

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF GENERAL SERVICES



**Addendum No. 08**  
**Invitation for Bid (“IFB”) No. DCAM-21-CS-IFB-0004**


**MPD Blue Plains Impound Lot Modernization**

**Issued: July 30, 2021**

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This Addendum No. 08 is issued on July 30, 2021. Except as modified hereby, the Invitation for Bid (“IFB”) remains unmodified.

**Item No. 01:** Attachment J.17 “Environmental Study - Phase II” is added to this IFB and is attached as Exhibit 1 to this addendum.

By:   
Pamela Ford Dickerson  
Contracting Officer

Date: 07/30/2021

- End of Addendum No. 08

**GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF GENERAL SERVICES**



**EXHIBIT 1**

**ATTACHMENT 17**

**ESA PHASE II REPORT**

**[ATTACHMENT WILL APPEAR ON THE FOLLOWING PAGE]**



**PHASE II ENVIRONMENTAL SITE ASSESSMENT**

**BLUE PLAINS IMPOUND LOT UPGRADES  
50001 SHEPHERD PARKWAY, SW  
WASHINGTON, DC 20032**

**ECS PROJECT NO. 37:2379**

**FOR**

**BELL ARCHITECTS, PC**

**NOVEMBER 1, 2019**



November 1, 2019

Mr. Daniel Blair  
Bell Architects, PC  
1228 9<sup>th</sup> Street, NW  
Washington, DC 20001

ECS Project No. 37:2569-A

Reference: Phase II Environmental Site Assessment, Blue Plains Impound Lot Upgrades,  
5001 Shepherd Parkway, SW, Washington, DC 20032.

Dear Mr. Blair:

ECS Capitol Services, PLLC (ECS) is pleased to present Bell Architects, PC with the results of the Phase II Environmental Site Assessment (ESA) at the above-referenced site. Our services were provided in accordance with ECS Proposal No. 37:2407-EPR.

If you have any questions about this report or other aspects of this project, please contact us at 202-400-2174.

Respectfully submitted,

**ECS CAPITOL SERVICES, PLLC**

Anna Franciosa, EIT  
Project Manager

David J. Bookbinder, CPG  
Consultant

W:\Environmental\\_e-projects\2500-2599\2569-A DGS Blue Plains Impound Lot Phase II\ Report\2569-A Phase II Report.docx

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- Appendix I: Boring Location Diagram
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## **1.0 INTRODUCTION**

### **1.1 Property Location and Current Use**

The project site is located at the existing Blue Plains Impound Lot at the physical address of 5001 Shepherd Parkway, SW in Washington, D.C. The current impound lot is an asphalt-covered parking lot with an approximate footprint of 820,000 square feet which contains an office building and currently houses a significant amount of vehicles. Based on publically available mapping information, the site slopes from an approximate topographical high of EL +36 feet in the northeast portion of the site to an approximate topographical low of EL +20 feet in the southwest portion. The impound lot is bound to the north by a parking lot, to the east and south by undeveloped forested land, and to the west by an asphalt/gravel/soil distribution center.

### **1.2 Project Background**

ECS previously performed a Phase I ESA for the subject property in July 2019 (ECS Project Number 37:2659). According to historical research, the subject property has been undeveloped land until approximately 1949 when several roads appeared to be present on the subject property. A tributary of the Potomac River transected the central portion of the property until the early 1960s. From the early 1960s through the 1970s, the subject property appeared to be used for construction staging. A soil stockpile may have been located on the northwestern portion of the subject property in 1979. By 1981, the subject property was developed with an asphalt parking lot, and by 2005 the current office building appeared to be constructed on the northwestern portion of the subject property. The following Recognized Environmental Conditions (RECs) were identified for the subject property:

- The adjacent property to the west at 4901 Shepherd Parkway, SW is an asphalt plant. This site was listed on the US Brownfields database as program ID: PBF20040256. In 2004, groundwater was reportedly found to be affected by lead, metals, PAHs, and VOCs. Based on the documented groundwater contamination adjacent to the subject property, this listing is considered to be a REC for the subject property.
- Approximately 200 feet up-gradient from the subject property is the DC Department of Human Services at 4 DC Village Lane, SW. This site is listed with two 20,000-gallon USTs with unlisted product, two 10,000-gallon USTs with unlisted product, one 4,000-gallon gasoline UST, and one 1,000-gallon heating oil UST, which are all permanently out of use. This site is also listed on the DC LUST database with one closed LUST case, #2017020, which was opened in September 2017 following reports of diesel in the subsurface soil, groundwater, and an environmentally sensitive area. ECS submitted a FOIA request for further information on the LUST case on July 10, 2019. Based on the documented up-gradient petroleum release in close proximity to the subject property, this listing is considered to be a REC for the subject property.
- Approximately 200 feet up-gradient from the subject property is the WMATA Shepherds Parkway Bus Garage located at 2 DC Village Lane SW. This site is listed with three 20,000-gallon diesel USTs, one 10,000-gallon gasoline UST, one 100,000-gallon diesel UST, and one 5,000-gallon diesel UST, which are all reported as currently in use. Installation dates were not included in the database report. This site is not listed on the DC LUST database which would indicate a reported release. Based on the material

threat of a new or undocumented historical release and topographic position relative to the subject property, this listing is considered to be a REC for the subject property.

## **2.0 PURPOSE**

The purpose of the Phase II ESA was to collect soil samples from beneath the site to determine if subsurface soil may require special handling or disposal as part of the anticipated site re-grading operations.

## **3.0 SAMPLING METHODOLOGY**

ECS employed an ATV-mounted hollow steam auger (HSA) drill rig to advance four environmental borings across the property (B-9 through B-12) to a depth of ten (10) feet below ground surface (bgs). During drilling operations, soil samples were collected in 1.5-foot increments using a two-inch outside diameter, spilt-barrel sampler. The spilt-barrel sampler of decontaminated between uses using a mixture of potable water and Alconox, followed by a potable water rinse. Each split-spoon sample recovered was screened in the field with a Photoionization Detector (PID) equipped with a 10.6 electron-volt lamp which measures total volatile organic compounds (VOCs).

Based on field screening results and field observations (i.e. PID readings, staining, odors, etc.), one soil sample per boring were collected. A total of four soil samples were collected for laboratory analysis. Due to limited recovery, composite soil samples were collected from borings B-9, B-10, and B-11. Each of the soil samples were placed in laboratory grade glassware, packed on ice and submitted under chain-of-custody protocol to an independent laboratory for analysis of TPH DRO, TPH GRO, VOCs, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and Resource Conservation and Recovery Act (RCRA) metals. Based on the total metal concentrations detected, each of the four (4) soil samples were analyzed for a Toxicity Characteristic Leaching Procedure (TCLP) for lead, and one (1) of the four (4) soil samples was also analyzed for TCLP chromium.

## **4.0 RESULTS**

### **4.1 Soil Sampling Results**

A total of four soil borings were advanced across the property to a depth of 10 feet bgs. Fill material was observed in each boring to the termination depth of the boring. Obvious field evidence of impact (i.e. elevated PID readings, staining or odor) was observed in three of the four soil borings. PID readings ranged from 1.6 parts per million (ppm) to 188.6 ppm. Soil sample results were compared to the DC RBCA Tier 1 Risk-Based Screening Level (RBSL) for subsurface soil to indoor inhalation for a commercial worker. Where DC RBSLs were not established for a particular compound, the concentrations were compared to the EPA Regional Screening Levels (RSLs) for industrial soil. A summary of the results is included below. The

laboratory results are summarized in the table provided in Appendix II. Boring logs are included as Appendix III. Full laboratory reports are provided in Appendix IV.

### **Petroleum**

TPH DRO was detected in each of the four (4) soil samples analyzed, at concentrations ranging from 144 milligrams per kilogram (mg/kg) to 816 mg/kg. Each of the detected TPH DRO concentrations was above the DOEE Tier 0 screening level of 100 mg/kg. TPH DRO was not detected in the four (4) soil samples above the DC Tier 1 RBSL for subsurface soil to indoor inhalation for a commercial worker of 14,600 mg/kg.

TPH GRO was detected in three (3) of the four (4) soil samples, at concentrations ranging from 0.21 mg/kg to 1.34 mg/kg. TPH GRO was not detected above the DOEE Tier 0 screening level of 100 mg/kg or the Tier 1 RBSL for subsurface soil to indoor inhalation for a commercial worker of 376 mg/kg.

