Date: 1/31/2017			
Static Water Level: N/A			Drilling Method: Dual Tube	Boring End Date: 1/31/2017			
Legend SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Sample Type: Direct Push	Backfill Type: Cuttings/Bentonite			
			Casing Length: N/A	Well Length: N/A			
			Casing Depth: N/A	Well Diameter: N/A			
			Drilling Company: Amereco INC.	Representative : Greg Kolboski			
				Well License # : 2059			
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil & 1" Gravel				
2	WCS-013A	2.2	Dark Brown Sand Interspersed with Gravel (Fill)			100	
3							
4		1.3					
5			Light Brown Very Fine to Fine Sand		SM		
6		0.9					
7							
8		1.3	Brown Very Fine Sand		SM		
9							
10		1.0	Gray Very Fine to Fine Sand		SM	100	
11							
12	WCS-013B	2.4	End of Boring				
13							
14							
15							
16							
17							
18							
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Notes:							

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-14

Project:

West Calumet Housing Complex

Location:

East Chicago

Water Level Data

First Encountered: 6'
Static Water Level: N/A

Legend

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/31/2017
Drilling Method:	Dual Tube	Boring End Date:	1/31/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2		0.8	Dark Brown Sand Interspersed with Gravel (Fill)		75	
3						
4		0.9	Dark Brown Fine Sand			
5						
6	WCS-014A	1.4	Gravel/Concrete/Sand (Fill) Sheen at 6'	Oil	100	
7						
8		1.2				
9			Dark Brown Fine Sand			
10	WCS-014B	1.9	Sand/Concrete/Gravel (Fill)			
11			Very Fine Gray Sand	SM		
12		1.6	End of Boring			
13						
14						
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16						
17						
18						
19						
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Notes:						

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-15

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: 2.73'

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/31/2017
Drilling Method:	Dual Tube	Boring End Date:	1/31/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	10'	Well Length:	10'
Casing Depth:	10'	Well Diameter:	1"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2		1.1	Light Brown Sand		75	
3						
4	WCS-015A	2.3				
5			Gravel/Concrete/Sand (Fill)		75	
6		1.2	Very Fine Gray Sand			
7				SM		
8		1.1			100	
9			Fine to Medium Gray Sand			
10		0.8		SM		
11						
12		1.0	End of Boring			
13						
14						
15						
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17						
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-16 Project: West Calumet Housing Complex Location: East Chicago, IN 46312				
Water Level Data First Encountered: 5' Static Water Level: 3'			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 1/31/2017 Drilling Method: Dual Tube Boring End Date: 1/31/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: 10' Well Length: 10' Casing Depth: 10' Well Diameter: 1" Drilling Company: Amereco INC. Representative : Greg Koliboski REC = Percent Recovery Well License # : 2059				
SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil				
2		1.1	Dark Brown Fine Sand with 1" Slag at 2'				
3			Light Brown Very Fine to Fine Sand		SM		
4	WCS-016A	1.5					
5							
6		1.4					
7			Gray Very Fine to Fine Sand		SM		
8		1.0					
9							
10		1.2	Gray Fine to Medium Sand		SM		
11							
12		1.5					
13			End of Boring				
14							
15							
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19							
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Notes:							

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-17</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>				
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>N/A</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>1/31/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>1/31/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>N/A</u> Well Length: <u>N/A</u> Casing Depth: <u>N/A</u> Well Diameter: <u>N/A</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License # : <u>2059</u>				
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil				
2		1.7	Dark Brown Fine Sand			75	
3							
4	<u>WCS-017A</u>	1.6					
5							
6		0.7	Concrete/Gravel (Fill)			75	
7							
8		0.5					
9							
10		1.1	Very Fine Dark Gray Sand with Brick Fragments at 11' (Fill?)			100	
11							
12		1.0	Very Fine Gray Sand		SM		
13			End of Boring				
14							
15							
16							
17							
18							
19							
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36							
Notes:							

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-18

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: N/A

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/31/2017
Drilling Method:	Dual Tube	Boring End Date:	1/31/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			6" Topsoil			
2		1.2				
3						
4	WCS-018A	1.4				
5						
6						
7			No Recovery			
8						
9			Very Fine Dark Gray Sand	SM		
10		0.6				
11						
12		0.6	Dark Gray Very Fine to Fine Sand	SM		
13			End of Boring			
14						
15						
16						
17						
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-19</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>					
Water Level Data First Encountered: <u>6'</u> Static Water Level: <u>N/A</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>1/31/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>1/31/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>N/A</u> Well Length: <u>N/A</u> Casing Depth: <u>N/A</u> Well Diameter: <u>N/A</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License # : <u>2059</u>					
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP	
1			6" Topsoil					
2		1.5	Dark Brown Fine Sand with Occasional Slag			75		
3								
4		2.1			Fine Light Brown Sand		SM	
5			Gray Very Fine to Fine Sand			75		
6	<u>WCS-019A</u>	3.1					SM	
7								
8		1.8						
9					Gray Very Fine Sand		SM	100
10	<u>WCS-019B</u>	2.7	Gray Fine to Medium Sand		SM			
11								
12		1.8	End of Boring		SM			
13								
14								
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Notes:								

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-20

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: N/A

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/31/2017
Drilling Method:	Dual Tube	Boring End Date:	1/31/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2		0.5	Dark Brown Fine Sand	SM	75	
3						
4		0.4	Fine Light Brown Sand	SM		
5						
6		0.4				
7				SM	100	
8	WCS-020A	2.4	Gray Very Fine to Fine Sand			
9						
10		0.7				
11			Gray Fine to Medium Sand	SM		
12		0.6				
13			End of Boring			
14						
15						
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-21</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>				
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>3.35'</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>1/31/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>1/31/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>10'</u> Well Length: <u>10'</u> Casing Depth: <u>10'</u> Well Diameter: <u>1"</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License #: <u>2059</u>				
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil				
2	<u>WCS-021A</u>	<u>2.3</u>	Dark Brown Fine Sand			75	
3							
4		<u>1.0</u>					
5			Light Brown Very Fine to Fine Sand				
6		<u>1.3</u>				100	
7							
8		<u>1.2</u>					
9			Gray Very Fine to Fine Sand				
10		<u>1.2</u>				100	
11			Gray Fine to Medium Sand				
12		<u>0.6</u>					
13			End of Boring				
14							
15							
16							
17							
18							
19							
20							
21							
22							
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Notes:							

**Amereco
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204 E. Jefferson Street
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Tel: 219-531-0531

Boring Number:

SB-22

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 4'
Static Water Level: 3.35'

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	1/31/2017
Drilling Method:	Dual Tube	Boring End Date:	1/31/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	10'	Well Length:	10'
Casing Depth:	10'	Well Diameter:	1"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2	WCS-022A	1.2	Dark Brown Fine Sand (Brick Fragments and Slag)			
3						
4		0.9		SM		
5						
6	WCS-022B	1.4				
7						
8		1.1		SM		
9						
10		1.1				
11				SM		
12		1.0				
13						
14						
15						
16						
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-23 Project: West Calumet Housing Complex Location: East Chicago, IN 46312					
Water Level Data First Encountered: 4' Static Water Level: 3.63'			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 1/31/2017 Drilling Method: Dual Tube Boring End Date: 1/31/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: 10' Well Length: 10' Casing Depth: 10' Well Diameter: 1" Drilling Company: Amereco INC. Representative : Greg Koliboski REC = Percent Recovery Well License # : 2059					
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP	
1			3" Topsoil					
2		0.7	Dark Brown Fine Sand with Brick Fragments and Slag			75		
3								
4	WCS-023A	1.1	Light Brown Very Fine to Fine Sand					
5					SM	100		
6		0.7						
7			Light Brown Fine to Medium Sand					
8		0.9			SM	100		
9								
10		0.9	Gray Fine to Medium Sand		SM			
11								
12		1.0						
13			End of Boring					
14								
15								
16								
17								
18								
19								
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Notes:								

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-24</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>					
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>N/A</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>2/1/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>2/1/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>N/A</u> Well Length: <u>N/A</u> Casing Depth: <u>N/A</u> Well Diameter: <u>N/A</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License # : <u>2059</u>					
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP	
1			6" Asphalt and Gravel					
2		0.8	Dark Brown Fine Sand with Occasional Slag Sheen from 5' - 6' Oily			75		
3								
4		1.2						
5								
6	WCS-024A	2.6						
7			Very Fine Gray Sand			100		
8		1.0						
9								
10		1.2						
11								
12		0.8	Very Fine to Fine Gray Sand			100		
13								
14								
15								
16								
17								
18								
19								
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Notes:								

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-25</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>					
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>N/A</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>2/1/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>2/1/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>N/A</u> Well Length: <u>N/A</u> Casing Depth: <u>N/A</u> Well Diameter: <u>N/A</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License # : <u>2059</u>					
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP	
1			6" Topsoil					
2		0.7	Dark Brown Fine Sand with Occasional Slag			75		
3								
4	<u>WCS-025A</u>	0.8						
5			Light Brown Very Fine to Fine Sand		SM	100		
6		0.7						
7								
8		0.8	Very Fine to Fine Gray Sand		SM	100		
9								
10		0.7						
11								
12		0.4						
13								
14								
15								
16								
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19								
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Notes:								

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-26				
Project: _____ Location: _____			West Calumet Housing Complex East Chicago, IN 46312				
Water Level Data First Encountered: N/A Static Water Level: N/A			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017 Drilling Method: Dual Tube Boring End Date: 2/1/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski REC = Percent Recovery Well License # : 2059				
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil				
2		0.2					
3			Fine Light Brown Sand		SM		
4	WCS-026A	0.2					
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
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Notes:							

**Amereco
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204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number: SB-27

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: N/A

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017
Drilling Method: Dual Tube Boring End Date: 2/1/2017
Sample Type: Direct Push Backfill Type: Cuttings/Bentonite
Casing Length: N/A Well Length: N/A
Casing Depth: N/A Well Diameter: N/A
Drilling Company: Amereco INC. Representative : Greg Koliboski
Well License #: 2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2		0.2	Dark Brown Fine Sand			
3						
4		0.3	Light Brown Very Fine to Fine Sand			
5			Staining in Sand at 6'			
6	WCS-027A	0.7	Concrete and Gravel			
7						
8		0.6	Very Fine to Fine Gray Sand			
9						
10		0.2	Gray Coarse Sand			
11						
12		0.3	Gray Very Fine Sand			
13			End of Boring			
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-28 Project: West Calumet Housing Complex Location: East Chicago, IN 46312				
Water Level Data First Encountered: N/A Static Water Level: N/A SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017 Drilling Method: Dual Tube Boring End Date: 2/1/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski Well License # : 2059				
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil				
2		0.3					
3			Dark Brown Fine Sand with Occasional Sand (Fill)				
4	WCS-028A	0.3					
5			End of Boring				
6							
7							
8							
9							
10							
11							
12							
13							
14							
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Notes:							

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-29

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: N/A
Static Water Level: N/A

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	2/1/2017
Drilling Method:	Dual Tube	Boring End Date:	2/1/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2		0.3	Dark Brown Fine Sand with Occasional Slag			
3				SM		
4	WCS-029A	0.3	Light Brown Very Fine to Fine Sand			
5			End of Boring			
6						
7						
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9						
10						
11						
12						
13						
14						
15						
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Notes:						

**Amereco
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204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-30

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: 3.67'

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	2/1/2017
Drilling Method:	Dual Tube	Boring End Date:	2/1/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	10'	Well Length:	10'
Casing Depth:	10'	Well Diameter:	1"
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			3" Topsoil			
2		0.3	Brown Fine Sand	SM	75	
3						
4	WCS-030A	0.4				
5			Light Brown Very Fine to Fine Sand	SM	100	
6		0.3				
7						
8		0.3		SM		
9			Gray Very Fine Sand		100	
10		0.3		SM		
11				SM		
12		0.3				
13			End of Boring			
14						
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Notes:						

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-31

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: N/A

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	2/1/2017
Drilling Method:	Dual Tube	Boring End Date:	2/1/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			Topsoil			
2		0.2				
3						
4	WCS-031A	0.3				
5						
6		0.2				
7						
8		0.3				
9						
10		0.3				
11						
12		0.3				
13						
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Notes:

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-32

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: N/A

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type:	6610DT	Boring Start Date:	2/1/2017
Drilling Method:	Dual Tube	Boring End Date:	2/1/2017
Sample Type:	Direct Push	Backfill Type:	Cuttings/Bentonite
Casing Length:	N/A	Well Length:	N/A
Casing Depth:	N/A	Well Diameter:	N/A
Drilling Company:	Amereco INC.	Representative :	Greg Koliboski
		Well License # :	2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			Asphalt/Gravel			
2		0.3	Light Brown Fine Sand		75	
3						
4	WCS-032A	0.3		SM		
5						
6		0.3			100	
7						
8		0.3				
9				SM		
10		0.3	Gray Very Fine to Fine Sand		100	
11						
12		0.3				
13						
14						
15						
16						
17						
18						
19						
20			End of Boring			
21						
22						
23						
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Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-33 Project: West Calumet Housing Complex Location: East Chicago, IN 46312						
Water Level Data First Encountered: 5' Static Water Level: N/A SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017 Drilling Method: Dual Tube Boring End Date: 2/1/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski Well License # : 2059						
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP		
1			6" Asphalt/Gravel						
2		0.2	Dark Brown Fine Sand with Occasional Slag			75			
3									
4	WCS-033A	0.3	Gravel/Sand (Fill)						
5			Very Fine to Fine Gray Sand			75			
6		0.3							
7								SM	
8		0.3							
9									
10		0.3	Very Fine Gray Sand			100			
11								SM	
12		0.4							
13			End of Boring						
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
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30									
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32									
33									
34									
35									
36									
Notes:									

**Amereco
Engineering**
204 E. Jefferson Street
Valparaiso, Indiana 46383
Tel: 219-531-0531

Boring Number:

SB-34

Project: West Calumet Housing Complex
Location: East Chicago, IN 46312

Water Level Data

First Encountered: 5'
Static Water Level: 3.17'

SS = Soil Sample
GW = Groundwater Sample
SG = Soil Gas Sample
PP = Pocket Pentrometer
REC = Percent Recovery

Drilling Information

Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017
Drilling Method: Dual Tube Boring End Date: 2/1/2017
Sample Type: Direct Push Backfill Type: Cuttings/Bentonite
Casing Length: 10' Well Length: 10'
Casing Depth: 10' Well Diameter: 1"
Drilling Company: Amereco INC. Representative : Greg Koliboski
Well License # : 2059

Depth (ft)	Sample	PID	Description	USCS	REC (%)	PP
1			Asphalt/Gravel			
2		0.3	Brown Sand and Gravel (Fill)		100	
3						
4	WCS-034A	0.3				
5						
6		0.3				
7				SM		
8		0.3				
9						
10		0.3		SM	100	
11						
12		0.3				
13						
14						
15			Very Fine to Fine Gray Sand			
16						
17						
18						
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36						
Notes:						

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-35</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>							
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>3.2'</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>2/1/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>2/1/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>12'</u> Well Length: <u>12'</u> Casing Depth: <u>12'</u> Well Diameter: <u>1"</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License # : <u>2059</u>							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP			
1			6" Topsoil							
2		0.3	Dark Brown Sand with Occasional Slag			75				
3										
4	<u>WCS-035A</u>	0.4								
5			Brown Very Fine to Fine Sand		SM	100				
6		0.3								
7										
8		0.3								
9										
10		0.3	Gray Very Fine to Fine Sand		SM	100				
11										
12		0.3								
13					End of Boring					
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
Notes:										