### **Volatile Organic Compounds**

Each of the soil samples had concentrations of various VOCs above the laboratory's detection limit. None of the detected VOC concentrations exceeded their respective Tier 1 RBSLs for subsurface soil to indoor inhalation for a commercial worker or EPA RSL for industrial soil for compounds where D.C. does not have a published screening level.

### **PAHs**

None of the soil samples were reported to have concentrations of PAHs above the laboratory reporting limits.

### **PCBs**

Two of the four soil samples had concentrations of PCBs above the laboratory's detection limit. None of the detected PCB concentrations exceeded their respective EPA RSL for industrial soil.

### **RCRA Metals**

None of the metals detected exceeded their respective EPA RSL for industrial soil with the exception of arsenic and lead. A summary of detected metals is included on Table 1 in Appendix II.

Arsenic was detected above the EPA RSL for industrial soil of 3.0 mg/kg in each of the four soil samples. However, arsenic is a naturally occurring compound and two of the detected soil concentrations were within expected background concentrations as defined by USGS Professional Paper 1270, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States (Shacklette and Boerngen, 1984). According to their arsenic map based on 1,257 background samples, soil samples from the greater DC area fall within the general concentration range (4.1 to 6.2 mg/kg) category as the mean for the United States, 5.2 mg/kg. That statistical range for arsenic has a standard deviation of 2.23. Therefore, two of the four detected arsenic concentrations were less than two standard deviations from the upper end of the local range (10.66 mg/kg). Data that falls within two standard deviations of a mean is not considered statistically significant. The other two arsenic concentrations, slightly exceeded typical background concentrations for this geologic area. Therefore, it ECS's opinion that the detected concentrations of arsenic in soil were generally consistent with background concentrations of arsenic in this geologic area and are not likely to pose an unacceptable risk to human health and the environment.



Lead was detected in each of the four soil samples ranging at concentrations ranging from 359 mg/kg to 1,710 mg/kg. Two of the soil samples B-10 and B-11 were reported to contain concentrations greater than the EPA RSL for industrial soil of 800 mg/kg.

A compound has the potential for being classified as hazardous when the soil result exceeds 20 times its EPA leachate threshold for designation as hazardous. Therefore, a TCLP was performed for the lead and chromium concentrations that exceeded 100 mg/kg to determine if the total metal concentrations would be considered a "hazardous waste" under RCRA for disposal purposes. None of the TCLP lead or chromium results exceeded their EPA threshold of 5.0 milligrams per liter (mg/L) for designation as hazardous under RCRA. Therefore, the samples would be considered non-hazardous for disposal purposes with regards to the metal concentrations.

## **5.0 CONCLUSIONS**

In order to determine if soil may be present beneath the site would require special handling and/or disposal if excavated, ECS advanced four borings across the property via ATV-mounted hollow stem auger (HSA) drill rig to a depth of 10 feet bgs. Fill material was observed in each of the four (4) borings to a minimum depth of nine (9) feet bgs. Field screening indicated obvious field evidence of impact in three (3) of the four (4) borings. A total of four soil samples were submitted to an independent laboratory for analysis of TPH DRO, TPH GRO, VOCs, PAHs, PCBs, and RCRA metals. Additionally, a TCLP lead analysis was conducted on each of the four (4) soil samples and TCLP chromium on one (1) of the (4) soil samples based on the total concentrations detected.

Evidence of petroleum impact was detected in each of the four (4) soil samples analyzed. Concentrations of VOCs, PCBs, and RCRA metals were not detected above their respective DC Tier 1 RBSL for subsurface soil to indoor inhalation for a commercial worker or EPA RSL for industrial soil, with the exception of arsenic and lead. Each of the arsenic concentrations exceeded its EPA RSL for industrial soil. However, each of the detected arsenic concentrations were within or slightly exceeded typical background concentrations for this geologic area. Lead was detected above its EPA RSL for industrial soil in two (2) of the four (4) soil samples analyzed. The primary risk exposure from lead is from direct contact with the contaminated material. Therefore, ECS recommends that a two-foot clean cap be placed in areas not covered by hardscape (i.e. building slabs, concrete, asphalt, etc.) to prevent occupants from coming into direct contact with the material.

It is our understanding that the subject property will undergo several site improvements including partial demolition and reconstruction of the parking lot, demolition of the existing office building, construction of a new administrative building, trash enclosure, and guard booth, and the installation of new car storage racks. At this time, little information regarding the design of the proposed administrative building, trash enclosure, and guard booth is known. However, ECS understands these structures will be constructed at existing grades. Additionally, the site improvements will include the installation of new bioretention facilities. ECS understands significant below grade excavation will not be required, although some excavation will be needed to re-grade the parking lot. Based the results of the Phase II ESA, petroleum-impacted material will be encountered if material is excavated for site improvements.

During redevelopment, petroleum-impacted soils that are excavated and need to be removed from the site as part of site development will need to be disposed of appropriately at a landfill or treatment/disposal facility permitted to accept such wastes. Prior to redevelopment, it may be prudent to develop a site-specific soil management plan (SMP) and Health and Safety Plan (HASP) for the site detailing safe soil handling and disposal procedures.

Disposal criteria for contaminated soil will depend on the jurisdiction in which it is to be disposed. In the District of Columbia, excavated soils containing detectable petroleum concentrations below the Tier 0 limit for TPH DRO (100 mg/kg) and the Tier 1 limit for TPH GRO (54.4 mg/kg) can be reused as fill material on the same site from which they were excavated only. Soils that are excavated containing petroleum concentrations above their respective TPH DRO and GRO limits or below their respective TPH DRO and GRO limits that cannot be reused onsite cannot be disposed of within the District limits and must be disposed of at an appropriate disposal or treatment facility. Each of the soil samples analyzed contained TPH DRO concentrations above the threshold for reuse onsite.

In Maryland, based on the Land Materials Administration Fact Sheet dated August 2017, soil containing petroleum (TPH DRO or TPH GRO) concentrations less than 230 mg/kg may be used as Category 1 fill materials at both residential and non-residential sites. Soil containing petroleum (TPH DRO or TPH GRO) concentrations less than 620 mg/kg may be used as Category 2 fill materials on non-residential sites only. Soils containing petroleum concentrations greater than 620 mg/kg will need to be disposed at a licensed disposal/treatment facility capable of accepting the material. However, for use as Category 1 or 2 fill material, all other contaminants will also need to be below their respective residential or commercial screening levels as defined in the current "State of Maryland Department of the Environment (MDE) Cleanup Standards for Soil and Groundwater," dated October 2018. Reuse of contaminated soil in accordance with the Fact Sheet is dependent on MDE Land Restoration Program review and approval of the material for use as backfill on the selected property. MDE may request additional site information (both for the source and receiving sites), and/or additional sampling and analysis prior to approval. If a site cannot be located to accept contaminated material as backfill, it will need to be disposed of at a licensed disposal/treatment facility capable of accepting the material.

In Virginia, solid waste management regulations divide petroleum-impacted soils into various classes depending on concentration. Soils containing petroleum concentrations less than 50 mg/kg and total BTEX less than 10 mg/kg may be disposed with certain restrictions (see 9VAC20-81-660-D.2.d). Soils containing less than 500 mg/kg petroleum and total BTEX less than 10 mg/kg may be disposed of in a lined landfill permitted to receive such wastes. Soils containing petroleum concentrations greater than 500 mg/kg or total BTEX greater than 10 mg/kg may not be disposed of in Virginia landfills, unless the permit expressly allows for such disposal.

In practice, it is often difficult for developers and contractors to find a suitable disposal location for the "marginally-impacted" petroleum contaminated soils- i.e. soils containing detectable petroleum concentrations below the regulatory thresholds. This is due to the paucity of net fill construction sites in the area and the relative abundance of legitimately clean fill materials with no petroleum contamination. Given the option, the developers of most fill sites will prefer clean fill materials over marginally-impacted materials. Consequently, it is common practice in this

region to dispose of even low-level contaminated soils at petroleum-impacted soil facilities such as Clean Earth, Inc. of Greater Washington (Upper Marlboro, Maryland) or Soil Safe, Inc. (Brandywine, Maryland). Based on the lead results, the material may or may not be accepted by the local licensed treatment/disposal facilities. If the local licensed treatment/disposal facilities will not accept the material due to the metals content, the material will need to be transported to a licensed facility capable of accepting the material.