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-36				
Project: _____ Location: _____			West Calumet Housing Complex East Chicago, IN 46312				
Water Level Data First Encountered: 5' Static Water Level: N/A			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017 Drilling Method: Dual Tube Boring End Date: 2/1/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski Well License # : 2059				
SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			3" Topsoil				
2		0.2	Dark Brown Fine Sand		SM		
3							
4	WCS-036A	0.3	Brown Very Fine to Fine Sand		SM		
5							
6		0.3					
7							
8		0.2	Gray Very Fine to Fine Sand		SM		
9							
10		0.3	Gray Very Fine Sand		SM		
11							
12		0.3					
13			End of Boring				
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
Notes:							

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: SB-37 Project: West Calumet Housing Complex Location: East Chicago, IN 46312				
Water Level Data First Encountered: 5' Static Water Level: N/A			Drilling Information Drilling Rig Type: 6610DT Boring Start Date: 2/1/2017 Drilling Method: Dual Tube Boring End Date: 2/1/2017 Sample Type: Direct Push Backfill Type: Cuttings/Bentonite Casing Length: N/A Well Length: N/A Casing Depth: N/A Well Diameter: N/A Drilling Company: Amereco INC. Representative : Greg Koliboski REC = Percent Recovery Well License # : 2059				
SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery							
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP
1			6" Topsoil				
2		0.2	Fine Light Brown Sand		SM	75	
3							
4	WCS-037A	0.3					
5							
6		0.2	Very Fine to Fine Gray Sand		SM	100	
7							
8		0.2					
9			Gray Very Fine Sand		SM		
10		0.2			SM	100	
11			Gray Very Fine to Fine Sand		SM		
12		0.2					
13			End of Boring				
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
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27							
28							
29							
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31							
32							
33							
34							
35							
36							
Notes:							

Amereco Engineering 204 E. Jefferson Street Valparaiso, Indiana 46383 Tel: 219-531-0531			Boring Number: <u>SB-38</u> Project: <u>West Calumet Housing Complex</u> Location: <u>East Chicago, IN 46312</u>					
Water Level Data First Encountered: <u>5'</u> Static Water Level: <u>N/A</u> SS = Soil Sample GW = Groundwater Sample SG = Soil Gas Sample PP = Pocket Pentrometer REC = Percent Recovery			Drilling Information Drilling Rig Type: <u>6610DT</u> Boring Start Date: <u>2/1/2017</u> Drilling Method: <u>Dual Tube</u> Boring End Date: <u>2/1/2017</u> Sample Type: <u>Direct Push</u> Backfill Type: <u>Cuttings/Bentonite</u> Casing Length: <u>N/A</u> Well Length: <u>N/A</u> Casing Depth: <u>N/A</u> Well Diameter: <u>N/A</u> Drilling Company: <u>Amereco INC.</u> Representative : <u>Greg Koliboski</u> Well License #: <u>2059</u>					
Depth (ft)	Sample	PID	Description		USCS	REC (%)	PP	
1			3" Topsoil					
2		0.2	Dark Brown Fine Sand with Occasional Slag, Brick Fragments and Gravel			75		
3								
4	WCS-038A	0.3						
5					Light Brown Very Fine to Fine Sand		SM	
6		0.3	Gray Very Fine Sand			100		
7								
8		0.3						
9								
10		0.3	Gray Very Fine to Fine Sand		SM	100		
11								
12		0.2						
13								
14			End of Boring					
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
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27								
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29								
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32								
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34								
35								
36								
Notes:								

**LOW FLOW SAMPLING
DATA SHEET**

SITE: West Calumet Housing Complex										CONSULTING FIRM: AMERECO, INC.	
DATE: 02/02/17										FIELD PERSONNEL: D. Voger A.W.; K.C.	
WEATHER: 22°F Sunny											
MONITOR WELL: MW-01		WELL DEPTH: 11.42		SCREENED/OPEN INTERVAL:							
WELL PERMIT #: _____		WELL DIAMETER: 2		Inches							
PDI/PID READINGS		BACKGROUND: 0.0		PUMP INTAKE DEPTH: 8 ft. below TOC							
		BENEATH OUTER CAP: 0.0		DEPTH TO WATER BEFORE PUMP INSTALLATION: 4.77 ft. below TOC							
		BENEATH INNER CAP: 0.1									
TIME	SAMPLING PURGING	pH	SPECIFIC CONDUCTIVITY (mS/cm)	READING	CHANGE*	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)	READING	CHANGE*	TEMPERATURE (degrees C)
		(pH units)	(mS/cm)	NA	NA	239	NA	3.46	NA	NA	NA
8:50am	✓	6.23	NA	.664		222.9	3.18				0.167
8:55	✓	6.24	NA	.572		217.5	3.08				0.167
9:00	✓	6.24	NA	0.576		214.0	2.76				4.79
9:05	✓	6.18	NA	0.576		212.8	2.76				4.80
9:10	✓	6.12	NA	0.573		210.4	2.81				44.97
9:15	✓	6.06	NA	0.572		208.4	2.81				44.70
9:20	✓	6.03	NA	0.570		206.5	2.77				44.63
9:25	✓	5.97	NA	0.575		204.2	2.62				45.31
9:30	✓	5.91	NA	0.575		202.7	2.51				45.16
COMMENTS: WCC-01@ 9:20 QA/QC-01@ 9:30											

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature;
± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

**LOW FLOW SAMPLING
DATA SHEET**

SITE:	West Calumet Housing Complex			CONSULTING FIRM:	AMERECO, INC.						
DATE:	12/17			FIELD PERSONNEL:	A. Walker						
WEATHER:	21° Sunny										
MONITOR WELL	WU-04	WELL DEPTH:	8 ft'	SCREENED/OPEN INTERVAL:							
WELL PERMIT #:		WELL DIAMETER:	1 Inch								
PID/FID READINGS	BACKGROUND:	0.0		PUMP INTAKE DEPTH:	6.5 ft. below TOC	DEPTH TO WATER BEFORE PUMP INSTALLATION: 3.25 ft. below TOC					
	BENEATH OUTER CAP:	2.0									
	BENEATH INNER CAP:	2.1									
TIME	SAMPLING	pH (pH units)	SPECIFIC CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)	TEMPERATURE (degrees C)				
	PURGING	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
10:15	\	5.78	NA	197.9	NA	5.07	NA	NA	NA	0.2	3.67
10:20	\	5.82	.351	190.6	3.57			47.61			
10:25	\	5.81	.366	196.1	2.99			47.51			3.68
10:30	\	5.93	.390	152.8	2.50			48.89			
10:35	\	5.91	.396	150.7	2.18			48.47			
10:40	\	6.03	.400	156.4	2.13			48.05			
10:45	\	6.12	.404	154.3	2.12			48.04			
COMMENTS: WUC-044											

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

**LOW FLOW SAMPLING
DATA SHEET**

SHEET ____ OF ____										
SITE:	West Calumet Housing Complex									
DATE:	2/1/07									
WEATHER:	21° Sunny									
MONITOR WELL	MJ-22	WELL DEPTH:	18.67	SCREENED/OPEN INTERVAL:						
WELL PERMIT #:		WELL DIAMETER:	1	Inches						
PID/FID READINGS	BACKGROUND:	0.0	PUMP INTAKE DEPTH:	7	ft. below TOC					
	BENEATH OUTER CAP:	0.4	DEPTH TO WATER BEFORE PUMP INSTALLATION:	335	ft. below TOC					
	BENEATH INNER CAP:	0.3								
TIME	SAMPLING PURGING	pH (μ H units)	SPECIFIC CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)	TEMPERATURE (degrees C)	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)	
READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	
10:50	✓	5.87	NA	133.4	NA	1.57	NA	44.82	NA	
11:55	✓	5.88	0.699	129.0	0.20			45.87		
12:00	✓	5.88	0.691	126.6	-0.55			45.81		
1:05	✓	5.91	0.692	134.1	1.72			45.72		
1:10	✓	6.02	0.696	136.4	.58			45.92	0.2	
1:15	✓	5.95	0.694	138.9	0.53			45.81	0.2	
1:20	✓	5.82	0.694	144.9	0.48			45.91	0.2	
COMMENTS: WCC-22 MS/MSD										

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity

**LOW FLOW SAMPLING
DATA SHEET**

LOW FLOW SAMPLING DATA SHEET										SHEET <u> </u> OF <u> </u>		
SITE:	West Calumet Housing Complex			CONSULTING FIRM: <u>AMERECO, INC.</u>								
DATE:	4/22/07			FIELD PERSONNEL: <u>A. Weller D. Unger</u>								
WEATHER:	21° Sunny											
MONITOR WELL:	14W-23			WELL DEPTH:	106.0		SCREENED/OPEN INTERVAL:					
WELL PERMIT #:				WELL DIAMETER:	1		Inches					
PID/FID READINGS	BACKGROUND:				PUMP INTAKE DEPTH:		7 ft. below TOC					
	BENEATH OUTER CAP:				DEPTH TO WATER BEFORE PUMP INSTALLATION:		363 ft. below TOC					
	BENEATH INNER CAP:											
TIME	PURGING SAMPLING	SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		
		READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	
11:30	✓	5.76	NA	156.22	NA	157.8	NA	3.70	NA	47.40	NA	
11:35	✓	5.78	0.621	155.3		1.96				47.55	0.2	
11:40	✓	5.75	0.625	158.5		2.58				47.51	0.2	
11:45	✓	5.74	.633	160.9		2.09				47.58	0.2	
11:50	✓	5.73	.640	162.9		1.74				47.52	0.2	
11:55	✓	5.79	0.644	164.3		1.53				47.44	0.2	
12:00	✓	5.81	0.645	165.5		1.51				47.55	0.2	
12:05	✓	5.81	0.647	167.4		1.55				47.56	0.2	
12:10	✓	5.80	0.648	169.3		1.59				47.62	0.2	
12:15	✓	5.80	0.646	169.3		1.62				48.00	0.2	
12:20	✓	5.80	0.644	169.4		1.63				48.46	0.2	
COMMENTS: WCC-23												

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET ONE

SITE:	West Calumet Housing Complex			CONSULTING FIRM: AMERECO, INC.				
DATE:	2/21/17			FIELD PERSONNEL: Alister T. Roff				
WEATHER:	20° Cloudy							
MONITOR WELL	WELL #:	4W-10	WELL DEPTH:	6,110'				
WELL PERMIT #:			WELL DIAMETER:	1 Inch				
			SCREENED/OPEN INTERVAL:					
			PUMP INTAKE DEPTH:	6 ft. below TOC				
			DEPTH TO WATER BEFORE PUMP INSTALLATION:	2,110 ft. below TOC				
PID/FID READINGS		BACKGROUND:	0.0					
		BENEATH OUTER CAP:	2.0					
		BENEATH INNER CAP:	2.1					
PURGING TIME	SAMPLING TIME	SPECIFIC CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)	TEMPERATURE (degrees C)	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
3:40	3:40	6.24	NA	444	NA	42.44	0.2	2,11
3:45	3:45	6.26	417	124.4	1.05	43.85		
3:50	3:50	6.26	415	122.2	1.07	44.05	0.2	2,12
3:55	3:55	6.25	0.444	121.3	0.93	44.24		
4:00	4:00	6.23	0.417	120.3	0.83	44.28		
Comments: WCG-210								

**LOW FLOW SAMPLING
DATA SHEET**

SHEET ____ OF ____

SITE: West Calumet Housing Complex	CONSULTING FIRM: AMERECO, INC.				
DATE: 3/2/17	FIELD PERSONNEL: A.Wilson J.Ray				
WEATHER: 23° Sunny					
MONITOR WELL #: ML-12	WELL DEPTH: 11.82	SCREENED/OPEN INTERVAL: _____			
WELL PERMIT #: _____	WELL DIAMETER: 2	Inches			
PID/FID READINGS		BACKGROUND: 0.0	PUMP INTAKE DEPTH: 7 ft. below TOC	DEPTH TO WATER BEFORE PUMP INSTALLATION: 237 ft. below TOC	
		BENEATH OUTER CAP: 22217			
		BENEATH INNER CAP: 22217			
TIME	SAMPLING PURGING	SPECIFIC CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)
	READING CHANGE*	READING CHANGE*	READING CHANGE*	READING CHANGE*	READING CHANGE*
2:36	6.04 NA	0.874 NA	166.1 NA	1.95 NA	NA NA
2:35	6.10	.870	161.3	1.13	46.95
2:40	6.12	.871	157.1	.70	47.16
2:45	6.06	.876	155.9	.74	47.24
2:50	6.02	0.878	156.6	143.60	47.28
0.2					
Comments: WCC-12B Duplicate					

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET OF

**LOW FLOW SAMPLING
DATA SHEET**

SITE:	West Calumet Housing Complex			CONSULTING FIRM:	AMERECO, INC.								
DATE:	2/3/02			FIELD PERSONNEL:	A.Wilke - J.Hug								
WEATHER:	18° Sunny			SCREENED/OPEN INTERVAL:									
MONITOR WELL:	MW-16	WELL DEPTH:	10.71'	DEPTH TO WATER BEFORE PUMP INSTALLATION:	3	ft. below TOC							
WELL PERMIT #:		WELL DIAMETER:	1	Inches									
PID/FID READINGS	BACKGROUND:	0.1	PUMP INTAKE DEPTH:	7	ft. below TOC								
	BENEATH OUTER CAP:	0.2	DEPTH TO WATER BEFORE PUMP INSTALLATION:	3	ft. below TOC								
	BENEATH INNER CAP:	0.1											
TIME	SAMPLING PURGING	SPECIFIC pH (pH units)	CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)	TEMPERATURE (degrees C)	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)				
TIME	SAMPLING PURGING	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*				
9:00	\	7.41	NA	0.573	NA	127.9	NA	40.3	NA	44.85	NA	0.0	3.02
9:05	\	7.41		0.556		128.5		1.80					0.2
9:10	\	7.42		0.574		94.1		0.75					0.2
9:15	\	7.42		0.560		87.2		0.65					0.3
9:20	\	7.41		0.565		89.0		0.59					0.2
9:25	\	7.43		0.573		70.4		0.47					0.2
9:30	\	7.43		0.580		69.2		0.55					0.2
COMMENTS: WJC-016													

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

**LOW FLOW SAMPLING
DATA SHEET**

INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Specific Conductivity and Temperature; ± 10 mV for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity

**LOW FLOW SAMPLING
DATA SHEET**

SHEET ____ OF ____

SITE:	West Calumet Housing Complex			CONSULTING FIRM: AMERECO, INC.						
DATE:	2/13/97			FIELD PERSONNEL: A.W. Neer J.V. "J"						
WEATHER:	21° Sunny			SCREENED/OPEN INTERVAL: _____						
MONITOR WELL	MON-30	WELL DEPTH:	4.7'							
WELL PERMIT #:				WELL DIAMETER:	1"	Inches				
PID/FID READINGS	BACKGROUND:	2.0	PUMP INTAKE DEPTH:	2 ft. below TOC						
	BENEATH OUTER CAP:	0.3	DEPTH TO WATER BEFORE PUMP INSTALLATION:	3.67 ft. below TOC						
	BENEATH INNER CAP:	0.1								
TIME	SAMPLING	pH (pH units)	SPECIFIC CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)	TEMPERATURE (degrees C)	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)	
PURGING	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	
2:10	✓	7.46	NA	57.0	NA	5.464	NA	NA	0.2	3.68
2:15	✓	7.49	0.052	59.1	2.65					45.97
2:20	✓	7.51	0.051	61.9	3.92					46.16
2:25	✓	7.49	0.084	62.9	3.75					46.71
2:30	✓	7.51	0.089	63.5	3.58					46.28
2:35	✓	7.50	0.0891	63.2	3.41					46.43
2:40	✓	7.50	0.0894	62.9	3.16					46.71
2:45	✓	7.51	0.0896	63.8	3.01					46.42
2:50	✓	7.50	0.0896	65.4	3.10					46.16
										3.70
										COMMENTS:

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET OF

SITE:	West Calumet Housing Complex		
DATE:	2/3/10		
WEATHER:	30° sunny		
MONITOR WELL	HW-34	WELL DEPTH:	97'
WELL PERMIT #:		WELL DIAMETER:	1"

CONSULTING FIRM: AMERECO, INC. **FIELD PERSONNEL:** A. J. Silver

SCREENED/OPEN INTERVAL:

PUMP INTAKE DEPTH: 2.17 ft. below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 2 ft. below TOC

PDI/EID READINGS

TIME	PURGING READING	SPECIFIC CONDUCTIVITY (mS/cm)	REDOX POTENTIAL (mv)	DISSOLVED OXYGEN (mg/l)	TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
					CHANGE*	READING	CHANGE*	READING		
1:20	7.40	NA	2.732	NA	34.4	NA	0.87	NA	46.86	NA
1:25	7.45	0.683	22.3	22.3	29.8	0.71	0.35	0.71	47.49	0.2
1:30	7.44	0.669	29.8	29.8	31.3	0.26	47.68	47.92	48.07	0.2
1:35 ^{pm}	7.46	0.663	31.7	31.7	35.0	0.18	47.95	48.07	48.19	0.2
1:40 ^{pm}	7.46	0.660	35.0	35.0	35.0	0.16	47.95	48.07	48.19	0.2
1:45	7.44	0.659	35.0	35.0	35.0	0.16	47.95	48.07	48.19	0.2

COMMENTS:

***INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Specific Conductivity and Temperature; ± 10 mV for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity**

**LOW FLOW SAMPLING
DATA SHEET**

PUMPING										SHEET <u> </u> OF <u> </u>				
CONSULTING FIRM: <u>AMERECO, INC.</u> FIELD PERSONNEL: <u>A. L. Miller & T. R. Rogers</u>														
SITE:	West Calumet Housing Complex			WELL DEPTH:	12.1'			SCREENED/OPEN INTERVAL:						
DATE:	2/13/12			WELL DIAMETER:	0.1' Inches									
WEATHER:	19° Sunny			PUMP INTAKE DEPTH:	7 ft. below TOC			DEPTH TO WATER BEFORE PUMP INSTALLATION:	3.2 ft. below TOC					
MONITOR WELL	ML-35			BENATH OUTER CAP:	0.1									
WELL PERMIT #:				BENATH INNER CAP:	0.25									
PID/FID READINGS		BACKGROUND:		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
TIME	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	NA	NA
12:35	7.42	NA	2.712	NA	141.5	NA	4.65	NA	NA	45.96	NA	0.2	3.21	
12:40	7.43		.753		38.5		3.06							
12:45	7.44		.754		134.8		2.98							
12:50	7.45		2.753		130.5		2.69							
12:55	7.44		2.744		130.5		2.62							
1:00 pm	7.44		2.746		130.6		2.51							
SAMPLING										COMMENT: WCC-0735				

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature;
 ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

APPENDIX C

AMERECO, INC.



Consulting □ Engineering □ Project Management
204 E. Jefferson Street
Valparaiso, IN 46383
(219) 531-0531
Fax: (219) 464-0464

SAMPLE LOG FORM

Client: East Chicago Housing Authority
4920 Larkspur Avenue
East Chicago, IN 46312

Project: Phase II ESA
West Calumet Housing Complex
East Chicago, IN 46312

Project No. 17.1151.2

Date Sampled: January 27 thru February 3, 2017

SAMPLE ID	MATRIX	DESCRIPTION AND LOCATION
WCS-001A	Soil	Soil Sample Collected From Soil Boring SB-01 Sample Taken from Approximately 7 Feet BGS Cool to 4°C ±2°
WCS-002A	Soil	Soil Sample Collected From Soil Boring SB-02 Sample Taken from Approximately 8 Feet BGS Cool to 4°C ±2°
WCS-003A	Soil	Soil Sample Collected From Soil Boring SB-03 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-003B	Soil	Soil Sample Collected From Soil Boring SB-03 Sample Taken from Approximately 12 Feet BGS Cool to 4°C ±2°
WCS-004A	Soil	Soil Sample Collected From Soil Boring SB-04 Sample Taken from Approximately 3 Feet BGS Cool to 4°C ±2°
WCS-005A	Soil	Soil Sample Collected From Soil Boring SB-05 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-006A	Soil	Soil Sample Collected From Soil Boring SB-06 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-007A	Soil	Soil Sample Collected From Soil Boring SB-07 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-007B	Soil	Soil Sample Collected From Soil Boring SB-07 Sample Taken from Approximately 12 Feet BGS Cool to 4°C ±2°
WCS-008A	Soil	Soil Sample Collected From Soil Boring SB-08 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-008B	Soil	Soil Sample Collected From Soil Boring SB-08 Sample Taken from Approximately 10 Feet BGS Cool to 4°C ±2°
WCS-009A	Soil	Soil Sample Collected From Soil Boring SB-09 Sample Taken from Approximately 5 Feet BGS Cool to 4°C ±2°

SAMPLE ID	MATRIX	DESCRIPTION AND LOCATION
WCS-010A	Soil	Soil Sample Collected From Soil Boring SB-10 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-011A	Soil	Soil Sample Collected From Soil Boring SB-11 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-012A	Soil	Soil Sample Collected From Soil Boring SB-12 Sample Taken from Approximately 5 Feet BGS Cool to 4°C ±2°
WCS-012B	Soil	Soil Sample Collected From Soil Boring SB-12 Sample Taken from Approximately 10 Feet BGS Cool to 4°C ±2°
WCS-013A	Soil	Soil Sample Collected From Soil Boring SB-13 Sample Taken from Approximately 2 Feet BGS Cool to 4°C ±2°
WCS-013B	Soil	Soil Sample Collected From Soil Boring SB-13 Sample Taken from Approximately 12 Feet BGS Cool to 4°C ±2°
WCS-014A	Soil	Soil Sample Collected From Soil Boring SB-14 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-014B	Soil	Soil Sample Collected From Soil Boring SB-14 Sample Taken from Approximately 10 Feet BGS Cool to 4°C ±2°
WCS-015A	Soil	Soil Sample Collected From Soil Boring SB-15 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-016A	Soil	Soil Sample Collected From Soil Boring SB-16 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-017A	Soil	Soil Sample Collected From Soil Boring SB-17 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-018A	Soil	Soil Sample Collected From Soil Boring SB-18 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-019A	Soil	Soil Sample Collected From Soil Boring SB-19 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-019B	Soil	Soil Sample Collected From Soil Boring SB-19 Sample Taken from Approximately 10 Feet BGS Cool to 4°C ±2°
WCS-020A	Soil	Soil Sample Collected From Soil Boring SB-20 Sample Taken from Approximately 8 Feet BGS Cool to 4°C ±2°
WCS-021A	Soil	Soil Sample Collected From Soil Boring SB-21 Sample Taken from Approximately 2 Feet BGS Cool to 4°C ±2°
WCS-022A	Soil	Soil Sample Collected From Soil Boring SB-22 Sample Taken from Approximately 2 Feet BGS Cool to 4°C ±2°
WCS-022B	Soil	Soil Sample Collected From Soil Boring SB-22 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-023A	Soil	Soil Sample Collected From Soil Boring SB-23 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°

SAMPLE ID	MATRIX	DESCRIPTION AND LOCATION
WCS-024A	Soil	Soil Sample Collected From Soil Boring SB-24 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-025A	Soil	Soil Sample Collected From Soil Boring SB-25 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-026A	Soil	Soil Sample Collected From Soil Boring SB-26 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-027A	Soil	Soil Sample Collected From Soil Boring SB-27 Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCS-028A	Soil	Soil Sample Collected From Soil Boring SB-28 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-029A	Soil	Soil Sample Collected From Soil Boring SB-29 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-030A	Soil	Soil Sample Collected From Soil Boring SB-30 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-031A	Soil	Soil Sample Collected From Soil Boring SB-31 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-032A	Soil	Soil Sample Collected From Soil Boring SB-32 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-033A	Soil	Soil Sample Collected From Soil Boring SB-33 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-034A	Soil	Soil Sample Collected From Soil Boring SB-34 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-035A	Soil	Soil Sample Collected From Soil Boring SB-35 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-036A	Soil	Soil Sample Collected From Soil Boring SB-36 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-037A	Soil	Soil Sample Collected From Soil Boring SB-37 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
WCS-038A	Soil	Soil Sample Collected From Soil Boring SB-38 Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
QA/QC-S1	Soil	Duplicate Soil Sample WCS-006A Sample Taken from Approximately 4 Feet BGS Cool to 4°C ±2°
QA/QC-S2	Soil	Duplicate Soil Sample WCS-019A Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
QA/QC-S3	Soil	Duplicate Soil Sample WCS-024A Sample Taken from Approximately 6 Feet BGS Cool to 4°C ±2°
WCG-001	Water	Water Sample Collected From Monitoring Well MW-01 Pump Intake Depth from TOC 8 Feet Cool to 4°C ±2°

SAMPLE ID	MATRIX	DESCRIPTION AND LOCATION
WCG-002	Water	Water Sample Collected From Soil Boring SB-02 Groundwater Encountered At 9 Feet BGS Cool to 4°C ±2°
WCG-003	Water	Water Sample Collected From Soil Boring SB-03 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-004	Water	Water Sample Collected From Temporary Well TW-04 Pump Intake Depth from TOC 6.5 Feet Cool to 4°C ±2°
WCG-007	Water	Water Sample Collected From Temporary Well TW-07 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-008	Water	Water Sample Collected From Soil Boring SB-08 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-009	Water	Water Sample Collected From Monitoring Well MW-09 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-010	Water	Water Sample Collected From Temporary Well TW-10 Pump Intake Depth from TOC 6 Feet Cool to 4°C ±2°
WCG-011	Water	Water Sample Collected From Soil Boring SB-11 Groundwater Encountered At 6 Feet BGS Cool to 4°C ±2°
WCG-012A	Water	Water Sample Collected From Monitoring Well MW-12 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-012B	Water	Duplicate Water Sample WCG-012A Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-013	Water	Water Sample Collected From Soil Boring SB-13 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-014	Water	Water Sample Collected From Soil Boring SB-14 Groundwater Encountered At 6 Feet BGS Cool to 4°C ±2°
WCG-015	Water	Water Sample Collected From Temporary Well TW-15 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-016	Water	Water Sample Collected From Temporary Well TW-16 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-017	Water	Water Sample Collected From Soil Boring SB-17 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-018	Water	Water Sample Collected From Soil Boring SB-18 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-019	Water	Water Sample Collected From Soil Boring SB-19 Groundwater Encountered At 6 Feet BGS Cool to 4°C ±2°
WCG-020	Water	Water Sample Collected From Soil Boring SB-20 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-021	Water	Water Sample Collected From Temporary Well TW-21 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°

SAMPLE ID	MATRIX	DESCRIPTION AND LOCATION
WCG-022	Water	Water Sample Collected From Temporary Well TW-22 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-023	Water	Water Sample Collected From Temporary Well TW-23 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-024	Water	Water Sample Collected From Soil Boring SB-24 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-025	Water	Water Sample Collected From Soil Boring SB-25 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-027	Water	Water Sample Collected From Soil Boring SB-27 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-030	Water	Water Sample Collected From Temporary Well TW-30 Pump Intake Depth from TOC 5 Feet Cool to 4°C ±2°
WCG-031	Water	Water Sample Collected From Soil Boring SB-31 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-032	Water	Water Sample Collected From Soil Boring SB-32 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-033	Water	Water Sample Collected From Soil Boring SB-33 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-034	Water	Water Sample Collected From Temporary Well TW-34 Pump Intake Depth from TOC 3 Feet Cool to 4°C ±2°
WCG-035	Water	Water Sample Collected From Monitoring Well MW-35 Pump Intake Depth from TOC 7 Feet Cool to 4°C ±2°
WCG-036	Water	Water Sample Collected From Soil Boring SB-36 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-037	Water	Water Sample Collected From Soil Boring SB-37 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°
WCG-038	Water	Water Sample Collected From Soil Boring SB-38 Groundwater Encountered At 5 Feet BGS Cool to 4°C ±2°

Analyzed by: SAC

Ref Numbers: 17010706, 17020063, 17010841, 17020109, 17020034

Sampled by: _____
Lewis Mason

Aaron Wilker

Soil Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

		Laboratory ID :		17010841-001		17010841-002		17010841-003		17010841-004		17010841-005		17010841-006		17010841-008			
		Client Sample ID :		WCS-001A		WCS-002A		WCS-003A		WCS-004A		WCS-005A		WCS-006A		WCS-007B			
		Date Collected :		01/27/2017 08:42		01/27/2017 09:20		01/27/2017 10:02		01/27/2017 09:07		01/27/2017 10:30		01/27/2017 11:01		01/27/2017 12:37			
Name	CASRN	Chemical		Soil Exposure	Residential	Direct Contact	Ind	Excavation	Residential	Soil MIG	Groundwater	Soil MIG	Residential	Soil MIG	SB-04	SB-05	SB-06	SB-07	SB-08
VOC				85000	100000	100000	7 bgs	8 bgs	8 bgs	7 bgs	8 bgs	7 bgs	8 bgs	3' bgs	4' bgs	4' bgs	4' bgs	4' bgs	
Acetone	(67-64-1)	71-43-2	17	51	1800	0.051	<0.084	<0.087	<0.077	<0.086	<0.048	<0.091	<0.082	<0.082	<0.081	<0.081	<0.081	<0.081	
Benzene	75-27-4	4.1	13	930	0.43	<0.056	<0.056	<0.058	<0.048	<0.057	<0.057	<0.060	<0.057	<0.055	<0.055	<0.054	<0.054	<0.054	
Bromodichloroethane	75-25-2	270	860	920	0.42	<0.056	<0.056	<0.058	<0.048	<0.057	<0.057	<0.060	<0.057	<0.055	<0.055	<0.054	<0.054	<0.054	
Bromoethane	74-83-9	9.5	30	160	0.038	<0.011	<0.012	<0.012	<0.011	<0.011	<0.011	<0.012	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	
Butanone	78-93-3	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	28000	
Carbon disulfide	75-15-0	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	
Carbon tetrachloride	56-23-5	9.1	29	460	0.039	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	
Chlorobenzene	108-90-7	390	760	760	1.4	<0.048	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	
Chloroethane	75-00-3	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	
Chloroform	67-66-3	4.5	14	1900	0.44	<0.036	<0.036	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	<0.038	
Chlormethane	74-87-3	150	460	1300	0.58	<0.011	<0.012	<0.012	<0.011	<0.011	<0.011	<0.012	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	
Dibromochloroethane	124-48-1	120	390	800	0.43	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	
1,1-Dichloroethane	75-34-3	50	160	1700	0.16	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
1,2-Dichloroethane	107-06-2	6.4	20	730	0.028	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	
1,1-Dichloroethylene	75-35-4	320	1000	1200	0.05	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
cis-1,2-Dichloroethylene	156-59-2	220	2300	2400	0.41	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
trans-1,2-Dichloroethylene	156-60-5	1900	1900	1900	0.62	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	
1,1,2-Dichloropropane	78-87-5	14	44	370	0.33	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	
cis-1,3-Dichloropropene	10061-01-5	25	82	1600	0.034	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	
trans-1,3-Dichloropropene	10061-02-6	25	82	1600	0.034	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	
Ethylbenzene	100-41-4	81	250	480	16	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	
2-Hexanone	591-78-6	280	1300	3300	0.18	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	
4-Methyl-2-pentanone	108-10-1	3400	3400	3400	28	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	
Methyl chloride	490	3200	3300	0.25	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
Methyl tert-butyl ether	1634-04-4	660	2100	8900	0.63	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
Syrene	100-42-5	870	870	870	2.2	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
1,1,2,2-Tetrachloroethane	79-34-5	8.4	27	1900	0.059	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	
Tetrachloroethane	127-18-4	110	170	170	0.045	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
Toluene	108-88-3	820	820	820	14	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	
1,1,1-Trichloroethane	71-55-6	640	640	640	1.4	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
1,1,2-Trichloroethane	79-00-5	2.1	6.3	35	0.32	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
Trichloroethene	79-01-6	5.7	19	95	0.036	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	
Vinyl chloride	75-01-4	83	17	1300	0.14	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	
Xylenes, Total	1330-20-7	260	260	200	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	
Acenaphthene	83-32-9	5000	45000	100000	110	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Acenaphthylene	208-96-8	22	290	100000	1200	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Anthracene	120-12-7	25000	51000	51000	260	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Benz(a)anthracene	53-70-3	0.22	2.9	160	2.6	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Benz(o)pyrene	50-32-8	0.22	2.9	160	4.7	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Benz(b)fluoranthene	205-99-2	2.2	1600	8.2	1600	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Benzog(1,1-b)perylene	191-24-2	340	3000	1200	27	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Benzofluoranthene	207-08-9	22	290	16000	80	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Chrysene	218-01-9	220	290	290	2.7	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
Fluoranthene	206-44-0	3400	30000	68000	1800	<0.040	<0.040	<0.040	<0.040</										

Soil Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

		Laboratory ID :		17010841-011	17010841-012	17010841-013	17010866-001	17010866-002	17010866-003	17010866-004	17010866-005	17010866-006	17010866-007	17010866-008		
		Client Sample ID :	WCS-008A	WCS-008B	WCS-QC-S1	WCS-010A	WCS-012A	WCS-013A	WCS-014A	WCS-015A	WCS-016A	WCS-017A	WCS-018A	WCS-019A	WCS-015A	
		Date Received :	01/27/2017	01/27/2017	01/27/2017	01/27/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	
Name	CASRN	Chemical	Soil Exposure	Groundwater	Residential	Direct Contact	Excavation	Residential	Soil MTG	SB-49	Duplicate	SB-10	SB-11	SB-13	SB-14	
VOC	Acetone	67-64-1	85000	100000	100000	51	17	51	13	1800	5.01	<0.084	<0.094	<0.086	<0.082	
Benzene	Bromodichloromethane	71-43-2	4.1	4.1	4.1	50	50	50	50	0.43	<0.0063	<0.0063	<0.0058	<0.0055	<0.0055	
Bromoform	Brornomethane	75-27-4	270	860	920	442	442	442	442	<0.0056	<0.0063	<0.0059	<0.0059	<0.0060	<0.0060	
2-Butanone	Carbon disulfide	74-83-9	9.5	30	160	0.38	0.011	0.011	0.011	<0.013	<0.013	<0.012	<0.012	<0.011	<0.012	
Carbon tetrachloride	Chlorobenzene	78-93-3	28000	28000	28000	23	23	23	23	<0.084	<0.094	<0.086	<0.088	<0.091	<0.092	
1,1,2-Dichloroethane	1,1,2-Dichloropropane	75-34-3	50	160	1700	740	48	48	<0.056	<0.063	<0.058	<0.055	<0.060	<0.062		
1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	107-06-2	6.4	20	730	0.28	<0.0056	<0.0063	<0.0063	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156-60-5	220	2300	2400	0.41	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
1,1,2-Dichloropropane	cis-1,3-Dichloropropene	78-87-5	14	44	370	0.33	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
trans-1,3-Dichloropropene	1,1,1,2-Tetrachloroethane	10661-01-5	25	82	1600	0.34	<0.0022	<0.0022	<0.0022	<0.0022	<0.0023	<0.0023	<0.0024	<0.0024	<0.0024	
Ethylbenzene	2-Hexanone	101-41-4	81	250	1000	0.05	<0.0056	<0.0063	<0.0063	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
2-Methyl-2-pentanone	2,2-Dichloroethane	108-10-1	280	1300	3300	0.18	<0.022	<0.022	<0.022	<0.023	<0.023	<0.024	<0.024	<0.022	<0.024	
Methyl chloride	3,3-Dimethylpentane	3400	3400	3400	28	28	<0.022	<0.022	<0.022	<0.023	<0.023	<0.024	<0.024	<0.022	<0.024	
Methyl tert-butyl ether	4-Methyl-2-pentanone	490	3200	3300	0.25	0.011	<0.013	<0.011	<0.011	<0.011	<0.012	<0.012	<0.011	<0.012	<0.012	
Trichloroethylene	1,1,1-Trichloroethane	660	2100	8900	0.63	0.63	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
Silylene	1,1,2,2-Tetrachloroethane	870	870	27	1900	0.059	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
Vinyl chloride	1,1,2,2-Tetrachloroethane	79-34-5	8.4	17	1300	0.14	<0.0022	<0.0022	<0.0022	<0.0022	<0.0023	<0.0023	<0.0024	<0.0024	<0.0024	
Tetrachloroethane	1,2,2,2-Tetrachloroethane	110	170	170	0.45	0.45	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
Toluene	1,2,2,2-Tetrachloroethane	108-88-3	820	820	820	14	<0.0056	<0.0063	<0.0063	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
1,1,1-Trichloroethane	1,1,1,2-Tetrachloroethane	71-55-6	640	750	750	1.4	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79-00-5	2.1	6.3	35	0.32	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79-01-6	5.7	19	95	0.36	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	75-01-4	0.83	17	1300	0.14	<0.0056	<0.0056	<0.0056	<0.0056	<0.0058	<0.0059	<0.0059	<0.0060	<0.0060	
PNA	Aceanaphthalene	1330-20-7	260	260	200	<0.017	<0.017	<0.017	<0.017	<0.019	<0.040	<0.040	<0.040	<0.042	<0.042	
Aceanaphthalene	83-33-9	5000	45000	100000	110	<0.041	<0.041	<0.041	<0.041	<0.041	<0.040	<0.040	<0.041	<0.042	<0.042	
Acetone	208-36-8	22	290	16000	12000	<0.041	<0.041	<0.041	<0.041	0.11	<0.040	<0.040	<0.041	<0.042	<0.042	
Acetone	208-36-8	25000	100000	100000	12000	<0.041	<0.041	<0.041	<0.041	0.11	<0.040	<0.040	<0.041	<0.042	<0.042	
Acetone	208-36-8	56-55-3	2.2	2.9	160	0.85	<0.041	<0.041	<0.041	0.43	0.48	0.48	0.48	0.51	<0.043	<0.042
Benzene	208-36-8	50-32-8	0.22	2.9	160	4.7	<0.041	<0.041	<0.041	0.40	0.40	<0.041	<0.042	0.10	0.10	0.10
Benzobiphenylene	205-59-2	2.2	29	1600	8.2	<0.041	<0.041	<0.041	0.40	0.55	<0.041	<0.042	0.68	0.68	0.80	0.80
Vinyl chloride	191-24-2	110	170	170	80	<0.041	<0.041	<0.041	<0.041	0.43	<0.040	<0.040	<0.042	<0.042	0.80	0.80
Benzocycloheptene	218-08-9	22	290	16000	250	<0.041	<0.041	<0.041	0.12	0.54	<0.040	<0.040	0.86	0.86	0.28	0.28
Chrysene	218-08-9	220	290	16000	250	<0.041	<0.041	<0.041	0.12	0.54	<0.040	<0.040	0.86	0.86	0.28	0.28
Benzocycloheptene	53-70-3	0.22	2.9	160	2.6	<0.041	<0.041	<0.041	0.17	0.40	<0.040	<0.040	0.86	0.86	0.28	0.28
Fluoranthene	206-44-0	3400	30000	680000	1800	<0.041	<0.041	<0.041	0.10	1.0	<0.040	<0.040	0.89	0.89	0.11	0.11
Fluorene	86-73-7	3400	30000	680000	110	<0.041	<0.041	<0.041	0.60	0.90	<0.041	<0.040	0.89	0.89	0.11	0.11
Indeno[1,2,3- <i>d</i>]pyrene	193-59-5	2.2	29	1600	2.7	<0.041	<0.041	<0.041	0.40	0.40	<0.040	<0.040	0.89	0.89	0.11	0.11
2-Methylnaphthalene	91-57-6	340	3000	68000	3.7	<0.21	<0.21	<0.21	0.21	0.21	<0.20	<0.20	0.20	0.20	<0.22	<0.22
Pheanthrene	91-20-3	53	170	31000	8.1	<0.041	<0.041	<0.041	0.12	0.46	<0.040	<0.040	0.46	0.46	<0.14	<0.14
Phenanthrene	85-01-8	2.8	8.3	520	2.7	<0.041	<0.041	<0.041	0.12	0.46	<0.040	<0.040	0.46	0.46	<0.14	<0.14
Acrolein	114-16-2	5.7	51	120	2.7	<0.041	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
Acrolein	114-16-2	3.2	9.5	560	0.24	<0.041	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
Acrolein	124-8	12672-29-6	3.2	9.7	33	0.41	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
Acrolein	124-8	11097-69-1	1.7	9.5	570	1.1	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
Barium	7440-39-3	21000	100000	100000	1700	<0.041	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
Cadmium	7440-43-9	99	980	1900	7.5	<5.4	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
Chromium	7440-47-3	53469-21-9	3.2	9.5	560	0.24	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	2500	23000	51000	260	<0.041	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	129-00-0	400	800	1000	0.16	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	129-00-0	2500	23000	51000	260	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	1104-28-2	2.8	8.3	520	0.016	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	11104-16-1	2.4	7.2	490	0.016	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	11104-16-1	3.2	9.5	560	0.24	<0.041	<0.041	0.11	0.41	<0.040	<0.040	0.41	0.41	<0.14	<0.14
PCB	12674-11-2	11104-16-1	5.7	51	120	2.7	<0.041	<0.041								

Soil Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

Soil Sample Summary											
Client Sample ID:		Laboratory ID:		17010866-010		17010866-011		17010866-012		17010866-013	
WCS-016A		WCS-017A		WCS-018A		WCS-019A		WCS-019B		WCS-020A	
Date Collected:		01/31/2017		01/31/2017		01/31/2017		01/31/2017		01/31/2017	
Name	CASRN	Chemical	Soil Exposure	Direct Contact	Con/Ind	Excavation	Groundwater	Soil MTG	Residential	SB-16	SB-17
			4" bgs	4" bgs	6" bgs	10" bgs	6" bgs	10" bgs	10" bgs	SB-19	SB-20
VOC										WCS-019A	SB-21
Acetone	67-64-1	85000	1000000	1000000	57	<0.079	<0.089	<0.084	<0.084	<0.087	<0.087
Benzene	71-43-2	17	51	1800	0.51	<0.0053	<0.0056	<0.0056	<0.0054	<0.0058	<0.0058
Bromoform	75-25-2	4.1	13	930	0.43	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
Bromonethane	74-83-9	9.5	30	920	0.42	<0.0053	<0.0059	<0.0056	<0.0054	<0.0058	<0.0058
Bromoethane	78-93-3	28000	28000	28000	23	<0.011	<0.012	<0.011	<0.011	<0.013	<0.012
Carbon disulfide	75-15-0	740	740	740	4.8	<0.053	<0.059	<0.056	<0.054	<0.058	<0.058
Carbon tetrachloride	56-23-5	9.1	29	460	0.39	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
Chlorobenzene	108-90-7	390	760	760	1.4	<0.053	<0.059	<0.056	<0.054	<0.058	<0.058
Chloroethane	75-00-3	2100	2100	2100	120	<0.011	<0.012	<0.011	<0.011	<0.012	<0.011
Chloroform	67-66-3	4.5	14	1900	0.44	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
Chloromethane	74-87-3	150	460	1300	0.98	<0.011	<0.012	<0.011	<0.011	<0.013	<0.012
Dibromochloromethane	124-48-1	120	390	800	0.43	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
1,1-Dichloroethane	75-34-3	50	160	1700	0.16	<0.0053	<0.0059	<0.0056	<0.0056	<0.0066	<0.0066
1,2-Dichloroethane	107-06-2	6.4	20	730	0.28	<0.0053	<0.0059	<0.0056	<0.0054	<0.0058	<0.0058
1,1-Dichloroethene	75-55-4	320	1000	1200	0.05	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
cis-1,2-Dichloroethene	156-59-2	220	2300	2400	0.41	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
trans-1,2-Dichloroethene	156-60-5	1900	1900	1900	0.62	<0.0053	<0.0059	<0.0056	<0.0054	<0.0058	<0.0058
1,2-Dichloropropene	78-87-5	14	44	370	0.33	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
cis-1,3-Dichloropropene	10061-01-5	25	82	1600	0.34	<0.0021	<0.0024	<0.0022	<0.0022	<0.0023	<0.0023
trans-1,3-Dichloropropene	10061-02-6	25	82	1600	0.34	<0.0021	<0.0024	<0.0022	<0.0022	<0.0023	<0.0023
Ethyllbenzene	100-41-4	81	250	480	0.16	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
2-Hexanone	591-78-6	280	1300	3300	0.18	<0.021	<0.024	<0.022	<0.022	<0.023	<0.023
cis-1,2-Pentanone	108-10-1	3400	3400	3400	28	<0.021	<0.024	<0.022	<0.022	<0.023	<0.023
Methyl chloride	75-09-2	490	3200	3300	0.25	<0.011	<0.012	<0.011	<0.011	<0.012	<0.011
Methyl tert-butyl ether	1634-04-4	660	2100	8900	0.63	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
Sterane	100-42-5	870	870	870	2.7	<0.0053	<0.0053	<0.0059	<0.0056	<0.0058	<0.0058
1,1,2,2-Tetrachloroethane	127-18-4	110	170	1900	0.059	<0.0053	<0.0059	<0.0056	<0.0054	<0.0058	<0.0058
Tetrachloroethane	108-88-3	820	820	820	14	<0.0053	<0.0059	<0.0059	<0.0054	<0.0058	<0.0058
1,1,1-Trichloroethane	71-55-6	640	640	640	1.1	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
1,1,2-Trichloroethane	79-00-5	2.1	6.3	35	0.36	<0.0053	<0.0059	<0.0056	<0.0054	<0.0058	<0.0058
Trichloroethene	79-01-6	5.7	19	95	0.32	<0.0053	<0.0059	<0.0056	<0.0056	<0.0058	<0.0058
Viny chloride	75-01-4	0.83	17	1300	0.014	<0.0053	<0.0053	<0.0059	<0.0054	<0.0058	<0.0058
PNA	1330-20-7	260	260	200	<0.016	<0.017	<0.017	<0.017	<0.017	<0.020	<0.017
Acenaphthene	83-32-9	5000	45000	100000	110	<0.039	<0.043	<0.042	<0.040	<0.042	<0.042
Acenaphthylene	208-96-8	22	290	16000	80	<0.043	<0.043	<0.043	<0.043	<0.040	<0.040
Anthracene	120-12-7	25000	100000	100000	1200	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
Benz(a)anthracene	53-70-3	2.2	29	160	0.85	<0.043	<0.043	<0.043	<0.043	<0.040	<0.040
Benz(a)pyrene	50-52-8	0.22	2.9	160	4.7	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
Benz(b)fluoranthene	205-99-2	2.2	29	1600	8.2	<0.043	<0.043	<0.043	<0.043	<0.040	<0.040
Benz(g,h,i)perylene	191-24-2	22	290	16000	80	<0.043	<0.043	<0.043	<0.043	<0.040	<0.040
Benz(k)fluoranthene	207-08-9	22	290	16000	250	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
Cyrene	218-01-9	220	290	16000	160	<0.043	<0.043	<0.043	<0.043	<0.040	<0.040
DBzo(a)anthracene	53-70-3	5.7	51	120	2.7	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
Fluoranthene	206-44-0	3400	30000	680000	1800	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
Fluorene	86-73-7	3400	30000	68000	110	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
Indeno(1,2,3-cd)phenene	193-39-5	2.2	29	1600	27	<0.043	<0.043	<0.043	<0.043	<0.042	<0.042
2-Methylnaphthalene	91-51-6	340	3000	6800	3.7	<0.22	<0.20	<0.20	<0.22	<0.21	<0.19
Naphthalene	91-20-5	53	170	3100	11	<0.043	<0.043	<0.043	<0.042	<0.040	<0.040
Phenanthrene	85-01-8	2500	23000	51000	260	<0.043	<0.043	<0.043	<0.042	<0.042	<0.042
Pyrene	129-00-0	5.7	51	120	2.7	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
PCB	Acroder 1016	1267-11-2	8.3	520	0.016	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Acroder 1221	11104-28-2	2.4	490	0.016	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Acroder 1232	11141-16-5	3.2	9.5	560	0.24	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Acroder 1248	12672-29-6	3.2	9.7	33	0.41	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Acroder 1254	11097-69-1	3.4	9.9	570	1.1	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Acroder 1260	11098-82-5	9.5	30	920	59	14	14	12	4.2	2.9	2.4
INORG	Barium	7440-39-3	21000	100000	1700	39	35	21	23	9.3	16
Cadmium	7440-41-3	99	980	1900	1000000	3.9	4.6	5.0	5.8	2.5	3.7
Chromium	7440-47-3	550	5800	9800	1000000	44	660	3.8	3.2	4.9	67
Lead	7439-92-1	400	800	1000	120	2.7	0.028	<0.028	<0.028	0.18	1.7
Mercury	7439-97-6	3.1	3.1	2.1	0.016	<1.1	<1.1	<1.1	<1.1	0.18	2.9
Selenium	7882-49-2	550	5800	9800	16	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Silver	7440-22-4	550	5800	9800	16	<1.2	<1.1	<1.1	<1.1	<1.4	<1.1