## **6.0 MANDATORY REPORTING REQUIREMENT**

Based on the DC Tier 0 screening exceedances in soil, this report will need to be submitted to the DOEE Underground Storage Tank (UST) Division. It is possible that the DOEE will open up a LUST case at the property. If a LUST case is opened by DOEE, the property owner or the identified responsible party (RP) will be required to submit a workplan for a comprehensive site assessment (CSA). The workplan would likely include additional soil and/or groundwater sampling to include, but not be limited to, the installation of permanent monitoring wells. At this time, ECS cannot predict costs associated with a potential LUST case due to the unknown potential site-specific requirements DOEE may impose on the property if a LUST case is opened.

## **7.0 QUALIFICATIONS**

The conclusions presented within this report are based upon a reasonable level of investigation within normal bounds and standards of professional practice for a site in this particular geographic and geologic setting, and the areas of the site accessible for drilling. It should be noted that this investigation and the results are necessarily limited to the areas and depths tested at the time of the investigation. This investigation was not designed or intended to be a full site characterization or comprehensive site assessment. The purpose of this assessment was to provide general information regarding subsurface environmental conditions at the areas and depths sampled.

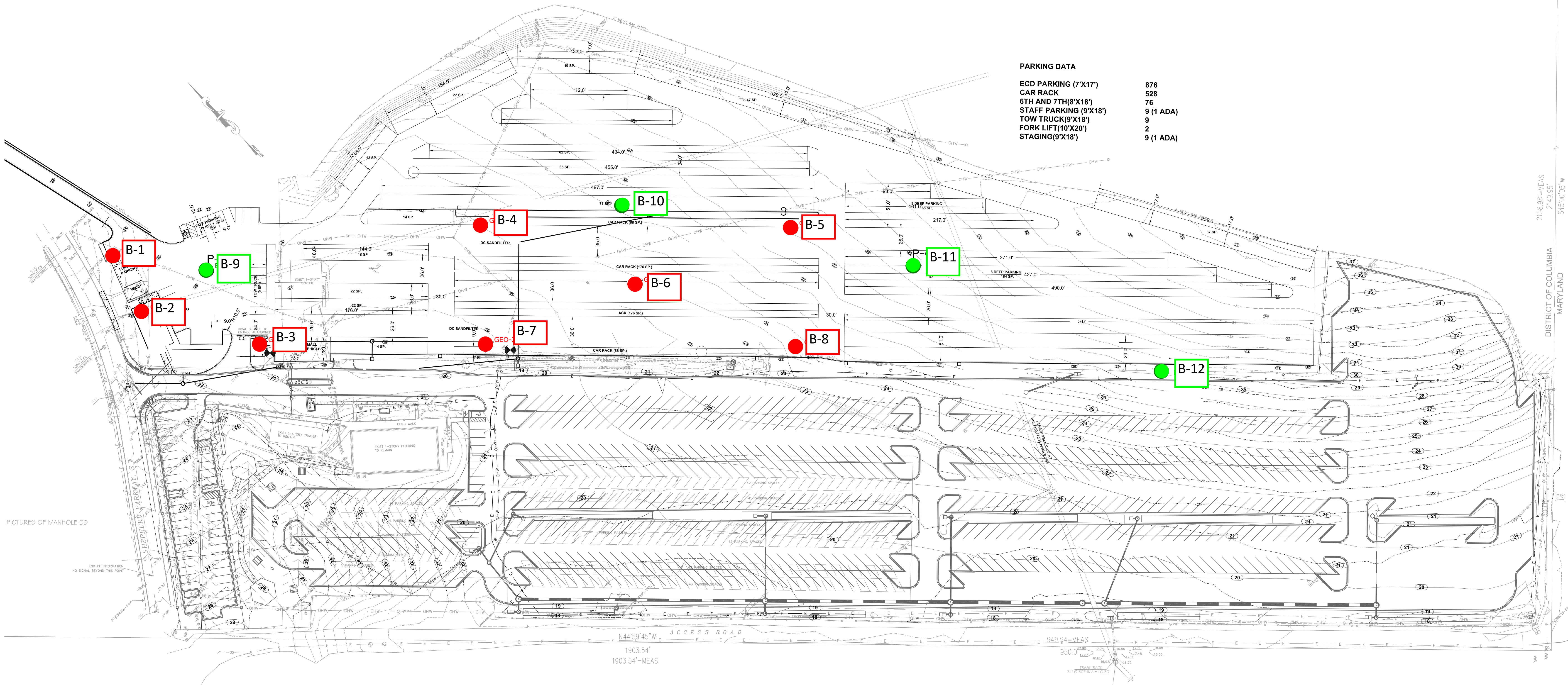
The findings of this study are not intended to serve as an audit of health and safety or compliance issues pertaining to improvements or occupant activities on-site. All observations, conclusions, and recommendations pertaining to environmental conditions at the subject site are limited to conditions observed, and or materials reviewed at the time this study was undertaken. No other warranty, expressed or implied, is made with regard to the conclusions and recommendations presented within this report.

This report is provided for the exclusive use of Bell Architects PC and their prospective partners. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties. The use of this report by any undesignated third party or parties would be at such party's sole risk and ECS disclaims liability for any such third party use or reliance. ECS has not completed or used any form of predetermined language to report the conclusions of this work and it is our understanding that we will not be required to do so. Compensation for this investigation is not contingent upon results, and ECS has conducted this assessment objectively without reference to any particular outcome desired by the client.

**APPENDIX I**  
**BORING LOCATION DIAGRAM**



PROPOSED BORING LOCATION DIAGRAM (PROVIDED BY BELL ARCHITECTS, PC)



**PARKING DATA**

ECD PARKING (7'X17')	876
CAR RACK	528
6TH AND 7TH(8'X18')	76
STAFF PARKING (9'X18')	9 (1 ADA)
TOW TRUCK(9'X18')	9
FORK LIFT(10'X20')	2
STAGING(9'X18')	9 (1 ADA)

**LEGEND**

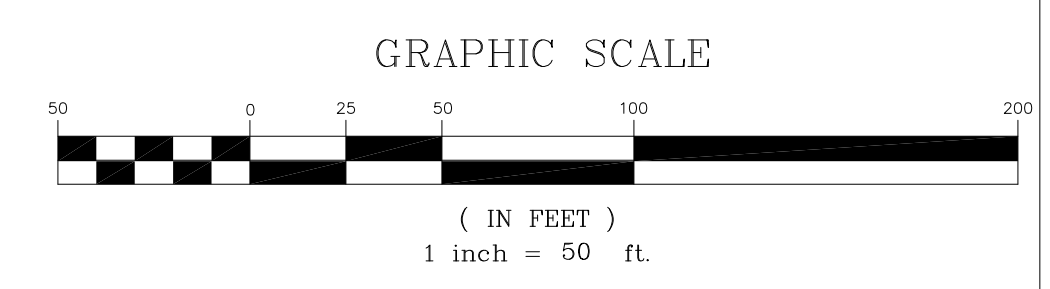
- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ STORM MH</li> <li>⬇ GROUND LIGHT</li> <li>⊕ WATER SHUT OFF SIGN</li> <li>U UTILITY MH</li> <li>☆ LIGHT POLE</li> <li>⊙ ELEC. MH</li> <li>⊙ GAS VALVE</li> <li>⊙ GAS METER</li> <li>⊙ SANITARY MH</li> <li>⊙ YARD GRATE-INLET</li> <li>⊙ WATER MH</li> <li>⊙ WATER VALVE</li> <li>⊙ WATER METER</li> <li>⊙ PM PARKING METER</li> <li>⊙ CHAIN LINK FENCE</li> <li>⊙ BOLLARD</li> <li>⊙ TREE</li> <li>~ BUSH</li> <li>△ TRAVERSE</li> <li>S/W TYP. SIDEWALK</li> <li>CONC. CONCRETE</li> <li>R/W RETAINING WALL</li> <li>IPF IRON PIPE FOUND</li> <li>TW TOP OF WALL ELEVATION</li> <li>BW BOTTOM OF WALL ELEVATION</li> <li>EXT. EXTENSION</li> <li>Handicap Ramp Symbol HANDICAP RAMP</li> <li>Telephone Pole Symbol TELEPHONE POLE</li> <li>Traffic Light Pole Symbol TRAFFIC LIGHT POLE</li> </ul> | <ul style="list-style-type: none"> <li>⊙ GUY</li> <li>EXST. EXISTING</li> <li>REC. RECORD INFORMATION</li> <li>MST. MEASURED INFORMATION</li> <li>Roof Drain Symbol ROOF DRAIN W/CONC BASE</li> <li>⊙ EXST. FIRE HYDRANT</li> <li>C&amp;G CURB &amp; GUTTER</li> <li>CLF. CHAIN LINK FENCE</li> <li>WF. WOODEN FENCE</li> <li>PL. PLANTER</li> <li>□ CO CLEAN OUT</li> <li>Generator Symbol GENERATOR (NATURAL GAS OR OTHER)</li> <li>RF REBAR FOUND</li> <li>R/C REBAR WITH CAP</li> <li>FND FOUND</li> <li>O/E OPEN END</li> <li>Benchmark Symbol BENCHMARK</li> <li>Asphalt Pavement Symbol ASPHALT PAVEMENT</li> <li>Boring Log Symbol BORING LOG</li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**BORING LOCATION LEGEND**

- ⊙ P-1-P-8 PAVEMENT BORING 6.5' DEPTH
- ⊙ SWM-1-SWM-6 STORM WATER MANAGEMENT BORING (TO BE FINAL DETERMINED AFTER MEETING W/DOEE ON 9/17/2019), 8' DEPTH
- ⊙ BS1 BORING FOR ADMIN. BUILDING 20' DEPTH
- ⊙ BS-2-BS-9 BORING FOR CAR RACK FOUNDATION 15' DEPTH

**UTILITY LEGEND**

- E — ELECTRIC LINE (PAINTED RED LINE)
- W — WATER LINE (PAINTED BLUE LINE)
- G — GAS LINE (PAINTED YELLOW LINE)
- T — COMMUNICATION LINE (PAINTED ORANGE LINE)
- S — SANITARY LINE (PAINTED GREEN LINE)
- PPL — PAINTED PINK LINE (POSSIBLY TEMPORARY SURVEY LINE)



**APPROVALS**

**BELL architects**  
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www.bellarchitects.com

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**MEP ENGINEER**  
XYZ CONSULTANTS, INC.  
223 MAIN ST, NW WASHINGTON DC 20111  
TEL: 202.212.1234

NOT FOR CONSTRUCTION

NO. DESCRIPTION DATE

**Metropolitan Police Department of the District of Columbia**

PROJECT

**Blue Plains Impound Lot Modernization**  
5001 SHEPHERD PARKWAY SW  
WASHINGTON, DC 20032

**SITE BORING LOCATION PLAN**

SHEET INFORMATION

DATE: 09/19/19 JOB#: 2114310  
DRAWN: WD CHECKED: BW  
SCALE: 1" = 50' BLDG: N/A

SHEET NUMBER

**BL-100**



**APPENDIX II**  
**SUMMARY OF ANALYTICAL RESULTS**

**Table 1**  
**Summary of Detected Concentrations in Soil**  
**5001 Shepherd Parkway, SW**  
**Washington, DC**

	Sample ID	B-9	B-10	B-11	B-12
	Sample Depth	6.5-10'	3.5-10'	6.0-10'	1.5'
	Sample Date	10/2/19	10/2/19	10/2/19	10/2/19
Total Petroleum Hydrocarbons	Indoor Inhalation of Sub-Surface Soil Screening Level (mg/kg)*	mg/kg	mg/kg	mg/kg	mg/kg
Gasoline Range Organics	376	<b>1.34</b>	<b>0.81</b>	<0.11	<b>0.21</b>
Diesel Range Organics	14,600	<b>399</b>	<b>332</b>	<b>114</b>	<b>816</b>
Volatile Organic Compounds	Screening Level (ug/kg)	ug/kg	ug/kg	ug/kg	ug/kg
Acetone	670,000,000**	<b>116</b>	<b>82.8</b>	<b>36.3</b>	<b>70.6</b>
Methylene Chloride	1,000,000**	<24.1	<23.5	<23.0	<b>26.2 L</b>
4-Isopropyltoluene	ne	<b>3.1 J</b>	<5.9	<5.7	<5.6
Toluene	691,000*	<b>2.8 J</b>	<5.9	<5.7	<5.6
1,2,4-Trimethylbenzene	1,800,00**	<b>8.6</b>	<5.9	<5.7	<b>16.9</b>
1,3,5-Trimethylbenzene	110,000**	<b>6.2</b>	<5.9	<5.7	<b>6.7</b>
Total Xylenes	26,700*	<12.0	<11.8	<11.4	<b>6.3J</b>
PCBs	Screening Level (ug/kg)**	ug/kg	ug/kg	ug/kg	ug/kg
Aroclor-1242	950	<100	<b>301</b>	<95.4	<93.3
Aroclor-1254	970	<100	<97.6	<95.4	<b>793</b>
Aroclor-1260	990	<100	<b>125</b>	<95.4	<93.3
RCRA 8 Metals	Screening Level (mg/kg)**	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	3.0	<b>6.02</b>	<b>10.6</b>	<b>11.9</b>	<b>12.7</b>
Barium	220,000	<b>123.0</b>	<b>261</b>	<b>450</b>	<b>410</b>
Cadmium	980	<b>1.55</b>	<b>8.81</b>	<b>9.4</b>	<b>9.18</b>
Chromium (total)	ne	<b>41.1</b>	<b>68.1</b>	<b>61.5</b>	<b>135</b>
Lead	800	<b>359</b>	<b>904</b>	<b>1,710</b>	<b>747</b>
Mercury	46	<b>0.206</b>	<b>0.527</b>	<b>0.764</b>	<b>0.811</b>
Selenium	5,800	<b>2.09</b>	<b>0.905</b>	<b>0.893</b>	<b>0.88</b>
Silver	5,800	<b>3.45</b>	<b>12.0</b>	<b>22.3</b>	<b>20.4</b>
TCLP Metals	RCRA Hazardous Threshold	mg/L	mg/L	mg/L	mg/L
Lead	5.0	<b>0.618</b>	<0.500	<0.500	<b>0.545</b>
Chromium	5.0	N/A	N/A	N/A	<0.500

**Notes:**

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

mg/L = milligrams per liter

Only compounds present at concentrations above the laboratory detection limit are included

J = Detected but below the reporting limit; therefore, result is an estimated concentration

L = Analyte is a possible laboratory contaminant

\* = D.C. Risk-Based Corrective Action (DCRBCA) Technical Guidance, Table 5-10 Risk-Based Screening for a Commercial Worker, Sub-Surface Soil, Indoor Inhalation, Updated June 2011

\*\* = no DCRBCA screening level established, screening level based on EPA Regional Screening Level (RSL) Summary Table April 2019 (TR=1E-6, THQ=1.0) for Industrial Soil

ne = No established screening level

N/A = not analyzed

**Exceeds Screening Level**

**APPENDIX III**

**BORING LOGS**



**PROJECT:** DGS Blue Plains Impound Lot Upgrades **BORING NO.** B-9  
**CLIENT:** Bell Architects, PC **PROJECT NO.** 37:2659-A



LOCATION: 5001 Shepherd Parkway SW, Washington, DC		ELEVATION:
DRILLER: Connelly & Associates		DATE DRILLED: 10/2/19
DRILL RIG: 3.25" Hollow Stem Auger		LOGGED BY: KG
		DEPTH TO WATER: N/A

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Elevation/ Depth (Ft)	PID Reading	Sample Number	Sample Recovery (in/in)	Graphic Log	Soil Classification	SOIL DESCRIPTION
0	16.7				<b>Asphalt</b>	Asphalt and gravel
48.9					<b>SM Fill</b>	Fill, silty SAND with gravel and construction debris, dark brown, moist, dense
5	188.6	<b>B-9</b>				
67.3		<b>B-9</b>			<b>CL</b>	Clay with gravel, dark gray, moist, stiff
10						End of Boring 10'
15						
20						
25						
30						
35						

**PROJECT:** DGS Blue Plains Impound Lot Upgrades **BORING NO.** B-10  
**CLIENT:** Bell Architects, PC **PROJECT NO.** 37:2659-A



LOCATION: 5001 Shepherd Parkway SW, Washington, DC		ELEVATION:
DRILLER: Connelly & Associates		DATE DRILLED: 10/2/19
DRILL RIG: 3.25" Hollow Stem Auger		LOGGED BY: KG
		DEPTH TO WATER: N/A

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Elevation/ Depth (Ft)	PID Reading	Sample Number	Sample Recovery (in/in)	Graphic Log	Soil Classification	SOIL DESCRIPTION
0	2.7	B-10			<b>Asphalt SM Fill</b>	Asphalt and Gravel
36.9						Fill, silty SAND with gravel, brick, asphalt and construction debris, dark gray, moist, loose
5	10.4	B-10				
9.4		B-10				
10						End of Boring 10'
15						
20						
25						
30						
35						

**PROJECT:** DGS Blue Plains Impound Lot Upgrades **BORING NO.** B-11  
**CLIENT:** Bell Architects, PC **PROJECT NO.** 37:2659-A