Soil Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

Name	CASRN	Chemical	Soil Exposure			Client Sample ID:			Laboratory ID:			
			Residential		Direct Contact	Groundwater		Excavation	WCS-026A		WCS-027A	
			Conflnd	Residntial	ConfInd	SB-24	SB-25	SB-26	SB-27	SB-28	SB-29	SB-31
VOC				85000	100000	6 bgs	4 bgs	4 bgs	6 bgs	4 bgs	4 bgs	4 bgs
Acetone	67-54-1		17	51	1800	0.57	<0.087*	<0.087*	<0.087*	<0.087*	<0.13	
Benzene	71-43-2		4.1	13	930	0.43	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Bromodichloromethane	75-27-4		270	860	920	0.42	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Bromoethane	74-83-9		9.5	30	160	0.038	<0.012	<0.012	<0.012	<0.012	<0.018	
Bromonethane	78-93-3		28000	28000	28000	23	<0.087*	<0.087*	<0.087*	<0.087*	<0.13	
2-Butanone	75-15-0		740	740	740	4.8	<0.058*	<0.058*	<0.058*	<0.058*	<0.088	
Carbon disulfide	56-23-5		9.1	29	460	0.039	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Carbon tetrachloride	108-90-7		390	760	760	1.4	<0.0058	<0.0058	<0.0058	<0.0058	<0.018	
Chlorobenzene	75-00-3		2100	2100	2100	120	<0.012	<0.012	<0.012	<0.012	<0.024	
Chloroform	67-66-3		4.5	14	1900	0.44	<0.0058	<0.0058	<0.0058	<0.0058	<0.018	
Chloromethane	74-87-3		150	460	1300	0.98	<0.012	<0.012	<0.012	<0.012	<0.024	
Dibromochloromethane	124-48-1		120	390	800	0.43	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,1-Dichloroethane	75-54-3		50	160	1700	0.16	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,2-Dichloroethane	107-06-2		6.4	20	730	0.028	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,1-Dichloroethene	75-55-4		320	1000	1200	0.05	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
cis-1,2-Dichloroethene	156-59-2		220	2300	2400	0.41	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
trans-1,2-Dichloroethene	156-60-3		1900	1900	1900	0.62	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,2-Dichloropropane	78-87-5		14	44	370	0.25	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
cis-1,3-Dichloropropene	10061-01-5		25	82	1600	0.034	<0.0023	<0.0023	<0.0023	<0.0023	<0.0055	
trans-1,3-Dichloropropene	10061-02-6		2.5	82	1600	0.034	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Ethylbenzene	81-04-4		81	250	380	16	<0.023	<0.023	<0.023	<0.023	<0.055	
2-Ethaneone	591-78-6		280	1300	3300	0.18	<0.0058	<0.0058	<0.0058	<0.0058	<0.023	
4-Methyl-2-pentanone	108-10-1		3400	3400	3400	28	<0.035	<0.035	<0.035	<0.035	<0.055	
Methylene chloride	75-09-2		490	3200	3300	0.025	<0.012	<0.012	<0.012	<0.012	<0.018	
Methyl tert-butyl ether	1634-04-4		660	2100	8900	0.63	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Styrene	100-42-5		870	870	870	2.2	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,1,2,2-Tetrachloroethane	79-34-5		8.4	27	1900	0.0039	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Tetrahydrofuran	127-18-4		110	170	170	0.045	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Toluene	108-88-3		820	820	820	14	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,1,1-Trichloroethane	71-55-6		640	640	640	1.4	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
1,1,2,2-Tetrachloroethane	79-00-5		2.1	6.3	35	0.032	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Vinyl chloride	75-01-4		0.83	17	1300	0.014	<0.0058	<0.0058	<0.0058	<0.0058	<0.0088	
Xylenes, Total	1330-20-7		260	260	200	<0.017	<0.026	<0.026	<0.026	<0.040	<0.040	<0.040
PNA	85-53-9		5000	45000	100000	110	<0.039	<0.040	<0.040	<0.040	<0.040	<0.040
Aceanthene	208-90-8		22	290	160000	1200	<0.039	<0.040	<0.040	<0.040	<0.040	<0.040
Anthracene	120-12-7		25000	100000	100000	0.85	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Benz(a)anthracene	56-55-3		2.2	29	1600	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Benz(b)fluoranthene	50-32-8		0.22	2.9	1600	4.7	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Benz(e)fluoranthene	205-99-2		2.2	29	1600	8.2	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Benzofluorene	191-24-2		260	260	200	0.014	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Benzofluoranthene	207-08-9		22	290	16000	80	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Chrysene	218-01-9		220	2900	100000	250	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Dibenz(a,h)anthracene	53-70-3		0.22	2.9	160	2.6	<0.039	<0.040	<0.040	<0.040	<0.040	<0.040
Fluoranthene	206-44-0		3400	30000	68000	1800	0.30	<0.040	<0.040	<0.040	<0.040	<0.040
Fluorene	86-73-7		3400	30000	68000	110	<0.039	<0.040	<0.040	<0.040	<0.040	<0.040
Indeno[1,2,3-cd]pyrene	193-39-5		2.2	29	1600	27	<0.039	<0.040	<0.040	<0.040	<0.040	<0.040
2-Methylphenylmethane	91-57-6		340	3000	6800	3.7	<0.20	<0.21	<0.21	<0.20	<0.20	<0.20
Naphthalene	91-20-3		53	170	3100	0.11	<0.039	<0.040	<0.040	<0.040	<0.040	<0.040
Phenanthrene	85-01-8		2500	23000	51000	260	0.29	<0.040	<0.040	<0.040	<0.040	<0.040
PCB	Acclor 1016		129-00-0	129-00-0	51	120	0.23	<0.040	<0.040	<0.040	<0.040	<0.040
Acclor 1221			11104-28-2	2.8	520	0.016	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Acclor 1232			11141-16-5	2.4	72	0.016	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Acclor 1242			53469-21-9	3.2	9.5	560	0.24	<0.10	<0.10	<0.10	<0.10	<0.10
Acclor 1254			11097-69-1	1.7	9.7	33	0.41	<0.10	<0.10	<0.10	<0.10	<0.10
Acclor 1260			11096-82-5	3.4	9.9	570	1.1	<0.10	<0.10	<0.10	<0.10	<0.10
INORG	Arsenic		7440-59-3	21000	100000	17000	5.2					
Barium			7440-43-9	99	980	1900	6.8	<0.54	<0.54	<0.54	<0.54	<0.54
Cadmium			7440-73-5				3.2					
Chromium			7439-92-1	400	800	1000	7.2					
Lead			7439-97-6	3.1	3.1	2.1	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Selenium			7782-49-2	550	5800	5.3	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Silver			7440-22-4	550	5800	5800	16	8.9	8.9	8.9	8.9	8.9

Soil Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

Name	CASRN	Chemical	Soil Exposure		Client Sample ID:		Laboratory ID:	17020034-0116		17020034-0117		17020034-0118		17020063-001		17020063-002		
			Direct Contact		Groundwater		Date Collected:	QA/QC S3	WCS-034A	WCS-034A	WCS-034A	WCS-034A	WCS-034A	WCS-037A	WCS-037A	WCS-037A	WCS-037A	
			Residential	Commercial	Soil Residential	Soil Industrial	Excavation	Residential	SB-34	SB-35	Duplicate	SB-36	SB-37	SB-38	4 bgs	4 bgs	4 bgs	4 bgs
VOC			85000	100000	100000	100000	100000	51	1800	0.051	<0.084	<0.084	<0.084	<0.084	<0.084	<0.084	<0.084	<0.084
Acetone	6744-1		17	13	950	0.43												
Benzene	71-43-2		4.1	30	920	0.42												
Bromodichloromethane	75-27-4		270	860	160	0.038												
Bromoethane	74-83-9		9.5	28000	28000	28000	28000											
2-Buanone	78-93-3																	
Carbon disulfide	75-15-0		740	740	740	4.8												
Carbon tetrachloride	56-23-5		9.1	29	460	0.039												
Chlorobenzene	108-90-7		390	760	760	1.4												
Chloroethane	75-00-3		2100	2100	2100	120												
Chloroform	67-66-3		4.5	14	1900	0.44												
Chloromethane	74-87-3		150	460	1300	0.98												
Dibromochloromethane	124-48-1		120	390	800	0.43												
1,1-Dichloroethane	75-34-3		50	160	1700	0.16												
1,2-Dichloroethane	107-06-2		6.4	20	730	0.028												
1,1-Dichlorethane	75-55-4		320	1000	1200	0.05												
cis-1,2-Dihydrocyclohexene	156-59-2		220	2300	2400	0.41												
trans-1,2-Dihydrocyclohexene	156-60-5		1900	1900	1900	0.62												
1,2-Diheliopropane	78-87-5		14	44	870	0.33												
cis-1,3-Diheliopropane	10061-01-5		25	82	1600	0.034												
trans-1,3-Diheliopropane	10061-02-6		25	82	1600	0.034												
Ethylbenzene	100-41-4		81	230	480	16												
2-Eicosane	591-78-6		280	1300	3300	0.18												
4-Methyl-2-pentanone	108-10-1		3400	3400	3400	0.025												
Methylene chloride	75-09-2		490	3200	3300	0.025												
Methyl tert-butyl ether	1634-04-4		660	2100	8900	0.63												
Styrene	100-42-5		870	870	870	2.2												
1,1,2,2-Tetrachloroethane	79-34-5		8.4	27	1900	0.0059												
Tetrahydrofuran	127-18-4		110	170	170	0.045												
Toluene	108-88-3		820	820	820	0.022												
1,1,1-Trichloroethane	71-55-6		640	640	640	1.4												
1,1,2-Trichloroethane	79-00-5		2.1	6.3	35	0.032												
Trichloroethane	79-01-6		5.7	19	95	0.036												
Vinyl chloride	75-01-4		0.83	17	1300	0.014												
Xylenes, Total	1330-20-7		260	260	260	0.016												
PNA	85-53-9		5000	45000	100000	110												
Acenaphthene	208-96-8																	
Anthracene	120-12-7		25000	100000	100000	1200												
Benz(a)anthracene	56-55-3		2.2	29	1600	0.85												
Benz(o)pyrene	50-32-8		0.22	2.9	160	4.7												
Benz(b)fluoranthene	205-99-2		2.2	29	1600	8.2												
Benz(c)phenanthrene	191-24-2																	
Benzofluoranthene	207-08-9		22	290	16000	80												
Chrysene	218-01-9		220	2900	100000	250												
Dibenz(a,h)anthracene	53-70-3		0.22	2.9	160	6.6												
Fluoranthene	206-44-0		3400	30000	68000	1800												
Fluorene	86-73-7		3400	30000	68000	110												
Indeno[1,2,3-c]dipyrene	193-39-5		2.2	29	1600	27												
2-Methylnaphthalene	91-57-6		340	3000	6800	3.7												
Naphthalene	91-20-3		53	170	3100	0.11												
Phenanthrene	85-01-8																	
Pyrene	129-00-0		2500	23000	51000	2.7												
PCB	Arcocet 1016		5.7	51	120	0.016												
Arcocet 1221	11104-28-2		2.8	8.3	520	0.016												
Arcocet 1332	11141-16-5		2.4	72	490	0.016												
Arcocet 1242	53469-21-9		3.2	9.5	560	0.24												
Arcocet 1248	11097-69-1		1.7	9.7	33	0.41												
Arcocet 1254	11096-82-5		3.4	9.5	30	0.20												
INORG	Arsenic		7440-58-2	9.5	59	10												
Barium	7440-59-3		21000	100000	17000	15												
Cadmium	7440-43-9		99	980	1900	15												
Chromium	7440-77-3																	
Lead	7439-92-1		400	800	1000	0.029												
Mercury	7439-97-6		3.1	3.1	2.1	0.029												
Selenium	7782-49-2		550	5800	5800	2.2												
Silver	7440-22-4		550	5800	5800	16												

Groundwater Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

	Laboratory ID :	1702063-004	17010841-014	1702063-005	17010841-015	17020109-002	17010841-001	17020109-003	17010841-016	17020109-004	17010866-016	17020109-005	17010866-017	17010866-018
	Client Sample ID :	WCG-01	WCG-002	WCG-003	WCG-04	WCG-007	WCG-008	WCG-49	WCG-010	WCG-011	WCG-012A	WCG-013	WCG-014	WCG-015
	Date Collected :	02/02/2017 09:00	01/27/2017 09:23:00	01/27/2017 10:05:00	02/03/2017 11:05:00	02/03/2017 13:40:00	02/03/2017 16:00	01/31/2017 11:45:00	02/02/2017 14:55:00	01/31/2017 01:00:00	01/31/2017 02:00:00	01/31/2017 02:00:00	01/31/2017 02:00:00	01/31/2017 02:00:00
	Chemical	Name	CA/SRN	Units	Tap	Groundwater								
VOC	Acetone	67-64-1	µg/L	14000	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	Dichloroethane	71-43-2	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform	75-25-2	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	74-83-9	µg/L	7.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Butanone	78-93-3	µg/L	5600	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Carbon disulfide	75-15-0	µg/L	810	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon tetrachloride	56-23-5	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene	108-39-7	µg/L	100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloroethane	124-48-1	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	75-00-3	µg/L	21000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	67-66-3	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethane	75-37-3	µg/L	28	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane	107-06-2	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Dichloroethane	75-35-4	µg/L	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	156-59-2	µg/L	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	156-60-5	µg/L	100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	78-87-5	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1,3-Tetrachloropropene	10061-01-5	µg/L	4.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,3-Tetrachloropropane	10061-02-6	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	100-41-4	µg/L	700	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Tetraethylbenzene	591-78-6	µg/L	38	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
4-Methyl-2-pentanone	108-10-1	µg/L	6300	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methylene chloride	75-09-2	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	1064-04-4	µg/L	140	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Sterane	160-42-5	µg/L	100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane	79-34-5	µg/L	0.76	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Xylenes, Total	1330-20-7	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PNA	2-Methylnaphthalene	91-57-6	µg/L	1000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acenaphthene	83-37-9	µg/L	530	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	µg/L	200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	79-01-6	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	75-01-4	µg/L	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl chloride	70-53-8	µg/L	100000	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Benz(a)anthracene	205-99-2	µg/L	0.34	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benz(a)fluoranthene	191-24-2	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(b)fluoranthene	207-08-9	µg/L	3.4	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	218-01-9	µg/L	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diben(a)anthracene	53-70-3	µg/L	0.034	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	206-54-0	µg/L	800	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-75-7	µg/L	290	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Indenol(1,2,3-c)pyrene	193-59-5	µg/L	0.34	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Naphthalene	91-20-3	µg/L	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	12674-11-0	µg/L	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
PCB	Accr1016			0.047	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Accr1221	11104-28-2	µg/L	0.047	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Accr1322	11141-16-5	µg/L	0.078	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Accr1242	53469-21-9	µg/L	0.078	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Accr1248	12672-29-6	µg/L	0.078	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Accr1254	11097-69-1	µg/L	1.5	26	26	26	26	26	26	26	26	26	26	26
Accr1260	11096-82-5	µg/L	0.078	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
INORG	Arsenic			87	40	40	40	40	40	40	40	40	40	40
Barium	7440-39-3	µg/L	5	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
Cadmium	7440-41-3	µg/L	100	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Lead	7439-92-1	µg/L	15	26	26	26	26	26	26	26	26	26	26	26
Mercury	7439-97-6	µg/L	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Selenium	7782-49-2	µg/L	50	46	46	46	46	46	46	46	46	46	46	46
Silver	7440-23-4	µg/L	94	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0

Groundwater Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

	Laboratory ID :	17020109-007	17010866-019	17010866-021	17010866-020	17020034-019	17020109-008	17020063-006	17020063-007	17020034-020	17020034-021	17020034-022	17020034-023
	Client Sample ID :	WCG-016	WCG-017	WCG-018	WCG-019	WCG-020	WCG-021	WCG-22	WCG-23	WCG-24	WCG-25	WCG-27	WCG-32
	Date Collected :	02/03/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017	01/31/2017
	Chemical Name	CASRN	Units	GroundWater									
VOC		67-64-1	µg/L	14000	<20	<20	<20	<20	<20	<20	<20	<20	<20
Acetone	Benzene	71-43-2	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromochloromethane	Bromoform	75-27-4	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform	Bromoform	75-25-2	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	2-Butantone	74-83-9	µg/L	7.5	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	2-Butantone	78-93-3	µg/L	5600	<20	<20	<20	<20	<20	<20	<20	<20	<20
Carbon tetrachloride	Carbon tetrachloride	75-15-0	µg/L	810	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	Carboxylic acid, 56-23-5	108-90-7	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dichloromethane	Dichloromethane	124-48-1	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane	Chloroethane	75-00-3	µg/L	21000	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	Chloroform	67-66-3	µg/L	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloromethane	Chloromethane	75-87-3	µg/L	190	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	1,1-Dichloroethane	75-33-3	µg/L	28	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane	1,2-Dichloroethane	107406-2	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethylene	1,1-Dichloroethylene	75-53-4	µg/L	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethylene	cis-1,2-Dichloroethylene	156-59-2	µg/L	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156-60-5	µg/L	100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	1,2-Dichloropropane	78-87-5	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene	cis-1,3-Dichloropropene	1065-40-5	µg/L	4.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	trans-1,3-Dichloropropene	1061-40-6	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	Ethylbenzene	100-41-4	µg/L	700	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Hexanone	2-Hexanone	591-78-6	µg/L	38	<20	<20	<20	<20	<20	<20	<20	<20	<20
2-Methyl-2-pentanone	2-Methyl-2-pentanone	108-10-1	µg/L	6300	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl chloride	Methyl chloride	75-09-2	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	Methyl tert-butyl ether	1634-04-4	µg/L	140	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Sterane	Sterane	101-12-5	µg/L	100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2,4-Tetrachloroethane	1,1,2,2,4-Tetrachloroethane	79-34-5	µg/L	0.76	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethane	Tetrachloroethane	127-18-4	µg/L	1000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene	Toluene	108-88-3	µg/L	500	<20	<20	<20	<20	<20	<20	<20	<20	<20
1,1,2-Trichloroethane	1,1,2-Trichloroethane	71-55-6	µg/L	200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	Trichloroethene	79-01-6	µg/L	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	Vinyl chloride	75-01-4	µg/L	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Xenobates, Total	Xenobates, Total	133020-7	µg/L	10000	<15	<15	<15	<15	<15	<15	<15	<15	<15
PNA	2-Methylnaphthalene	91-57-6	µg/L	36	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	Acenaphthene	83-33-9	µg/L	520	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	Acenaphthylene	208-26-8	µg/L	1800	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aiphraene	Aiphraene	120-12-7	µg/L	34	<0.10	0.23	0.16	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benz(a)anthracene	Benz(a)anthracene	56-55-3	µg/L	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benz(o)pyrene	Benz(o)pyrene	50-32-8	µg/L	0.2	<0.10	0.18	0.18	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benz(b)fluoranthene	Benz(b)fluoranthene	205-99-2	µg/L	0.34	<0.10	0.24	0.17	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benz(c)fluoranthene	Benz(c)fluoranthene	191-24-2	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	Phenanthrene	207408-9	µg/L	3.4	<0.10	0.18	0.23	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	Chrysene	218-01-9	µg/L	0.27	<0.10	0.10	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diisobutylarlene	Diisobutylarlene	53-70-3	µg/L	0.034	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	Fluoranthene	206-44-0	µg/L	800	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	Fluorene	86-73-7	µg/L	290	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Indeno[1,2-3]diphenylene	Indeno[1,2-3]diphenylene	193-39-5	µg/L	0.34	<0.10	0.10	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Naphthalene	Naphthalene	91-20-3	µg/L	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	Phenanthrene	85-00-8	µg/L	120	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB	PCB	126741-11-2	µg/L	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
PCB	PCB	1104-38-2	µg/L	0.047	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
PCB	PCB	1141-16-5	µg/L	0.047	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
PCB	PCB	5346-21-9	µg/L	0.078	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
PCB	PCB	11097-69-1	µg/L	15	3.5	0.078	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
INORG	INORG	7440-38-2	µg/L	10	0.078	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Barium	Barium	7440-39-3	µg/L	2000	110	680	790	370	530	78	15	8.9	
Cadmium	Cadmium	7440-43-9	µg/L	5	<2.0	45	14	<5.0	<3.3	<2.0	<2.0	<2.0	
Chromium	Chromium	7440-47-3	µg/L	100	<4.0	360	410	350	71	<8.0	<8.0	<8.0	
Lead	Lead	7439-22-1	µg/L	15	3.5	16000	8200	220	290	20	24	24	
Mercury	Mercury	7439-97-6	µg/L	2	0.20	2.2	0.42	0.21	0.23	<0.20	<0.20	<0.20	
Selenium	Selenium	7782-49-2	µg/L	50	5.7	<17	<17	<10	7.5	<4.0	<4.0	<4.0	
Silver	Silver	7440-22-4	µg/L	94	<4.0	89	<17	<17	<10	<6.7	<4.0	<4.0	

Amreco Engineering
54 Michigan Avenue
Valparaiso, IN 46383

Groundwater Sample Summary
West Calumet Housing Complex
East Chicago, IN 46312

	Laboratory ID :	17020034-024	17020109-010	17020109-011	17020063-008	17020063-009	17020063-010
	Client Sample ID :	WCG-033	WCG-034	WCG-035	WCG-036	WCG-037	WCG-038
	Date Collected :	02/01/2017 13:35:00	02/03/2017 13:45:00	02/03/2017 13:05:00	02/01/2017 16:00:00	02/02/2017 16:00:00	02/01/2017 16:17:00
	Chemical Name	CASRN	Units	Groundwater Tap			
VOC	Acetone	67-64-1	µg/L	14000	<20	<20	
Benzene		71-43-2	µg/L	5	<5.0	<5.0	
Bromodichloromethane		75-27-4	µg/L	80	<5.0	<5.0	
Bromoform		75-25-2	µg/L	80	<5.0	<5.0	
Bromomethane		74-83-9	µg/L	7.5	<10	<10	
2-Butanone		78-93-3	µg/L	5600	<20	<20	
Carbon disulfide		75-15-0	µg/L	810	<10	<10	
Carbon tetrachloride		56-23-5	µg/L	5	<5.0	<5.0	
Chlorobenzene		108-90-7	µg/L	100	<5.0	<5.0	
Dibromoacetaldehyde		124-48-1	µg/L	80	<5.0	<5.0	
Chloroethane		75-00-3	µg/L	21000	<10	<10	
Chloroform		67-66-3	µg/L	80	<5.0	<5.0	
Chloromethane		74-87-3	µg/L	190	<10	<10	
1,1-Dichloroethane		75-34-3	µg/L	28	<5.0	<5.0	
1,2-Dichloroethane		107-06-2	µg/L	5	<5.0	<5.0	
1,1,1-Dichloroethene		75-55-4	µg/L	7	<5.0	<5.0	
cis-1,2-Dichloroethene		156-59-2	µg/L	70	<5.0	<5.0	
trans-1,2-Dichloroethene		156-0-5	µg/L	100	<5.0	<5.0	
1,2-Dichloropropane		78-87-5	µg/L	5	<5.0	<5.0	
cis-1,3-Dichloropropene		10061-01-5	µg/L	4.7	<1.0	<1.0	
trans-1,3-Dichloropropene		10061-02-6	µg/L	4.7	<1.0	<1.0	
Ethylbenzene		100-41-4	µg/L	700	<5.0	<5.0	
Tetrachloroethane		591-78-6	µg/L	38	<20	<20	
2-Hexanone		108-10-1	µg/L	6300	<20	<20	
4-Methyl-1-pentanone		108-0-1	µg/L	5	<5.0	<5.0	
Methylene chloride		75-09-2	µg/L	140	<5.0	<5.0	
Methyl tert-butyl ether		103-04-4	µg/L	100	<5.0	<5.0	
Styrene		100-42-5	µg/L	0.76	<5.0	<5.0	
1,1,2,2-Tetrachloroethane		79-34-5	µg/L	5	<5.0	<5.0	
Toluene		108-88-3	µg/L	1000	<5.0	<5.0	
1,1,1-Trichloroethane		71-53-6	µg/L	200	<5.0	<5.0	
1,1,2-Trichloroethane		79-00-5	µg/L	5	<5.0	<5.0	
Trichloroethene		79-01-6	µg/L	5	<5.0	<5.0	
Vinyl chloride		75-01-4	µg/L	2	<2.0	<2.0	
Xylenes, Total		133-20-7	µg/L	10000	<15	<15	
PNA	2-Methylnaphthalene	91-51-6	µg/L	36	<1.0	<1.0	<1.0
	Acenaphthene	83-32-9	µg/L	530	<1.0	<1.0	<1.0
	Acenaphthylene	208-36-8	µg/L	<1.0	<1.0	<1.0	<1.0
	Anthracene	120-12-7	µg/L	1800	<1.0	<1.0	<1.0
	Benz(a)anthracene	56-53-3	µg/L	0.12	<0.10	<0.10	<0.10
	Benz(e)pyrene	50-32-8	µg/L	0.2	<0.10	<0.10	<0.10
	Benz(o)biphenyl	205-59-2	µg/L	0.34	<0.10	<0.10	<0.10
	Benz(o,p)-diphenyl	191-24-2	µg/L	<1.0	<1.0	<1.0	<1.0
	Benz(p)fluoranthene	207-70-9	µg/L	3.4	<0.10	<0.10	<0.10
	Chrysene	218-01-9	µg/L	34	<0.10	<0.10	<0.10
	Dibenz(a,h)anthracene	53-70-3	µg/L	0.034	<0.10	<0.10	<0.10
	Fluoranthene	206-44-0	µg/L	800	<1.0	<1.0	<1.0
	Fluorene	86-73-7	µg/L	290	<1.0	<1.0	<1.0
	Indeno[1,2,3-ij]perylene	193-39-5	µg/L	0.34	<0.10	<0.10	<0.10
	Naphthalene	91-20-3	µg/L	1.7	<1.0	<1.0	<1.0
	Phenanthrene	85-01-8	µg/L	<1.0	<1.0	<1.0	<1.0
	Pyrene	129-00-0	µg/L	120	<1.0	<1.0	<1.0
PCB	Accidol 1016	12674-11-2	µg/L	1.4	<0.50	<0.50	<0.50
	Accidol 1221	11104-28-2	µg/L	0.047	<0.50	<0.50	<0.50
	Accidol 1232	11141-16-5	µg/L	0.047	<0.50	<0.50	<0.50
	Accidol 1242	53469-21-9	µg/L	0.078	<0.50	<0.50	<0.50
	Accidol 1254	11097-69-1	µg/L	0.078	<0.50	<0.50	<0.50
	Accidol 1260	11095-63-5	µg/L	0.078	<0.50	<0.50	<0.50
INORG	Arsenic	740-38-2	µg/L	10	<4.0	80	88
	Barium	7440-39-3	µg/L	2000	15	45	470
	Cadmium	7440-43-9	µg/L	5	<2.0	<5.0	<5.0
	Chromium	7440-47-3	µg/L	100	<4.0	150	200
	Lead	7439-92-1	µg/L	15	4.9	2.5	530
	Manganese	7439-97-6	µg/L	2	<0.20	<0.20	0.43
	Selenium	7782-49-2	µg/L	50	<4.0	6.8	27
	Silver	7440-23-4	µg/L	94	<4.0	<4.0	<10

STAT Analysis Corporation

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February 07, 2017

Amereco Inc.
204 E. Jefferson
Valparaiso, IN 46383
Telephone: (219) 531-0531
Fax: (219) 464-0464

Analytical Report for STAT Work Order: 17020063 Revision 0

RE: 16.1151.2, W. Calumet Housing Complex, East Chicago, IN

Dear Steven Travis:

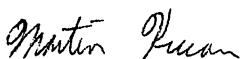
STAT Analysis received 10 samples for the referenced project on 2/2/2017 5:15:00 PM. The analytical results are presented in the following report.

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

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

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

Sincerely,



Martin Kucan
Project Manager

The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.

Client: Amereco Inc.
Project: 16.1151.2, W. Calumet Housing Complex, East Chicag **Work Order Sample Summary**
Work Order: 17020063 Revision 0

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
17020063-001A	WCS-036A		2/1/2017 2:45:00 PM	2/2/2017
17020063-001B	WCS-036A		2/1/2017 2:45:00 PM	2/2/2017
17020063-002A	WCS-037A		2/1/2017 3:13:00 PM	2/2/2017
17020063-002B	WCS-037A		2/1/2017 3:13:00 PM	2/2/2017
17020063-003A	WCS-038A		2/1/2017 3:23:00 PM	2/2/2017
17020063-003B	WCS-038A		2/1/2017 3:23:00 PM	2/2/2017
17020063-004A	WCG-01		2/2/2017 9:20:00 AM	2/2/2017
17020063-004B	WCG-01		2/2/2017 9:20:00 AM	2/2/2017
17020063-004C	WCG-01		2/2/2017 9:20:00 AM	2/2/2017
17020063-005A	WCG-04		2/2/2017 10:45:00 AM	2/2/2017
17020063-005B	WCG-04		2/2/2017 10:45:00 AM	2/2/2017
17020063-006A	WCG-22		2/2/2017 1:20:00 PM	2/2/2017
17020063-006B	WCG-22		2/2/2017 1:20:00 PM	2/2/2017
17020063-006C	WCG-22		2/2/2017 1:20:00 PM	2/2/2017
17020063-007A	WCG-23		2/2/2017 12:10:00 PM	2/2/2017
17020063-007B	WCG-23		2/2/2017 12:10:00 PM	2/2/2017
17020063-007C	WCG-23		2/2/2017 12:10:00 PM	2/2/2017
17020063-008A	WCG-036		2/1/2017 4:00:00 PM	2/2/2017
17020063-008B	WCG-036		2/1/2017 4:00:00 PM	2/2/2017
17020063-009A	WCG-037		2/1/2017 4:00:00 PM	2/2/2017
17020063-009B	WCG-037		2/1/2017 4:00:00 PM	2/2/2017
17020063-010A	WCG-038		2/1/2017 4:17:00 PM	2/2/2017
17020063-010B	WCG-038		2/1/2017 4:17:00 PM	2/2/2017

CLIENT: Amereco Inc.**Project:** 16.1151.2, W. Calumet Housing Complex, East Chicago, IN**Work Order:** 17020063 Revision 0

CASE NARRATIVE

Please refer to Analytical QC Summary Report for QC outliers.

STAT Analysis Corporation

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Accreditations:IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID: WCS-036A				
Work Order:	17020063 Revision 0	Collection Date: 2/1/2017 2:45:00 PM				
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix: Soil				
Lab ID:	17020063-001					
Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	SW8270C (SW3550B)			Prep Date: 2/6/2017		Analyst: DM
Acenaphthene	ND	0.039		mg/Kg-dry	1	2/7/2017
Acenaphthylene	ND	0.039		mg/Kg-dry	1	2/7/2017
Anthracene	ND	0.039		mg/Kg-dry	1	2/7/2017
Benz(a)anthracene	ND	0.039		mg/Kg-dry	1	2/7/2017
Benzo(a)pyrene	ND	0.039		mg/Kg-dry	1	2/7/2017
Benzo(b)fluoranthene	ND	0.039		mg/Kg-dry	1	2/7/2017
Benzo(g,h,i)perylene	ND	0.039		mg/Kg-dry	1	2/7/2017
Benzo(k)fluoranthene	ND	0.039		mg/Kg-dry	1	2/7/2017
Chrysene	ND	0.039		mg/Kg-dry	1	2/7/2017
Dibenz(a,h)anthracene	ND	0.039		mg/Kg-dry	1	2/7/2017
Fluoranthene	ND	0.039		mg/Kg-dry	1	2/7/2017
Fluorene	ND	0.039		mg/Kg-dry	1	2/7/2017
Indeno(1,2,3-cd)pyrene	ND	0.039		mg/Kg-dry	1	2/7/2017
2-Methylnaphthalene	ND	0.20		mg/Kg-dry	1	2/7/2017
Naphthalene	ND	0.039		mg/Kg-dry	1	2/7/2017
Phenanthrene	ND	0.039		mg/Kg-dry	1	2/7/2017
Pyrene	ND	0.039		mg/Kg-dry	1	2/7/2017
PCBs	SW8082 (SW3550B)			Prep Date: 2/3/2017		Analyst: GVC
Aroclor 1016	ND	0.096		mg/Kg-dry	1	2/3/2017
Aroclor 1221	ND	0.096		mg/Kg-dry	1	2/3/2017
Aroclor 1232	ND	0.096		mg/Kg-dry	1	2/3/2017
Aroclor 1242	ND	0.096		mg/Kg-dry	1	2/3/2017
Aroclor 1248	ND	0.096		mg/Kg-dry	1	2/3/2017
Aroclor 1254	ND	0.096		mg/Kg-dry	1	2/3/2017
Aroclor 1260	ND	0.096		mg/Kg-dry	1	2/3/2017
Metals by ICP/MS	SW6020 (SW3050B)			Prep Date: 2/7/2017		Analyst: JG
Arsenic	5.4	1.0		mg/Kg-dry	10	2/7/2017
Barium	23	1.0		mg/Kg-dry	10	2/7/2017
Cadmium	ND	0.52		mg/Kg-dry	10	2/7/2017
Chromium	3.7	1.0		mg/Kg-dry	10	2/7/2017
Lead	28	0.52		mg/Kg-dry	10	2/7/2017
Selenium	ND	1.0		mg/Kg-dry	10	2/7/2017
Silver	ND	1.0		mg/Kg-dry	10	2/7/2017
Mercury	SW7471A			Prep Date: 2/6/2017		Analyst: LB
Mercury	ND	0.024		mg/Kg-dry	1	2/6/2017

ND - Not Detected at the Reporting Limit

RL - Reporting / Quantitation Limit for the analysis

Qualifiers: J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

HT - Sample received past holding time

E - Value above quantitation range

* - Non-accredited parameter

H - Holding time exceeded

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: February 07, 2017**Date Printed:** February 07, 2017**ANALYTICAL RESULTS**

Client:	Amereco Inc.	Client Sample ID:	WCS-036A
Work Order:	17020063 Revision 0	Collection Date:	2/1/2017 2:45:00 PM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Soil
Lab ID:	17020063-001		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Percent Moisture Percent Moisture	D2974 16.9	0.2	*	wt%	1	Prep Date: 2/5/2017 Analyst: RW 2/6/2017

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

RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
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Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID:	WCS-037A		
Work Order:	17020063 Revision 0	Collection Date:	2/1/2017 3:13:00 PM		
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Soil		
Lab ID:	17020063-002				
Analyses	Result	RL Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS	SW8270C (SW3550B)			Prep Date: 2/6/2017	Analyst: DM
Acenaphthene	ND	0.041	mg/Kg-dry	1	2/7/2017
Acenaphthylene	ND	0.041	mg/Kg-dry	1	2/7/2017
Anthracene	ND	0.041	mg/Kg-dry	1	2/7/2017
Benz(a)anthracene	ND	0.041	mg/Kg-dry	1	2/7/2017
Benzo(a)pyrene	ND	0.041	mg/Kg-dry	1	2/7/2017
Benzo(b)fluoranthene	ND	0.041	mg/Kg-dry	1	2/7/2017
Benzo(g,h,i)perylene	ND	0.041	mg/Kg-dry	1	2/7/2017
Benzo(k)fluoranthene	ND	0.041	mg/Kg-dry	1	2/7/2017
Chrysene	ND	0.041	mg/Kg-dry	1	2/7/2017
Dibenz(a,h)anthracene	ND	0.041	mg/Kg-dry	1	2/7/2017
Fluoranthene	ND	0.041	mg/Kg-dry	1	2/7/2017
Fluorene	ND	0.041	mg/Kg-dry	1	2/7/2017
Indeno(1,2,3-cd)pyrene	ND	0.041	mg/Kg-dry	1	2/7/2017
2-Methylnaphthalene	ND	0.21	mg/Kg-dry	1	2/7/2017
Naphthalene	ND	0.041	mg/Kg-dry	1	2/7/2017
Phenanthrene	ND	0.041	mg/Kg-dry	1	2/7/2017
Pyrene	ND	0.041	mg/Kg-dry	1	2/7/2017
PCBs	SW8082 (SW3550B)			Prep Date: 2/3/2017	Analyst: GVC
Aroclor 1016	ND	0.098	mg/Kg-dry	1	2/3/2017
Aroclor 1221	ND	0.098	mg/Kg-dry	1	2/3/2017
Aroclor 1232	ND	0.098	mg/Kg-dry	1	2/3/2017
Aroclor 1242	ND	0.098	mg/Kg-dry	1	2/3/2017
Aroclor 1248	ND	0.098	mg/Kg-dry	1	2/3/2017
Aroclor 1254	ND	0.098	mg/Kg-dry	1	2/3/2017
Aroclor 1260	ND	0.098	mg/Kg-dry	1	2/3/2017
Metals by ICP/MS	SW6020 (SW3050B)			Prep Date: 2/7/2017	Analyst: JG
Arsenic	2.4	1.1	mg/Kg-dry	10	2/7/2017
Barium	7.9	1.1	mg/Kg-dry	10	2/7/2017
Cadmium	ND	0.55	mg/Kg-dry	10	2/7/2017
Chromium	5.1	1.1	mg/Kg-dry	10	2/7/2017
Lead	5.6	0.55	mg/Kg-dry	10	2/7/2017
Selenium	ND	1.1	mg/Kg-dry	10	2/7/2017
Silver	ND	1.1	mg/Kg-dry	10	2/7/2017
Mercury	SW7471A			Prep Date: 2/6/2017	Analyst: LB
Mercury	ND	0.022	mg/Kg-dry	1	2/6/2017

ND - Not Detected at the Reporting Limit

RL - Reporting / Quantitation Limit for the analysis

Qualifiers: J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

HT - Sample received past holding time

E - Value above quantitation range

* - Non-accredited parameter

H - Holding time exceeded

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Date Reported: February 07, 2017**Date Printed:** February 07, 2017**ANALYTICAL RESULTS**

Client: Amereco Inc. **Client Sample ID:** WCS-037A
Work Order: 17020063 Revision 0 **Collection Date:** 2/1/2017 3:13:00 PM
Project: 16.1151.2, W. Calumet Housing Complex, East Chi **Matrix:** Soil
Lab ID: 17020063-002

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Percent Moisture	D2974					Prep Date: 2/5/2017
Percent Moisture	19.4	0.2	*	wt%	1	Analyst: RW 2/6/2017

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

RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID:	WCS-038A
Work Order:	17020063 Revision 0	Collection Date:	2/1/2017 3:23:00 PM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Soil
Lab ID:	17020063-003		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS						
Acenaphthene	ND	0.040		mg/Kg-dry	1	2/7/2017
Acenaphthylene	ND	0.040		mg/Kg-dry	1	2/7/2017
Anthracene	ND	0.040		mg/Kg-dry	1	2/7/2017
Benz(a)anthracene	ND	0.040		mg/Kg-dry	1	2/7/2017
Benzo(a)pyrene	ND	0.040		mg/Kg-dry	1	2/7/2017
Benzo(b)fluoranthene	ND	0.040		mg/Kg-dry	1	2/7/2017
Benzo(g,h,i)perylene	ND	0.040		mg/Kg-dry	1	2/7/2017
Benzo(k)fluoranthene	ND	0.040		mg/Kg-dry	1	2/7/2017
Chrysene	ND	0.040		mg/Kg-dry	1	2/7/2017
Dibenz(a,h)anthracene	ND	0.040		mg/Kg-dry	1	2/7/2017
Fluoranthene	ND	0.040		mg/Kg-dry	1	2/7/2017
Fluorene	ND	0.040		mg/Kg-dry	1	2/7/2017
Indeno(1,2,3-cd)pyrene	ND	0.040		mg/Kg-dry	1	2/7/2017
2-Methylnaphthalene	ND	0.21		mg/Kg-dry	1	2/7/2017
Naphthalene	ND	0.040		mg/Kg-dry	1	2/7/2017
Phenanthrene	ND	0.040		mg/Kg-dry	1	2/7/2017
Pyrene	ND	0.040		mg/Kg-dry	1	2/7/2017
PCBs						
Aroclor 1016	ND	0.097		mg/Kg-dry	1	2/3/2017
Aroclor 1221	ND	0.097		mg/Kg-dry	1	2/3/2017
Aroclor 1232	ND	0.097		mg/Kg-dry	1	2/3/2017
Aroclor 1242	ND	0.097		mg/Kg-dry	1	2/3/2017
Aroclor 1248	ND	0.097		mg/Kg-dry	1	2/3/2017
Aroclor 1254	ND	0.097		mg/Kg-dry	1	2/3/2017
Aroclor 1260	ND	0.097		mg/Kg-dry	1	2/3/2017
Metals by ICP/MS						
Arsenic	2.7	1.1		mg/Kg-dry	10	2/7/2017
Barium	28	1.1		mg/Kg-dry	10	2/7/2017
Cadmium	ND	0.53		mg/Kg-dry	10	2/7/2017
Chromium	3.7	1.1		mg/Kg-dry	10	2/7/2017
Lead	560	0.53		mg/Kg-dry	10	2/7/2017
Selenium	ND	1.1		mg/Kg-dry	10	2/7/2017
Silver	ND	1.1		mg/Kg-dry	10	2/7/2017
Mercury						
Mercury	SW7471A			Prep Date:	2/6/2017	Analyst: LB
	ND	0.022		mg/Kg-dry	1	2/6/2017

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

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: February 07, 2017**Date Printed:** February 07, 2017**ANALYTICAL RESULTS**

Client:	Amereco Inc.	Client Sample ID:	WCS-038A
Work Order:	17020063 Revision 0	Collection Date:	2/1/2017 3:23:00 PM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Soil
Lab ID:	17020063-003		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Percent Moisture Percent Moisture	D2974 18.4	0.2	*	wt%	1	Prep Date: 2/5/2017 Analyst: RW 2/6/2017

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

RL - Reporting / Quantitation Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID:	WCG-01
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 9:20:00 AM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-004		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS						
Acetone	ND	0.020		mg/L	1	2/6/2017
Benzene	ND	0.0050		mg/L	1	2/6/2017
Bromodichloromethane	ND	0.0050		mg/L	1	2/6/2017
Bromoform	ND	0.0050		mg/L	1	2/6/2017
Bromomethane	ND	0.010		mg/L	1	2/6/2017
2-Butanone	ND	0.020		mg/L	1	2/6/2017
Carbon disulfide	ND	0.010		mg/L	1	2/6/2017
Carbon tetrachloride	ND	0.0050		mg/L	1	2/6/2017
Chlorobenzene	ND	0.0050		mg/L	1	2/6/2017
Chloroethane	ND	0.010		mg/L	1	2/6/2017
Chloroform	ND	0.0050		mg/L	1	2/6/2017
Chloromethane	ND	0.010		mg/L	1	2/6/2017
Dibromochloromethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
cis-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
trans-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloropropane	ND	0.0050		mg/L	1	2/6/2017
cis-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
trans-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
Ethylbenzene	ND	0.0050		mg/L	1	2/6/2017
2-Hexanone	ND	0.020		mg/L	1	2/6/2017
4-Methyl-2-pentanone	ND	0.020		mg/L	1	2/6/2017
Methylene chloride	ND	0.0050		mg/L	1	2/6/2017
Methyl tert-butyl ether	ND	0.0050		mg/L	1	2/6/2017
Styrene	ND	0.0050		mg/L	1	2/6/2017
1,1,2,2-Tetrachloroethane	ND	0.0050		mg/L	1	2/6/2017
Tetrachloroethene	ND	0.0050		mg/L	1	2/6/2017
Toluene	ND	0.0050		mg/L	1	2/6/2017
1,1,1-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1,2-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
Trichloroethene	ND	0.0050		mg/L	1	2/6/2017
Vinyl chloride	ND	0.0020		mg/L	1	2/6/2017
Xylenes, Total	ND	0.015		mg/L	1	2/6/2017
Semivolatile Organic Compounds by GC/MS						
Acenaphthene	ND	0.0010		mg/L	1	2/7/2017
Acenaphthylene	ND	0.0010		mg/L	1	2/7/2017

Qualifiers: ND - Not Detected at the Reporting Limit

RL - Reporting / Quantitation Limit for the analysis

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

HT - Sample received past holding time

E - Value above quantitation range

* - Non-accredited parameter

H - Holding time exceeded

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Accreditations:IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: February 07, 2017

Date Printed: February 07, 2017

ANALYTICAL RESULTS

Client:	Amereco Inc.	Client Sample ID:	WCG-01
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 9:20:00 AM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-004		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS						
Anthracene	ND	0.0010		mg/L	1	2/7/2017
Benz(a)anthracene	ND	0.00010		mg/L	1	2/7/2017
Benzo(a)pyrene	ND	0.00010		mg/L	1	2/7/2017
Benzo(b)fluoranthene	ND	0.00010		mg/L	1	2/7/2017
Benzo(g,h,i)perylene	ND	0.0010		mg/L	1	2/7/2017
Benzo(k)fluoranthene	ND	0.00010		mg/L	1	2/7/2017
Chrysene	ND	0.00010		mg/L	1	2/7/2017
Dibenz(a,h)anthracene	ND	0.00010		mg/L	1	2/7/2017
Fluoranthene	ND	0.0010		mg/L	1	2/7/2017
Fluorene	ND	0.0010		mg/L	1	2/7/2017
Indeno(1,2,3-cd)pyrene	ND	0.00010		mg/L	1	2/7/2017
2-Methylnaphthalene	ND	0.0010		mg/L	1	2/7/2017
Naphthalene	ND	0.0010		mg/L	1	2/7/2017
Phenanthrene	ND	0.0010		mg/L	1	2/7/2017
Pyrene	ND	0.0010		mg/L	1	2/7/2017
PCBs						
			SW8082 (SW3510C)		Prep Date:	2/3/2017
Aroclor 1016	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1221	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1232	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1242	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1248	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1254	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1260	ND	0.00050		mg/L	1	2/3/2017
Metals by ICP/MS						
			SW6020 (SW3005A)		Prep Date:	2/7/2017
Arsenic	0.087	0.0040		mg/L	2	2/7/2017
Barium	0.040	0.0040		mg/L	2	2/7/2017
Cadmium	0.0098	0.0020		mg/L	2	2/7/2017
Chromium	ND	0.0080		mg/L	2	2/7/2017
Lead	0.026	0.0020		mg/L	2	2/7/2017
Selenium	0.046	0.0040		mg/L	2	2/7/2017
Silver	ND	0.0040		mg/L	2	2/7/2017
Mercury						
			SW7470A		Prep Date:	2/3/2017
Mercury	ND	0.00020		mg/L	1	2/3/2017

Qualifiers:	ND - Not Detected at the Reporting Limit J - Analyte detected below quantitation limits B - Analyte detected in the associated Method Blank HT - Sample received past holding time * - Non-accredited parameter	RL - Reporting / Quantitation Limit for the analysis S - Spike Recovery outside accepted recovery limits R - RPD outside accepted recovery limits E - Value above quantitation range H - Holding time exceeded
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Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID:	WCG-04
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 10:45:00 AM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-005		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS	SW8260B (SW5030B)			Prep Date:		Analyst: JNM
Acetone	ND	0.020		mg/L	1	2/6/2017
Benzene	ND	0.0050		mg/L	1	2/6/2017
Bromodichloromethane	ND	0.0050		mg/L	1	2/6/2017
Bromoform	ND	0.0050		mg/L	1	2/6/2017
Bromomethane	ND	0.010		mg/L	1	2/6/2017
2-Butanone	ND	0.020		mg/L	1	2/6/2017
Carbon disulfide	ND	0.010		mg/L	1	2/6/2017
Carbon tetrachloride	ND	0.0050		mg/L	1	2/6/2017
Chlorobenzene	ND	0.0050		mg/L	1	2/6/2017
Chloroethane	ND	0.010		mg/L	1	2/6/2017
Chloroform	ND	0.0050		mg/L	1	2/6/2017
Chloromethane	ND	0.010		mg/L	1	2/6/2017
Dibromochloromethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
cis-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
trans-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloropropane	ND	0.0050		mg/L	1	2/6/2017
cis-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
trans-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
Ethylbenzene	ND	0.0050		mg/L	1	2/6/2017
2-Hexanone	ND	0.020		mg/L	1	2/6/2017
4-Methyl-2-pentanone	ND	0.020		mg/L	1	2/6/2017
Methylene chloride	ND	0.0050		mg/L	1	2/6/2017
Methyl tert-butyl ether	ND	0.0050		mg/L	1	2/6/2017
Styrene	ND	0.0050		mg/L	1	2/6/2017
1,1,2,2-Tetrachloroethane	ND	0.0050		mg/L	1	2/6/2017
Tetrachloroethene	ND	0.0050		mg/L	1	2/6/2017
Toluene	ND	0.0050		mg/L	1	2/6/2017
1,1,1-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1,2-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
Trichloroethene	ND	0.0050		mg/L	1	2/6/2017
Vinyl chloride	ND	0.0020		mg/L	1	2/6/2017
Xylenes, Total	ND	0.015		mg/L	1	2/6/2017
Semivolatile Organic Compounds by GC/MS	SW8270C-SIM (SW3510C)			Prep Date:	2/2/2017	Analyst: DM
Acenaphthene	ND	0.0010		mg/L	1	2/7/2017
Acenaphthylene	ND	0.0010		mg/L	1	2/7/2017

Qualifiers: ND - Not Detected at the Reporting Limit

RL - Reporting / Quantitation Limit for the analysis

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

HT - Sample received past holding time

E - Value above quantitation range

* - Non-accredited parameter

H - Holding time exceeded

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Date Reported: February 07, 2017

Date Printed: February 07, 2017

ANALYTICAL RESULTS

Client:	Amereco Inc.	Client Sample ID:	WCG-04
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 10:45:00 AM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-005		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS						
Anthracene	ND	0.0010		mg/L	1	2/7/2017
Benz(a)anthracene	ND	0.00010		mg/L	1	2/7/2017
Benzo(a)pyrene	ND	0.00010		mg/L	1	2/7/2017
Benzo(b)fluoranthene	ND	0.00010		mg/L	1	2/7/2017
Benzo(g,h,i)perylene	ND	0.0010		mg/L	1	2/7/2017
Benzo(k)fluoranthene	ND	0.00010		mg/L	1	2/7/2017
Chrysene	ND	0.00010		mg/L	1	2/7/2017
Dibenz(a,h)anthracene	ND	0.00010		mg/L	1	2/7/2017
Fluoranthene	ND	0.0010		mg/L	1	2/7/2017
Fluorene	ND	0.0010		mg/L	1	2/7/2017
Indeno(1,2,3-cd)pyrene	ND	0.00010		mg/L	1	2/7/2017
2-Methylnaphthalene	ND	0.0010		mg/L	1	2/7/2017
Naphthalene	ND	0.0010		mg/L	1	2/7/2017
Phenanthrene	ND	0.0010		mg/L	1	2/7/2017
Pyrene	ND	0.0010		mg/L	1	2/7/2017
PCBs						
Aroclor 1016	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1221	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1232	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1242	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1248	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1254	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1260	ND	0.00050		mg/L	1	2/3/2017

ND - Not Detected at the Reporting Limit

Qualifiers:
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter

RL - Reporting / Quantitation Limit for the analysis

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID:	WCG-22
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 1:20:00 PM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-006		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS						
Acetone	ND	0.020		mg/L	1	2/6/2017
Benzene	ND	0.0050		mg/L	1	2/6/2017
Bromodichloromethane	ND	0.0050		mg/L	1	2/6/2017
Bromoform	ND	0.0050		mg/L	1	2/6/2017
Bromomethane	ND	0.010		mg/L	1	2/6/2017
2-Butanone	ND	0.020		mg/L	1	2/6/2017
Carbon disulfide	ND	0.010		mg/L	1	2/6/2017
Carbon tetrachloride	ND	0.0050		mg/L	1	2/6/2017
Chlorobenzene	ND	0.0050		mg/L	1	2/6/2017
Chloroethane	ND	0.010		mg/L	1	2/6/2017
Chloroform	ND	0.0050		mg/L	1	2/6/2017
Chloromethane	ND	0.010		mg/L	1	2/6/2017
Dibromochloromethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
cis-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
trans-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloropropane	ND	0.0050		mg/L	1	2/6/2017
cis-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
trans-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
Ethylbenzene	ND	0.0050		mg/L	1	2/6/2017
2-Hexanone	ND	0.020		mg/L	1	2/6/2017
4-Methyl-2-pentanone	ND	0.020		mg/L	1	2/6/2017
Methylene chloride	ND	0.0050		mg/L	1	2/6/2017
Methyl tert-butyl ether	ND	0.0050		mg/L	1	2/6/2017
Styrene	ND	0.0050		mg/L	1	2/6/2017
1,1,2,2-Tetrachloroethane	ND	0.0050		mg/L	1	2/6/2017
Tetrachloroethene	ND	0.0050		mg/L	1	2/6/2017
Toluene	ND	0.0050		mg/L	1	2/6/2017
1,1,1-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1,2-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
Trichloroethene	ND	0.0050		mg/L	1	2/6/2017
Vinyl chloride	ND	0.0020		mg/L	1	2/6/2017
Xylenes, Total	ND	0.015		mg/L	1	2/6/2017
Semivolatile Organic Compounds by GC/MS						
Acenaphthene	ND	0.0010		mg/L	1	2/7/2017
Acenaphthylene	ND	0.0010		mg/L	1	2/7/2017

Qualifiers: ND - Not Detected at the Reporting Limit

RL - Reporting / Quantitation Limit for the analysis

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

HT - Sample received past holding time

E - Value above quantitation range

* - Non-accredited parameter

H - Holding time exceeded

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Date Reported: February 07, 2017**Date Printed:** February 07, 2017**ANALYTICAL RESULTS**

Client:	Amereco Inc.	Client Sample ID:	WCG-22
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 1:20:00 PM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-006		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Semivolatile Organic Compounds by GC/MS						
Anthracene	ND	0.0010		mg/L	1	2/7/2017
Benz(a)anthracene	ND	0.00010		mg/L	1	2/7/2017
Benzo(a)pyrene	ND	0.00010		mg/L	1	2/7/2017
Benzo(b)fluoranthene	ND	0.00010		mg/L	1	2/7/2017
Benzo(g,h,i)perylene	ND	0.0010		mg/L	1	2/7/2017
Benzo(k)fluoranthene	ND	0.00010		mg/L	1	2/7/2017
Chrysene	ND	0.00010		mg/L	1	2/7/2017
Dibenz(a,h)anthracene	ND	0.00010		mg/L	1	2/7/2017
Fluoranthene	ND	0.0010		mg/L	1	2/7/2017
Fluorene	ND	0.0010		mg/L	1	2/7/2017
Indeno(1,2,3-cd)pyrene	ND	0.00010		mg/L	1	2/7/2017
2-Methylnaphthalene	ND	0.0010		mg/L	1	2/7/2017
Naphthalene	ND	0.0010		mg/L	1	2/7/2017
Phenanthrene	ND	0.0010		mg/L	1	2/7/2017
Pyrene	ND	0.0010		mg/L	1	2/7/2017
PCBs						
			SW8082 (SW3510C)		Prep Date:	2/3/2017
Aroclor 1016	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1221	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1232	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1242	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1248	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1254	ND	0.00050		mg/L	1	2/3/2017
Aroclor 1260	ND	0.00050		mg/L	1	2/3/2017
Metals by ICP/MS						
			SW6020 (SW3005A)		Prep Date:	2/7/2017
Arsenic	ND	0.0040		mg/L	2	2/7/2017
Barium	0.015	0.0040		mg/L	2	2/7/2017
Cadmium	ND	0.0020		mg/L	2	2/7/2017
Chromium	ND	0.0080		mg/L	2	2/7/2017
Lead	ND	0.0020		mg/L	2	2/7/2017
Selenium	ND	0.0040		mg/L	2	2/7/2017
Silver	ND	0.0040		mg/L	2	2/7/2017
Mercury						
			SW7470A		Prep Date:	2/3/2017
Mercury	ND	0.00020		mg/L	1	2/3/2017

Qualifiers:	ND - Not Detected at the Reporting Limit J - Analyte detected below quantitation limits B - Analyte detected in the associated Method Blank HT - Sample received past holding time * - Non-accredited parameter	RL - Reporting / Quantitation Limit for the analysis S - Spike Recovery outside accepted recovery limits R - RPD outside accepted recovery limits E - Value above quantitation range H - Holding time exceeded
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Accreditations:IEPA ELAP 100445;ORELAP IL300001;AIHA-LAP, LLC 101160;NVLAP LabCode 101202-0

Date Reported: February 07, 2017**ANALYTICAL RESULTS****Date Printed:** February 07, 2017

Client:	Amereco Inc.	Client Sample ID:	WCG-23
Work Order:	17020063 Revision 0	Collection Date:	2/2/2017 12:10:00 PM
Project:	16.1151.2, W. Calumet Housing Complex, East Chi	Matrix:	Aqueous
Lab ID:	17020063-007		

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS						
Acetone	ND	0.020		mg/L	1	2/6/2017
Benzene	ND	0.0050		mg/L	1	2/6/2017
Bromodichloromethane	ND	0.0050		mg/L	1	2/6/2017
Bromoform	ND	0.0050		mg/L	1	2/6/2017
Bromomethane	ND	0.010		mg/L	1	2/6/2017
2-Butanone	ND	0.020		mg/L	1	2/6/2017
Carbon disulfide	ND	0.010		mg/L	1	2/6/2017
Carbon tetrachloride	ND	0.0050		mg/L	1	2/6/2017
Chlorobenzene	ND	0.0050		mg/L	1	2/6/2017
Chloroethane	ND	0.010		mg/L	1	2/6/2017
Chloroform	ND	0.0050		mg/L	1	2/6/2017
Chloromethane	ND	0.010		mg/L	1	2/6/2017
Dibromochloromethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
cis-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
trans-1,2-Dichloroethene	ND	0.0050		mg/L	1	2/6/2017
1,2-Dichloropropane	ND	0.0050		mg/L	1	2/6/2017
cis-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
trans-1,3-Dichloropropene	ND	0.0010		mg/L	1	2/6/2017
Ethylbenzene	ND	0.0050		mg/L	1	2/6/2017
2-Hexanone	ND	0.020		mg/L	1	2/6/2017
4-Methyl-2-pentanone	ND	0.020		mg/L	1	2/6/2017
Methylene chloride	ND	0.0050		mg/L	1	2/6/2017
Methyl tert-butyl ether	ND	0.0050		mg/L	1	2/6/2017
Styrene	ND	0.0050		mg/L	1	2/6/2017
1,1,2,2-Tetrachloroethane	ND	0.0050		mg/L	1	2/6/2017
Tetrachloroethene	ND	0.0050		mg/L	1	2/6/2017
Toluene	ND	0.0050		mg/L	1	2/6/2017
1,1,1-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
1,1,2-Trichloroethane	ND	0.0050		mg/L	1	2/6/2017
Trichloroethene	ND	0.0050		mg/L	1	2/6/2017
Vinyl chloride	ND	0.0020		mg/L	1	2/6/2017
Xylenes, Total	ND	0.015		mg/L	1	2/6/2017
Semivolatile Organic Compounds by GC/MS						
Acenaphthene	ND	0.0010		mg/L	1	2/7/2017
Acenaphthylene	ND	0.0010		mg/L	1	2/7/2017

Qualifiers: ND - Not Detected at the Reporting Limit

RL - Reporting / Quantitation Limit for the analysis

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

HT - Sample received past holding time

E - Value above quantitation range

* - Non-accredited parameter

H - Holding time exceeded