LOCATION: 5001 Shepherd Parkway SW, Washington, DC		ELEVATION:
DRILLER: Connelly & Associates		DATE DRILLED: 10/2/19
DRILL RIG: 3.25" Hollow Stem Auger		LOGGED BY: KG
		DEPTH TO WATER: N/A

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Elevation/ Depth (Ft)	PID Reading	Sample Number	Sample Recovery (in/in)	Graphic Log	Soil Classification	SOIL DESCRIPTION
0	3.4				<b>Asphalt SM Fill</b>	Asphalt and Gravel
1.6						Fill, silty SAND with gravel, brick, asphalt and construction debris, dark gray, moist, loose
5	3.5	<b>B-11</b>				
10	4.0	<b>B-11</b>				
15						
20						
25						
30						
35						
						End of Boring 10'

**PROJECT:** DGS Blue Plains Impound Lot Upgrades **BORING NO.** B-12  
**CLIENT:** Bell Architects, PC **PROJECT NO.** 37:2659-A



LOCATION: 5001 Shepherd Parkway SW, Washington, DC		ELEVATION:
DRILLER: Connelly & Associates		DATE DRILLED: 10/2/19
DRILL RIG: 3.25" Hollow Stem Auger		LOGGED BY: KG
		DEPTH TO WATER: N/A

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Elevation/ Depth (Ft)	PID Reading	Sample Number	Sample Recovery (in/in)	Graphic Log	Soil Classification	SOIL DESCRIPTION
0	11.4	B-12			<b>Asphalt SM Fill</b>	Asphalt and Gravel Fill, silty SAND with gravel, brick, asphalt and construction debris, dark gray, moist, loose
1.5						
5	5.3					
10	0.3					
15						
20						
25						
30						
35						
						End of Boring 10'

**APPENDIX IV**  
**LABORATORY RESULTS**

Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

28 October 2019

Anna Franciosa  
ECS-Chantilly  
14026 Thunderbolt Place, Suite 100  
Chantilly, VA 20151  
RE: BLUE PLAINS IMPOUND LOT UPGRADES

Enclosed are the results of analyses for samples received by the laboratory on 10/03/19 14:40.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at [www.mdspectral.com](http://www.mdspectral.com) for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Will Brewington  
President

## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-9-6.5-10		9100312-01	Soil	10/02/19 10:00	10/03/19 14:40
B-10-3.6-6.5-10		9100312-02	Soil	10/02/19 10:37	10/03/19 14:40
B-11-6.1-10		9100312-03	Soil	10/02/19 11:20	10/03/19 14:40
B-12-1.5		9100312-04	Soil	10/02/19 11:56	10/03/19 14:40



Will Brewington, President

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-9-6.5-10**

**9100312-01 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) Prepared by 3540-GCMS(Soxhlet)</b>									
Acenaphthene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Acenaphthylene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Anthracene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Benzo[a]anthracene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Benzo[b]fluoranthene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Benzo[k]fluoranthene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Benzo[ghi]perylene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Benzo[a]pyrene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Chrysene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Fluoranthene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Fluorene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
2-Methylnaphthalene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Naphthalene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Phenanthrene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Pyrene	ND		ug/kg dry	1200	482	4	10/07/19	10/08/19 13:48	WB
Surrogate: 2-Fluorophenol		23-121		62 %	10/07/19		10/08/19 13:48		
Surrogate: Phenol-d5		24-113		76 %	10/07/19		10/08/19 13:48		
Surrogate: Nitrobenzene-d5		23-120		83 %	10/07/19		10/08/19 13:48		
Surrogate: 2,4,6-Tribromophenol		19-122		93 %	10/07/19		10/08/19 13:48		
Surrogate: 2-Fluorobiphenyl		30-115		60 %	10/07/19		10/08/19 13:48		
Surrogate: Terphenyl-d14		18-137		85 %	10/07/19		10/08/19 13:48		
<b>GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC</b>									
Gasoline-Range Organics	1.34		mg/kg dry	0.12	0.12	1	10/07/19	10/07/19 19:58	GM

Will Brewington, President

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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-9-6.5-10**

**9100312-01 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
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**DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3546-GC(Microwave)**

<b>Diesel-Range Organics</b>	<b>399</b>		mg/kg dry	32.1	32.1	1	10/04/19	10/04/19 21:44	SJA
<i>Surrogate: o-Terphenyl</i>			70-130	81 %	10/04/19		10/04/19 21:44		

**PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids**

<b>Percent Solids</b>	<b>83</b>		%			1	10/04/19	10/04/19 14:54	GM
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**POLYCHLORINATED BIPHENYLS BY EPA 8082A (GC/ECD) Prepared by 3540-GC(Soxhlet) ClPestPCB**

Aroclor-1016	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1221	ND		ug/kg dry	205	205	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1232	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1242	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1248	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1254	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1260	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1262	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
Aroclor-1268	ND		ug/kg dry	100	100	1	10/07/19	10/09/19 00:19	SJA
<i>Surrogate: Tetrachloro-m-xylene</i>			40-150	81 %	10/07/19		10/09/19 00:19		
<i>Surrogate: Decachlorobiphenyl</i>			40-150	82 %	10/07/19		10/09/19 00:19		

**TOTAL METALS ANALYSIS BY EPA 3050B/6020A Prepared by 3050B-Metals Digestion**

<b>Arsenic</b>	<b>6.02</b>		mg/kg dry	0.301	0.301	1	10/07/19	10/09/19 14:29	VVD
<b>Barium</b>	<b>123</b>		mg/kg dry	1.51	1.51	5	10/07/19	10/09/19 17:34	VVD
<b>Cadmium</b>	<b>1.55</b>		mg/kg dry	0.301	0.301	1	10/07/19	10/09/19 14:29	VVD
<b>Chromium</b>	<b>41.1</b>		mg/kg dry	0.301	0.301	1	10/07/19	10/09/19 14:29	VVD
<b>Lead</b>	<b>359</b>		mg/kg dry	1.51	1.51	5	10/07/19	10/09/19 17:34	VVD
<b>Mercury</b>	<b>0.206</b>		mg/kg dry	0.0151	0.0151	1	10/07/19	10/09/19 14:29	VVD
<b>Selenium</b>	<b>2.09</b>		mg/kg dry	0.301	0.301	1	10/07/19	10/09/19 14:29	VVD
<b>Silver</b>	<b>3.45</b>		mg/kg dry	0.301	0.301	1	10/07/19	10/09/19 14:29	VVD

Will Brewington, President

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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-9-6.5-10**

**9100312-01 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS) Prepared by 3010A-Metals Digestion(TCLP)</b>									
Lead	0.618		mg/L	0.500	0.500	1	10/25/19	10/28/19 13:26	VVD



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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

### B-9-6.5-10

9100312-01RE1 (Soil)  
Sample Date: 10/02/19

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS</b>									
Acetone	116		ug/kg dry	12.0	12.0	1	10/09/19	10/09/19 22:12	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	60.2	60.2	1	10/09/19	10/09/19 22:12	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Benzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Bromobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Bromochloromethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Bromodichloromethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Bromoform	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Bromomethane	ND		ug/kg dry	6.0	6.0	1	10/09/19	10/09/19 22:12	GM
tert-Butanol (TBA)	ND		ug/kg dry	60.2	60.2	1	10/09/19	10/09/19 22:12	GM
2-Butanone (MEK)	ND		ug/kg dry	12.0	12.0	1	10/09/19	10/09/19 22:12	GM
n-Butylbenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
sec-Butylbenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
tert-Butylbenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Carbon disulfide	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Carbon tetrachloride	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Chlorobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Chloroethane	ND		ug/kg dry	6.0	6.0	1	10/09/19	10/09/19 22:12	GM
Chloroform	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Chloromethane	ND		ug/kg dry	6.0	6.0	1	10/09/19	10/09/19 22:12	GM
2-Chlorotoluene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
4-Chlorotoluene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Dibromochloromethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Dibromomethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2-Dichlorobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,3-Dichlorobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,4-Dichlorobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Dichlorodifluoromethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1-Dichloroethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2-Dichloroethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1-Dichloroethene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM

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Will Brewington, President

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-9-6.5-10**

**9100312-01RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
cis-1,2-Dichloroethene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Dichlorofluoromethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2-Dichloropropane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,3-Dichloropropane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
2,2-Dichloropropane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1-Dichloropropene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Ethylbenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Hexachlorobutadiene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
2-Hexanone	ND		ug/kg dry	12.0	12.0	1	10/09/19	10/09/19 22:12	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
<b>4-Isopropyltoluene</b>	<b>3.1</b>	J	ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
4-Methyl-2-pentanone	ND		ug/kg dry	12.0	12.0	1	10/09/19	10/09/19 22:12	GM
Methylene chloride	ND		ug/kg dry	24.1	24.1	1	10/09/19	10/09/19 22:12	GM
Naphthalene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
n-Propylbenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Styrene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Tetrachloroethene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
<b>Toluene</b>	<b>2.8</b>	J	ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1,1-Trichloroethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,1,2-Trichloroethane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Trichloroethene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,2,3-Trichloropropane	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM

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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-9-6.5-10**

**9100312-01RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
1,2,4-Trimethylbenzene	8.6		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
1,3,5-Trimethylbenzene	6.2		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Vinyl chloride	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
o-Xylene	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
m- & p-Xylenes	ND		ug/kg dry	6.0	2.4	1	10/09/19	10/09/19 22:12	GM
Surrogate: 1,2-Dichloroethane-d4		70-130		109 %	10/09/19		10/09/19 22:12		
Surrogate: Toluene-d8		75-120		100 %	10/09/19		10/09/19 22:12		
Surrogate: 4-Bromofluorobenzene		65-120		103 %	10/09/19		10/09/19 22:12		



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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-10-3.6-6.5-10**

**9100312-02 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
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#### SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) Prepared by 3540-GCMS(Soxhlet)

Acenaphthene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Acenaphthylene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Anthracene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Benzo[a]anthracene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Benzo[b]fluoranthene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Benzo[k]fluoranthene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Benzo[ghi]perylene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Benzo[a]pyrene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Chrysene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Fluoranthene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Fluorene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
2-Methylnaphthalene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Naphthalene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Phenanthrene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB
Pyrene	ND		ug/kg dry	2350	941	4	10/07/19	10/08/19 14:10	WB

Surrogate: 2-Fluorophenol		23-121	59 %	10/07/19	10/08/19 14:10
Surrogate: Phenol-d5		24-113	77 %	10/07/19	10/08/19 14:10
Surrogate: Nitrobenzene-d5		23-120	86 %	10/07/19	10/08/19 14:10
Surrogate: 2,4,6-Tribromophenol		19-122	89 %	10/07/19	10/08/19 14:10
Surrogate: 2-Fluorobiphenyl		30-115	85 %	10/07/19	10/08/19 14:10
Surrogate: Terphenyl-d14		18-137	92 %	10/07/19	10/08/19 14:10

#### GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC

Gasoline-Range Organics	0.81		mg/kg dry	0.12	0.12	1	10/07/19	10/07/19 20:32	GM
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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-10-3.6-6.5-10**

**9100312-02 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
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#### **DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3546-GC(Microwave)**

<b>Diesel-Range Organics</b>	<b>332</b>		mg/kg dry	78.4	78.4	1	10/04/19	10/04/19 22:11	SJA
<i>Surrogate: o-Terphenyl</i>			70-130	86 %	10/04/19		10/04/19 22:11		

#### **PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids**

<b>Percent Solids</b>	<b>85</b>		%			1	10/04/19	10/04/19 14:54	GM
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#### **POLYCHLORINATED BIPHENYLS BY EPA 8082A (GC/ECD) Prepared by 3540-GC(Soxhlet) ClPestPCB**

Aroclor-1016	ND		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
Aroclor-1221	ND		ug/kg dry	200	200	1	10/07/19	10/09/19 00:49	SJA
Aroclor-1232	ND		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
<b>Aroclor-1242</b>	<b>301</b>		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
Aroclor-1248	ND		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
Aroclor-1254	ND		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
<b>Aroclor-1260</b>	<b>125</b>		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
Aroclor-1262	ND		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
Aroclor-1268	ND		ug/kg dry	97.6	97.6	1	10/07/19	10/09/19 00:49	SJA
<i>Surrogate: Tetrachloro-m-xylene</i>			40-150	79 %	10/07/19		10/09/19 00:49		
<i>Surrogate: Decachlorobiphenyl</i>			40-150	78 %	10/07/19		10/09/19 00:49		

#### **TOTAL METALS ANALYSIS BY EPA 3050B/6020A Prepared by 3050B-Metals Digestion**

<b>Arsenic</b>	<b>10.6</b>		mg/kg dry	0.294	0.294	1	10/07/19	10/09/19 14:31	VVD
<b>Barium</b>	<b>261</b>		mg/kg dry	2.94	2.94	10	10/07/19	10/09/19 17:37	VVD
<b>Cadmium</b>	<b>8.81</b>		mg/kg dry	0.294	0.294	1	10/07/19	10/09/19 14:31	VVD
<b>Chromium</b>	<b>68.1</b>		mg/kg dry	0.294	0.294	1	10/07/19	10/09/19 14:31	VVD
<b>Lead</b>	<b>904</b>		mg/kg dry	2.94	2.94	10	10/07/19	10/09/19 17:37	VVD
<b>Mercury</b>	<b>0.527</b>		mg/kg dry	0.0147	0.0147	1	10/07/19	10/09/19 14:31	VVD
<b>Selenium</b>	<b>0.905</b>		mg/kg dry	0.294	0.294	1	10/07/19	10/09/19 14:31	VVD
<b>Silver</b>	<b>12.0</b>		mg/kg dry	0.294	0.294	1	10/07/19	10/09/19 14:31	VVD



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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-10-3.6-6.5-10**

**9100312-02 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS) Prepared by 3010A-Metals Digestion(TCLP)</b>									
Lead	ND		mg/L	0.500	0.500	1	10/25/19	10/28/19 13:28	VVD



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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
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**B-10-3.6-6.5-10**

**9100312-02RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS</b>									
Acetone	82.8		ug/kg dry	11.8	11.8	1	10/09/19	10/09/19 22:39	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	58.8	58.8	1	10/09/19	10/09/19 22:39	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Benzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Bromobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Bromochloromethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Bromodichloromethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Bromoform	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Bromomethane	ND		ug/kg dry	5.9	5.9	1	10/09/19	10/09/19 22:39	GM
tert-Butanol (TBA)	ND		ug/kg dry	58.8	58.8	1	10/09/19	10/09/19 22:39	GM
2-Butanone (MEK)	ND		ug/kg dry	11.8	11.8	1	10/09/19	10/09/19 22:39	GM
n-Butylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
sec-Butylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
tert-Butylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Carbon disulfide	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Carbon tetrachloride	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Chlorobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Chloroethane	ND		ug/kg dry	5.9	5.9	1	10/09/19	10/09/19 22:39	GM
Chloroform	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Chloromethane	ND		ug/kg dry	5.9	5.9	1	10/09/19	10/09/19 22:39	GM
2-Chlorotoluene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
4-Chlorotoluene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Dibromochloromethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Dibromomethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1-Dichloroethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2-Dichloroethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1-Dichloroethene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-10-3.6-6.5-10**

**9100312-02RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Dichlorofluoromethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2-Dichloropropane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,3-Dichloropropane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
2,2-Dichloropropane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1-Dichloropropene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Ethylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Hexachlorobutadiene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
2-Hexanone	ND		ug/kg dry	11.8	11.8	1	10/09/19	10/09/19 22:39	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
4-Isopropyltoluene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
4-Methyl-2-pentanone	ND		ug/kg dry	11.8	11.8	1	10/09/19	10/09/19 22:39	GM
Methylene chloride	ND		ug/kg dry	23.5	23.5	1	10/09/19	10/09/19 22:39	GM
Naphthalene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
n-Propylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Styrene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Tetrachloroethene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Toluene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Trichloroethene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM

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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-10-3.6-6.5-10**

**9100312-02RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Vinyl chloride	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
o-Xylene	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
m- & p-Xylenes	ND		ug/kg dry	5.9	2.4	1	10/09/19	10/09/19 22:39	GM
Surrogate: 1,2-Dichloroethane-d4			70-130	113 %	10/09/19		10/09/19 22:39		
Surrogate: Toluene-d8			75-120	104 %	10/09/19		10/09/19 22:39		
Surrogate: 4-Bromofluorobenzene			65-120	93 %	10/09/19		10/09/19 22:39		



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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-11-6.1-10**

**9100312-03 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) Prepared by 3540-GCMS(Soxhlet)</b>									
Acenaphthene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Acenaphthylene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Anthracene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Benzo[a]anthracene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Benzo[b]fluoranthene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Benzo[k]fluoranthene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Benzo[ghi]perylene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Benzo[a]pyrene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Chrysene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Fluoranthene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Fluorene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
2-Methylnaphthalene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Naphthalene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Phenanthrene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Pyrene	ND		ug/kg dry	575	230	2	10/07/19	10/08/19 14:33	WB
Surrogate: 2-Fluorophenol		23-121		53 %	10/07/19		10/08/19 14:33		
Surrogate: Phenol-d5		24-113		65 %	10/07/19		10/08/19 14:33		
Surrogate: Nitrobenzene-d5		23-120		59 %	10/07/19		10/08/19 14:33		
Surrogate: 2,4,6-Tribromophenol		19-122		77 %	10/07/19		10/08/19 14:33		
Surrogate: 2-Fluorobiphenyl		30-115		53 %	10/07/19		10/08/19 14:33		
Surrogate: Terphenyl-d14		18-137		67 %	10/07/19		10/08/19 14:33		
<b>GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC</b>									
Gasoline-Range Organics	ND		mg/kg dry	0.11	0.11	1	10/07/19	10/07/19 21:05	GM

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

### B-11-6.1-10

9100312-03 (Soil)  
Sample Date: 10/02/19

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
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#### DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3546-GC(Microwave)

<b>Diesel-Range Organics</b>	<b>114</b>		mg/kg dry	30.7	30.7	1	10/04/19	10/04/19 23:07	SJA
<i>Surrogate: o-Terphenyl</i>			70-130	79 %	10/04/19		10/04/19 23:07		

#### PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids

<b>Percent Solids</b>	<b>87</b>		%			1	10/04/19	10/04/19 14:54	GM
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#### POLYCHLORINATED BIPHENYLS BY EPA 8082A (GC/ECD) Prepared by 3540-GC(Soxhlet) ClPestPCB

Aroclor-1016	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1221	ND		ug/kg dry	195	195	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1232	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1242	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1248	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1254	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1260	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1262	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
Aroclor-1268	ND		ug/kg dry	95.4	95.4	1	10/07/19	10/09/19 01:19	SJA
<i>Surrogate: Tetrachloro-m-xylene</i>			40-150	80 %	10/07/19		10/09/19 01:19		
<i>Surrogate: Decachlorobiphenyl</i>			40-150	90 %	10/07/19		10/09/19 01:19		

#### TOTAL METALS ANALYSIS BY EPA 3050B/6020A Prepared by 3050B-Metals Digestion

<b>Arsenic</b>	<b>11.9</b>		mg/kg dry	0.287	0.287	1	10/07/19	10/09/19 14:34	VVD
<b>Barium</b>	<b>450</b>		mg/kg dry	5.75	5.75	20	10/07/19	10/09/19 17:39	VVD
<b>Cadmium</b>	<b>9.40</b>		mg/kg dry	0.287	0.287	1	10/07/19	10/09/19 14:34	VVD
<b>Chromium</b>	<b>61.5</b>		mg/kg dry	0.287	0.287	1	10/07/19	10/09/19 14:34	VVD
<b>Lead</b>	<b>1710</b>		mg/kg dry	5.75	5.75	20	10/07/19	10/09/19 17:39	VVD
<b>Mercury</b>	<b>0.764</b>		mg/kg dry	0.287	0.287	20	10/07/19	10/09/19 17:39	VVD
<b>Selenium</b>	<b>0.893</b>		mg/kg dry	0.287	0.287	1	10/07/19	10/09/19 14:34	VVD
<b>Silver</b>	<b>22.3</b>		mg/kg dry	0.287	0.287	1	10/07/19	10/09/19 14:34	VVD



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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

**Reported:**  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-11-6.1-10**

**9100312-03 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS) Prepared by 3010A-Metals Digestion(TCLP)</b>									
Lead	ND		mg/L	0.500	0.500	1	10/25/19	10/28/19 13:31	VVD



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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

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10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-11-6.1-10**

**9100312-03RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS</b>									
Acetone	36.3		ug/kg dry	11.5	11.5	1	10/09/19	10/09/19 23:06	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	57.5	57.5	1	10/09/19	10/09/19 23:06	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Benzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Bromobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Bromochloromethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Bromodichloromethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Bromoform	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Bromomethane	ND		ug/kg dry	5.7	5.7	1	10/09/19	10/09/19 23:06	GM
tert-Butanol (TBA)	ND		ug/kg dry	57.5	57.5	1	10/09/19	10/09/19 23:06	GM
2-Butanone (MEK)	ND		ug/kg dry	11.5	11.5	1	10/09/19	10/09/19 23:06	GM
n-Butylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
sec-Butylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
tert-Butylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Carbon disulfide	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Carbon tetrachloride	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Chlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Chloroethane	ND		ug/kg dry	5.7	5.7	1	10/09/19	10/09/19 23:06	GM
Chloroform	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Chloromethane	ND		ug/kg dry	5.7	5.7	1	10/09/19	10/09/19 23:06	GM
2-Chlorotoluene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
4-Chlorotoluene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Dibromochloromethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Dibromomethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1-Dichloroethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2-Dichloroethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1-Dichloroethene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM

**IS-06**

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-11-6.1-10**

**9100312-03RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Dichlorofluoromethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2-Dichloropropane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,3-Dichloropropane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
2,2-Dichloropropane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1-Dichloropropene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Ethylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Hexachlorobutadiene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
2-Hexanone	ND		ug/kg dry	11.5	11.5	1	10/09/19	10/09/19 23:06	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
4-Isopropyltoluene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
4-Methyl-2-pentanone	ND		ug/kg dry	11.5	11.5	1	10/09/19	10/09/19 23:06	GM
Methylene chloride	ND		ug/kg dry	23.0	23.0	1	10/09/19	10/09/19 23:06	GM
Naphthalene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
n-Propylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Styrene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Tetrachloroethene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Toluene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Trichloroethene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM

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**Analytical Results**

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-11-6.1-10**

**9100312-03RE1 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Vinyl chloride	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
o-Xylene	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
m- & p-Xylenes	ND		ug/kg dry	5.7	2.3	1	10/09/19	10/09/19 23:06	GM
Surrogate: 1,2-Dichloroethane-d4			70-130	133 %	10/09/19		10/09/19 23:06		S-06
Surrogate: Toluene-d8			75-120	139 %	10/09/19		10/09/19 23:06		S-06
Surrogate: 4-Bromofluorobenzene			65-120	68 %	10/09/19		10/09/19 23:06		

**IS-06**

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

### B-12-1.5

9100312-04 (Soil)  
Sample Date: 10/02/19

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS</b>									
Acetone	70.6		ug/kg dry	11.2	11.2	1	10/09/19	10/09/19 00:39	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	56.2	56.2	1	10/09/19	10/09/19 00:39	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Benzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Bromobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Bromochloromethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Bromodichloromethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Bromoform	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Bromomethane	ND		ug/kg dry	5.6	5.6	1	10/09/19	10/09/19 00:39	GM
tert-Butanol (TBA)	ND		ug/kg dry	56.2	56.2	1	10/09/19	10/09/19 00:39	GM
2-Butanone (MEK)	ND		ug/kg dry	11.2	11.2	1	10/09/19	10/09/19 00:39	GM
n-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
sec-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
tert-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Carbon disulfide	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Carbon tetrachloride	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Chlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Chloroethane	ND		ug/kg dry	5.6	5.6	1	10/09/19	10/09/19 00:39	GM
Chloroform	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Chloromethane	ND		ug/kg dry	5.6	5.6	1	10/09/19	10/09/19 00:39	GM
2-Chlorotoluene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
4-Chlorotoluene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Dibromochloromethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Dibromomethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1-Dichloroethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2-Dichloroethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM

IS-06



Will Brewington, President

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

### B-12-1.5

9100312-04 (Soil)  
Sample Date: 10/02/19

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
<b>IS-06</b>									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Dichlorofluoromethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,3-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
2,2-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Ethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Hexachlorobutadiene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
2-Hexanone	ND		ug/kg dry	11.2	11.2	1	10/09/19	10/09/19 00:39	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
4-Isopropyltoluene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
4-Methyl-2-pentanone	ND		ug/kg dry	11.2	11.2	1	10/09/19	10/09/19 00:39	GM
<b>Methylene chloride</b>	<b>26.2</b>	L	ug/kg dry	22.5	22.5	1	10/09/19	10/09/19 00:39	GM
Naphthalene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
n-Propylbenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Styrene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Tetrachloroethene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Toluene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Trichloroethene	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM

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Will Brewington, President

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

### B-12-1.5

9100312-04 (Soil)  
Sample Date: 10/02/19

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) Prepared by 5030-GCMS (continued)</b>									
<b>1,2,4-Trimethylbenzene</b>	<b>16.9</b>		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
<b>1,3,5-Trimethylbenzene</b>	<b>6.7</b>		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Vinyl chloride	ND		ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
<b>o-Xylene</b>	<b>2.4</b>	J	ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
<b>m- &amp; p-Xylenes</b>	<b>3.9</b>	J	ug/kg dry	5.6	2.2	1	10/09/19	10/09/19 00:39	GM
Surrogate: 1,2-Dichloroethane-d4			70-130	139 %	10/09/19		10/09/19 00:39		S-06
Surrogate: Toluene-d8			75-120	123 %	10/09/19		10/09/19 00:39		S-06
Surrogate: 4-Bromofluorobenzene			65-120	97 %	10/09/19		10/09/19 00:39		
<b>SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) Prepared by 3540-GCMS(Soxhlet)</b>									
Acenaphthene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Acenaphthylene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Anthracene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Benzo[a]anthracene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Benzo[b]fluoranthene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Benzo[k]fluoranthene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Benzo[ghi]perylene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Benzo[a]pyrene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Chrysene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Fluoranthene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Fluorene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
2-Methylnaphthalene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Naphthalene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Phenanthrene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Pyrene	ND		ug/kg dry	5620	2250	4	10/07/19	10/08/19 15:20	WB
Surrogate: 2-Fluorophenol			23-121	41 %	10/07/19		10/08/19 15:20		
Surrogate: Phenol-d5			24-113	90 %	10/07/19		10/08/19 15:20		
Surrogate: Nitrobenzene-d5			23-120	88 %	10/07/19		10/08/19 15:20		
Surrogate: 2,4,6-Tribromophenol			19-122	96 %	10/07/19		10/08/19 15:20		
Surrogate: 2-Fluorobiphenyl			30-115	95 %	10/07/19		10/08/19 15:20		
Surrogate: Terphenyl-d14			18-137	101 %	10/07/19		10/08/19 15:20		

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## Analytical Results

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-12-1.5**

**9100312-04 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC</b>									
Gasoline-Range Organics	0.21		mg/kg dry	0.11	0.11	1	10/07/19	10/07/19 21:38	GM
<b>DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3546-GC(Microwave)</b>									
Diesel-Range Organics	816		mg/kg dry	74.9	74.9	1	10/04/19	10/04/19 23:34	SJA
Surrogate: <i>o</i> -Terphenyl		70-130		103 %	10/04/19		10/04/19 23:34		
<b>PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids</b>									
Percent Solids	89		%			1	10/04/19	10/04/19 14:54	GM
<b>POLYCHLORINATED BIPHENYLS BY EPA 8082A (GC/ECD) Prepared by 3540-GC(Soxhlet) CIPestPCB</b>									
Aroclor-1016	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1221	ND		ug/kg dry	191	191	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1232	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1242	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1248	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
<b>Aroclor-1254</b>	<b>793</b>		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1260	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1262	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Aroclor-1268	ND		ug/kg dry	93.3	93.3	1	10/07/19	10/09/19 01:48	SJA
Surrogate: Tetrachloro- <i>m</i> -xylene		40-150		82 %	10/07/19		10/09/19 01:48		
Surrogate: Decachlorobiphenyl		40-150		76 %	10/07/19		10/09/19 01:48		
<b>TOTAL METALS ANALYSIS BY EPA 3050B/6020A Prepared by 3050B-Metals Digestion</b>									
Arsenic	12.7		mg/kg dry	0.281	0.281	1	10/07/19	10/09/19 14:41	VVD
Barium	410		mg/kg dry	2.81	2.81	10	10/07/19	10/09/19 17:47	VVD
Cadmium	9.18		mg/kg dry	0.281	0.281	1	10/07/19	10/09/19 14:41	VVD
Chromium	135		mg/kg dry	0.281	0.281	1	10/07/19	10/09/19 14:41	VVD
Lead	747		mg/kg dry	2.81	2.81	10	10/07/19	10/09/19 17:47	VVD
Mercury	0.811		mg/kg dry	0.140	0.140	10	10/07/19	10/09/19 17:47	VVD
Selenium	0.880		mg/kg dry	0.281	0.281	1	10/07/19	10/09/19 14:41	VVD
Silver	20.4		mg/kg dry	0.281	0.281	1	10/07/19	10/09/19 14:41	VVD

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**Analytical Results**

**Project: BLUE PLAINS IMPOUND LOT UPGRADES**

Project Number: [none]  
Project Manager: Anna Franciosa

**Reported:**  
10/28/19 15:53  
Report revised to include TCLP lead and chromium. Original report ID 9100312 10 10 19 1633

**B-12-1.5**

**9100312-04 (Soil)**  
**Sample Date: 10/02/19**

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
<b>TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS) Prepared by 3010A-Metals Digestion(TCLP)</b>									
Chromium	ND		mg/L	0.500	0.500	1	10/25/19	10/28/19 13:33	VVD
<b>Lead</b>	<b>0.545</b>		mg/L	0.500	0.500	1	10/25/19	10/28/19 13:33	VVD

Will Brewington, President

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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
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Maryland Spectral Services does not maintain certification for the following analytical parameters:

#### Maryland Spectral Services

Matrix , Method , Analyte

Soil   Lead (TCLP)   Lead	Soil   Chromium (TCLP)   Chromium
Soil   8260 (Full List)   Hexachlorobutadiene	Soil   6020 (RCRA8 Total)   Arsenic
Soil   6020 (RCRA8 Total)   Barium	Soil   6020 (RCRA8 Total)   Cadmium
Soil   6020 (RCRA8 Total)   Chromium	Soil   6020 (RCRA8 Total)   Lead
Soil   6020 (RCRA8 Total)   Mercury	Soil   6020 (RCRA8 Total)   Selenium
Soil   6020 (RCRA8 Total)   Silver	



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## Analytical Results

### Project: BLUE PLAINS IMPOUND LOT UPGRADES

Project Number: [none]  
Project Manager: Anna Franciosa

Reported:  
10/28/19 15:53  
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### Notes and Definitions

- S-06 Surrogate recovery outside control limits due to sample matrix effect as confirmed by reanalysis.
- L Analyte is a possible laboratory contaminant
- J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
- IS-06 Internal standard area outside control limits due to sample matrix effect as confirmed by reanalysis.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- %-Solids Percent Solids is a supportive test and as such does not require accreditation



Will Brewington, President

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# CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.  
 1500 Caton Center Drive, Suite G  
 Baltimore, MD 21227  
 410-247-7600 o Fax 410-247-7602  
 labman@mdspectral.com

Matrix Codes: NW (nonpotable water)  
 PW (potable water)

Preservative: Field pH, Residual Chlorine, QC Request, Trip Blank, Field Blank  
 1 + 1 HCL, H<sub>2</sub>SO<sub>4</sub>, Methanol, Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, NaHCO<sub>3</sub>

MSS Lab ID  
 9100312-01

Report revised to include TCLP lead and Chromium. Original report ID 9100312 10 10 19 1633

Analysis Requested	TPH-GRO	TPH-DRO	VOCs	PAHs	RCRA Metals	PCBs	No. of Containers	Project Manager: A. Franciosa		
								Date	Time	Other
	X	X	X	X	X	X				
	↓	↓	↓	↓	↓	↓				
	↓	↓	↓	↓	↓	↓				
	↓	↓	↓	↓	↓	↓				

Field Sample ID	Date	Time	Water	Soil	Other	Received by: (Signature)	
						Date/Time	(Printed)
B9-6.5-10	10/2	10:00	X				
B10-3.6-6.5-10	10/2	10:37	↓				
B-11-6.1-10	10/2	11:20	↓				
B-12-1.5	10/2	11:56	↓				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Klaire Gubler	10/2/19	Klaire Gubler	10/2/19	3:34										
			10/3/19											

Lab Use: Temp: 4.8 °C  
 Received on Ice  
 Received same day  
 Preservation Appropriate

Sample Disposal:  
 Return to Client  
 Disposal by lab  
 Archive for \_\_\_ days

Turn Around Time:  
 Normal (7 day)  
 5 day  
 4 day  
 3 day  
 Rush (2 day)  
 Next Day  
 Other: \_\_\_  
 Specific Due Date: \_\_\_

Delivery Method:  
 Courier  
 Client  
 UPS  
 FedEx  
 USPS  
 Other: \_\_\_

Special Instructions/QC Requirements & Comments: