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SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

March 30, 2021

Mr. Peter Lisichenko, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: 68HE0319D0004
TD No: TO-0036-0021
DC No: STARTV-02-D-0109
SUBJECT: REMOVAL ACTION (RV2) SAMPLING REPORT
HOLY TRINITY CEMETERY SITE, AREA 6 & 7
LEWISTON, NIAGARA COUNTY, NEW YORK

Dear Mr. Lisichenko,

Enclosed please find the Removal Action (RV2) Sampling Report which summarizes the soil sampling event conducted by the U.S. Environmental Protection Agency, Region II (EPA) with the support of Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) at the Holy Trinity Cemetery Site, Area 6 & 7 (the Site) located in Lewiston, Niagara County, New York. The soil sampling event was performed as part of RV2 activities on December 1, 2020.

If you have any questions or comments, please contact me at (908) 510-9551.

Sincerely,

WESTON SOLUTIONS, INC.

David Benoit
For: START V Site Project Manager

Enclosure
cc: TDD File: TO-0036-0021

REMOVAL ACTION (RV2) SAMPLING REPORT

HOLY TRINITY CEMETERY SITE, AREA 6 & 7

Lewiston, Niagara County, New York

Site Code: A23M
CERCLIS Code: NYN000206698

Prepared by:

Superfund Technical Assessment & Response Team V
Weston Solutions, Inc.
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Edison, New Jersey 08837

Prepared for:

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1.0 Introduction

On December 1, 2020, the U.S. Environmental Protection Agency, Region II (EPA) Superfund and Emergency Management Division (SEMD) with the support of Weston Solutions Inc., Superfund Technical Assessment & Response Team V (START V) performed a soil sampling event as part of Removal Action (RV2) activities at off-site areas of concern (AOCs) comprising two residential properties (designated as Area 6 and Area 7) located adjacent to the Holy Trinity Cemetery Site (the Site). The soil samples (also comprising slag material) collected during the sampling event were submitted for laboratory waste characterization and radiochemistry analyses.

1.1 Site Location and Description

The Site consists of approximately 2.91 acres of radionuclide contamination located at a cemetery that is approximately 31.5 acres in size. The Site is owned by Holy Trinity Cemetery of Divine Mercy Parish in Lewiston, Niagara County, New York. The areas of observed contamination in the north-western portion of the property on a relatively flat and slightly elevated grassy field, under existing roadways, and at an isolated area adjacent to the Interstate 190 (I-190) corridor. There is one building on the Site which is utilized as both a residence and a cemetery maintenance facility. The Site is bordered to the north and east by I-190; to the south by Gate of Heaven Cemetery; and to the west by Robert Avenue and a residential area.

Based on historical information, EPA identified nine AOCs at the Site, including six on-site AOCs and three off-site AOCs. The on-site AOCs are identified as Area 1 through Area 4 and Area 8, comprising the grassy open fields and undeveloped portions of the Site, and Area 9, comprising portions of the non-public Site road network. The off-site AOCs are identified as Area 5 through Area 7, comprising three residences located adjacent to the Site, including 5374 Robert Avenue (Area 5), 5380 Robert Avenue (Area 6), and 5382 Robert Avenue (Area 7). The AOCs that were sampled as part of RV2 include Area 6 and Area 7.

Refer to Attachment A, Figure 1: Site Location Map

1.2 Site History and Background

In 1978, the U.S. Department of Energy (DOE) conducted an aerial radiological survey of the Niagara Falls region and identified more than 15 properties having elevated levels of radiation above background levels. It is believed that, in the early 1960s, slag from an unknown source was used as fill on the properties prior to paving. Based on the original survey and subsequent investigations, it is believed that the radioactive slag was deposited on the Site.

In February 1980, the New York State Department of Health (NYSDOH) Bureau of Radiological Health and the Niagara County Health Department conducted a ground radiological survey of the Site to identify areas with elevated radioactivity resulting from the use of radioactive slag as fill on the property. The survey was conducted based on information that the slag used at the cemetery was from the same source used at two other locations in nearby Niagara Falls, which had been identified by the NYSDOH as containing elevated levels of radioactivity. During the survey, cemetery personnel showed NYSDOH a slag pile located near the caretaker's garage in the western portion of the property. Cemetery personnel stated that this slag was used as fill for the cemetery roads throughout the property.

In addition, the slag was used as fill for the base of two proposed roadbeds that extended approximately 500 to 600 feet from the caretaker's garage, northwest toward Robert Avenue. At the time of the survey, the construction of these roads had been abandoned. The underlying slag base was covered with an unknown amount of soil and was left as an open field. Using an Eberline PRM-7 radiation meter, ground radiological survey of the slag pile indicated gamma radiation measuring 250 microroentgens per hour (µR/hr) and along cemetery roads, gamma readings ranged from 5 µR/hr (*i.e.*, background concentration) to 30 µR/hr. Gamma readings along the abandoned roadbeds ranged from 200 µR/hr to 400 µR/hr. Samples of the slag were collected as part of the investigation. Laboratory analysis of the samples indicated that the concentrations of isotopic uranium, isotopic thorium, radium-226 (Ra-226), and radium-228 (Ra-228), were significantly higher than background values.

In October 2006, the New York State Department of Environmental Conservation (NYSDEC) and the Niagara County Health Department conducted a reconnaissance of the Site. At the time, the slag pile previously observed near the caretaker's garage was no longer on the Site; the current caretaker had neither knowledge of the slag pile, nor what happened to it. The caretaker also indicated that children living nearby used this area for recreation. Since the 1980 NYSDOH site investigation, trees had grown through the abandoned slag roadbeds, pushing the slag to the surface. As part of the Site visit, NYSDEC conducted a ground radiological survey with an Exploranium GR-135. Radiological measurements taken while walking along the roadbed indicated gamma readings ranging from 200 to 450 µR/hr at waist height (approximately 1 meter/3 feet above the ground) and contact reading (approximately 1 inch above the ground) ranging from 450 to 570 µR/hr. Contact reading taken next to exposed slag near a tree was documented at 700 µR/hr. The NYSDEC collected four slag samples which were analyzed for isotopic uranium and isotopic thorium via gamma-ray spectroscopy. Laboratory analytical results indicated the presence of uranium-238/234 (U-238/234) at concentrations ranging from 114 picocuries per gram (pCi/g) to 1,664 pCi/g and thorium-232 (Th-232) from 114 pCi/g to 898 pCi/g.

In May 2007, NYSDEC visited the Site to verify contamination in an on-site debris pile using gamma-ray spectroscopy. During a 5-minute static survey, Ra-226 was the only radionuclide identified. A similar survey conducted on one of the roadbeds confirmed the presence of Th-232. During a reconnaissance performed by the NYSDOH and NYSDEC in July 2013, a ground radiological survey of on-site roadways and along the back roadway leading off-site was conducted using a pressurized ion chamber (PIC) and a sodium iodide (NaI) 2x2 scintillator. Measurements taken along the roadways with the PIC indicated gamma levels up to 51 µR/hr and up to 50,000 counts per minute (cpm) with the NaI scintillator.

On December 12 and 13, 2013, EPA's contractor, Weston Solutions, Inc., Site Assessment Team (SAT), collected a total of 14 subsurface soil samples and three slag samples from the Site. Soil samples were also collected from two locations suspected to be outside of the source area in order to document background conditions. At each sample location, soil samples were collected directly beneath slag material; at locations where a radioactive fill layer was not visually observed the soil sample was collected at the equivalent depth interval. Each slag sample consisted of one single piece of slag material. The soil samples were analyzed by Test America Laboratories (TestAmerica) for target analyte list (TAL) metals via EPA SW846; isotopic thorium and isotopic uranium via DOE alpha spectroscopy Health and Safety Laboratory (HASL)-300 Method A-01-R; Ra-226, Ra-228, and other gamma emitting radioisotopes via DOE gamma spectroscopy HASL-300 Method GA-01-R. The slag samples were analyzed for the same radiological

parameters as the soil samples but were not analyzed for TAL metals. Analytical results indicated that concentrations of radionuclides in all the slag samples and seven soil samples including the field duplicate, were significantly higher than at background conditions.

On May 1, 2014, SAT collected radon and thoron concentration measurements from locations on and in the vicinity of the Site. At the selected locations in background areas, above the source material, and off the source area, radon, and thoron concentration measurements in picocuries per liter (pCi/L) were collected with RAD7 radon/thoron detectors. The radon and thoron measurements were collected at heights of one meter above the ground surface. Radon and thoron concentrations were at normal background levels.

On August 10 through 13, 2015, EPA and RST 3 conducted a Removal Assessment of the Site. The presence/absence of radon, thoron, and gamma radiation was verified through ground radiological surveys. Areas of observed contamination were delineated by comparing radiological survey measurements from suspected source areas with measurements obtained from a background location. Laboratory analytical results were used to verify the concentration of radon in living spaces of the one on-site building and to determine the presence of residual contamination and potential releases of radiation-containing material in soil and fill at the Site. Ground radiological survey measurements were collected on-site using fluke pressurized ionization chamber (FPIC), Ludlum-2241, and Reuter-Stokes high pressure ion chamber (HPIC). To define the basis for comparing ground radiological survey results, it was necessary to establish background reading at the Site. Background readings were collected with each of the instruments from locations on-site that were presumed to be unaffected by historic Site activities. Background gamma measurements included readings collected with Ludlum-2241 (9,900 to 10,700 cpm), FPIC (7 to 16 µR/hr at waist height and 9 to 17 µR/hr at contact), and HPIC (9.52 µR/hr). Specific isotopes were identified using a Berkeley Nucleonics Corporation (BNC) SAM 940™ (SAM 940) portable radioisotope identification system. A Durridge RAD7 electronic radon/thoron detector was utilized to measure the concentration of radon and thoron in ambient air. Background radon/thoron concentrations ranged from 0 to less than (<) 4.0 pCi/L, and no radionuclides were detected with the SAM-940 at the selected background location.

During the August 2015 radiological investigation, gamma measurements taken with the Ludlum-2241 in the one on-site building were generally at background levels, with a few locations indicating gamma readings that were slightly above background. The highest gamma measurement collected in the one on-site building was 16,100 cpm in the viewing room. Gamma measurements taken with the Ludlum-2241 in exterior locations throughout the Site were generally above background, with the highest reading at 569,000 cpm (more than 53 times [53x] above background). Gamma measurements collected with the FPIC in the one on-site building were generally at background levels ranging from 3 µR/hr (at waist height) to 19 µR/hr (at contact). Gamma measurements taken with the HPIC at three locations in the one on-site building ranged from 9.56 µR/hr to 10.94 µR/hr. Exterior HPIC gamma measurements were generally above background. The HPIC gamma measurements collected from eight locations selected on-site for soil sampling ranged from 10.02 µR/hr to 256.34 µR/hr (more than 26x above background). At one location on the east side of the on-site dirt road, Ra-226 was detected with the SAM-940. Based upon results from radon/thoron surveys conducted with RAD7, radon and thoron concentrations were at normal background levels in the on-site building; however, at all eight soil sampling locations, radon concentration was above background in contact measurement collected from one soil sampling location, thoron concentrations were above background in waist-level

measurements collected at five soil sampling locations and above background in contact measurements collected at two soil sampling locations.

On August 10 through 13, 2015, RST-3 procured National Radon Safety Board (NRSB)-certified company, Accu-View Property Inspections (Accu-View), utilized passive activated charcoal canisters (radon canisters) to conduct short-term radon sampling tests that lasted a minimum of approximately 72 hours. A total of 15 radon canisters, including two field duplicates, and one field blank, were deployed in the one on-site building. Radon testing locations were focused on frequently occupied spaces in the building. Analytical results indicated that concentrations of radon were below the EPA Site-Specific Action Level (SSAL) of 4.0 pCi/L in all the living spaces sampled in the building.

On August 12, 2015, RST 3 conducted a soil sampling event to verify the presence of residual radioactive material in on-site soil. Based on radiological survey data from SAT's prior site investigation, and survey data from the August 2015 radiological investigation, soil sampling locations suspected to contain radionuclides and metals/metalloids were identified on-site by EPA. A total of nine soil samples, including one field duplicate, were collected at depths 0 to 4 feet below ground surface (bgs) from eight location on-site. The soil samples were analyzed by TestAmerica for TAL metals (including mercury) via EPA SW846; isotopic thorium and isotopic uranium via alpha spectroscopy HASL-300-A-01-R; Ra-226 (21 days ingrowth), Ra-228 and other gamma emitting radioisotopes via gamma spectroscopy HASL-300-GA-01-R. Analytical results indicated that concentrations of Ra-226 exceeded the EPA SSAL (established by EPA in August 2015) of 4.06 pCi/g in three of the nine soil samples. The concentration of cobalt was above the EPA Removal Management Level (RML) of 70 milligrams per kilograms (mg/kg) in one soil sample with exceedance concentration at 110 mg/kg. Thallium concentration was above the EPA RML of 2.3 mg/kg in one soil sample with exceedance concentration at 2.4 mg/kg.

On August 12, 2015, EPA collected four wipe samples including one field blank, from access doorways in the on-site building. The wipe samples were collected to determine if radiation-containing material was being tracked into the building. The wipe samples were analyzed by EPA using Ludlum-3030. Based upon the analytical results of the wipe samples for the selected counting durations, the minimum detectable concentration (MDC) for 100 square centimeters (cm^2) were determined as 0.80 disintegrations per minute (dpm) and 29.5 dpm respectively, for alpha and beta particles. These levels were below the 100 dpm and 1,000 dpm respectively, for alpha and beta counts outlined in the *New York City* Department of Health and Mental Hygiene (NYC DOHMH) Article 175 of the NYC Health Code, "Radiation Control", §175.03 - Release of Materials or Facilities, which was adopted by EPA as the SSAL for alpha and beta particles. Alpha and beta counts for all the wipe samples were at the natural background level conservatively estimated by counting a blank wipe.

In April 2016, EPA performed Removal Assessment activities at AOCs associated with the Site. Utilizing an all-terrain vehicle (ATV), RST 3 conducted ground radiological survey at seven of the nine AOCs to identify locations indicating presence of radiation-containing material and to define the extent of contamination in the AOCs. Air monitoring and sampling was performed daily at the on-site AOCs during the radiological survey activities to verify that the survey activities being performed on-site were not generating fugitive dust to levels that would potentially expose on-site personnel and the public to site-related contaminants. Based on the results of the ground radiological survey, approximately 50 percent (%) of Area 1; portions northeast, south, and

southwest of Area 2, as well as portions of the non-public Site road network immediately south of Area 2; discontinuous hot spots identified in the southern and southeast portions of Area 3; a dirt pile located on the eastern portion of Area 4; and portions of Area 9 immediately south of Area 1 and Area 3; all indicated gamma readings exceeding 3x background. Gamma readings at Area 5 and Area 8 were at normal background levels. Baseline air monitoring results indicated that particulate concentrations were generally below 50 micrograms per cubic meter ($\mu g/m^3$). Daily air monitoring results indicated that particulate concentrations during radiological survey activities were generally below the minimum SSAL of 100 $\mu g/m^3$. Screening results of air filter samples collected with the RADēCO during radiological survey activities indicated that alpha, beta, and gamma particles were at normal background levels.

On April 22 through 24, 2016, RST-3 procured NRSB-certified Company, Accu-View, conducted radon sampling in the residence at Area 5 by to verify if radon was present in living spaces of the residence and, subsequently determine if the installation of a radon mitigation system in the residence was necessary. Analytical results of 12 pre-mitigation radon samples, including one field duplicate, and one field blank, collected from the residence in Area 5 indicated radon concentrations were equal to or exceeded the EPA SSAL of 4.0 picocuries per liter (pCi/L) in five of the samples. Based on the pre-mitigation radon analytical results, on May 24, 2016, EPA conducted a walk-through at Area 5 and identified a location in the residence to install a radon mitigation system. On June 15, 2016, a radon mitigation system was installed in the residence at Area 5. On August 1 through 4, 2016, a post-mitigation radon sampling event was performed to verify the effectiveness of the radon mitigation system in reducing the concentration of radon in the residence. Analytical results of the post-mitigation radon sampling event indicated that radon concentrations were at normal background levels.

On August 18, 2016, RST 3 collected a total of 30 soil samples from seven soil sampling locations identified by the EPA at Area 5. Using non-dedicated hand shovels and pickaxe, test pits were advanced to depths bgs. Soil samples were collected from six locations at depths 0 to 6, 6 to 12, 12 to 18, and 18 to 24 inches bgs, and from one location at depths 2 to 8, 8 to 14, 14 to 20, and 20 to 26 inches bgs. All the soil samples were analyzed by PACE Analytical Services (PACE) for isotopic thorium, isotopic uranium, and other alpha emitting actinides via alpha spectroscopy HASL-300 Method U-02; radium-226 (21-day ingrowth), radium-228, and other gamma emitting radioisotopes via gamma spectroscopy EPA Method 901.1. Analytical results of the 30 soil samples, including two field duplicates, collected from Area 5, indicated that concentrations of target radionuclides were below the EPA SSALs.

2.0 Scope of Work

As part of the scope of work (SOW) for the RV2 activities, START V was tasked by the EPA with collecting soil samples (also comprising slag material), including quality assurance/quality control (QA/QC) samples, from locations on the driveway of Area 6 and in the vehicle parking garage of Area 7, and submitting the samples to the assigned laboratory for waste characterization analysis, including full TAL analysis (TAL volatile organic compounds (VOCs), TAL semivolatile organic compounds (SVOCs), TAL pesticides, TAL polychlorinated biphenyls (PCBs), herbicides, TAL metals including mercury, and cyanide), full toxicity characteristic leaching procedure (TCLP) analysis (TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury), and Resource Conservation and Recovery Act (RCRA) characteristics analysis. Additionally, soil samples were submitted to the assigned laboratory for full radiochemistry

analysis (alpha spectroscopy, gamma spectroscopy, and Ra-226 [homogenized for 21-day ingrowth]) in view of blending calculation for future removal operations on-site.

Furthermore, START V was tasked with documenting all significant observations and Site activities in the Site logbook and with digital photographs, entering all sampling information into the Site-Specific SCRIBE data management system, and documenting sampling locations with Global Positioning System (GPS) technology.

3.0 On-Site Personnel

Name	Affiliation	Duties On-site
Pete Lisichenko	EPA, Region II	On-Scene Coordinator
Sean Quinn	Weston Solutions Inc., START V Region II	Site Project Manager, Site Health and Safety, Sample Collection, QA/QC, GPS, and Sample Management
David Benoit	Weston Solutions Inc., START V, Region II	Sample Collection, QA/QC, GPS, and Sample Management

EPA: U.S. Environmental Protection Agency
QA/QC: Quality Control/Quality Assurance
GPS: Global Positioning System
START V: Superfund Technical Assessment and Response Team V

4.0 Site Activities and Observations

On December 1, 2020, EPA and START V mobilized to the Site to conduct RV2 soil sampling activities at residential AOCs, Area 6 and Area 7, in accordance with the SOW. Upon arrival at both AOCs, color-coded utility flags and markings placed by Dig Safely New York were observed. Utilizing a 3x3 NaI scintillator and a Ludlum-2241-2 setup, locations exhibiting the highest gamma readings in both AOCs were selected for sampling by the EPA On-Scene Coordinator (OSC). A total of six sampling locations were selected by the OSC, including four locations in the driveway of Area 6 and two locations in the vehicle parking garage of Area 7. At the selected sampling locations, a coring device was used to core through surface concrete to expose the underlying soil. Non-dedicated stainless-steel hand augers were utilized to advance borings at the cored locations to depths up to 24 inches bgs. Soil samples, including slag material, were collected at the designated sampling depth intervals bgs. A total of sixteen grab soil samples, including one field duplicate, were collected from Area 6. A total of eleven grab soil samples, including two field duplicate, were collected from Area 7. Additionally, aliquots of soil collected from Area 6 and 7 were composited, and two soil samples, including one field duplicate, were collected from the composited soil. Samples designated for QA/QC purposes were collected as necessary, including one rinsate blank.

Refer to Attachment A, Figure 2: December 2020 Soil Sample Location Map, Attachment B, Table 1: Sample Collection Summary Table, and Attachment C: Photographic Documentation log.

4.1 Soil Lithology

Generally, the lithology of the soils encountered in Area 6 at depths 0 to 12 inches bgs comprised of brown gravel with brown fine sandy clay, and at depths 12 to 24 inches bgs, brown clay and gravel transitioning to clay. Generally, the lithology of the soil encountered in Area 7 at depths 0 to 12 inches bgs comprised of light grey gravel with trace slag material at depths 6 to 12 inches bgs, and at depths 12 to 24 inches bgs, light grey gravel, some clay, and trace slag material.

Gamma readings taken at 6-inch intervals in each location at both AOCs were in the range of 15-25 µR/hr, approximately 2x background.

Refer to Attachment B, Table 1: Sample Collection Summary Table.

5.0 Sampling Methodology

All field sampling activities were performed in accordance with EPA's Environmental Response Team (ERT)/Scientific Engineering Response and Analytical Services (SERAS) contractor's Standard Operating Procedure (SOP) Number (No.) 2001: *General Field Sampling Guidelines*. Soil sampling was conducted in accordance with the START V Site-Specific Uniform Federal Policy (UFP) Quality Assurance Project Plan (QAPP), EPA's ERT/SERAS contractor's SOP No. 2012: *Soil Sampling*, and EPA's Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Prior to mobilizing to the Site, Dig Safely New York was contacted to mark out the locations of all subsurface public utilities within the Right-of-Way areas near the residential AOCs.

Soil sampling locations were determined by screening the AOCs with a 3x3 NaI scintillator connected to a Ludlum-2241-2. Locations exhibiting the highest gamma readings were selected for sampling. Utilizing a coring device, selected sampling locations with surface concrete were cored through to expose the underlying soil. Thereafter, non-dedicated stainless-steel hand augers were utilized to advance a boring in each cored location, at 6-inch intervals, to depths up to 24 inches bgs. New nitrile gloves were donned between sampling locations and depth intervals. Grab soil sample extracted at each 6-inch interval bgs was placed in a dedicated, resealable plastic bag for homogenization. Each bagged soil sample was screened for gamma radiation at a background location using the Ludlum-2241 and NaI 3x3 scintillator setup. Screening data was documented, and sample transferred into 8-ounce (oz.) glass sample jar. Samples for QA/QC purposes, including field duplicate, and additional sample volumes designated as matrix spike/matrix spike duplicate (MS/MSD), were collected at the rate of one per 20 field samples. All the grab soil samples were collected for definitive data objective and submitted full radiochemistry analysis.

At the discretion of the OSC, homogenized bagged soil samples collected at depths 6 to 12 inches bgs from both AOCs, where slag material was either encountered, or suspected to be present, were collected as discrete grab samples for waste characterization (full TAL, full TCLP, and RCRA characteristic) and full radiochemistry analyses. Soil samples designated for TAL VOCs and TCLP VOCs analyses were collected first from the homogenized bagged soil using Encore samplers. The remaining soil sample volume requirement for other waste characterization parameters and full radiochemistry analyses were collected from the homogenized bagged soil using dedicated plastic scoop and transferred into designated laboratory glass sample containers. Samples for QA/QC purposes, including field duplicate, and additional sample volumes designated as MS/MSD, were collected at the rate of one per 20 field samples per matrix, per AOC. It is noteworthy that all the discrete grab soil samples were collected for definitive data objective; however, due to inaccurate sample logging by the laboratory, soil samples designated for TAL VOCs, TAL SVOCs, TAL pesticides, and herbicides, analyses were analyzed outside the prescribed holding time; therefore, the analytical data provided by the laboratory for these parameters were evaluated as screening data.

In addition, bagged soil samples collected at depths 6 to 12 inches bgs from sampling locations in both AOCs were selected by the OSC for composite soil sampling. Using dedicated plastic scoop,

aliquots of soil from the selected bagged soil samples were collected, composited into one sample, and homogenized in a dedicated resealable plastic bag, from which two composite soil samples, including one field duplicate, were collected for definitive data objective, and submitted for full TCLP and RCRA characteristics analyses.

Decontamination of non-dedicated sampling equipment (i.e., stainless-steel hand auger) was performed in accordance with EPA's ERT/SERAS contractor's SOP No. 2006: *Sampling Equipment Decontamination*, and included Alconox detergent and potable water scrub, potable water rinse, and air dry. One rinsate blank was collected to demonstrate adequacy of the decontamination of non-dedicated sampling equipment. The rinsate blank was collected by pouring deionized (DI) water over a properly decontaminated hand auger and collecting the rinse water in sample containers. The rinsate blank was collected for definitive data objective and submitted for TAL SVOCs, TAL PCBs, herbicides, TAL metals including mercury, cyanide, alpha spectroscopy, and gamma spectroscopy, analyses. Rinsate sample for TAL VOCs analysis was collected in 40 milliliters (mL) volatile organic analysis (VOA) vails pre-preserved with hydrochloric acid. Rinsate sample for TAL metals, including mercury, analysis was preserved with nitric acid pH less than (<) 2 and rinsate sample for cyanide analysis was preserved with sodium hydroxide (NaOH) pH > 12.

All the cored and sampled locations were backfilled in reverse order with the excavated soil after sampling, tamped down and restored with concrete mix. All sample information was entered into the Site-Specific SCRIBE data management system from which chain of custody (COC) record and sample labels were generated.

6.0 Laboratory Receiving Samples

The following laboratories were utilized for sample analyses during the December 2020 waste characterization soil sampling event.

Laboratory Name/Location	Sample Matrix	Analysis
Eurofins TestAmerica Laboratories, Inc. 13715 Rider Trail North Earth City, MO 63045	Soil/Slag/Rocks	Full Radiochemistry: Alpha Spectroscopy, Gamma Spectroscopy, and Ra-226 (homogenized for 21-day ingrowth) Full TAL: VOCs, SVOCs, Pesticides, PCBs, Metals, Mercury, Cyanide, and Herbicides Full TCLP: VOCs, SVOCs, Pesticides, Herbicides, TCLP Metal, Mercury, and RCRA Characteristics
	Aqueous (Rinsate Blank)	Alpha Spectroscopy and Gamma Spectroscopy TAL VOCs, TAL SVOCs, TAL PCBs, TAL Metals including Mercury, Cyanide, and Herbicides

TCLP: Toxicity Characteristic Leaching Procedure
RCRA: Resource Conservation and Recovery Act
TAL: Target Analyte List
PCBs: Polychlorinated Biphenyls
VOCs: Volatile Organic Compounds
SVOCs: Semivolatile Organic Compounds

7.0 Sample Collection and Dispatch

On December 1, 2020, a total of 15 grab soil samples, including one field duplicate, for full radiochemistry analysis and one discrete grab soil sample (collected at 6 to 12 inches bgs) for waste characterization analysis, were collected from Area 6. A total of nine grab soil samples,

including one field duplicate, for full radiochemistry analysis and two discrete grab soil samples (collected at 6 to 12 inches bgs) for waste characterization analysis, were collected from Area 7. Additionally, two composite soil samples (collected at 6 to 12 inches bgs), including one field duplicate, comprising soil from Area 6 and 7, were collected for full TCLP and RCRA characteristics analyses. Additionally, one rinsate blank was collected for TAL VOCs, TAL SVOCs, TAL PCBs, TAL metals including mercury, cyanide, herbicides, alpha spectroscopy and gamma spectroscopy, analyses.

On December 1, 2020, two composite soil samples, including one field duplicate, and additional volumes of one composite soil sample designated as MS/MSD, were shipped to Eurofins TestAmerica Laboratories, Inc. in Earth City, Missouri (TestAmerica-MO) for full TCLP and RCRA characteristics analyses. In addition, three discrete grab soil samples, including one field duplicate, and additional volumes of one grab soil sample designated as MS/MSD, were shipped to TestAmerica-MO for waste characterization (full TAL, full TCLP, and RCRA characteristic) and full radiochemistry analyses. Furthermore, one rinsate blank was shipped along with the soil samples to TestAmerica-MO for TAL VOCs, TAL SVOCs, TAL PCBs, TAL metals including mercury, cyanide, herbicides, alpha spectroscopy and gamma spectroscopy, analyses. All the soil samples and rinsate blank were documented under COC record No. 2-120120-0036-0021-01 and shipped via FedEx Airbill No. 772228984130.

On December 2, 2020, a total of 24 grab soil samples, including two field duplicates, and additional soil sample volumes designated as MS/MSD, were shipped to TestAmerica-MO for full radiochemistry analysis. All the soil samples were documented under COC Record No. 2-120220-0036-0021-01 and shipped via FedEx Airbill No. 772235722675.

Refer to Attachment B, Table 1: Soil Sample Collection Summary Table and Attachment D: Chain of Custody Record.

8.0 Analytical Results

The analytical results of the soil samples for full TAL analysis were compared with EPA Removal Management Levels (RMLs) for residential soil and NYSDEC Residential Use Soil Cleanup Objectives (RUSCOs). Analytical results of the soil samples for full TCLP analysis were compared with the EPA Maximum Concentration of Contaminants (MCCs) for the toxicity characteristic as determined by TCLP. Analytical results of soil samples for radiochemistry analysis were compared with the SSALs established by EPA in March 2019 for the target radioisotopes.

Based on analytical results of the three discrete grab soil samples, including one field duplicate, analyzed for full TAL, concentrations of TAL VOCs, TAL SVOCs, TAL PCBs, TAL pesticides, TAL metals including mercury, cyanide, and herbicides, were either not detected, or well below their respective EPA RMLs and NYSDEC RUSCOs.

Based on analytical results of the three discrete grab soil samples, including one field duplicate, and two composite soil samples, including one field duplicate, analyzed for full TCLP, concentrations TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, were either not detected, or well below their respective EPA MCCs.

Based on analytical results of the three discrete grab soil samples, including one field duplicate, and two composite soil samples, including one field duplicate, analyzed for RCRA characteristics, reactive cyanide and burn rate were negative. Reactive sulfide was 22 mg/kg in HTCRV2-WC02-0612-01, and pH for all five samples, including two field duplicates, was slightly basic, ranging from 10.1 to 10.6.

Based on analytical results of the 24 grab soil samples, including two field duplicates, and three discrete grab soil samples, including one field duplicate, analyzed for radiochemistry, concentrations of Ra-226 exceeded the EPA SSAL of 1.79 pCi/g in all 24 grab soil samples, including two field duplicates, and all three discrete soil samples, including one field duplicate. The highest concentration of Ra-226 in the discrete soil samples was 49.4 pCi/g in HTCRV2-SS06-0612-01 collected at depths 6 to 12 inches bgs from HTCRV2-SS06. The highest concentration of Ra-226 in the discrete grab soil samples was 46.6 pCi/g in field duplicate HTCRV2-WC02-0612-02 (of HTCRV2-WC02-0612-01) collected at depths 6 to 12 inches bgs.

Additionally, concentrations of U-238 exceeded the EPA SSAL of 3.85 pCi/g in 20 of the 24 grab soil samples, including two field duplicates, and all three composite soil samples, including one field duplicate. The highest concentration of U-238 in the grab soil samples was 43.7 pCi/g in field duplicate HTCRV2-SS06-0006-02 (of HTCRV2-SS06-0006-01) collected at depths 0 to 6 inches bgs from HTCRV2-SS06. The highest concentration of U-238 in the composite samples was 42.6 pCi/g in field duplicate HTCRV2-WC02-0612-02 (of HTCRV2-WC02-0612-01) collected at depths 6 to 12 inches bgs.

Refer to Attachment A, Figure 2: December 2020 Soil Sample Location Map, Attachment B, Table 2 through 9: Soil Analytical Results Summary Tables, Attachment E: Laboratory Analytical Report, and Attachment F: Data Validation Report.

9.0 Conclusion

On December 1, 2020, EPA and START V performed a soil sampling event as part of RV2 activities at off-site AOCs comprising two residential properties designated as Area 6 and Area 7 located adjacent to the Site. The soil samples (also comprising slag material) collected during the sampling event were submitted to the assigned laboratory for waste characterization (full TAL, full TCLP, and RCRA characteristic) and full radiochemistry (alpha spectroscopy, gamma spectroscopy, and Ra-226 [homogenized for 21-day ingrowth]) analyses.

Utilizing a 3x3 NaI scintillator and a Ludlum-2241-2 setup, locations exhibiting the highest gamma readings in both AOCs were selected for sampling. A total of six sampling locations were selected, including four locations in the driveway of Area 6 and two locations in the vehicle parking garage of Area 7. At the selected sampling locations, a coring device was used to core through surface concrete to expose the underlying soil. Non-dedicated stainless-steel hand augers were utilized to advance borings at the cored locations to depths up to 24 inches bgs. Grab soil samples were collected from each sampling location at 6-inch intervals bgs.

A total of 15 grab soil samples, including one field duplicate, for full radiochemistry analysis and one discrete grab soil sample (collected at 6 to 12 inches bgs) for waste characterization analysis, were collected from Area 6. A total of nine grab soil samples, including one field duplicate, for full radiochemistry analysis and two discrete grab soil samples (collected at 6 to 12 inches bgs) for

waste characterization analysis, were collected from Area 7. Additionally, two composite soil samples, including one field duplicate, comprising soil from Area 6 and 7, were collected for full TCLP and RCRA characteristics analyses.

The analytical results of the soil samples for full TAL analysis were compared with EPA RMLs for residential soil and NYSDEC RUSCOs. Analytical results of the soil samples for full TCLP analysis were compared with the EPA MCCs for the toxicity characteristic as determined by TCLP. Analytical results of soil samples for radiochemistry analysis were compared with the SSALs established by EPA in March 2019 for the target radioisotopes. Based on analytical results of the three discrete grab soil samples, including one field duplicate, analyzed for full TAL, concentrations of TAL VOCs, TAL SVOCs, TAL PCBs, TAL pesticides, TAL metals including mercury, cyanide, and herbicides, were either not detected, or well below their respective EPA RMLs and NYSDEC RUSCOs.

Based on analytical results of the three discrete grab soil samples, including one field duplicate, and two composite soil samples, including one field duplicate, analyzed for full TCLP, concentrations TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, were either not detected, or well below their respective EPA MCCs. Based on analytical results of the three discrete grab soil samples, including one field duplicate, and two composite soil samples, including one field duplicate, analyzed for RCRA characteristics, reactive cyanide and burn rate were negative. Reactive sulfide was 22 mg/kg in HTCRV2-WC02-0612-01, and pH for all five samples, including two field duplicates, was slightly basic, ranging from 10.1 to 10.6.

Based on analytical results of the 24 grab soil samples, including two field duplicates, and three discrete grab soil samples, including one field duplicate, analyzed for radiochemistry, concentrations of Ra-226 exceeded the EPA SSAL of 1.79 pCi/g in all 24 grab soil samples, including two field duplicates, and all three discrete soil samples, including one field duplicate. The highest concentration of Ra-226 in the discrete soil samples was 49.4 pCi/g in HTCRV2-SS06-0612-01 collected at depths 6 to 12 inches bgs from HTCRV2-SS06. The highest concentration of Ra-226 in the discrete grab soil samples was 46.6 pCi/g in field duplicate HTCRV2-WC02-0612-02 (of HTCRV2-WC02-0612-01) collected at depths 6 to 12 inches bgs.

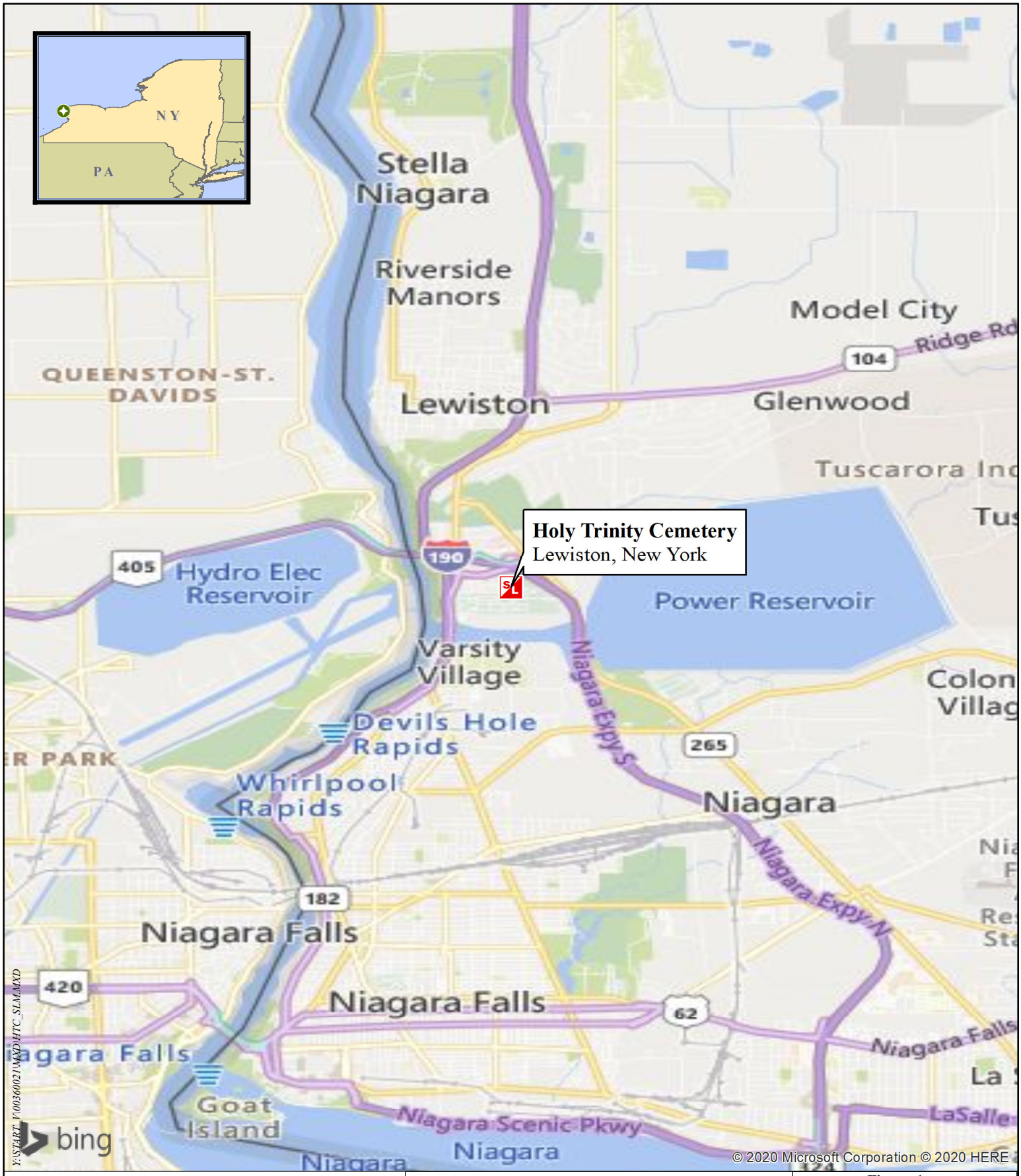
Additionally, concentrations of U-238 exceeded the EPA SSAL of 3.85 pCi/g in 20 of the 24 grab soil samples, including two field duplicates, and all three composite soil samples, including one field duplicate. The highest concentration of U-238 in the grab soil samples was 43.7 pCi/g in field duplicate HTCRV2-SS06-0006-02 (of HTCRV2-SS06-0006-01) collected at depths 0 to 6 inches bgs from HTCRV2-SS06. The highest concentration of U-238 in the composite samples was 42.6 pCi/g in field duplicate HTCRV2-WC02-0612-02 (of HTCRV2-WC02-0612-01) collected at depths 6 to 12 inches bgs.

Report prepared by: _____ 03/30/2021
David Benoit Date
for: START V Site Project Manager

Report reviewed by: _____ 03/30/2021
Bernard Nwosu Date
START V Group Leader

ATTACHMENT A

Figures



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Legend

Site Location

N

0 0.4 0.8 1.6 2.4 3.2 Miles

Weston Solutions, Inc.
Federal East Division

In Association With
Eco-Risk; Avatar Environmental, LLC;
Pro-West & Associates, Inc.;
On-Site Environmental, Inc.;
and Sovereign Consulting, Inc.

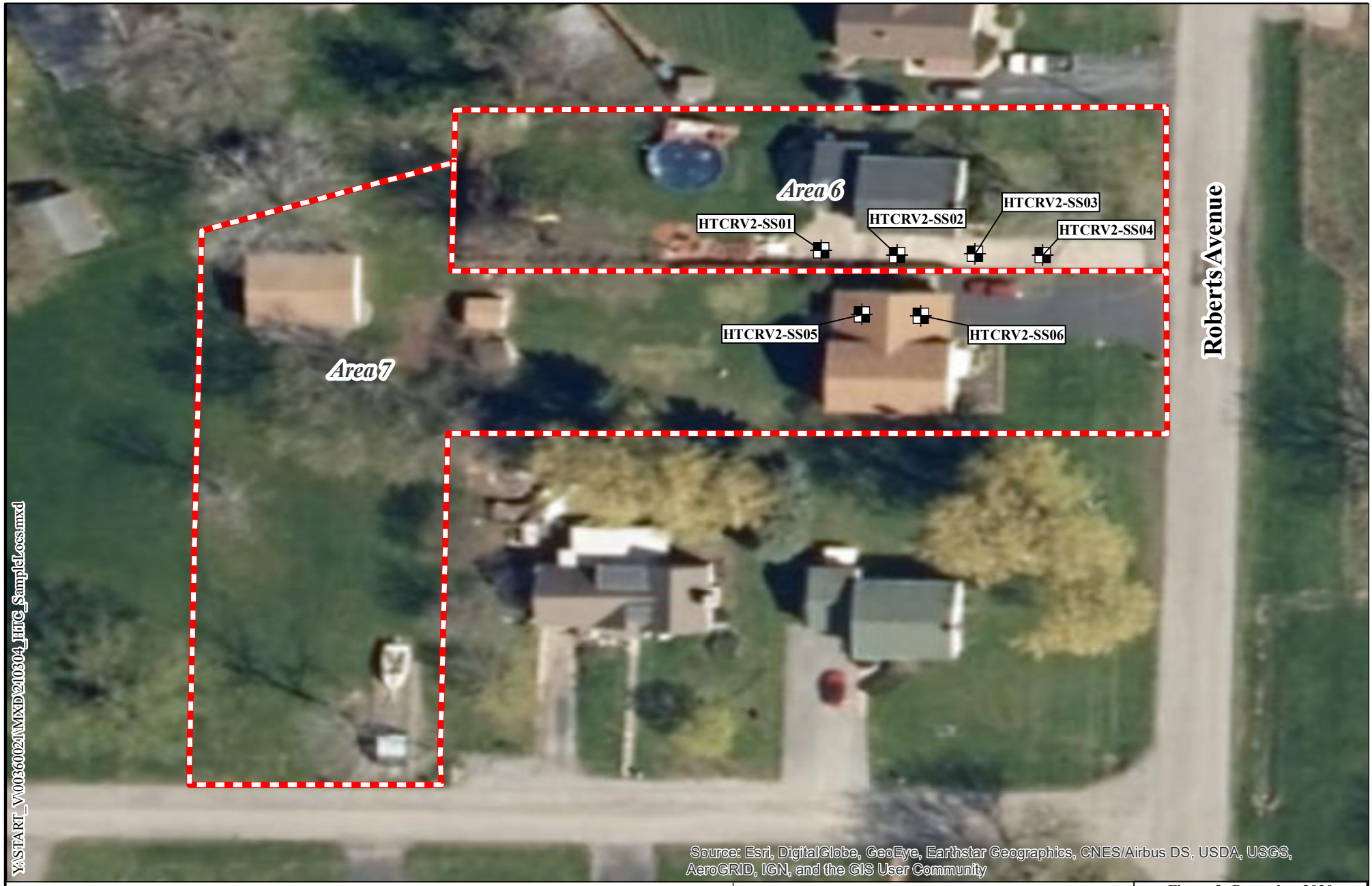
DATE MODIFIED: 10/19/2020

Figure 1:
Site Location Map

Holy Trinity Cemetery
Lewiston, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	P. LISICHENKO
START V SPM:	B. NWOSU
CHARGE #::	40200.021.036.2021



Legend

Soil Sample Location

Area of Concern

N

0 20 40 80 120 160 Feet

Weston Solutions, Inc.
Federal East Division

In Association With
Eco-Risk; Avatar Environmental, LLC;
Pro-West & Associates, Inc.;
On-Site Environmental, Inc.;
and Sovereign Consulting, Inc.

Figure 2: December 2020
Soil Sample Location Map

HOLY TRINITY CEMETERY
LEWISTON, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

DATE MODIFIED: 3/4/2021

GIS ANALYST:	M. LANG
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FILENAME:	210304_HTC_SampleLocs.mxd

ATTACHMENT B

Tables

Table 1: Sample Collection Summary Table
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

Sample Date	Area	Sample Location	Surface Gamma (µR/hr)	Depth (inches)	Lithology	START V Sample Number	Sample Gamma (µR/hr)	Sample Matrix	Sample Collection	Sample Type	Sample Analyses
Blending Calculation Soil Screening and Documentation						**Blending Calculation Sample Collection and Analyses**					
12/1/2020	Area 6	HTCRV2-SS01	15 - 25	0 - 6	Wet brown GRAVEL with wet brown fine sandy clay	NA	NA	Soil/Rock/Slag	Grab	NA	Full Radiochemistry
				6 - 12	Wet brown GRAVEL with wet brown fine sandy clay	HTCRV2-SS01-0612-01				Field Sample	
				12 - 18	Wet brown clay with some wet brown gravel	HTCRV2-SS01-1218-01				Field Sample	
				18 - 24	Wet brown silty CLAY	HTCRV2-SS01-1824-01				Field Sample	
12/1/2020		HTCRV2-SS02	15 - 25	0 - 6	Wet brown GRAVEL with some wet brown fine sandy clay	NA	NA	Soil/Rock/Slag	Grab	NA	
				6 - 12	Wet brown GRAVEL with wet brown fine sandy clay	HTCRV2-SS02-0612-01				Field Sample	
				12 - 18	Wet brown GRAVEL with some wet brown sandy clay	HTCRV2-SS02-1218-01				Field Sample	
				18 - 24	Wet brown sandy CLAY	HTCRV2-SS02-1824-01				Field Sample	
				24 - 30	Wet brown sandy CLAY	NA				NA	
12/1/2020		HTCRV2-SS03	15 - 25	0 - 6	Wet brown GRAVEL with trace fine sandy clay	HTCRV2-SS03-0006-01	NA	Soil/Rock/Slag	Grab	Field Sample	
				6 - 12	Wet brown GRAVEL with some trace fine sandy clay	HTCRV2-SS03-0612-01				Field Sample	
				12 - 18	Wet brown GRAVEL with trace fine sandy clay	HTCRV2-SS03-1218-01				Field Sample	
				18 - 24	Wet brown CLAY with some wet brown gravel	HTCRV2-SS03-1824-01				Field Sample	
12/1/2020		HTCRV2-SS04	15 - 25	0 - 6	Wet brown GRAVEL with some brown fine sandy clay	HTCRV2-SS04-0006-01*	NA	Soil/Rock/Slag	Grab	Field Sample	
						HTCRV2-SS04-0006-02				Field Duplicate	
				6 - 12	Wet brown GRAVEL with trace brown sandy clay	HTCRV2-SS04-0612-01				Field Sample	
				12 - 18	Wet brown sandy CLAY with trace wet brown gravel	HTCRV2-SS04-1218-01				Field Sample	
				18 - 24	Wet brown sandy CLAY with trace brown gravel	HTCRV2-SS04-1824-01				Field Sample	
12/1/2020	Area 7	HTCRV2-SS05	15 - 25	0 - 6	Dry light grey GRAVEL with trace slag material	HTCRV2-SS05-0006-01	NA	Soil/Rock/Slag	Grab	Field Sample	
				6 - 12	Dry light grey GRAVEL with trace slag material	HTCRV2-SS05-0612-01				Field Sample	
				12 - 18	Dry light grey GRAVEL with some moist brown clay and trace slag material	HTCRV2-SS05-1218-01				Field Sample	
				18 - 24	Moist brown CLAY with little light grey gravel and trace slag material	HTCRV2-SS05-1824-01				Field Sample	
12/1/2020		HTCRV2-SS06	15 - 25	0 - 6	Dry light grey GRAVEL	HTCRV2-SS06-0006-01*	NA	Soil/Rock/Slag	Grab	Field Sample	
						HTCRV2-SS06-0006-02				Field Duplicate	
				6 - 12	Light grey GRAVEL with some slag material	HTCRV2-SS06-0612-01				Field Sample	
				12 - 18	Dry light grey GRAVEL with little moist clay	HTCRV2-SS06-1218-01				Field Sample	
				18 - 24	Moist brown CLAY with some light grey gravel and trace slag material	HTCRV2-SS06-1824-01				Field Sample	
Waste Characterization Soil Screening and Documentation						**Waste Characterization Sample Collection and Analyses**					
12/1/2020	Area 6 & 7	HTCRV2-WC01	15 - 25	6 - 12	NA	HTCRV2-COMP-0612-01*	NA	Soil/Rock/Slag	Composite	Field Sample	Full TCLP / RCRA Characteristics
		HTCRV2-WC02			NA	HTCRV2-COMP-0612-02				Field Duplicate	
	Area 6	HTCRV2-WC01	15 - 25	6 - 12	NA	HTCRV2-WC01-0612-01	35	Soil/Rock/Slag	Grab	Field Sample	Full Radiochemistry / Full TAL (including Herbicide) / Full TCLP / RCRA Characteristics
	Area 7	HTCRV2-WC02			NA	HTCRV2-WC02-0612-01*	40			Field Sample	
					NA	HTCRV2-WC02-0612-02				Field Duplicate	
Rinsate Blank Sample Documentation						**Rinsate Blank Sample Screening and Analyses**					
12/1/2020	NA	NA	NA	NA	NA	HTCRV2-RB-120120	NA	Aqueous	Grab	Rinsate Blank	Alpha Spec / Gamma Spec / TAL VOCs, TAL SVOCs, TAL PCBs, TAL Metals, Mercury, Cyanide, and Herbicide

Notes:
START V: Superfund Technical Assessment & Response Team V
µR/hr: Microroentgen per hour
NA: Not Applicable
Alpha Spec: Alpha Spectroscopy analysis via A-01-R, Gamma Spec: Gamma Spectroscopy analysis via GA-01-R
Full Radiochemistry: Alpha Spec, Gamma Spec, and Radium-226 (homogenized for 21-day ingrowth)
TAL: Target Analyte List
Full TAL: Volatile Organic Compunds (VOCs) + Percent Moisture, Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metals [including Mercury (Hg) and Cyanide (CN)]
TCLP: Toxicity Characteristic Leaching Procedure
Full TCLP: VOCs, SVOCs, Pesticides, Herbicides, Metals (including Hg)
RCRA: Resource Conservation and Recovery Act
*Field sample designated as matrix spike/matrix spike duplicate (MS/MSD)
Soil sample location surfaces and soil samples were screened using a Ludlum-2241 fitted with a 3x3 Sodium Iodide (NaI) Scintillator
Background gamma reading was 13 µR/hr

Table 2: Soil Analytical Results Summary Table - TAL VOCs
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	HTCRV2-RB-120120
Sample Date			**12/1/2020**	**12/1/2020**	**12/1/2020**	**12/1/2020**
Sample Depth (Inches)			**6-12**	**6-12**	**6-12**	**Rinsate Blank**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Deionized Water**
TAL VOC			**(µg/kg)**	**(µg/kg)**	**(µg/kg)**	**(µg/L)**
1,1,1-Trichloroethane	8,100,000	680	0.29 UH	0.24 UH	0.21 UH	0.24 U
1,1,2,2-Tetrachloroethane	60,000	NS	0.26 UH *+	0.22 UH *+	0.19 UH *+	0.37 U
1,1,2-Trichlorotrifluoroethane	6,700,000	NS	0.37 UH	0.31 UH	0.27 UH	0.31 U
1,1,2-Trichloroethane	1,500	NS	0.22 UH	0.18 UH	0.16 UH	0.20 U
1,1-Dichloroethane	360,000	270	0.25 UH	0.21 UH	0.19 UH	0.26 U
1,1-Dichloroethene	230,000	330	0.28 UH	0.23 UH	0.20 UH	0.26 U
1,2,3-Trichlorobenzene	63,000	NS	0.22 UH *+	0.18 UH *+	0.16 UH *+	0.36 U
1,2,4-Trichlorobenzene	58,000	NS	0.44 UH	0.36 UH	0.33 UH	0.37 U
1,2-Dibromo-3-Chloropropane	530	NS	0.57 UH *+	0.47 UH *+	0.42 UH *+	0.38 U
1,2-Dichlorobenzene	1,800,000	1,100	0.45 UH *+	0.37 UH *+	0.33 UH *+	0.21 U
1,2-Dichloroethane	31,000	20	0.36 UH	0.30 UH	0.27 UH	0.43 U
1,2-Dichloropropane	16,000	NS	0.52 UH	0.43 UH	0.38 UH	0.35 U
1,3-Dichlorobenzene	NS	2,400	0.45 UH	0.37 UH	0.33 UH	0.34 U
1,4-Dichlorobenzene	260,000	1,800	0.28 UH	0.23 UH	0.20 UH	0.33 U
1,4-Dioxane	530,000	100	11 UH *+	9.3 UH *+	8.3 UH *+	28.0 U
2-Butanone	27,000,000	120	0.45 UH	0.37 UH	0.33 UH	1.90 U
2-Hexanone	200,000	NS	2.1 UH *+	1.7 UH *+	1.6 UH *+	1.1 U
4-Methyl-2-Pentanone	33,000,000	NS	1.9 UH *+	1.6 UH *+	1.4 UH *+	1.3 U
Acetone	61,000,000	50	7.1 UH	5.8 UH	**5.6 H**	4.4 U
Benzene	82,000	60	0.32 UH	0.26 UH	0.23 UH	0.20 U
Bromoform	1,600,000	NS	0.52 UH	0.43 UH	0.39 UH	0.54 U
Bromomethane	6,800	NS	1.2 UH *+	1.0 UH *+	0.91 UH *+	0.55 U
Carbon Disulfide	770,000	NS	**0.38 J H**	**0.30 J H**	**0.44 J H**	0.82 U
Carbon Tetrachloride	65,000	760	0.48 UH	0.39 UH	0.35 UH	0.21 U
Chlorobenzene	280,000	1,100	0.22 UH	0.18 UH	0.16 UH	0.38 U
Chlorobromomethane	NS	NS	0.35 UH	0.29 UH	0.26 UH	0.41 U
Chlorodibromomethane	NS	NS	0.24 UH	0.20 UH	0.18 UH	0.28 U
Chloroethane	14,000,000	NS	0.64 UH	0.53 UH	0.47 UH	0.32 U
Chloroform	32,000	370	1.2 UH	0.99 UH	0.88 UH	0.33 U
Chloromethane	110,000	NS	0.54 UH	0.44 UH	0.40 UH	0.40 U
cis-1,2-Dichloroethene	160,000	250	0.44 UH	0.36 UH	0.33 UH	0.22 U
cis-1,3-Dichloropropene	NS	NS	0.34 UH	0.28 UH	0.25 UH	0.22 U
Cyclohexane	6,500,000	NS	0.27 UH	0.22 UH	0.20 UH	0.32 U
Dibromochloromethane	830,000	NS	0.32 UH	0.26 UH	0.23 UH	0.34 U
Dichlorodifluoromethane	87,000	NS	0.42 UH	0.34 UH	0.31 UH	0.31 U
Ethyl Benzene	580,000	1,000	0.25 UH	0.20 UH	0.18 UH	0.30 U
Ethylene Dibromide	NS	NS	0.22 UH	0.18 UH	0.16 UH	0.50 U
Isopropylbenzene	1,900,000	NS	**0.88 J H**	**2.3 H**	**1.9 H**	0.3 U
Methyl Acetate	78,000,000	NS	5.3 UH	4.4 UH	3.9 UH	0.8 U
Methyl tert-butyl Ether	4,700,000	930	0.63 UH	0.52 UH	0.47 UH	0.22 U
Methylcyclohexane	NS	NS	0.62 UH	0.51 UH	0.45 UH	0.71 U
Methylene Chloride	350,000	50	**6.5 H**	1.2 UH	1.0 UH	0.3 U
m/p-Xylenes*	580,000	1,600	**0.22 J H**	0.18 UH	0.16 UH	0.30 U
o-Xylene*	650,000	1,600	0.24 UH	0.20 UH	0.18 UH	0.36 U
Styrene	6,000,000	NS	0.34 UH	0.28 UH	0.25 UH	0.42 U
Tetrachloroethene	81,000	1,300	0.38 UH	0.31 UH	0.28 UH	0.25 U
Toluene	4,900,000	700	**0.50 J H**	0.24 UH	0.21 UH	0.38 U
trans-1,2-Dichloroethene	70,000	190	0.3 UH	0.25 UH	0.22 UH	0.24 U
t-1,3-Dichloropropene	NS	NS	0.33 UH	0.27 UH	0.24 UH	0.22 U
Trichloroethene	4,100	470	0.40 UH	0.33 UH	0.29 UH	0.31 U
Trichlorofluoromethane	23,000,000	NS	0.50 UH	0.41 UH	0.37 UH	0.32 U
Vinyl Chloride	5,900	20	0.67 UH	0.55 UH	0.50 UH	0.17 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL VOC: Target Analyte List Volatile Organic Compound

U: Not detected; J: Estimated result; NS: Not Specified

H: Sample was prepped or analyzed beyond the specified holding time

*+: LCS and/or LCSD is outside acceptance limits, high biased

µg/kg: Micrograms per kilogram; µg/L: Micrograms per liter

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

*No specified NYSDEC RUSCO for m/p xylene or o-xylene, the NYSDEC RUSCO for mixed xylenes is 1,600 µg/kg

Bold result values are detections

Table 3: Soil Analytical Results Summary Table - TAL SVOCs
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	HTCRV2-RB-120120
Sample Date			12/1/2020	12/1/2020	12/1/2020	12/1/2020
Sample Depth (Inches)			6-12	6-12	6-12	Rinsate Blank
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Deionized Water
TAL SVOC			(µg/kg)	(µg/kg)	(µg/kg)	(µg/L)
Acenaphthene	3,600,000	98,000	12 UH	9.6 UH	9.8 UH	4.3 U
Acenaphthylene	NS	100,000	4.3 UH	3.4 UH	3.5 UH	3.3 U
Acetophenone	7,800,000	NS	21 UH	17 UH	17 UH	9.3 U
Anthracene	18,000,000	100,000	13 UH	20 UH *-	20 UH *-	5.2 U
Atrazine	240,000	NS	25 UH *-	56 UH *-	57 UH *-	5.4 UJ
Benzaldehyde	7,800,000	NS	71 UH *-	12 UH	12 UH	8.4 UJ
Benzo(a)anthracene	110,000	1,000	15 UH	9.0 UH	9.2 UH	2.4 U
Benzo(a)pyrene	11,000	1,000	11 UH	8.8 UH	8.9 UH	1.6 U
Benzo(b)fluoranthene	110,000	1,000	**11 J H**	10 UH	10 UH	2.7 U
Benzo(g,h,i)perylene	NS	100,000	13 UH	6.6 UH	6.7 UH	2.8 UJ
Benzo(k)fluoranthene	1,100,000	1,000	8.4 UH	26 UH	27 UH	2.7 U
1,1-Biphenyl	47,000	NS	5.7 UH	4.5 UH	4.6 UH	4.7 U
bis(2-Chloroethoxy)methane	190,000	NS	33 UH	12 UH	12 UH	2.4 U
bis(2-Chloroethyl)ether	23,000	NS	15 UH	18 UH	18 UH	2.5 U
Bis(2-ethylhexyl)phthalate	1,300,000	NS	23 UH	16 UH	16 UH	3.2 U
4-Bromophenyl-phenylether	NS	NS	17 UH	13 UH	14 UH	3 U
Butylbenzylphthalate	13,000,000	NS	20 UH	53 UH *-	53 UH *-	3.4 U
Caprolactam	31,000,000	NS	67 UH *-	13 UH	13 UH	8.9 U
Carbazole	NS	NS	16 UH	5.7 UH	5.8 UH	2.7 U
4-Chloroaniline	250,000	NS	76 UH	60 UH	61 UH	2 U
4-Chloro-3-methylphenol	6,300,000	NS	24 UH	19 UH	19 UH	7.5 U
2-Chloronaphthalene	4,800,000	NS	20 UH	16 UH	16 UH	4.7 U
2-Chlorophenol	390,000	NS	15 UH	12 UH	12 UH	1.5 U
4-Chlorophenyl-phenylether	NS	NS	15 UH	12 UH	12 UH	5.1 U
Chrysene	11,000,000	1,000	7.2 UH	5.7 UH	15 UH	3.6 U
Dibenzo(a,h)anthracene	11,000	330	19 UH	15 UH	15 UH	2.9 UJ
Dibenzofuran	78,000	14,000	6 UH	4.8 UH	4.8 UH	4.4 U
3,3-Dichlorobenzidine	120,000	NS	65 UH	51 UH	52 UH	5.7 U
2,4-Dichlorophenol	190,000	NS	210 UH	22 UH	170 UH	4.3 U
Diethylphthalate	51,000,000	NS	6.2 UH	4.9 UH	5 UH	5.7 U
2,4-Dimethylphenol	1,300,000	NS	19 UH	15 UH	15 UH	2.5 U
Dimethylphthalate	NS	NS	97 UH	77 UH	78 UH	3.1 U
Di-n-butylphthalate	6,300,000	NS	16 UH	13 UH	13 UH	3.4 U
4,6-Dinitro-2-methylphenol	5,100	NS	170 UH	140 UH	140 UH	12 UJ
2,4-Dinitrophenol	130,000	NS	210 UH	170 UH	170 UH	11 U
2,4-Dinitrotoluene	130,000	NS	46 UH	36 UH	37 UH	4 UJ
2,6-Dinitrotoluene	19,000	NS	31 UH	24 UH	25 UH	3.3 U
Di-n-octyl phthalate	630,000	NS	23 UH	18 UH	18 UH	3 U
Fluoranthene	2,400,000	100,000	15 UH	12 UH	12 UH	2.7 U
Fluorene	2,400,000	100,000	5.8 UH	4.6 UH	4.7 UH	3.4 U
Hexachlorobenzene	21,000	330	20 UH	16 UH	16 UH	3.6 U
Hexachlorobutadiene	78,000	NS	9.1 UH	7.2 UH	7.3 UH	1.6 U
Hexachlorocyclopentadiene	1,800	NS	38 UH	30 UH	30 UH	3.1 U
Hexachloroethane	45,000	NS	15 UH	12 UH	12 UH	15.0 U
Indeno(1,2,3-cd)pyrene	110,000	500	17 UH	13 UH	13 UH	3.2 UJ
Isophorone	13,000,000	NS	120 UH	98 UH	99 UH	3.8 U
2-Methylnaphthalene	240,000	NS	12 UH	9.5 UH	9.6 UH	3.2 U
2-Methylphenol	3,200,000	330	27 UH	21 UH	21 UH	2.7 U
4-Methylphenol	6,300,000	330	27 UH	21 UH	21 UH	2.6 U
Naphthalene	130,000	12,000	7.4 UH	5.9 UH	5.9 UH	2.2 U
2-Nitroaniline	630,000	NS	16 UH	13 UH	13 UH	1.9 U
3-Nitroaniline	NS	NS	48 UH	38 UH	39 UH	7.7 U
4-Nitroaniline	250,000	NS	49 UH	39 UH	39 UH	4.9 U
Nitrobenzene	130,000	NS	10 UH	8.1 UH	8.3 UH	2.3 U
2-Nitrophenol	NS	NS	43 UH	34 UH	34 UH	3 UJ
4-Nitrophenol	NS	NS	70 UH	55 UH	56 UH	16 U
n-Nitroso-di-n-propylamine	7,800	NS	31 UH	25 UH	25 UH	1.7 U
n-Nitrosodiphenylamine	11,000,000	NS	35 UH	28 UH	28 UH	3.6 U
2,2-oxybis(1-Chloropropane)	3,100,000	NS	7.7 UH	6.1 UH	6.2 UH	3.6 UJ
Pentachlorophenol	100,000	800	88 UH	69 UH	70 UH	5.8 U
Phenanthrene	NS	100,000	7.5 UH	6 UH	6 UH	5.1 U
Phenol	19,000,000	330	16 UH	12 UH	13 UH	1.2 U
Pyrene	1,800,000	100,000	11 UH	8.4 UH	8.5 UH	6.6 U
1,2,4,5-Tetrachlorobenzene	23,000	NS	13 UH	11 UH	11 UH	5.0 U
2,3,4,6-Tetrachlorophenol	1,900,000	NS	29 UH	23 UH	23 UH	3 U
2,4,5-Trichlorophenol	6,300,000	NS	44 UH	34 UH	35 UH	3.5 U
2,4,6-Trichlorophenol	63,000	NS	55 UH	43 UH	44 UH	3.4 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL SVOC: Target Analyte List Semivolatile Organic Compound

U: Not detected; J: Estimated result; NS: Not Specified; µg/kg: Micrograms per kilogram; µg/L: Micrograms per liter

H: Sample was prepped or analyzed beyond the specific holding time; *-: LCS and/or LCSD is outside acceptance limits, low biased

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Bold result values are detections

Table 4: Soil Analytical Results Summary Table - TAL PCBs
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	HTCRV2-RB-120120
Sample Date			12/1/2020	12/1/2020	12/1/2020	12/1/2020
Sample Depth (Inches)			6-12	6-12	6-12	Rinsate Blank
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Deionized Water
TAL PCB*			(µg/kg)	(µg/kg)	(µg/kg)	(µg/L)
Aroclor-1016	4,100	1,000	11 UJ	9.1 UJ	9.2 UJ	0.095 U
Aroclor-1221	20,000	1,000	11 UJ	9.1 UJ	9.2 UJ	0.095 U
Aroclor-1232	17,000	1,000	11 UJ	9.1 UJ	9.2 UJ	0.095 U
Aroclor-1242	23,000	1,000	11 UJ	9.1 UJ	9.2 UJ	0.095 U
Aroclor-1248	23,000	1,000	11 UJ	9.1 UJ	9.2 UJ	0.095 U
Aroclor-1254	1,200	1,000	12 UJ	9.4 UJ	9.5 UJ	0.086 U
Aroclor-1260	24,000	1,000	12 UJ	9.4 UJ	9.5 UJ	0.086 U
Aroclor-1262	NS	1,000	12 UJ	9.4 UJ	9.5 UJ	0.086 U
Aroclor-1268	NS	1,000	12 UJ	9.4 UJ	9.5 UJ	0.086 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL PCB: Target Analyte List Polychlorinated Biphenyl

U: Not detected; J: Estimated result; NS: Not Specified; NA: Not Applicable

µg/kg: Micrograms per kilogram

µg/L: Micrograms per liter

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

*NYSDEC RUSCO based on value for PCBs

Bold result values are detections

Table 5: Soil Analytical Results - TAL Pesticides Summary Table
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02
Sample Date			12/1/2020	12/1/2020	12/1/2020
Sample Depth (Inches)			6-12	6-12	6-12
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
TAL Pesticide			(µg/kg)	(µg/kg)	(µg/kg)
4,4-DDD	1,900	2,600	1.5 UH	1.2 UH	1.2 UH
4,4-DDE	23,000	1,800	**4.2 J H**	0.81 UH	0.82 UH
4,4-DDT	37,000	1,700	**2.6 J H p**	1.3 UH	1.3 UH
Aldrin	2,300	19	1.3 UH	1.0 UH	1.0 UH
alpha-BHC	8,600	20	0.88 UH	0.70 UH	0.70 UH
beta-BHC	30,000	72	0.97 UH	0.77 UH	0.78 UH
Chlordane (technical)	NS	910	21 UH	17 UH	17 UH
delta-BHC	NS	250	0.53 UH	0.42 UH	0.42 UH
Dieldrin	3,200	39	1.1 UH	0.89 UH	0.90 UH
Endosulfan I	NS	4,800	1.3 UH	1.0 UH	1.1 UH
Endosulfan II	NS	4,800	2.2 UH	1.8 UH	1.8 UH
Endrin	19,000	60	1.1 UH	0.86 UH	0.87 UH
Endosulfan Sulfate	380,000	4,800	1.2 UH	0.98 UH	0.99 UH
Endrin aldehyde	NS	NS	2.0 UH	1.6 UH	1.6 UH
Endrin ketone	NS	NS	1.7 UH	1.3 UH	1.3 UH
gamma-BHC (Lindane)	21,000	100	0.8 UH	0.63 UH	0.64 UH
Heptachlor	13,000	380	1.0 UH	0.81 UH	0.82 UH
Heptachlor epoxide	1,000	NS	1.3 UH	1.0 UH	1.0 UH
Methoxychlor	320,000	NS	2.0 UH	1.6 UH	1.6 UH
Toxaphene	5,700	NS	31 UH	25 UH	25 UH

Notes

START V: Superfund Technical Assessment & Response Team V

TAL: Target Analyte List

U: Not detected; J: Estimated result; NS: Not Specified

H: Sample was prepped or analyzed beyond the specific holding time

p: The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported

µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Bold result values are detections

Table 6: Soil Analytical Results Summary Table - Herbicides
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	HTCRV2-RB-120120
Sample Date			**12/1/2020**	**12/1/2020**	**12/1/2020**	**12/1/2020**
Sample Depth (Inches)			**6-12**	**6-12**	**6-12**	**Rinsate Blank**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Deionized Water**
Herbicide			**(µg/kg)**	**(µg/kg)**	**(µg/kg)**	**(µg/L)**
2,4-D	700,000	NS	16 UH	12 UH	13 UH	0.13 UJ
2,4,5-TP (Silvex)	510,000	3,800	4.5 UH	3.6 UH	3.6 UH	0.11 UJ
2,4,5-T	630,000	NS	9.2 UH	7.2 UH	7.4 UH	0.12 UJ

Notes

START V: Superfund Technical Assessment & Response Team V

U: Not Detected; J: Estimated result; NS: Not Specified

H: Sample was prepped or analyzed beyond the specific holding time

µg/kg: Micrograms per kilogram; µg/L: Micrograms per liter

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Bold result values are detections

Table 7: Soil Analytical Results Summary Table - TAL Metals
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA RML Residential Soil (mg/kg)	[2]NYSDEC RUSCO (mg/kg)	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	HTCRV2-RB-120120
Sample Date			12/1/2020	12/1/2020	12/1/2020	12/1/2020
Sample Depth (Inches)			6-12	6-12	6-12	Rinsate Blank
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Deionized Water
TAL Metal			(mg/kg)	(mg/kg)	(mg/kg)	(µg/L)
Aluminum	77,000	NS	**17,000**	**3,200 J**	**10,000 J**	8.0 U
Antimony	31	NS	0.19 U	0.15 U	0.15 U	0.76 U
Arsenic	35	16	**3.9**	**0.17 J**	**0.51 J**	0.89 U
Barium	15,000	350	**120**	**33 J**	**88 J**	0.9 U
Beryllium	160	14	**1.3**	**0.62**	**1.5**	0.098 U
Cadmium	71	2.5	**1.2 J**	0.11 U	**0.24 J**	0.16 U
Calcium	NS	NS	**130,000**	**99,000 J**	**200,000 J**	**88 J**
Chromium	NS	NS	**23**	**3.4 J**	**14 J**	0.69 U
Cobalt	23	NS	**13**	**0.21 J**	**7.0 J**	0.26 U
Copper	3,100	270	**18 J**	**2.5**	**6.0**	2.5 U
Iron	55,000	NS	**20,000**	**190 J**	**890 J**	**13 J**
Lead	400	400	**40**	**0.48 J**	**1.9 J**	**0.29 J**
Magnesium	NS	NS	**7,900 J**	**810 J**	**3,900 J**	**20 J**
Manganese	1,800	2,000	**460**	**47 J**	**110 J**	1.1 U
Nickel	1,500	130	**21**	**0.23 J**	**3.2**	0.45 U
Potassium	NS	NS	**2,500**	**280 J**	**990 J**	110 U
Selenium	390	4	**0.69 J**	**0.32 J**	**1.2 J**	0.46 U
Silver	390	8.3	**0.13 J**	**0.22 J**	**0.16 J**	0.19 U
Sodium	NS	NS	**1,000**	**810 J**	**2,300 J**	**210**
Thallium	0.78	NS	**0.12 J**	0.041 U	0.042 U	0.17 U
Vanadium	390	NS	**29**	**2.6**	**13 J**	0.37 U
Zinc	23,000	2,200	**83 J**	**11**	**17**	5.1 U
Mercury	11	0.73	**0.061 J**	**0.009 J**	**0.013 J**	0.091 U
Cyanide	23	27	**2.2 H**	**2.9 H**	**4.7 H**	0.004 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL: Target Analyte List

U: Not detected; J: Estimated result; NS: Not Specified;

H: Sample was prepped or analyzed beyond the specific holding time

F1: Matrix Spike (MS) and/or Matrix Spike Dulicate (MSD) recovery exceeds control limits

mg/kg: Milligrams per kilogram

All rinsate sample results presented in micrograms per liter (µg/L), except cyanide, which is reported in milligrams per liter (mg/L)

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Bold result values are detections

Table 8: Soil Analytical Results Summary Table - TCLP and RCRA Charateristics
Holy Trinity Cemetery Site (Are 6 & 7)
Lewiston, Niagara County, New York
December 1, 2020

START V Sample Number	[1]EPA MCC	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	HTCRV2-COMP-0612-01	HTCRV2-COMP-0612-02
Sample Date		**12/1/2020**	**12/1/2020**	**12/1/2020**	**12/1/2020**	**12/1/2020**
Sample Depth (Inches)		**6-12**	**6-12**	**6-12**	**6-12**	**6-12**
Sample Matrix		**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
TCLP VOC	**(mg/L)**					
1,1-Dichloroethene	0.7	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
1,2-Dichloroethane	0.5	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U
1,4-Dichlorobenzene	7.5	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U
2-Butanone (MEK)	200.0	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Benzene	0.5	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
Carbon Tetrachloride	0.5	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U
Chlorobenzene	100.0	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U
Chloroform	6.0	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U
Tetrachloroethene	0.7	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Trichloroethene	0.5	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U
Vinyl Chloride	0.2	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
TCLP SVOC	**(mg/L)**					
1,4-Dichlorobenzene	7.5	0.00040 UJ	0.00040 UJ	0.00040 UJ	0.00040 UJ	0.00040 UJ
2,4,5-Trichlorophenol	400.0	0.00080 UJ	0.00080 UJ	0.00080 UJ	0.00080 UJ	0.00080 UJ
2,4,6-Trichlorophenol	2.0	0.00080 UJ	0.00080 UJ	0.00080 UJ	0.00080 UJ	0.00080 UJ
2,4-Dinitrotoluene	0.13	0.0010 UJ	0.0010 UJ	0.0010 UJ	0.0010 UJ	0.0010 UJ
2-Methylphenol	200.0	0.00060 UJ	0.00060 UJ	0.00060 UJ	0.00060 UJ	0.00060 UJ
3 & 4 Methylphenol	200.0	0.00060 UJ	0.00060 UJ	0.00060 UJ	0.00060 UJ	0.00060 UJ
Hexachlorobenzene	0.13	0.00040 UJ	0.00040 UJ	0.00040 UJ	0.00040 UJ	0.00040 UJ
Hexachlorobutadiene	0.5	0.00080 UJ	0.00080 UJ	0.00080 UJ	0.00080 UJ	0.00080 UJ
Hexachloroethane	3.0	0.0012 UJ	0.0012 UJ	0.0012 UJ	0.0012 UJ	0.0012 UJ
Nitrobenzene	2.0	0.00060 UJ	0.00060 UJ	0.00060 UJ	0.00060 UJ	0.00060 UJ
Pentachlorophenol	100.0	0.0014 UJ	0.0014 UJ	0.0014 UJ	0.0014 UJ	0.0014 UJ
Pyridine	5.0	0.0019 UJ	0.0019 UJ	0.0019 UJ	0.0019 UJ	0.0019 UJ
TCLP Pesticide	**(mg/L)**					
Chlordane (technical)	0.03	0.000055 UJ	0.000055 UJ	0.000055 UJ	0.000055 UJ	0.000055 UJ
Endrin	0.02	0.0000040 UJ	0.0000040 UJ	0.0000040 UJ	0.0000040 UJ	0.0000040 UJ
gamma-BHC (Lindane)	0.4	0.000012 UJ	0.000012 UJ	0.000012 UJ	0.000012 UJ	0.000012 UJ
Heptachlor	0.008	0.0000030 UJ	0.0000030 UJ	0.0000030 UJ	0.0000030 UJ	0.0000030 UJ
Heptachlor epoxide	0.008	0.0000050 UJ	0.0000050 UJ	0.0000050 UJ	0.0000050 UJ	0.0000050 UJ
Methoxychlor	10.0	0.0000040 UJ	0.0000040 UJ	0.0000040 UJ	0.0000040 UJ	0.0000040 UJ
Toxaphene	0.5	0.00011 UJ	0.00011 UJ	0.00011 UJ	0.00011 UJ	0.00011 UJ
TCLP Herbicide	**(mg/L)**					
2,4-D	10.0	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ
2,4,5-TP (Silvex)	1.0	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ
TCLP Metal	**(mg/L)**					
Arsenic	5.0	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Barium	100.0	**0.3 J**	**0.099 J**	**0.08 J**	**0.015 J**	**0.22 J**
Cadmium	1.0	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Chromium	5.0	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Lead	5.0	**0.066**	**0.044 J**	**0.04 J**	**0.059**	**0.053**
Selenium	1.0	0.029 U	0.029 U	0.029 U	0.029 U	0.29 U
Silver	5.0	0.029 U	0.029 U	0.029 U	0.029 U	0.29 U
Mercury	0.2	**0.00026**	0.00020 U	**0.00031**	0.00020 U	0.00020 U
RCRA Characteristic	**(NA)**					
Corrosivity / pH	NS	**10 HF**	**10.2 HF**	**10.6 HF**	**10.4 HF**	**10.1 HF**
Ignitability - °C	NS	NA	NA	NA	NA	NA
Burn Rate - mm/sec	NS	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Reactive Cyanide - mg/kg	NS	25 U	25 U	25 U	25 U	25 U
Reactive Sulfide - mg/kg	NS	20 U	**22**	20 U	20 U	20 U

Notes

START V: Superfund Technical Assessment & Response Team V

TCLP: Toxicity Characteristic Leaching Procedure

VOC: Volatile Organic Compound; SVOC: Semivolatile Organic Compound

RCRA: Resource Conservation and Recovery Act

U: Not detected; UJ: Not detected at the estimated reporting limit; J: Estimated result

mg/L: Milligrams per liter; mg/kg: Milligrams per kilograms; °C: degree centigrade; mm/sec: Millimeters per second

NI: Not Ignitible; NS: Not Specified; NA: Not Applicable

HF: Field parameter with a holding time of 15 minutes. Test performed beyond holding time

[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC)
for toxicity characteristic as determined by TCLP, October 2009

Bold result values are detections

Table 9: Soil Analytical Results Summary Table - Radiochemistry
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 2020

		START V Sample Number	HTCRV2-SS01-0612-01			HTCRV2-SS01-1218-01			HTCRV2-SS01-1824-01			HTCRV2-SS02-0612-01			HTCRV2-SS02-1218-01			HTCRV2-SS02-1824-01			HTCRV2-SS03-0006-01		
		Sample Date	12/1/2020			12/1/2020			12/1/2020			12/1/2020			12/1/2020			12/1/2020			12/1/2020		
		Sample Depth (Inches)	6-12			12-18			18-24			6-12			12-18			18-24			0-6		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	Analytical Method	[1]EPA SSAL (pCi/g)	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty
Thorium-228 (Th-228)	A-01-R	31,000	0.209		0.104	1.17		0.240	0.683		0.169	0.420		0.151	1.09		0.242	0.845		0.190	0.526		0.158
Thorium-230 (Th-230)	A-01-R	6,160	25.2		2.32	2.12		0.344	1.71		0.300	38.3		3.44	44.0		3.94	10.3		1.05	21.0		1.97
Thorium-232 (Th-232)	A-01-R	2.88	0.487		0.140	0.976		0.208	0.606		0.148	0.374		0.126	1.39		0.271	0.871		0.187	0.461		0.137
Uranium-233/234 (U-233/234)	A-01-R	10,300	35.0		3.29	2.36		0.343	1.78		0.284	35.6		3.39	18.8		1.86	18.4		1.82	20.0		1.97
Uranium-235/236 (U-235/236)	A-01-R	60.9	2.03		0.433	0.175		0.0877	0.0858		0.0614	1.61		0.402	0.882		0.251	1.03		0.271	1.10		0.284
Uranium-238 (U-238)	A-01-R	3.85	**35.4**		**3.32**	2.49		0.353	1.79		0.285	**33.2**		**3.18**	**19.4**		**1.92**	**18.9**		**1.87**	**19.7**		**1.95**
Actinium-228 (Ac-228)	GA-01-R	2.88	1.23		0.506	1.18		0.515	1.27		0.313	0.165	U	0.709	0.435	U	0.694	0.824	U	0.828	0.373	U	0.907
Bismuth-212 (Bi-212)	GA-01-R	10,400,000	-1.07	U	2.49	0.0178	U	1.38	-1.02	U	1.53	0.547	U	2.34	-0.735	U	2.56	-1.83	U	2.99	1.82	U	3.51
Bismuth-214 (Bi-214)	GA-01-R	2,110,000	39.0		4.10	3.21		0.484	2.95		0.441	36.4		3.89	37.3		3.99	31.0		3.29	35.6		3.87
Cesium-137 (Cs-137)	GA-01-R	18	0.000	U	0.113	0.217		0.0861	0.110		0.0570	-0.0229	U	0.153	-0.0861	U	0.238	-0.174	U	0.281	-0.225	U	0.638
Lead-212 (Pb-212)	GA-01-R	1,060,000	0.357	U	0.228	1.10		0.217	1.04		0.203	0.379		0.239	0.171	U	0.643	0.599		0.222	0.535		0.274
Lead-214 (Pb-214)	GA-01-R	11,800,000	40.8		4.23	3.58		0.498	3.25		0.425	39.9		4.22	38.8		4.14	31.6		3.30	36.5		3.90
Potassium-40 (K-40)	GA-01-R	43	5.16	J	1.93	19.4	J	3.14	16.4	J	2.59	4.41	J	1.96	3.14	J	1.85	8.51	J	2.96	1.78	U	3.13
Protactinium-234M (Pa-234M)	GA-01-R	3.85	0.435	U	0.917	-0.222	U	0.669	0.120	U	0.332	0.584	U	0.573	0.492	U	0.561	0.333	U	0.896	0.0237	U	0.0366
Radium-224 (Ra-224)	GA-01-R	1,400,000	0.357	U	0.228	1.10		0.217	1.04		0.203	0.379		0.239	0.171	U	0.643	0.599		0.222	0.535		0.274
Radium-226* (Ra-226)	GA-01-R	1.79	**39.0**		**4.10**	**3.21**		**0.484**	**2.95**		**0.441**	**36.4**		**3.89**	**37.3**		**3.99**	**31.0**		**3.29**	**35.6**		**3.87**
Radium-228 (Ra-228)	GA-01-R	2.88	1.23		0.506	1.18		0.515	1.27		0.313	0.165	U	0.709	0.435	U	0.694	0.824	U	0.828	0.373	U	0.907
Thallium-208 (Tl-208)	GA-01-R	5,470,000	0.338	J	0.166	0.509	J	0.133	0.387	J	0.105	-0.140	U	0.155	0.0642	U	0.114	0.320	J	0.161	0.212	U	0.168
Thorium-234 (Th-234)	GA-01-R	76,700	32.4		4.18	5.89		1.72	3.10		0.913	29.2		3.90	24.4		3.59	23.0		3.13	26.8		3.83

		START V Sample Number	HTCRV2-SS03-0612-01			HTCRV2-SS03-1218-01			HTCRV2-SS03-1824-01			HTCRV2-SS04-0006-01			HTCRV2-SS04-0006-02			HTCRV2-SS04-0612-01			HTCRV2-SS04-1218-01		
		Sample Date	12/1/2020			12/1/2020			12/1/2020			12/1/2020			12/1/2020			12/1/2020			12/1/2020		
		Sample Depth (Inches)	6-12			12-18			18-24			0-6			0-6			6-12			12-18		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	Analytical Method	[1]EPA SSAL (pCi/g)	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty	Result (pCi/g)	Qualifier	Total Uncertainty
Thorium-228 (Th-228)	A-01-R	31,000	0.264		0.113	1.13		0.220	0.856		0.195	0.519		0.157	0.480		0.148	0.523		0.157	1.13		0.238
Thorium-230 (Th-230)	A-01-R	6,160	36.8		3.29	2.57		0.366	8.28		0.876	25.1		2.32	28.4		2.59	22.7		2.11	2.49		0.386
Thorium-232 (Th-232)	A-01-R	2.88	0.416		0.126	0.979		0.194	0.954		0.198	0.522		0.152	0.540		0.147	0.477		0.152	0.979		0.213
Uranium-233/234 (U-233/234)	A-01-R	10,300	43.4		4.14	3.37		0.445	9.39		0.991	31.5		3.01	33.9		3.23	34.7		3.32	3.44		0.456
Uranium-235/236 (U-235/236)	A-01-R	60.9	2.14		0.519	0.133		0.0794	0.506		0.162	1.54		0.379	1.54		0.385	1.94		0.451	0.224		0.102
Uranium-238 (U-238)	A-01-R	3.85	**42.8**		**4.09**	3.49		0.456	**9.26**		**0.979**	**29.8**		**2.86**	**34.9**		**3.32**	**35.8**		**3.41**	**3.93**		**0.500**
Actinium-228 (Ac-228)	GA-01-R	2.88	0.854		0.596	0.889		0.616	1.20		0.535	0.991		0.877	0.651	U	0.622	-0.351	U	1.02	1.72		0.374
Bismuth-212 (Bi-212)	GA-01-R	10,400,000	1.46	U	2.34	0.335	U	2.19	0.000	U	1.19	-2.12	U	3.48	1.37	U	2.30	1.84	U	3.38	-0.809	U	3.33
Bismuth-214 (Bi-214)	GA-01-R	2,110,000	38.2		4.07	10.5		1.26	16.0		1.84	37.5		4.47	37.5		4.03	34.5		3.75	2.49		0.404
Cesium-137 (Cs-137)	GA-01-R	18	0.0762	U	0.205	-0.104	U	0.169	-0.160	U	0.240	-0.182	U	0.276	-0.145	U	0.108	-0.107	U	0.636	0.0769	U	0.118
Lead-212 (Pb-212)	GA-01-R	1,060,000	0.196	U	0.575	1.15		0.239	0.634		0.252	0.197	U	0.710	0.176	U	0.608	0.521		0.263	1.03		0.222
Lead-214 (Pb-214)	GA-01-R	11,800,000	41.6		4.39	10.2		1.18	15.8		1.83	40.0		4.69	38.2		4.07	35.8		3.83	3.46		0.487
Potassium-40 (K-40)	GA-01-R	43	-0.106	U	2.67	22.3	J	3.32	11.5	J	2.31	4.87	J	2.19	4.29	J	1.70	1.78	U	3.09	22.7	J	3.39
Protactinium-234M (Pa-234M)	GA-01-R	3.85	0.0214	U	0.294	-0.316	U	0.940	0.251	U	0.199	0.496	U	1.03	-0.425	U	1.01	0.216	U	0.339	-0.211	U	0.479
Radium-224 (Ra-224)	GA-01-R	1,400,000	0.196	U	0.575	1.15		0.239	0.634		0.252	0.197	U	0.710	0.176	U	0.608	0.521		0.263	1.03		0.222
Radium-226* (Ra-226)	GA-01-R	1.79	**38.2**		**4.07**	**10.5**		**1.26**	**16.0**		**1.84**	**37.5**		**4.47**	**37.5**		**4.03**	**34.5**		**3.75**	**2.49**		**0.404**
Radium-228 (Ra-228)	GA-01-R	2.88	0.854		0.596	0.889		0.616	1.20		0.535	0.991		0.877	0.651	U	0.622	-0.351	U	1.02	1.72		0.374
Thallium-208 (Tl-208)	GA-01-R	5,470,000	-0.00648	U	0.00803	0.531	J	0.182	0.205	U	0.209	0.0577	U	0.0993	-0.0257	U	0.0344	0.0759	U	0.233	0.398	J	0.122
Thorium-234 (Th-234)	GA-01-R	76,700	30.2		4.01	9.69		2.01	8.80		2.27	26.5		4.21	22.1		3.40	25.3		3.63	-1.86	U	1.42

Notes:

START V: Superfund Technical Assessment & Response Team V

NA: Not Applicable, NS: Not Specified, U: Non-Detected, pCi/g: Picocuries per gram

Radium-226 analyzed via 21 days ingrowth

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)

*EPA Area-Specific Action Level (ASAL) for Ra-226 is 13.3 pCi/g for Area 6 and 1.79 pCi/g for Area 7. However, since some soil samples collected from Area 6 and Area 7 were composite samples, the more stringent ASAL of 1.79 pCi/g was used for data comparison

Result equals or exceeds the EPA SSAL or EPA ASAL

Table 9: Soil Analytical Results Summary Table - Radiochemistry
Holy Trinity Cemetery Site (Area 6 & 7)
Lewiston, Niagara County, New York
December 2020

	START V Sample Number		**HTCRV2-SS04-1821-01**			**HTCRV2-SS05-0006-01**			**HTCRV2-SS05-0612-01**			**HTCRV2-SS05-1218-01**			**HTCRV2-SS05-1824-01**			**HTCRV2-SS06-0006-01**			**HTCRV2-SS06-0006-02**		
	Sample Date		**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**		
	Sample Depth (Inches)		**18-21**			**0-6**			**6-12**			**12-18**			**18-24**			**0-6**			**0-6**		
	Sample Matrix		**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium-228 (Th-228)	A-01-R	31,000	0.927		0.198	0.338		0.147	0.315		0.132	0.751		0.193	0.862		0.201	0.360		0.159	0.247		0.120
Thorium-230 (Th-230)	A-01-R	6,160	5.93		0.667	36.1		3.26	37.6		3.38	14.9		1.47	11.1		1.13	43.7		3.95	41.8		3.75
Thorium-232 (Th-232)	A-01-R	2.88	1.02		0.202	0.312		0.117	0.309		0.113	0.904		0.203	0.977		0.205	0.317		0.130	0.298		0.116
Uranium-233/234 (U-233/234)	A-01-R	10,300	3.06		0.422	35.0		3.34	36.7		3.50	14.6		1.47	6.50		0.724	39.2		3.69	44.2		4.20
Uranium-235/236 (U-235/236)	A-01-R	60.9	0.160		0.0864	1.71		0.423	1.96		0.460	0.725		0.212	0.254		0.116	1.67		0.409	2.47		0.558
Uranium-238 (U-238)	A-01-R	3.85	3.05		0.421	**31.1**		**3.01**	**35.6**		**3.41**	**13.7**		**1.40**	**6.47**		**0.722**	**39.3**		**3.69**	**43.7**		**4.16**
Actinium-228 (Ac-228)	GA-01-R	2.88	1.09		0.475	0.975		0.825	0.691	U	0.690	0.958		0.571	0.994		0.377	0.244	U	1.24	-0.392	U	0.905
Bismuth-212 (Bi-212)	GA-01-R	10,400,000	3.03		1.61	-1.78	U	1.26	-1.66	U	2.52	-1.06	U	2.87	-1.18	U	2.09	1.92	U	3.80	-1.86	U	3.09
Bismuth-214 (Bi-214)	GA-01-R	2,110,000	11.8		1.37	45.0		4.82	40.4		4.31	25.3		2.76	23.9		2.59	46.1		5.00	39.2		4.21
Cesium-137 (Cs-137)	GA-01-R	18	-0.0519	U	0.171	-0.128	U	0.268	0.0364	U	0.217	-0.163	U	0.250	-0.0953	U	0.191	-0.274	U	0.395	-0.125	U	0.173
Lead-212 (Pb-212)	GA-01-R	1,060,000	1.14		0.240	0.390	U	0.276	0.488		0.240	0.956		0.258	0.772		0.222	0.301	U	0.884	0.524		0.280
Lead-214 (Pb-214)	GA-01-R	11,800,000	11.6		1.31	47.9		5.09	44.0		4.63	27.3		2.89	25.6		2.75	47.7		5.17	42.8		4.55
Potassium-40 (K-40)	GA-01-R	43	18.0	J	3.19	1.22	U	2.53	2.56	J	2.05	9.04	J	3.17	9.35	J	2.24	-0.869	U	3.82	1.26	U	2.60
Protactinium-234M (Pa-234M)	GA-01-R	3.85	-0.287	U	0.900	0.0928	U	0.243	-0.442	U	1.28	-0.424	U	1.29	0.273	U	0.322	-0.162	U	0.432	-0.132	U	0.381
Radium-224 (Ra-224)	GA-01-R	1,400,000	1.14		0.240	0.390	U	0.276	0.488		0.240	0.956		0.258	0.772		0.222	0.301	U	0.884	0.524		0.280
Radium-226* (Ra-226)	GA-01-R	1.79	**11.8**		**1.37**	**45.0**		**4.82**	**40.4**		**4.31**	**25.3**		**2.76**	**23.9**		**2.59**	**46.1**		**5.00**	**39.2**		**4.21**
Radium-228 (Ra-228)	GA-01-R	2.88	1.09		0.475	0.975		0.825	0.691	U	0.690	0.958		0.571	0.994		0.377	0.244	U	1.24	-0.392	U	0.905
Thallium-208 (Tl-208)	GA-01-R	5,470,000	0.388		0.175	-0.123	U	0.243	-0.0278	U	0.0388	0.0786	U	0.306	0.474	J	0.156	0.156	U	0.265	-0.0399	U	0.0525
Thorium-234 (Th-234)	GA-01-R	76,700	7.97		1.76	32.3		4.40	32.7		4.26	20.1		3.20	18.3		2.76	28.7		5.12	31.1		4.34

	START V Sample Number		**HTCRV2-SS06-0612-01**			**HTCRV2-SS06-1218-01**			**HTCRV2-SS06-1824-01**			**HTCRV2-WC01-0612-01**			**HTCRV2-WC02-0612-01**			**HTCRV2-WC02-0612-02**			**HTCRV2-RB-120120**		
	Sample Date		**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**			**12/1/2020**		
	Sample Depth (Inches)		**6-12**			**12-18**			**18-24**			**6-12**			**6-12**			**6-12**			**NA**		
	Sample Matrix		**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Soil/Rock/Slag**			**Rinsate Blank (Aqueous)**		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/L)**	**Qualifier**	**Total Uncertainty**
Thorium-228 (Th-228)	A-01-R	31,000	0.452		0.147	0.825		0.193	0.447		0.140	0.813		0.194	0.379		0.146	0.267		0.126	0.164	U	0.426
Thorium-230 (Th-230)	A-01-R	6,160	37.3		3.35	10.4		1.07	17.8		1.67	12.5		1.25	41.2		3.69	41.7		3.74	0.421	U	0.460
Thorium-232 (Th-232)	A-01-R	2.88	0.339		0.119	0.862		0.190	0.444		0.125	0.768		0.180	0.290		0.113	0.355		0.128	-0.00554	U	0.0511
Uranium-233/234 (U-233/234)	A-01-R	10,300	40.2		3.82	8.90		1.05	13.0		1.34	7.08		0.803	42.0		3.98	41.5		3.90	0.144	U	0.145
Uranium-235/236 (U-235/236)	A-01-R	60.9	2.14		0.493	0.423		0.182	0.836		0.234	0.366		0.141	1.74		0.445	2.27		0.493	0.000	U	0.0199
Uranium-238 (U-238)	A-01-R	3.85	**39.3**		**3.74**	**9.26**		**1.08**	**13.1**		**1.35**	**7.37**		**0.827**	**40.8**		**3.88**	**42.6**		**3.99**	0.0239	U	0.0658
Actinium-228 (Ac-228)	GA-01-R	2.88	0.955	U	0.808	0.607	U	0.937	0.612	U	0.988	0.629		0.452	0.359	U	1.04	1.06		0.647	11.5	U	19.0
Bismuth-212 (Bi-212)	GA-01-R	10,400,000	-1.02	U	3.36	0.288	U	2.92	-1.93	U	8.44	-0.599	U	5.16	-1.36	U	3.59	0.652	U	3.28	-30.5	U	109
Bismuth-214 (Bi-214)	GA-01-R	2,110,000	49.4		5.88	34.7		3.79	28.0		3.04	22.1		2.42	48.4		5.75	46.6		4.89	15.4	U	18.2
Cesium-137 (Cs-137)	GA-01-R	18	-0.228	U	0.354	-0.151	U	0.668	0.00190	U	0.225	-0.124	U	0.197	-0.196	U	0.297	-0.137	U	0.302	-3.32	U	6.61
Lead-212 (Pb-212)	GA-01-R	1,060,000	0.247	U	0.866	0.447		0.276	-0.0167	U	0.536	0.440		0.196	0.535	U	0.342	0.438	U	0.311	10.8	U	10.3
Lead-214 (Pb-214)	GA-01-R	11,800,000	51.0		6.01	35.7		3.83	34.8		3.74	23.9		2.58	53.0		6.27	48.2		5.04	2.67	U	9.93
Potassium-40 (K-40)	GA-01-R	43	1.69	U	3.52	5.60	J	3.19	5.42	J	1.77	2.89	J	2.36	1.38	U	3.02	0.000	U	1.78	87.2		55.0
Protactinium-234M (Pa-234M)	GA-01-R	3.85	0.140	U	0.250	0.857		0.619	0.836	U	1.22	0.0475	U	0.0790	0.351	U	0.581	0.973	U	0.909	2.34	U	4.29
Radium-224 (Ra-224)	GA-01-R	1,400,000	0.247	U	0.866	0.447		0.276	-0.0167	U	0.536	0.440		0.196	0.535	U	0.342	0.438	U	0.311	10.8	U	10.3
Radium-226* (Ra-226)	GA-01-R	1.79	**49.4**		**5.88**	**34.7**		**3.79**	**28.0**		**3.04**	**22.1**		**2.42**	**48.4**		**5.75**	**46.6**		**4.89**	15.4	U	18.2
Radium-228 (Ra-228)	GA-01-R	2.88	0.955	U	0.808	0.607	U	0.937	0.612	U	0.988	0.629		0.452	0.359	U	1.04	1.06		0.647	11.5	U	19.0
Thallium-208 (Tl-208)	GA-01-R	5,470,000	0.0644	U	0.231	0.0502	U	0.235	0.00981	U	0.248	0.297	J	0.153	-0.184	U	0.347	0.209	U	0.363	8.14		6.45
Thorium-234 (Th-234)	GA-01-R	76,700	35.5		5.29	21.6		3.39	18.6		2.94	16.6		2.54	35.5		5.44	35.3		4.93	-251	U	196

Notes:

START V: Superfund Technical Assessment & Response Team V

NA: Not Applicable, NS: Not Specified, U: Non-Detected, pCi/g: Picocuries per gram, pCi/L: Picocurries per liter

Radium-226 analyzed via 21 days ingrowth

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)

*EPA Area-Specific Action Level (ASAL) for Ra-226 is 13.3 pCi/g for Area 6 and 1.79 pCi/g for Area 7. However, since some soil samples collected from Area 6 and Area 7 were composite samples, the more stringent ASAL of 1.79 pCi/g was used for data comparison

**There are no EPA SSALs for aqueous matrix

Result equals or exceeds the EPA SSAL or EPA ASAL

ATTACHMENT C

Photographic Documentation Log

Photographic Documentation Log
Holy Trinity Cemetery Site, Area 6 & 7
Lewiston, Niagara County, New York
December 2020

Photograph 1: On December 1, 2020, the U.S. Environmental Protection Agency, Region II (EPA) and Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) conducted a Removal Action soil sampling event at two residential areas of concern (AOCs), designated as Area 6 and Area7, located adjacent to the Holy Trinity Cemetery Site (the Site). Six locations were selected for sampling, including four locations in the driveway of Area 6 and two locations in the vehicle parking garage of Area 7. Above is a view of sampling location HTCRV2-SS01 in Area 6.

Photograph 2: At the selected sampling locations, a coring device was used to core through surface concrete to expose the underlying soil. Above is a view of the concrete cores extracted from a sampling location.

Photographic Documentation Log
Holy Trinity Cemetery Site, Area 6 & 7
Lewiston, Niagara County, New York
December 2020

Photograph 3: View of START V personnel using non-dedicated stainless-steel hand augers to advance borings at a cored location in Area 6 to depths up to 24 inches below ground surface (bgs). Soil samples were collected at 6-inch intervals down to 24 inches bgs.

Photograph 4: View of sample location HTCRV2-SS07 in Area 7. Generally, the lithology of the soil encountered in Area 7 at depths 0 to 12 inches bgs comprised of light grey gravel with trace slag material at depths 6 to 12 inches bgs, and at depths 12 to 24 inches bgs, light grey gravel, some clay, and trace slag material.

ATTACHMENT D

Chains of Custody Record

USEPA

DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

160-40623 Chain of Custody

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-

Cooler
Lab: TestAmerica Laboratories, Inc. - St. L
Lab Phone: 314-298-8

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-COMP-0612-01	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	9	25-gram Encore	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-02	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	3	25-gram Encore	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-RB-120120	NA	Alpha/Gamma Spectroscopy	DI Water	12/1/2020	1	1 L poly	4 C	N
	HTCRV2-RB-120120	NA	TAL SVOC	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	PCBs	DI Water	12/1/2020	1	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	TAL Metals + Hg	DI Water	12/1/2020	1	1 L HDPE	HNO3 pH<2, 4 C	N
	HTCRV2-RB-120120	NA	Cyanide	DI Water	12/1/2020	1	1 L HDPE	NaOH pH>12, 4 C	N
	HTCRV2-RB-120120	NA	Herbicides	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-WC01-0612-01	WC01	Gamma/Alpha Spec	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC01-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC01-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All Analysis	[signature] Weston START V	12/1/2020 1200	Fed Ex		
	Fed Ex		Micha Koninkinger ETA STL	12/2/2020 01:47	

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-01
Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-WC01-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	9	5-gram Encore	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	2	4 oz glass with septum	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-02	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC02-0612-02	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC02-0612-02	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Sam Ahanrich	[signature] Weston Stout	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Koninhuger ETA STL	12/2/2020 09:47	

USEPA

DateShipped: 12/2/2020
CarrierName: FedEx
AirbillNo: 772235722675

160-40639 Chain of Custody

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120220-0036-0021-01

Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-SS01-1218-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS01-1824-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS02-0612-01	WC02	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS02-1218-01	WC02	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS02-1824-01	WC02	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-0006-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-0612-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-1218-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-1824-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-0006-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-SS04-0006-02	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-0612-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-1218-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-1824-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-0006-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-0612-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-1218-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-1824-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-0006-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-SS06-0006-02	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-0612-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-1218-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-1824-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples/ All Analysis	Sean Weston/ START	12/2/2020 1100	FED EX		
	FED EX		ETA STL	12/3/2020 0955	

USEPA

DateShipped: 12/2/2020
CarrierName: FedEx
AirbillNo: 772235722675

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120220-0036-0021-01

Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-SS01-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples / All Analysis	Weston / START V	12/2/2020 1100	FED EX		
	FED EX		ETASTL	12/3/2020 0955	

ATTACHMENT E

Laboratory Analytical Reports

ATTACHMENT F

Data Validation Report

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40623-1
Client Project/Site: EPA RST2 - RFP No. 636
Revision: 1

For:
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837

Attn: Ms. Smita Sumbaly

Rhonda Ridenhower

Authorized for release by:
12/22/2020 12:00:33 PM

Rhonda Ridenhower, Client Service Manager
(314)298-8566
Rhonda.Ridenhower@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 54
Surrogate Summary 61

Job ID: 160-40623-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 636

Report Number: 160-40623-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Revision 1- added Edison workshare COC to level II report.

RECEIPT

The samples were received on 12/02/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 11.4º C.

Receipt Exceptions: The container label for the following sample containers did not match the information listed on the Chain-of-Custody

Job ID: 160-40623-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

(COC): HTCRV2-RB-120120 (160-40623-3). The containers listed on the COC do not include three VOA VIAL 40mL - HCl.

The vials, encores, and 1L Amber Glass containers were received within temp; however, the other containers associated with following samples were received at the laboratory outside the required temperature criteria: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6). The samples were logged with collection times listed on the container labels.

TCLP VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP volatile organic compounds (GC-MS) in accordance with EPA SW846 Method 1311/8260C. The samples were leached on 12/06/2020 and analyzed on 12/10/2020.

Surrogate recovery for the following sample was outside the upper control limit: HTCRV2-COMP-0612-01 (160-40623-1). This sample did not contain any target analytes; therefore, re-analysis was not performed.

The continuing calibration verification (CCV) associated with batch 460-745491 recovered above the upper control limit for Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 460-745491 recovered outside control limits for the following analyte: Carbon tetrachloride. This analyte was biased high in the LCS/LCSD and was not detected in the associated samples; therefore, the data have been reported.

Four surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-analysis. The following method blank contained an allowable number of surrogate compounds outside limits: (MB 460-745491/7). These results have been reported and qualified.

Samples HTCRV2-COMP-0612-01 (160-40623-1)[10X], HTCRV2-COMP-0612-02 (160-40623-2)[10X], HTCRV2-WC01-0612-01 (160-40623-4)[10X], HTCRV2-WC02-0612-01 (160-40623-5)[10X] and HTCRV2-WC02-0612-02 (160-40623-6)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GC MS)

Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for volatile organic compounds (GC MS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 12/14/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 1311 / 8270D. The samples were leached on 12/15/2020, prepared on 12/16/2020 and analyzed on 12/16/2020 and 12/17/2020.

2,4-Dinitrotoluene failed the recovery criteria high for the MS of sample 460-224839-4 in batch 460-747421.

2,4-Dinitrotoluene failed the recovery criteria high for the MSD of sample 460-224839-4 in batch 460-747421.

The continuing calibration verification (CCV) associated with batch 460-747421 recovered above the upper control limit for 2,4-Dinitrotoluene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been

Job ID: 160-40623-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC MS)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for semivolatile organic compounds (GC MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 12/06/2020 and analyzed on 12/07/2020.

The continuing calibration verification (CCV) analyzed in batch 460-744876 was outside the method criteria for the following analyte(s): Indeno[1,2,3-cd]pyrene, 2,2'-oxybis[1-chloropropane], Benzo[g,h,i]perylene, Atrazine, 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Benzaldehyde, Dibenz(a,h)anthracene and 2-Nitrophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 460-744813 and analytical batch 460-744876 recovered outside control limits for the following analytes: Atrazine. These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP CHLORINATED PESTICIDES
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP chlorinated pesticides in accordance with EPA SW-846 Methods 1311/ 8081B. The samples were leached on 12/15/2020, prepared on 12/16/2020 and analyzed on 12/17/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The samples were prepared on 12/05/2020 and analyzed on 12/07/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP CHLORINATED HERBICIDES
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were leached on 12/15/2020, prepared on 12/16/2020 and analyzed on 12/18/2020.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORINATED HERBICIDES
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 12/04/2020 and analyzed on 12/07/2020.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP METALS (ICP)

Job ID: 160-40623-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Method 1311/6010D. The samples were leached on 12/15/2020, and prepared and analyzed on 12/16/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP/MS)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for Metals (ICP/MS) in accordance with EPA SW-846 Method 6020B. The samples were prepared on 12/11/2020 and analyzed on 12/13/2020.

Calcium, Iron, Manganese and Sodium failed the recovery criteria low for the MS of sample 460-224225-1 in batch 460-746597.

Lead exceeded the RPD limit for the duplicate of sample 460-224225-1. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP MERCURY
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 12/15/2020, and prepared and analyzed on 12/18/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 12/14/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

FLASHPOINT
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for flashpoint in accordance with EPA SW-846 Method 1030. The samples were analyzed on 12/16/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 12/13/2020 and analyzed on 12/14/2020.

Cyanide, Total failed the recovery criteria high for the MS of sample 460-223902-3 in batch 460-746908.

Cyanide, Total failed the recovery criteria high for the MSD of sample 460-223902-3 in batch 460-746908.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REACTIVE CYANIDE
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for reactive cyanide in accordance with EPA SW-846 Method 9014. The samples were prepared and analyzed on 12/18/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REACTIVE SULFIDE
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4),

Job ID: 160-40623-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for reactive sulfide in accordance with EPA SW-846 Method 7.3.4. The samples were prepared and analyzed on 12/18/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PH

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for pH in accordance with EPA SW-846 Method 9045D. The samples were analyzed on 12/17/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 12/15/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

USEPA

DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

160-40623 Chain of Custody

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-

Cooler
Lab: TestAmerica Laboratories, Inc. - St. L
Lab Phone: 314-298-8

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-COMP-0612-01	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	9	25-gram Encore	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-02	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	3	25-gram Encore	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-RB-120120	NA	Alpha/Gamma Spectroscopy	DI Water	12/1/2020	1	1 L poly	4 C	N
	HTCRV2-RB-120120	NA	TAL SVOC	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	PCBs	DI Water	12/1/2020	1	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	TAL Metals + Hg	DI Water	12/1/2020	1	1 L HDPE	HNO3 pH<2, 4 C	N
	HTCRV2-RB-120120	NA	Cyanide	DI Water	12/1/2020	1	1 L HDPE	NaOH pH>12, 4 C	N
	HTCRV2-RB-120120	NA	Herbicides	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-WC01-0612-01	WC01	Gamma/Alpha Spec	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC01-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC01-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All Analysis	[signature] Weston START V	12/1/2020 1200	Fed Ex		
	Fed Ex		Micha Koninkinger ETA STL	12/2/2020 01:47	

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-01
Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-WC01-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	9	5-gram Encore	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	2	4 oz glass with septum	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-02	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC02-0612-02	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC02-0612-02	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Sam Allan/LB	[signature] Weston Start	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Koninhuger ETA STL	12/2/2020 09:47	

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Ridenhower, Rhonda E	Carrier Tracking No(s):	COC No: 160-205076.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rhonda.Ridenhower@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Louisiana; NELAP - New York		Job #: 160-40623-1
Address: 777 New Durham Road, ,	Due Date Requested: 1/6/2021			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: EPA RST2 - RFP No. 636	Project #: 16009432			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/1311_Z TCLP VOCs	8270D/1311_T TCLP SVOCs	8081B/1311_T TCLP Pesticides	8151A/1311_T TCLP Herbicides	6010D/1311T_M TCLP Metals w/ Hg	7470A/1311T_Hg TCLP Mercury	1030	9045D	9014_ReactiveCN/7.3.3	9034_Reactive/7.3.4				Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
HTCRV2-COMP-0612-01 (160-40623-1)	12/1/20	13:00 Eastern		Solid			X	X	X	X	X	X	X	X	X	X				19	
HTCRV2-COMP-0612-02 (160-40623-2)	12/1/20	13:15 Eastern		Solid			X	X	X	X	X	X	X	X	X	X				8	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 12/3/2020 1715	Company: ETA STL	Received by: via FedEx	Date/Time: 12/4/20 1100	Company: ETA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: ☒ Yes Δ No	Custody Seal No.: tamper evident tape		Cooler Temperature(s) °C and Other Remarks: 3.8, 1.0, 4.1°C FR11		

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-1

Login Number: 40623
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	11.4, 1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Additional 40mL vials were received for HTCRV2-RB-120120.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	A container was added for Rad Screen aliquot on samples -1 and -2
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-1

Login Number: 40623
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 12/04/20 03:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8, 1.0, 4.1°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
X	Surrogate recovery exceeds control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL EDI
8081B	Organochlorine Pesticides (GC)	SW846	TAL EDI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL EDI
8151A	Herbicides (GC)	SW846	TAL EDI
6010D	Metals (ICP)	SW846	TAL EDI
6020B	Metals (ICP/MS)	SW846	TAL EDI
7470A	Mercury (CVAA)	SW846	TAL EDI
1030	Ignitability, Solids	SW846	TAL EDI
9012B	Cyanide, Total andor Amenable	SW846	TAL EDI
9014	Cyanide, Reactive	SW846	TAL EDI
9034	Sulfide, Reactive	SW846	TAL EDI
9045D	pH	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL EDI
1311	TCLP Extraction	SW846	TAL EDI
3010A	Preparation, Total Metals	SW846	TAL EDI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL EDI
5030C	Purge and Trap	SW846	TAL EDI
7.3.3	Cyanide, Reactive	SW846	TAL EDI
7.3.4	Sulfide, Reactive	SW846	TAL EDI
7470A	Preparation, Mercury	SW846	TAL EDI
8151A	Extraction (Herbicides)	SW846	TAL EDI
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40623-1	HTCRV2-COMP-0612-01	Solid	12/01/20 13:00	12/02/20 09:47	
160-40623-2	HTCRV2-COMP-0612-02	Solid	12/01/20 13:15	12/02/20 09:47	
160-40623-3	HTCRV2-RB-120120	Water	12/01/20 00:00	12/02/20 09:47	
160-40623-4	HTCRV2-WC01-0612-01	Solid	12/01/20 13:30	12/02/20 09:47	
160-40623-5	HTCRV2-WC02-0612-01	Solid	12/01/20 13:45	12/02/20 09:47	
160-40623-6	HTCRV2-WC02-0612-02	Solid	12/01/20 14:00	12/02/20 09:47	

Detection Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Client Sample ID: HTCRV2-COMP-0612-01 — Lab Sample ID: 160-40623-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.15	J	1.0	0.066	mg/L	5		6010D	TCLP
Lead	0.059		0.050	0.012	mg/L	5		6010D	TCLP
pH	10.4	HF			SU	1		9045D	Total/NA
Corrosivity	10.4	HF			SU	1		9045D	Total/NA

Client Sample ID: HTCRV2-COMP-0612-02 — Lab Sample ID: 160-40623-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.22	J	1.0	0.066	mg/L	5		6010D	TCLP
Lead	0.053		0.050	0.012	mg/L	5		6010D	TCLP
pH	10.1	HF			SU	1		9045D	Total/NA
Corrosivity	10.1	HF			SU	1		9045D	Total/NA

Client Sample ID: HTCRV2-RB-120120 — Lab Sample ID: 160-40623-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	88	J	200	23	ug/L	1		6020B	Total/NA
Iron	13	J	120	8.5	ug/L	1		6020B	Total/NA
Magnesium	20	J	200	15	ug/L	1		6020B	Total/NA
Sodium	210		200	58	ug/L	1		6020B	Total/NA
Lead	0.29	J	1.2	0.11	ug/L	1		6020B	Total/NA

Client Sample ID: HTCRV2-WC01-0612-01 — Lab Sample ID: 160-40623-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.30	J	1.0	0.066	mg/L	5		6010D	TCLP
Lead	0.066		0.050	0.012	mg/L	5		6010D	TCLP
Mercury	0.00026		0.00020	0.00020	mg/L	1		7470A	TCLP
pH	10	HF			SU	1		9045D	Total/NA
Corrosivity	10	HF			SU	1		9045D	Total/NA

Client Sample ID: HTCRV2-WC02-0612-01 — Lab Sample ID: 160-40623-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.099	J	1.0	0.066	mg/L	5		6010D	TCLP
Lead	0.044	J	0.050	0.012	mg/L	5		6010D	TCLP
Sulfide, Reactive	22		20	20	mg/Kg	1		9034	Total/NA
pH	10.2	HF			SU	1		9045D	Total/NA
Corrosivity	10.2	HF			SU	1		9045D	Total/NA

Client Sample ID: HTCRV2-WC02-0612-02 — Lab Sample ID: 160-40623-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.080	J	1.0	0.066	mg/L	5		6010D	TCLP
Lead	0.040	J	0.050	0.012	mg/L	5		6010D	TCLP
Mercury	0.00031		0.00020	0.00020	mg/L	1		7470A	TCLP
pH	10.6	HF			SU	1		9045D	Total/NA
Corrosivity	10.6	HF			SU	1		9045D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Client Sample ID: HTCRV2-COMP-0612-01

Lab Sample ID: 160-40623-1

Date Collected: 12/01/20 13:00
Date Received: 12/02/20 09:47

Matrix: Solid

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.010	0.0026	mg/L			12/10/20 04:34	10
1,2-Dichloroethane	ND		0.010	0.0043	mg/L			12/10/20 04:34	10
1,4-Dichlorobenzene	ND		0.010	0.0033	mg/L			12/10/20 04:34	10
2-Butanone (MEK)	ND		0.050	0.019	mg/L			12/10/20 04:34	10
Benzene	ND		0.010	0.0020	mg/L			12/10/20 04:34	10
Carbon tetrachloride	ND		0.010	0.0021	mg/L			12/10/20 04:34	10
Chlorobenzene	ND		0.010	0.0038	mg/L			12/10/20 04:34	10
Chloroform	ND		0.010	0.0033	mg/L			12/10/20 04:34	10
Tetrachloroethene	ND		0.010	0.0025	mg/L			12/10/20 04:34	10
Trichloroethene	ND		0.010	0.0031	mg/L			12/10/20 04:34	10
Vinyl chloride	ND		0.010	0.0017	mg/L			12/10/20 04:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 123*		*12/10/20 04:34*	*10*
4-Bromofluorobenzene	*126*	*X*	*76 - 120*		*12/10/20 04:34*	*10*
Dibromofluoromethane (Surr)	*95*		*77 - 124*		*12/10/20 04:34*	*10*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/10/20 04:34*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/16/20 22:57	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 22:57	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 22:57	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/16/20 22:57	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 22:57	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 22:57	1
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/16/20 22:57	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/16/20 22:57	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/16/20 22:57	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/16/20 22:57	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/16/20 22:57	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/16/20 22:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*103*		*36 - 159*	*12/16/20 10:10*	*12/16/20 22:57*	*1*
2-Fluorobiphenyl	*95*		*42 - 127*	*12/16/20 10:10*	*12/16/20 22:57*	*1*
2-Fluorophenol (Surr)	*51*		*18 - 72*	*12/16/20 10:10*	*12/16/20 22:57*	*1*
Nitrobenzene-d5 (Surr)	*89*		*46 - 137*	*12/16/20 10:10*	*12/16/20 22:57*	*1*
Phenol-d5 (Surr)	*34*		*10 - 50*	*12/16/20 10:10*	*12/16/20 22:57*	*1*
Terphenyl-d14 (Surr)	*100*		*39 - 150*	*12/16/20 10:10*	*12/16/20 22:57*	*1*

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:21	12/17/20 08:42	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 08:42	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:21	12/17/20 08:42	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:21	12/17/20 08:42	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:21	12/17/20 08:42	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 08:42	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:21	12/17/20 08:42	1

Client Sample ID: HTCRV2-COMP-0612-01

Lab Sample ID: 160-40623-1
Date Collected: 12/01/20 13:00
Matrix: Solid
Date Received: 12/02/20 09:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*10 - 132*	*12/16/20 10:21*	*12/17/20 08:42*	*1*
Tetrachloro-m-xylene	*74*		*10 - 150*	*12/16/20 10:21*	*12/17/20 08:42*	*1*

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 07:56	1
Silvex (2,4,5-TP)	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 07:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*121*		*39 - 145*	*12/16/20 10:28*	*12/18/20 07:56*	*1*

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 17:55	5
Barium	**0.15**	**J**	1.0	0.066	mg/L		12/16/20 10:46	12/16/20 17:55	5
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 17:55	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 17:55	5
Lead	**0.059**		0.050	0.012	mg/L		12/16/20 10:46	12/16/20 17:55	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 17:55	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 17:55	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00020	mg/L		12/18/20 13:24	12/18/20 14:36	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**10.4**	**HF**			SU			12/17/20 16:56	1
Corrosivity	**10.4**	**HF**			SU			12/17/20 16:56	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Burn Rate	ND		2.20	2.20	mm/sec			12/16/20 14:12	1
Cyanide, Reactive	ND		25	25	mg/Kg		12/18/20 16:39	12/18/20 16:49	1
Sulfide, Reactive	ND		20	20	mg/Kg		12/18/20 16:29	12/18/20 16:44	1

Client Sample ID: HTCRV2-COMP-0612-02

Lab Sample ID: 160-40623-2
Date Collected: 12/01/20 13:15
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.010	0.0026	mg/L			12/10/20 05:00	10
1,2-Dichloroethane	ND		0.010	0.0043	mg/L			12/10/20 05:00	10
1,4-Dichlorobenzene	ND		0.010	0.0033	mg/L			12/10/20 05:00	10
2-Butanone (MEK)	ND		0.050	0.019	mg/L			12/10/20 05:00	10
Benzene	ND		0.010	0.0020	mg/L			12/10/20 05:00	10
Carbon tetrachloride	ND		0.010	0.0021	mg/L			12/10/20 05:00	10
Chlorobenzene	ND		0.010	0.0038	mg/L			12/10/20 05:00	10
Chloroform	ND		0.010	0.0033	mg/L			12/10/20 05:00	10
Tetrachloroethene	ND		0.010	0.0025	mg/L			12/10/20 05:00	10
Trichloroethene	ND		0.010	0.0031	mg/L			12/10/20 05:00	10
Vinyl chloride	ND		0.010	0.0017	mg/L			12/10/20 05:00	10

Client Sample ID: HTCRV2-COMP-0612-02

Lab Sample ID: 160-40623-2

Date Collected: 12/01/20 13:15

Matrix: Solid

Date Received: 12/02/20 09:47

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 123		12/10/20 05:00	10
4-Bromofluorobenzene	103		76 - 120		12/10/20 05:00	10
Dibromofluoromethane (Surr)	95		77 - 124		12/10/20 05:00	10
Toluene-d8 (Surr)	107		80 - 120		12/10/20 05:00	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/16/20 23:18	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 23:18	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 23:18	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/16/20 23:18	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 23:18	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 23:18	1
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/16/20 23:18	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/16/20 23:18	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/16/20 23:18	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/16/20 23:18	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/16/20 23:18	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/16/20 23:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	101		36 - 159	12/16/20 10:10	12/16/20 23:18	1
2-Fluorobiphenyl	90		42 - 127	12/16/20 10:10	12/16/20 23:18	1
2-Fluorophenol (Surr)	47		18 - 72	12/16/20 10:10	12/16/20 23:18	1
Nitrobenzene-d5 (Surr)	87		46 - 137	12/16/20 10:10	12/16/20 23:18	1
Phenol-d5 (Surr)	30		10 - 50	12/16/20 10:10	12/16/20 23:18	1
Terphenyl-d14 (Surr)	89		39 - 150	12/16/20 10:10	12/16/20 23:18	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:21	12/17/20 08:54	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 08:54	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:21	12/17/20 08:54	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:21	12/17/20 08:54	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:21	12/17/20 08:54	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 08:54	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:21	12/17/20 08:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 132	12/16/20 10:21	12/17/20 08:54	1
Tetrachloro-m-xylene	67		10 - 150	12/16/20 10:21	12/17/20 08:54	1

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:15	1
Silvex (2,4,5-TP)	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	131		39 - 145	12/16/20 10:28	12/18/20 08:15	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Client Sample ID: HTCRV2-COMP-0612-02

Lab Sample ID: 160-40623-2
Date Collected: 12/01/20 13:15
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 18:12	5
Barium	**0.22**	**J**	1.0	0.066	mg/L		12/16/20 10:46	12/16/20 18:12	5
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 18:12	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 18:12	5
Lead	**0.053**		0.050	0.012	mg/L		12/16/20 10:46	12/16/20 18:12	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 18:12	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 18:12	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00020	mg/L		12/18/20 13:24	12/18/20 14:38	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**10.1**	**HF**			SU			12/17/20 16:58	1
Corrosivity	**10.1**	**HF**			SU			12/17/20 16:58	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Burn Rate	ND		2.20	2.20	mm/sec			12/16/20 14:12	1
Cyanide, Reactive	ND		25	25	mg/Kg		12/18/20 16:39	12/18/20 16:49	1
Sulfide, Reactive	ND		20	20	mg/Kg		12/18/20 16:29	12/18/20 16:44	1

Client Sample ID: HTCRV2-RB-120120

Lab Sample ID: 160-40623-3
Date Collected: 12/01/20 00:00
Matrix: Water
Date Received: 12/02/20 09:47

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.24	ug/L			12/14/20 12:53	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.37	ug/L			12/14/20 12:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			12/14/20 12:53	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/14/20 12:53	1
1,1-Dichloroethane	ND		1.0	0.26	ug/L			12/14/20 12:53	1
1,1-Dichloroethene	ND		1.0	0.26	ug/L			12/14/20 12:53	1
1,2,3-Trichlorobenzene	ND		1.0	0.36	ug/L			12/14/20 12:53	1
1,2,4-Trichlorobenzene	ND		1.0	0.37	ug/L			12/14/20 12:53	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.38	ug/L			12/14/20 12:53	1
1,2-Dichlorobenzene	ND		1.0	0.21	ug/L			12/14/20 12:53	1
1,2-Dichloroethane	ND		1.0	0.43	ug/L			12/14/20 12:53	1
1,2-Dichloropropane	ND		1.0	0.35	ug/L			12/14/20 12:53	1
1,3-Dichlorobenzene	ND		1.0	0.34	ug/L			12/14/20 12:53	1
1,4-Dichlorobenzene	ND		1.0	0.33	ug/L			12/14/20 12:53	1
1,4-Dioxane	ND		50	28	ug/L			12/14/20 12:53	1
2-Butanone (MEK)	ND		5.0	1.9	ug/L			12/14/20 12:53	1
2-Hexanone	ND		5.0	1.1	ug/L			12/14/20 12:53	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.3	ug/L			12/14/20 12:53	1
Acetone	ND		5.0	4.4	ug/L			12/14/20 12:53	1
Benzene	ND		1.0	0.20	ug/L			12/14/20 12:53	1
Bromoform	ND		1.0	0.54	ug/L			12/14/20 12:53	1
Bromomethane	ND		1.0	0.55	ug/L			12/14/20 12:53	1
Carbon disulfide	ND		1.0	0.82	ug/L			12/14/20 12:53	1

Client Sample ID: HTCRV2-RB-120120

Date Collected: 12/01/20 00:00
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		1.0	0.21	ug/L			12/14/20 12:53	1
Chlorobenzene	ND		1.0	0.38	ug/L			12/14/20 12:53	1
Chlorobromomethane	ND		1.0	0.41	ug/L			12/14/20 12:53	1
Chlorodibromomethane	ND		1.0	0.28	ug/L			12/14/20 12:53	1
Chloroethane	ND		1.0	0.32	ug/L			12/14/20 12:53	1
Chloroform	ND		1.0	0.33	ug/L			12/14/20 12:53	1
Chloromethane	ND		1.0	0.40	ug/L			12/14/20 12:53	1
cis-1,2-Dichloroethene	ND		1.0	0.22	ug/L			12/14/20 12:53	1
cis-1,3-Dichloropropene	ND		1.0	0.22	ug/L			12/14/20 12:53	1
Cyclohexane	ND		1.0	0.32	ug/L			12/14/20 12:53	1
Dichlorobromomethane	ND		1.0	0.34	ug/L			12/14/20 12:53	1
Dichlorodifluoromethane	ND		1.0	0.31	ug/L			12/14/20 12:53	1
Ethylbenzene	ND		1.0	0.30	ug/L			12/14/20 12:53	1
Ethylene Dibromide	ND		1.0	0.50	ug/L			12/14/20 12:53	1
Isopropylbenzene	ND		1.0	0.34	ug/L			12/14/20 12:53	1
Methyl acetate	ND		5.0	0.79	ug/L			12/14/20 12:53	1
Methyl tert-butyl ether	ND		1.0	0.22	ug/L			12/14/20 12:53	1
Methylcyclohexane	ND		1.0	0.71	ug/L			12/14/20 12:53	1
Methylene Chloride	ND		1.0	0.32	ug/L			12/14/20 12:53	1
m-Xylene & p-Xylene	ND		1.0	0.30	ug/L			12/14/20 12:53	1
o-Xylene	ND		1.0	0.36	ug/L			12/14/20 12:53	1
Styrene	ND		1.0	0.42	ug/L			12/14/20 12:53	1
Tetrachloroethene	ND		1.0	0.25	ug/L			12/14/20 12:53	1
Toluene	ND		1.0	0.38	ug/L			12/14/20 12:53	1
trans-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/14/20 12:53	1
trans-1,3-Dichloropropene	ND		1.0	0.22	ug/L			12/14/20 12:53	1
Trichloroethene	ND		1.0	0.31	ug/L			12/14/20 12:53	1
Trichlorofluoromethane	ND		1.0	0.32	ug/L			12/14/20 12:53	1
Vinyl chloride	ND		1.0	0.17	ug/L			12/14/20 12:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*12/14/20 12:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 123*		*12/14/20 12:53*	*1*
4-Bromofluorobenzene	*85*		*76 - 120*		*12/14/20 12:53*	*1*
Dibromofluoromethane (Surr)	*98*		*77 - 124*		*12/14/20 12:53*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/14/20 12:53*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		40	4.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
1,2,4,5-Tetrachlorobenzene	ND		40	5.0	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,2'-oxybis[1-chloropropane]	ND		40	2.5	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,3,4,6-Tetrachlorophenol	ND		40	3.0	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,4,5-Trichlorophenol	ND		40	3.5	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,4,6-Trichlorophenol	ND		40	3.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,4-Dichlorophenol	ND		40	4.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,4-Dimethylphenol	ND		40	2.5	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,4-Dinitrophenol	ND		80	11	ug/L		12/06/20 09:20	12/07/20 02:10	1

Client Sample ID: HTCRV2-RB-120120

Lab Sample ID: 160-40623-3

Date Collected: 12/01/20 00:00

Matrix: Water

Date Received: 12/02/20 09:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	ND		8.0	4.0	ug/L		12/06/20 09:20	12/07/20 02:10	1
2,6-Dinitrotoluene	ND		8.0	3.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
2-Chloronaphthalene	ND		40	4.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
2-Chlorophenol	ND		40	1.5	ug/L		12/06/20 09:20	12/07/20 02:10	1
2-Methylnaphthalene	ND		40	2.1	ug/L		12/06/20 09:20	12/07/20 02:10	1
2-Methylphenol	ND		40	2.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
2-Nitroaniline	ND		40	1.9	ug/L		12/06/20 09:20	12/07/20 02:10	1
2-Nitrophenol	ND		40	3.0	ug/L		12/06/20 09:20	12/07/20 02:10	1
3,3'-Dichlorobenzidine	ND		40	5.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
3-Nitroaniline	ND		40	7.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
4,6-Dinitro-2-methylphenol	ND		80	12	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Bromophenyl phenyl ether	ND		40	3.0	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Chloro-3-methylphenol	ND		40	2.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Chloroaniline	ND		40	7.5	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Chlorophenyl phenyl ether	ND		40	5.1	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Methylphenol	ND		40	2.6	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Nitroaniline	ND		40	4.9	ug/L		12/06/20 09:20	12/07/20 02:10	1
4-Nitrophenol	ND		80	16	ug/L		12/06/20 09:20	12/07/20 02:10	1
Acenaphthene	ND		40	4.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
Acenaphthylene	ND		40	3.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
Acetophenone	ND		40	9.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
Anthracene	ND		40	5.2	ug/L		12/06/20 09:20	12/07/20 02:10	1
Atrazine	ND	*	40	5.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Benzaldehyde	ND		40	8.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Benzo[a]anthracene	ND		4.0	2.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Benzo[a]pyrene	ND		4.0	1.6	ug/L		12/06/20 09:20	12/07/20 02:10	1
Benzo[b]fluoranthene	ND		8.0	2.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
Benzo[g,h,i]perylene	ND		40	2.8	ug/L		12/06/20 09:20	12/07/20 02:10	1
Benzo[k]fluoranthene	ND		4.0	2.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
Bis(2-chloroethoxy)methane	ND		40	2.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Bis(2-chloroethyl)ether	ND		4.0	2.5	ug/L		12/06/20 09:20	12/07/20 02:10	1
Bis(2-ethylhexyl) phthalate	ND		40	3.2	ug/L		12/06/20 09:20	12/07/20 02:10	1
Butyl benzyl phthalate	ND		40	3.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Caprolactam	ND		40	8.9	ug/L		12/06/20 09:20	12/07/20 02:10	1
Carbazole	ND		40	2.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
Chrysene	ND		40	3.6	ug/L		12/06/20 09:20	12/07/20 02:10	1
Dibenz(a,h)anthracene	ND		4.0	2.9	ug/L		12/06/20 09:20	12/07/20 02:10	1
Dibenzofuran	ND		40	4.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Diethyl phthalate	ND		40	3.9	ug/L		12/06/20 09:20	12/07/20 02:10	1
Dimethyl phthalate	ND		40	3.1	ug/L		12/06/20 09:20	12/07/20 02:10	1
Di-n-butyl phthalate	ND		40	3.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Di-n-octyl phthalate	ND		40	3.0	ug/L		12/06/20 09:20	12/07/20 02:10	1
Fluoranthene	ND		40	3.4	ug/L		12/06/20 09:20	12/07/20 02:10	1
Fluorene	ND		40	3.6	ug/L		12/06/20 09:20	12/07/20 02:10	1
Hexachlorobenzene	ND		4.0	1.6	ug/L		12/06/20 09:20	12/07/20 02:10	1
Hexachlorobutadiene	ND		8.0	3.1	ug/L		12/06/20 09:20	12/07/20 02:10	1
Hexachlorocyclopentadiene	ND		40	15	ug/L		12/06/20 09:20	12/07/20 02:10	1
Hexachloroethane	ND		8.0	3.2	ug/L		12/06/20 09:20	12/07/20 02:10	1
Indeno[1,2,3-cd]pyrene	ND		8.0	3.8	ug/L		12/06/20 09:20	12/07/20 02:10	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Client Sample ID: HTCRV2-RB-120120

Date Collected: 12/01/20 00:00
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-3

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		40	3.2	ug/L		12/06/20 09:20	12/07/20 02:10	1
Naphthalene	ND		8.0	2.2	ug/L		12/06/20 09:20	12/07/20 02:10	1
Nitrobenzene	ND		4.0	2.3	ug/L		12/06/20 09:20	12/07/20 02:10	1
N-Nitrosodi-n-propylamine	ND		4.0	1.7	ug/L		12/06/20 09:20	12/07/20 02:10	1
N-Nitrosodiphenylamine	ND		40	3.6	ug/L		12/06/20 09:20	12/07/20 02:10	1
Pentachlorophenol	ND		80	5.8	ug/L		12/06/20 09:20	12/07/20 02:10	1
Phenanthrene	ND		40	5.1	ug/L		12/06/20 09:20	12/07/20 02:10	1
Phenol	ND		40	1.2	ug/L		12/06/20 09:20	12/07/20 02:10	1
Pyrene	ND		40	6.6	ug/L		12/06/20 09:20	12/07/20 02:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*12/06/20 09:20*	*12/07/20 02:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*60*		*36 - 159*	*12/06/20 09:20*	*12/07/20 02:10*	*1*
2-Fluorobiphenyl	*75*		*42 - 127*	*12/06/20 09:20*	*12/07/20 02:10*	*1*
2-Fluorophenol (Surr)	*32*		*18 - 72*	*12/06/20 09:20*	*12/07/20 02:10*	*1*
Nitrobenzene-d5 (Surr)	*75*		*46 - 137*	*12/06/20 09:20*	*12/07/20 02:10*	*1*
Phenol-d5 (Surr)	*18*		*10 - 50*	*12/06/20 09:20*	*12/07/20 02:10*	*1*
Terphenyl-d14 (Surr)	*95*		*39 - 150*	*12/06/20 09:20*	*12/07/20 02:10*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1221	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1232	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1242	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1248	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1254	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1260	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor-1262	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 21:39	1
Aroclor 1268	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 21:39	1
Polychlorinated biphenyls, Total	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*84*		*10 - 150*	*12/05/20 15:24*	*12/07/20 21:39*	*1*
Tetrachloro-m-xylene	*60*		*48 - 125*	*12/05/20 15:24*	*12/07/20 21:39*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		1.2	0.13	ug/L		12/04/20 23:53	12/07/20 08:42	1
Silvex (2,4,5-TP)	ND		1.2	0.11	ug/L		12/04/20 23:53	12/07/20 08:42	1
2,4,5-T	ND		1.2	0.12	ug/L		12/04/20 23:53	12/07/20 08:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*97*		*39 - 145*	*12/04/20 23:53*	*12/07/20 08:42*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		2.0	0.19	ug/L		12/11/20 11:53	12/13/20 13:41	1
Aluminum	ND		40	8.0	ug/L		12/11/20 11:53	12/13/20 13:41	1

Client Sample ID: HTCRV2-RB-120120

Lab Sample ID: 160-40623-3
Date Collected: 12/01/20 00:00
Matrix: Water
Date Received: 12/02/20 09:47

Method: 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.89	ug/L		12/11/20 11:53	12/13/20 13:41	1
Barium	ND		4.0	0.91	ug/L		12/11/20 11:53	12/13/20 13:41	1
Beryllium	ND		0.80	0.098	ug/L		12/11/20 11:53	12/13/20 13:41	1
Calcium	**88**	**J**	200	23	ug/L		12/11/20 11:53	12/13/20 13:41	1
Cadmium	ND		2.0	0.16	ug/L		12/11/20 11:53	12/13/20 13:41	1
Cobalt	ND		4.0	0.26	ug/L		12/11/20 11:53	12/13/20 13:41	1
Chromium	ND		4.0	0.69	ug/L		12/11/20 11:53	12/13/20 13:41	1
Copper	ND		4.0	2.5	ug/L		12/11/20 11:53	12/13/20 13:41	1
Iron	**13**	**J**	120	8.5	ug/L		12/11/20 11:53	12/13/20 13:41	1
Potassium	ND		200	110	ug/L		12/11/20 11:53	12/13/20 13:41	1
Magnesium	**20**	**J**	200	15	ug/L		12/11/20 11:53	12/13/20 13:41	1
Manganese	ND		8.0	1.1	ug/L		12/11/20 11:53	12/13/20 13:41	1
Sodium	**210**		200	58	ug/L		12/11/20 11:53	12/13/20 13:41	1
Nickel	ND		4.0	0.45	ug/L		12/11/20 11:53	12/13/20 13:41	1
Lead	**0.29**	**J**	1.2	0.11	ug/L		12/11/20 11:53	12/13/20 13:41	1
Antimony	ND		2.0	0.76	ug/L		12/11/20 11:53	12/13/20 13:41	1
Selenium	ND		2.5	0.46	ug/L		12/11/20 11:53	12/13/20 13:41	1
Thallium	ND		0.80	0.17	ug/L		12/11/20 11:53	12/13/20 13:41	1
Vanadium	ND		4.0	0.37	ug/L		12/11/20 11:53	12/13/20 13:41	1
Zinc	ND		16	5.1	ug/L		12/11/20 11:53	12/13/20 13:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.091	ug/L		12/14/20 12:12	12/14/20 13:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010	0.0040	mg/L		12/13/20 11:48	12/14/20 17:40	1

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4
Date Collected: 12/01/20 13:30
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.010	0.0026	mg/L			12/10/20 05:25	10
1,2-Dichloroethane	ND		0.010	0.0043	mg/L			12/10/20 05:25	10
1,4-Dichlorobenzene	ND		0.010	0.0033	mg/L			12/10/20 05:25	10
2-Butanone (MEK)	ND		0.050	0.019	mg/L			12/10/20 05:25	10
Benzene	ND		0.010	0.0020	mg/L			12/10/20 05:25	10
Carbon tetrachloride	ND		0.010	0.0021	mg/L			12/10/20 05:25	10
Chlorobenzene	ND		0.010	0.0038	mg/L			12/10/20 05:25	10
Chloroform	ND		0.010	0.0033	mg/L			12/10/20 05:25	10
Tetrachloroethene	ND		0.010	0.0025	mg/L			12/10/20 05:25	10
Trichloroethene	ND		0.010	0.0031	mg/L			12/10/20 05:25	10
Vinyl chloride	ND		0.010	0.0017	mg/L			12/10/20 05:25	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 123*		*12/10/20 05:25*	*10*
4-Bromofluorobenzene	*102*		*76 - 120*		*12/10/20 05:25*	*10*
Dibromofluoromethane (Surr)	*95*		*77 - 124*		*12/10/20 05:25*	*10*

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Matrix: Solid

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/10/20 05:25*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/16/20 23:39	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 23:39	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 23:39	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/16/20 23:39	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 23:39	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 23:39	1
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/16/20 23:39	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/16/20 23:39	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/16/20 23:39	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/16/20 23:39	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/16/20 23:39	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/16/20 23:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*100*		*36 - 159*	*12/16/20 10:10*	*12/16/20 23:39*	*1*
2-Fluorobiphenyl	*89*		*42 - 127*	*12/16/20 10:10*	*12/16/20 23:39*	*1*
2-Fluorophenol (Surr)	*49*		*18 - 72*	*12/16/20 10:10*	*12/16/20 23:39*	*1*
Nitrobenzene-d5 (Surr)	*90*		*46 - 137*	*12/16/20 10:10*	*12/16/20 23:39*	*1*
Phenol-d5 (Surr)	*32*		*10 - 50*	*12/16/20 10:10*	*12/16/20 23:39*	*1*
Terphenyl-d14 (Surr)	*87*		*39 - 150*	*12/16/20 10:10*	*12/16/20 23:39*	*1*

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:21	12/17/20 09:06	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 09:06	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:21	12/17/20 09:06	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:21	12/17/20 09:06	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:21	12/17/20 09:06	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 09:06	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:21	12/17/20 09:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*10 - 132*	*12/16/20 10:21*	*12/17/20 09:06*	*1*
Tetrachloro-m-xylene	*75*		*10 - 150*	*12/16/20 10:21*	*12/17/20 09:06*	*1*

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:30	1
Silvex (2,4,5-TP)	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*117*		*39 - 145*	*12/16/20 10:28*	*12/18/20 08:30*	*1*

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 18:16	5
Barium	**0.30**	**J**	1.0	0.066	mg/L		12/16/20 10:46	12/16/20 18:16	5

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Date Collected: 12/01/20 13:30
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 18:16	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 18:16	5
Lead	**0.066**		0.050	0.012	mg/L		12/16/20 10:46	12/16/20 18:16	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 18:16	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 18:16	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00026**		0.00020	0.00020	mg/L		12/18/20 13:24	12/18/20 14:39	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**10**	**HF**			SU			12/17/20 17:00	1
Corrosivity	**10**	**HF**			SU			12/17/20 17:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Burn Rate	ND		2.20	2.20	mm/sec			12/16/20 14:12	1
Cyanide, Reactive	ND		25	25	mg/Kg		12/18/20 16:39	12/18/20 16:49	1
Sulfide, Reactive	ND		20	20	mg/Kg		12/18/20 16:29	12/18/20 16:44	1

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Date Collected: 12/01/20 13:45
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.010	0.0026	mg/L			12/10/20 05:51	10
1,2-Dichloroethane	ND		0.010	0.0043	mg/L			12/10/20 05:51	10
1,4-Dichlorobenzene	ND		0.010	0.0033	mg/L			12/10/20 05:51	10
2-Butanone (MEK)	ND		0.050	0.019	mg/L			12/10/20 05:51	10
Benzene	ND		0.010	0.0020	mg/L			12/10/20 05:51	10
Carbon tetrachloride	ND		0.010	0.0021	mg/L			12/10/20 05:51	10
Chlorobenzene	ND		0.010	0.0038	mg/L			12/10/20 05:51	10
Chloroform	ND		0.010	0.0033	mg/L			12/10/20 05:51	10
Tetrachloroethene	ND		0.010	0.0025	mg/L			12/10/20 05:51	10
Trichloroethene	ND		0.010	0.0031	mg/L			12/10/20 05:51	10
Vinyl chloride	ND		0.010	0.0017	mg/L			12/10/20 05:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 123*		*12/10/20 05:51*	*10*
4-Bromofluorobenzene	*97*		*76 - 120*		*12/10/20 05:51*	*10*
Dibromofluoromethane (Surr)	*95*		*77 - 124*		*12/10/20 05:51*	*10*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/10/20 05:51*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/17/20 00:00	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/17/20 00:00	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/17/20 00:00	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/17/20 00:00	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/17/20 00:00	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/17/20 00:00	1

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Date Collected: 12/01/20 13:45
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/17/20 00:00	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/17/20 00:00	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/17/20 00:00	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/17/20 00:00	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/17/20 00:00	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/17/20 00:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*92*		*36 - 159*	*12/16/20 10:10*	*12/17/20 00:00*	*1*
2-Fluorobiphenyl	*84*		*42 - 127*	*12/16/20 10:10*	*12/17/20 00:00*	*1*
2-Fluorophenol (Surr)	*43*		*18 - 72*	*12/16/20 10:10*	*12/17/20 00:00*	*1*
Nitrobenzene-d5 (Surr)	*82*		*46 - 137*	*12/16/20 10:10*	*12/17/20 00:00*	*1*
Phenol-d5 (Surr)	*28*		*10 - 50*	*12/16/20 10:10*	*12/17/20 00:00*	*1*
Terphenyl-d14 (Surr)	*87*		*39 - 150*	*12/16/20 10:10*	*12/17/20 00:00*	*1*

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:21	12/17/20 09:19	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 09:19	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:21	12/17/20 09:19	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:21	12/17/20 09:19	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:21	12/17/20 09:19	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 09:19	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:21	12/17/20 09:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*10 - 132*	*12/16/20 10:21*	*12/17/20 09:19*	*1*
Tetrachloro-m-xylene	*85*		*10 - 150*	*12/16/20 10:21*	*12/17/20 09:19*	*1*

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:45	1
Silvex (2,4,5-TP)	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*119*		*39 - 145*	*12/16/20 10:28*	*12/18/20 08:45*	*1*

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 18:20	5
Barium	**0.099**	**J**	1.0	0.066	mg/L		12/16/20 10:46	12/16/20 18:20	5
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 18:20	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 18:20	5
Lead	**0.044**	**J**	0.050	0.012	mg/L		12/16/20 10:46	12/16/20 18:20	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 18:20	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 18:20	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00020	mg/L		12/18/20 13:24	12/18/20 14:20	1

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5
Date Collected: 12/01/20 13:45
Matrix: Solid
Date Received: 12/02/20 09:47

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**10.2**	**HF**			SU			12/17/20 17:01	1
Corrosivity	**10.2**	**HF**			SU			12/17/20 17:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Burn Rate	ND		2.20	2.20	mm/sec			12/16/20 14:12	1
Cyanide, Reactive	ND		25	25	mg/Kg		12/18/20 16:39	12/18/20 16:49	1
Sulfide, Reactive	**22**		20	20	mg/Kg		12/18/20 16:29	12/18/20 16:44	1

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6
Date Collected: 12/01/20 14:00
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.010	0.0026	mg/L			12/10/20 06:41	10
1,2-Dichloroethane	ND		0.010	0.0043	mg/L			12/10/20 06:41	10
1,4-Dichlorobenzene	ND		0.010	0.0033	mg/L			12/10/20 06:41	10
2-Butanone (MEK)	ND		0.050	0.019	mg/L			12/10/20 06:41	10
Benzene	ND		0.010	0.0020	mg/L			12/10/20 06:41	10
Carbon tetrachloride	ND		0.010	0.0021	mg/L			12/10/20 06:41	10
Chlorobenzene	ND		0.010	0.0038	mg/L			12/10/20 06:41	10
Chloroform	ND		0.010	0.0033	mg/L			12/10/20 06:41	10
Tetrachloroethene	ND		0.010	0.0025	mg/L			12/10/20 06:41	10
Trichloroethene	ND		0.010	0.0031	mg/L			12/10/20 06:41	10
Vinyl chloride	ND		0.010	0.0017	mg/L			12/10/20 06:41	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 123*		*12/10/20 06:41*	*10*
4-Bromofluorobenzene	*101*		*76 - 120*		*12/10/20 06:41*	*10*
Dibromofluoromethane (Surr)	*98*		*77 - 124*		*12/10/20 06:41*	*10*
Toluene-d8 (Surr)	*107*		*80 - 120*		*12/10/20 06:41*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/17/20 00:21	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/17/20 00:21	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/17/20 00:21	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/17/20 00:21	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/17/20 00:21	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/17/20 00:21	1
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/17/20 00:21	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/17/20 00:21	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/17/20 00:21	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/17/20 00:21	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/17/20 00:21	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/17/20 00:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*109*		*36 - 159*	*12/16/20 10:10*	*12/17/20 00:21*	*1*
2-Fluorobiphenyl	*93*		*42 - 127*	*12/16/20 10:10*	*12/17/20 00:21*	*1*
2-Fluorophenol (Surr)	*47*		*18 - 72*	*12/16/20 10:10*	*12/17/20 00:21*	*1*

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6

Date Collected: 12/01/20 14:00
Matrix: Solid
Date Received: 12/02/20 09:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	93		46 - 137	12/16/20 10:10	12/17/20 00:21	1
Phenol-d5 (Surr)	31		10 - 50	12/16/20 10:10	12/17/20 00:21	1
Terphenyl-d14 (Surr)	95		39 - 150	12/16/20 10:10	12/17/20 00:21	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:21	12/17/20 09:31	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 09:31	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:21	12/17/20 09:31	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:21	12/17/20 09:31	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:21	12/17/20 09:31	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 09:31	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:21	12/17/20 09:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	34		10 - 132	12/16/20 10:21	12/17/20 09:31	1
Tetrachloro-m-xylene	67		10 - 150	12/16/20 10:21	12/17/20 09:31	1

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:59	1
Silvex (2,4,5-TP)	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 08:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	124		39 - 145	12/16/20 10:28	12/18/20 08:59	1

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 18:24	5
Barium	**0.080**	**J**	1.0	0.066	mg/L		12/16/20 10:46	12/16/20 18:24	5
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 18:24	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 18:24	5
Lead	**0.040**	**J**	0.050	0.012	mg/L		12/16/20 10:46	12/16/20 18:24	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 18:24	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 18:24	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00031**		0.00020	0.00020	mg/L		12/18/20 13:24	12/18/20 14:41	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	**10.6**	**HF**			SU			12/17/20 17:03	1
Corrosivity	**10.6**	**HF**			SU			12/17/20 17:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Burn Rate	ND		2.20	2.20	mm/sec			12/16/20 14:12	1
Cyanide, Reactive	ND		25	25	mg/Kg		12/18/20 16:39	12/18/20 16:49	1
Sulfide, Reactive	ND		20	20	mg/Kg		12/18/20 16:29	12/18/20 16:44	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-745491/7
Matrix: Solid
Analysis Batch: 745491

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.0010	0.00026	mg/L			12/09/20 11:43	1
1,2-Dichloroethane	ND		0.0010	0.00043	mg/L			12/09/20 11:43	1
1,4-Dichlorobenzene	ND		0.0010	0.00033	mg/L			12/09/20 11:43	1
2-Butanone (MEK)	ND		0.0050	0.0019	mg/L			12/09/20 11:43	1
Benzene	ND		0.0010	0.00020	mg/L			12/09/20 11:43	1
Carbon tetrachloride	ND		0.0010	0.00021	mg/L			12/09/20 11:43	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			12/09/20 11:43	1
Chloroform	ND		0.0010	0.00033	mg/L			12/09/20 11:43	1
Tetrachloroethene	ND		0.0010	0.00025	mg/L			12/09/20 11:43	1
Trichloroethene	ND		0.0010	0.00031	mg/L			12/09/20 11:43	1
Vinyl chloride	ND		0.0010	0.00017	mg/L			12/09/20 11:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 123*		*12/09/20 11:43*	*1*
4-Bromofluorobenzene	*121*	*X*	*76 - 120*		*12/09/20 11:43*	*1*
Dibromofluoromethane (Surr)	*111*		*77 - 124*		*12/09/20 11:43*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/09/20 11:43*	*1*

Lab Sample ID: LCS 460-745491/4
Matrix: Solid
Analysis Batch: 745491

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.0200	0.0194		mg/L		97	68 - 133
1,2-Dichloroethane	0.0200	0.0183		mg/L		92	75 - 121
1,4-Dichlorobenzene	0.0200	0.0197		mg/L		98	80 - 118
2-Butanone (MEK)	0.100	0.0981		mg/L		98	69 - 128
Benzene	0.0200	0.0200		mg/L		100	78 - 126
Carbon tetrachloride	0.0200	0.0264	*	mg/L		132	56 - 131
Chlorobenzene	0.0200	0.0207		mg/L		104	80 - 119
Chloroform	0.0200	0.0203		mg/L		101	78 - 125
Tetrachloroethene	0.0200	0.0231		mg/L		115	70 - 127
Trichloroethene	0.0200	0.0199		mg/L		99	71 - 121
Vinyl chloride	0.0200	0.0190		mg/L		95	61 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 123*
4-Bromofluorobenzene	*120*		*76 - 120*
Dibromofluoromethane (Surr)	*110*		*77 - 124*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 460-745491/5
Matrix: Solid
Analysis Batch: 745491

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	0.0200	0.0184		mg/L		92	68 - 133	5	30
1,2-Dichloroethane	0.0200	0.0180		mg/L		90	75 - 121	2	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 460-745491/5
Matrix: Solid
Analysis Batch: 745491

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.0200	0.0199		mg/L		100	80 - 118	1	30
2-Butanone (MEK)	0.100	0.0988		mg/L		99	69 - 128	1	30
Benzene	0.0200	0.0196		mg/L		98	78 - 126	2	30
Carbon tetrachloride	0.0200	0.0270	*	mg/L		135	56 - 131	2	30
Chlorobenzene	0.0200	0.0204		mg/L		102	80 - 119	2	30
Chloroform	0.0200	0.0200		mg/L		100	78 - 125	1	30
Tetrachloroethene	0.0200	0.0229		mg/L		115	70 - 127	1	30
Trichloroethene	0.0200	0.0202		mg/L		101	71 - 121	2	30
Vinyl chloride	0.0200	0.0181		mg/L		90	61 - 144	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 123*
4-Bromofluorobenzene	*119*		*76 - 120*
Dibromofluoromethane (Surr)	*111*		*77 - 124*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 460-745705/8
Matrix: Solid
Analysis Batch: 745705

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.0010	0.00026	mg/L			12/09/20 23:30	1
1,2-Dichloroethane	ND		0.0010	0.00043	mg/L			12/09/20 23:30	1
1,4-Dichlorobenzene	ND		0.0010	0.00033	mg/L			12/09/20 23:30	1
2-Butanone (MEK)	ND		0.0050	0.0019	mg/L			12/09/20 23:30	1
Benzene	ND		0.0010	0.00020	mg/L			12/09/20 23:30	1
Carbon tetrachloride	ND		0.0010	0.00021	mg/L			12/09/20 23:30	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			12/09/20 23:30	1
Chloroform	ND		0.0010	0.00033	mg/L			12/09/20 23:30	1
Tetrachloroethene	ND		0.0010	0.00025	mg/L			12/09/20 23:30	1
Trichloroethene	ND		0.0010	0.00031	mg/L			12/09/20 23:30	1
Vinyl chloride	ND		0.0010	0.00017	mg/L			12/09/20 23:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 123*		*12/09/20 23:30*	*1*
4-Bromofluorobenzene	*116*		*76 - 120*		*12/09/20 23:30*	*1*
Dibromofluoromethane (Surr)	*96*		*77 - 124*		*12/09/20 23:30*	*1*
Toluene-d8 (Surr)	*88*		*80 - 120*		*12/09/20 23:30*	*1*

Lab Sample ID: LCS 460-745705/4
Matrix: Solid
Analysis Batch: 745705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.0200	0.0212		mg/L		106	68 - 133
1,2-Dichloroethane	0.0200	0.0167		mg/L		84	75 - 121
1,4-Dichlorobenzene	0.0200	0.0197		mg/L		99	80 - 118
2-Butanone (MEK)	0.100	0.104		mg/L		104	69 - 128

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 460-745705/4
Matrix: Solid
Analysis Batch: 745705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0200	0.0179		mg/L		89	78 - 126
Carbon tetrachloride	0.0200	0.0202		mg/L		101	56 - 131
Chlorobenzene	0.0200	0.0197		mg/L		98	80 - 119
Chloroform	0.0200	0.0192		mg/L		96	78 - 125
Tetrachloroethene	0.0200	0.0202		mg/L		101	70 - 127
Trichloroethene	0.0200	0.0196		mg/L		98	71 - 121
Vinyl chloride	0.0200	0.0209		mg/L		104	61 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*81*		*75 - 123*
4-Bromofluorobenzene	*92*		*76 - 120*
Dibromofluoromethane (Surr)	*97*		*77 - 124*
Toluene-d8 (Surr)	*85*		*80 - 120*

Lab Sample ID: LCSD 460-745705/5
Matrix: Solid
Analysis Batch: 745705

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	0.0200	0.0218		mg/L		109	68 - 133	3	30
1,2-Dichloroethane	0.0200	0.0182		mg/L		91	75 - 121	9	30
1,4-Dichlorobenzene	0.0200	0.0199		mg/L		99	80 - 118	1	30
2-Butanone (MEK)	0.100	0.104		mg/L		104	69 - 128	0	30
Benzene	0.0200	0.0183		mg/L		92	78 - 126	2	30
Carbon tetrachloride	0.0200	0.0176		mg/L		88	56 - 131	13	30
Chlorobenzene	0.0200	0.0200		mg/L		100	80 - 119	2	30
Chloroform	0.0200	0.0169		mg/L		85	78 - 125	12	30
Tetrachloroethene	0.0200	0.0186		mg/L		93	70 - 127	8	30
Trichloroethene	0.0200	0.0200		mg/L		100	71 - 121	2	30
Vinyl chloride	0.0200	0.0202		mg/L		101	61 - 144	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 123*
4-Bromofluorobenzene	*90*		*76 - 120*
Dibromofluoromethane (Surr)	*84*		*77 - 124*
Toluene-d8 (Surr)	*85*		*80 - 120*

Lab Sample ID: MB 460-746752/9
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.24	ug/L			12/14/20 11:25	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.37	ug/L			12/14/20 11:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			12/14/20 11:25	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/14/20 11:25	1
1,1-Dichloroethane	ND		1.0	0.26	ug/L			12/14/20 11:25	1
1,1-Dichloroethene	ND		1.0	0.26	ug/L			12/14/20 11:25	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 460-746752/9
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.36	ug/L			12/14/20 11:25	1
1,2,4-Trichlorobenzene	ND		1.0	0.37	ug/L			12/14/20 11:25	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.38	ug/L			12/14/20 11:25	1
1,2-Dichlorobenzene	ND		1.0	0.21	ug/L			12/14/20 11:25	1
1,2-Dichloroethane	ND		1.0	0.43	ug/L			12/14/20 11:25	1
1,2-Dichloropropane	ND		1.0	0.35	ug/L			12/14/20 11:25	1
1,3-Dichlorobenzene	ND		1.0	0.34	ug/L			12/14/20 11:25	1
1,4-Dichlorobenzene	ND		1.0	0.33	ug/L			12/14/20 11:25	1
1,4-Dioxane	ND		50	28	ug/L			12/14/20 11:25	1
2-Butanone (MEK)	ND		5.0	1.9	ug/L			12/14/20 11:25	1
2-Hexanone	ND		5.0	1.1	ug/L			12/14/20 11:25	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.3	ug/L			12/14/20 11:25	1
Acetone	ND		5.0	4.4	ug/L			12/14/20 11:25	1
Benzene	ND		1.0	0.20	ug/L			12/14/20 11:25	1
Bromoform	ND		1.0	0.54	ug/L			12/14/20 11:25	1
Bromomethane	ND		1.0	0.55	ug/L			12/14/20 11:25	1
Carbon disulfide	ND		1.0	0.82	ug/L			12/14/20 11:25	1
Carbon tetrachloride	ND		1.0	0.21	ug/L			12/14/20 11:25	1
Chlorobenzene	ND		1.0	0.38	ug/L			12/14/20 11:25	1
Chlorobromomethane	ND		1.0	0.41	ug/L			12/14/20 11:25	1
Chlorodibromomethane	ND		1.0	0.28	ug/L			12/14/20 11:25	1
Chloroethane	ND		1.0	0.32	ug/L			12/14/20 11:25	1
Chloroform	ND		1.0	0.33	ug/L			12/14/20 11:25	1
Chloromethane	ND		1.0	0.40	ug/L			12/14/20 11:25	1
cis-1,2-Dichloroethene	ND		1.0	0.22	ug/L			12/14/20 11:25	1
cis-1,3-Dichloropropene	ND		1.0	0.22	ug/L			12/14/20 11:25	1
Cyclohexane	ND		1.0	0.32	ug/L			12/14/20 11:25	1
Dichlorobromomethane	ND		1.0	0.34	ug/L			12/14/20 11:25	1
Dichlorodifluoromethane	ND		1.0	0.31	ug/L			12/14/20 11:25	1
Ethylbenzene	ND		1.0	0.30	ug/L			12/14/20 11:25	1
Ethylene Dibromide	ND		1.0	0.50	ug/L			12/14/20 11:25	1
Isopropylbenzene	ND		1.0	0.34	ug/L			12/14/20 11:25	1
Methyl acetate	ND		5.0	0.79	ug/L			12/14/20 11:25	1
Methyl tert-butyl ether	ND		1.0	0.22	ug/L			12/14/20 11:25	1
Methylcyclohexane	ND		1.0	0.71	ug/L			12/14/20 11:25	1
Methylene Chloride	ND		1.0	0.32	ug/L			12/14/20 11:25	1
m-Xylene & p-Xylene	ND		1.0	0.30	ug/L			12/14/20 11:25	1
o-Xylene	ND		1.0	0.36	ug/L			12/14/20 11:25	1
Styrene	ND		1.0	0.42	ug/L			12/14/20 11:25	1
Tetrachloroethene	ND		1.0	0.25	ug/L			12/14/20 11:25	1
Toluene	ND		1.0	0.38	ug/L			12/14/20 11:25	1
trans-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/14/20 11:25	1
trans-1,3-Dichloropropene	ND		1.0	0.22	ug/L			12/14/20 11:25	1
Trichloroethene	ND		1.0	0.31	ug/L			12/14/20 11:25	1
Trichlorofluoromethane	ND		1.0	0.32	ug/L			12/14/20 11:25	1
Vinyl chloride	ND		1.0	0.17	ug/L			12/14/20 11:25	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 460-746752/9
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Method Blank
Prep Type: Total/NA

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/14/20 11:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 123		12/14/20 11:25	1
4-Bromofluorobenzene	87		76 - 120		12/14/20 11:25	1
Dibromofluoromethane (Surr)	95		77 - 124		12/14/20 11:25	1
Toluene-d8 (Surr)	105		80 - 120		12/14/20 11:25	1

Lab Sample ID: LCS 460-746752/4
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	17.2		ug/L		86	68 - 128
1,1,2,2-Tetrachloroethane	20.0	18.9		ug/L		95	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroetha ne	20.0	18.0		ug/L		90	59 - 142
1,1,2-Trichloroethane	20.0	19.5		ug/L		97	74 - 125
1,1-Dichloroethane	20.0	18.8		ug/L		94	73 - 130
1,1-Dichloroethene	20.0	17.2		ug/L		86	68 - 133
1,2,3-Trichlorobenzene	20.0	21.7		ug/L		109	53 - 144
1,2,4-Trichlorobenzene	20.0	21.0		ug/L		105	64 - 132
1,2-Dibromo-3-Chloropropane	20.0	17.8		ug/L		89	41 - 143
1,2-Dichlorobenzene	20.0	20.3		ug/L		102	79 - 122
1,2-Dichloroethane	20.0	18.2		ug/L		91	75 - 121
1,2-Dichloropropane	20.0	20.0		ug/L		100	76 - 126
1,3-Dichlorobenzene	20.0	19.9		ug/L		100	80 - 121
1,4-Dichlorobenzene	20.0	18.5		ug/L		93	80 - 118
1,4-Dioxane	400	396		ug/L		99	70 - 142
2-Butanone (MEK)	100	88.9		ug/L		89	69 - 128
2-Hexanone	100	85.6		ug/L		86	74 - 127
4-Methyl-2-pentanone (MIBK)	100	84.4		ug/L		84	78 - 125
Acetone	100	83.7		ug/L		84	61 - 134
Benzene	20.0	19.4		ug/L		97	78 - 126
Bromoform	20.0	21.0		ug/L		105	38 - 144
Bromomethane	20.0	12.7		ug/L		64	10 - 150
Carbon disulfide	20.0	18.5		ug/L		93	64 - 138
Carbon tetrachloride	20.0	18.2		ug/L		91	56 - 131
Chlorobenzene	20.0	19.2		ug/L		96	80 - 119
Chlorobromomethane	20.0	19.6		ug/L		98	73 - 126
Chlorodibromomethane	20.0	19.4		ug/L		97	58 - 130
Chloroethane	20.0	17.7		ug/L		89	29 - 150
Chloroform	20.0	18.7		ug/L		93	78 - 125
Chloromethane	20.0	18.7		ug/L		94	38 - 150
cis-1,2-Dichloroethene	20.0	17.6		ug/L		88	78 - 121
cis-1,3-Dichloropropene	20.0	20.1		ug/L		100	74 - 125
Cyclohexane	20.0	20.9		ug/L		105	67 - 133
Dichlorobromomethane	20.0	17.7		ug/L		88	72 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 460-746752/4
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	20.0	18.5		ug/L		92	31 - 150
Ethylbenzene	20.0	18.8		ug/L		94	78 - 120
Ethylene Dibromide	20.0	19.6		ug/L		98	69 - 126
Isopropylbenzene	20.0	19.0		ug/L		95	79 - 125
Methyl acetate	40.0	37.9		ug/L		95	70 - 127
Methyl tert-butyl ether	20.0	19.0		ug/L		95	65 - 131
Methylcyclohexane	20.0	20.1		ug/L		100	60 - 139
Methylene Chloride	20.0	18.5		ug/L		92	74 - 127
m-Xylene & p-Xylene	20.0	19.7		ug/L		98	78 - 123
o-Xylene	20.0	18.2		ug/L		91	78 - 122
Styrene	20.0	17.8		ug/L		89	75 - 127
Tetrachloroethene	20.0	20.0		ug/L		100	70 - 127
Toluene	20.0	19.4		ug/L		97	78 - 119
trans-1,2-Dichloroethene	20.0	18.1		ug/L		90	74 - 126
trans-1,3-Dichloropropene	20.0	20.2		ug/L		101	66 - 127
Trichloroethene	20.0	18.1		ug/L		91	71 - 121
Trichlorofluoromethane	20.0	16.6		ug/L		83	61 - 140
Vinyl chloride	20.0	17.9		ug/L		90	61 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 123*
4-Bromofluorobenzene	*91*		*76 - 120*
Dibromofluoromethane (Surr)	*102*		*77 - 124*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCSD 460-746752/5
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	18.3		ug/L		91	68 - 128	6	30
1,1,2,2-Tetrachloroethane	20.0	20.4		ug/L		102	63 - 139	7	30
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	19.1		ug/L		96	59 - 142	6	30
1,1,2-Trichloroethane	20.0	20.4		ug/L		102	74 - 125	5	30
1,1-Dichloroethane	20.0	20.3		ug/L		101	73 - 130	8	30
1,1-Dichloroethene	20.0	18.5		ug/L		92	68 - 133	7	30
1,2,3-Trichlorobenzene	20.0	23.9		ug/L		120	53 - 144	10	30
1,2,4-Trichlorobenzene	20.0	23.5		ug/L		118	64 - 132	12	30
1,2-Dibromo-3-Chloropropane	20.0	19.4		ug/L		97	41 - 143	9	30
1,2-Dichlorobenzene	20.0	21.9		ug/L		110	79 - 122	7	30
1,2-Dichloroethane	20.0	18.6		ug/L		93	75 - 121	2	30
1,2-Dichloropropane	20.0	20.4		ug/L		102	76 - 126	2	30
1,3-Dichlorobenzene	20.0	21.2		ug/L		106	80 - 121	6	30
1,4-Dichlorobenzene	20.0	20.4		ug/L		102	80 - 118	10	30
1,4-Dioxane	400	419		ug/L		105	70 - 142	6	30
2-Butanone (MEK)	100	90.8		ug/L		91	69 - 128	2	30
2-Hexanone	100	89.4		ug/L		89	74 - 127	4	30
4-Methyl-2-pentanone (MIBK)	100	87.5		ug/L		87	78 - 125	4	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 460-746752/5
Matrix: Water
Analysis Batch: 746752

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	100	91.1		ug/L		91	61 - 134	9	30
Benzene	20.0	21.3		ug/L		106	78 - 126	9	30
Bromoform	20.0	22.2		ug/L		111	38 - 144	5	30
Bromomethane	20.0	13.5		ug/L		67	10 - 150	6	30
Carbon disulfide	20.0	19.9		ug/L		100	64 - 138	7	30
Carbon tetrachloride	20.0	19.0		ug/L		95	56 - 131	4	30
Chlorobenzene	20.0	20.6		ug/L		103	80 - 119	7	30
Chlorobromomethane	20.0	19.7		ug/L		99	73 - 126	1	30
Chlorodibromomethane	20.0	21.2		ug/L		106	58 - 130	9	30
Chloroethane	20.0	18.0		ug/L		90	29 - 150	2	30
Chloroform	20.0	18.7		ug/L		94	78 - 125	0	30
Chloromethane	20.0	19.2		ug/L		96	38 - 150	3	30
cis-1,2-Dichloroethene	20.0	18.6		ug/L		93	78 - 121	5	30
cis-1,3-Dichloropropene	20.0	21.7		ug/L		108	74 - 125	8	30
Cyclohexane	20.0	22.6		ug/L		113	67 - 133	8	30
Dichlorobromomethane	20.0	19.3		ug/L		97	72 - 121	9	30
Dichlorodifluoromethane	20.0	19.7		ug/L		98	31 - 150	6	30
Ethylbenzene	20.0	20.6		ug/L		103	78 - 120	9	30
Ethylene Dibromide	20.0	21.3		ug/L		106	69 - 126	8	30
Isopropylbenzene	20.0	20.6		ug/L		103	79 - 125	8	30
Methyl acetate	40.0	35.4		ug/L		89	70 - 127	7	30
Methyl tert-butyl ether	20.0	19.7		ug/L		99	65 - 131	4	30
Methylcyclohexane	20.0	21.3		ug/L		106	60 - 139	6	30
Methylene Chloride	20.0	19.8		ug/L		99	74 - 127	7	30
m-Xylene & p-Xylene	20.0	21.2		ug/L		106	78 - 123	7	30
o-Xylene	20.0	19.1		ug/L		96	78 - 122	5	30
Styrene	20.0	19.5		ug/L		98	75 - 127	9	30
Tetrachloroethene	20.0	20.8		ug/L		104	70 - 127	4	30
Toluene	20.0	21.0		ug/L		105	78 - 119	8	30
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	74 - 126	6	30
trans-1,3-Dichloropropene	20.0	21.3		ug/L		106	66 - 127	5	30
Trichloroethene	20.0	18.8		ug/L		94	71 - 121	4	30
Trichlorofluoromethane	20.0	17.5		ug/L		88	61 - 140	5	30
Vinyl chloride	20.0	18.9		ug/L		95	61 - 144	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 123*
4-Bromofluorobenzene	*89*		*76 - 120*
Dibromofluoromethane (Surr)	*97*		*77 - 124*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LB 460-744845/1-A
Matrix: Solid
Analysis Batch: 745491

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.010	0.0026	mg/L			12/09/20 16:13	10
1,2-Dichloroethane	ND		0.010	0.0043	mg/L			12/09/20 16:13	10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 460-744845/1-A
Matrix: Solid
Analysis Batch: 745491

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.0033	mg/L			12/09/20 16:13	10
2-Butanone (MEK)	ND		0.050	0.019	mg/L			12/09/20 16:13	10
Benzene	ND		0.010	0.0020	mg/L			12/09/20 16:13	10
Carbon tetrachloride	ND		0.010	0.0021	mg/L			12/09/20 16:13	10
Chlorobenzene	ND		0.010	0.0038	mg/L			12/09/20 16:13	10
Chloroform	ND		0.010	0.0033	mg/L			12/09/20 16:13	10
Tetrachloroethene	ND		0.010	0.0025	mg/L			12/09/20 16:13	10
Trichloroethene	ND		0.010	0.0031	mg/L			12/09/20 16:13	10
Vinyl chloride	ND		0.010	0.0017	mg/L			12/09/20 16:13	10

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 123*		*12/09/20 16:13*	*10*
4-Bromofluorobenzene	*120*		*76 - 120*		*12/09/20 16:13*	*10*
Dibromofluoromethane (Surr)	*112*		*77 - 124*		*12/09/20 16:13*	*10*
Toluene-d8 (Surr)	*97*		*80 - 120*		*12/09/20 16:13*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-744813/1-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 744813

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		40	4.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
1,2,4,5-Tetrachlorobenzene	ND		40	5.0	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,2'-oxybis[1-chloropropane]	ND		40	2.5	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,3,4,6-Tetrachlorophenol	ND		40	3.0	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,4,5-Trichlorophenol	ND		40	3.5	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,4,6-Trichlorophenol	ND		40	3.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,4-Dichlorophenol	ND		40	4.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,4-Dimethylphenol	ND		40	2.5	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,4-Dinitrophenol	ND		80	11	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,4-Dinitrotoluene	ND		8.0	4.0	ug/L		12/06/20 09:20	12/06/20 19:02	1
2,6-Dinitrotoluene	ND		8.0	3.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
2-Chloronaphthalene	ND		40	4.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
2-Chlorophenol	ND		40	1.5	ug/L		12/06/20 09:20	12/06/20 19:02	1
2-Methylnaphthalene	ND		40	2.1	ug/L		12/06/20 09:20	12/06/20 19:02	1
2-Methylphenol	ND		40	2.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
2-Nitroaniline	ND		40	1.9	ug/L		12/06/20 09:20	12/06/20 19:02	1
2-Nitrophenol	ND		40	3.0	ug/L		12/06/20 09:20	12/06/20 19:02	1
3,3'-Dichlorobenzidine	ND		40	5.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
3-Nitroaniline	ND		40	7.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
4,6-Dinitro-2-methylphenol	ND		80	12	ug/L		12/06/20 09:20	12/06/20 19:02	1
4-Bromophenyl phenyl ether	ND		40	3.0	ug/L		12/06/20 09:20	12/06/20 19:02	1
4-Chloro-3-methylphenol	ND		40	2.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
4-Chloroaniline	ND		40	7.5	ug/L		12/06/20 09:20	12/06/20 19:02	1
4-Chlorophenyl phenyl ether	ND		40	5.1	ug/L		12/06/20 09:20	12/06/20 19:02	1
4-Methylphenol	ND		40	2.6	ug/L		12/06/20 09:20	12/06/20 19:02	1
4-Nitroaniline	ND		40	4.9	ug/L		12/06/20 09:20	12/06/20 19:02	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-744813/1-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 744813

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		80	16	ug/L		12/06/20 09:20	12/06/20 19:02	1
Acenaphthene	ND		40	4.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
Acenaphthylene	ND		40	3.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
Acetophenone	ND		40	9.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
Anthracene	ND		40	5.2	ug/L		12/06/20 09:20	12/06/20 19:02	1
Atrazine	ND		40	5.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Benzaldehyde	ND		40	8.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Benzo[a]anthracene	ND		4.0	2.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Benzo[a]pyrene	ND		4.0	1.6	ug/L		12/06/20 09:20	12/06/20 19:02	1
Benzo[b]fluoranthene	ND		8.0	2.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
Benzo[g,h,i]perylene	ND		40	2.8	ug/L		12/06/20 09:20	12/06/20 19:02	1
Benzo[k]fluoranthene	ND		4.0	2.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
Bis(2-chloroethoxy)methane	ND		40	2.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Bis(2-chloroethyl)ether	ND		4.0	2.5	ug/L		12/06/20 09:20	12/06/20 19:02	1
Bis(2-ethylhexyl) phthalate	ND		40	3.2	ug/L		12/06/20 09:20	12/06/20 19:02	1
Butyl benzyl phthalate	ND		40	3.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Caprolactam	ND		40	8.9	ug/L		12/06/20 09:20	12/06/20 19:02	1
Carbazole	ND		40	2.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
Chrysene	ND		40	3.6	ug/L		12/06/20 09:20	12/06/20 19:02	1
Dibenz(a,h)anthracene	ND		4.0	2.9	ug/L		12/06/20 09:20	12/06/20 19:02	1
Dibenzofuran	ND		40	4.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Diethyl phthalate	ND		40	3.9	ug/L		12/06/20 09:20	12/06/20 19:02	1
Dimethyl phthalate	ND		40	3.1	ug/L		12/06/20 09:20	12/06/20 19:02	1
Di-n-butyl phthalate	ND		40	3.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Di-n-octyl phthalate	ND		40	3.0	ug/L		12/06/20 09:20	12/06/20 19:02	1
Fluoranthene	ND		40	3.4	ug/L		12/06/20 09:20	12/06/20 19:02	1
Fluorene	ND		40	3.6	ug/L		12/06/20 09:20	12/06/20 19:02	1
Hexachlorobenzene	ND		4.0	1.6	ug/L		12/06/20 09:20	12/06/20 19:02	1
Hexachlorobutadiene	ND		8.0	3.1	ug/L		12/06/20 09:20	12/06/20 19:02	1
Hexachlorocyclopentadiene	ND		40	15	ug/L		12/06/20 09:20	12/06/20 19:02	1
Hexachloroethane	ND		8.0	3.2	ug/L		12/06/20 09:20	12/06/20 19:02	1
Indeno[1,2,3-cd]pyrene	ND		8.0	3.8	ug/L		12/06/20 09:20	12/06/20 19:02	1
Isophorone	ND		40	3.2	ug/L		12/06/20 09:20	12/06/20 19:02	1
Naphthalene	ND		8.0	2.2	ug/L		12/06/20 09:20	12/06/20 19:02	1
Nitrobenzene	ND		4.0	2.3	ug/L		12/06/20 09:20	12/06/20 19:02	1
N-Nitrosodi-n-propylamine	ND		4.0	1.7	ug/L		12/06/20 09:20	12/06/20 19:02	1
N-Nitrosodiphenylamine	ND		40	3.6	ug/L		12/06/20 09:20	12/06/20 19:02	1
Pentachlorophenol	ND		80	5.8	ug/L		12/06/20 09:20	12/06/20 19:02	1
Phenanthrene	ND		40	5.1	ug/L		12/06/20 09:20	12/06/20 19:02	1
Phenol	ND		40	1.2	ug/L		12/06/20 09:20	12/06/20 19:02	1
Pyrene	ND		40	6.6	ug/L		12/06/20 09:20	12/06/20 19:02	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*12/06/20 09:20*	*12/06/20 19:02*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*146*		*36 - 159*	*12/06/20 09:20*	*12/06/20 19:02*	*1*
2-Fluorobiphenyl	*95*		*42 - 127*	*12/06/20 09:20*	*12/06/20 19:02*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-744813/1-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 744813

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	54		18 - 72	12/06/20 09:20	12/06/20 19:02	1
Nitrobenzene-d5 (Surr)	98		46 - 137	12/06/20 09:20	12/06/20 19:02	1
Phenol-d5 (Surr)	35		10 - 50	12/06/20 09:20	12/06/20 19:02	1
Terphenyl-d14 (Surr)	117		39 - 150	12/06/20 09:20	12/06/20 19:02	1

Lab Sample ID: LCS 460-744813/2-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 744813

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	80.0	67.8		ug/L		85	59 - 102
1,2,4,5-Tetrachlorobenzene	80.0	74.8		ug/L		93	48 - 109
2,2'-oxybis[1-chloropropane]	80.0	52.7		ug/L		66	38 - 124
2,3,4,6-Tetrachlorophenol	80.0	85.4		ug/L		107	64 - 123
2,4,5-Trichlorophenol	80.0	77.0		ug/L		96	64 - 110
2,4,6-Trichlorophenol	80.0	79.8		ug/L		100	64 - 115
2,4-Dichlorophenol	80.0	73.0		ug/L		91	65 - 107
2,4-Dimethylphenol	80.0	66.3		ug/L		83	59 - 101
2,4-Dinitrophenol	160	191		ug/L		119	36 - 150
2,4-Dinitrotoluene	80.0	95.9		ug/L		120	63 - 122
2,6-Dinitrotoluene	80.0	86.3		ug/L		108	71 - 118
2-Chloronaphthalene	80.0	69.5		ug/L		87	57 - 102
2-Chlorophenol	80.0	63.1		ug/L		79	57 - 93
2-Methylnaphthalene	80.0	71.8		ug/L		90	57 - 103
2-Methylphenol	80.0	54.6		ug/L		68	45 - 86
2-Nitroaniline	80.0	64.8		ug/L		81	54 - 123
2-Nitrophenol	80.0	88.1		ug/L		110	60 - 126
3,3'-Dichlorobenzidine	80.0	71.8		ug/L		90	59 - 125
3-Nitroaniline	80.0	73.1		ug/L		91	57 - 110
4,6-Dinitro-2-methylphenol	160	186		ug/L		117	69 - 149
4-Bromophenyl phenyl ether	80.0	78.1		ug/L		98	65 - 115
4-Chloro-3-methylphenol	80.0	73.3		ug/L		92	60 - 107
4-Chloroaniline	80.0	68.9		ug/L		86	43 - 105
4-Chlorophenyl phenyl ether	80.0	78.5		ug/L		98	60 - 113
4-Methylphenol	80.0	52.1		ug/L		65	37 - 86
4-Nitroaniline	80.0	73.8		ug/L		92	52 - 122
4-Nitrophenol	160	52.8	J	ug/L		33	17 - 61
Acenaphthene	80.0	64.2		ug/L		80	54 - 108
Acenaphthylene	80.0	70.1		ug/L		88	64 - 102
Acetophenone	80.0	72.1		ug/L		90	65 - 109
Anthracene	80.0	68.1		ug/L		85	69 - 110
Atrazine	40.0	72.3	*	ug/L		181	10 - 150
Benzaldehyde	40.0	48.0		ug/L		120	47 - 134
Benzo[a]anthracene	80.0	68.4		ug/L		85	71 - 114
Benzo[a]pyrene	80.0	80.0		ug/L		100	67 - 106
Benzo[b]fluoranthene	80.0	81.4		ug/L		102	65 - 113
Benzo[g,h,i]perylene	80.0	85.9		ug/L		107	48 - 145
Benzo[k]fluoranthene	80.0	78.5		ug/L		98	66 - 116

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-744813/2-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 744813

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-chloroethoxy)methane	80.0	69.0		ug/L		86	64 - 114
Bis(2-chloroethyl)ether	80.0	68.6		ug/L		86	57 - 112
Bis(2-ethylhexyl) phthalate	80.0	71.3		ug/L		89	60 - 135
Butyl benzyl phthalate	80.0	80.6		ug/L		101	63 - 126
Caprolactam	40.0	22.9	J	ug/L		57	10 - 60
Carbazole	80.0	64.7		ug/L		81	68 - 113
Chrysene	80.0	67.3		ug/L		84	74 - 122
Dibenz(a,h)anthracene	80.0	87.8		ug/L		110	57 - 144
Dibenzofuran	80.0	71.6		ug/L		89	65 - 104
Diethyl phthalate	80.0	77.4		ug/L		97	65 - 105
Dimethyl phthalate	80.0	77.7		ug/L		97	68 - 105
Di-n-butyl phthalate	80.0	72.5		ug/L		91	66 - 113
Di-n-octyl phthalate	80.0	76.9		ug/L		96	40 - 133
Fluoranthene	80.0	69.9		ug/L		87	66 - 116
Fluorene	80.0	71.1		ug/L		89	64 - 108
Hexachlorobenzene	80.0	81.3		ug/L		102	59 - 129
Hexachlorobutadiene	80.0	75.4		ug/L		94	33 - 98
Hexachlorocyclopentadiene	80.0	64.3		ug/L		80	14 - 97
Hexachloroethane	80.0	61.0		ug/L		76	27 - 94
Indeno[1,2,3-cd]pyrene	80.0	92.5		ug/L		116	55 - 139
Isophorone	80.0	73.1		ug/L		91	64 - 113
Naphthalene	80.0	66.9		ug/L		84	56 - 99
Nitrobenzene	80.0	78.8		ug/L		99	67 - 109
N-Nitrosodi-n-propylamine	80.0	70.0		ug/L		87	60 - 111
N-Nitrosodiphenylamine	80.0	68.0		ug/L		85	67 - 110
Pentachlorophenol	160	137		ug/L		86	57 - 135
Phenanthrene	80.0	67.5		ug/L		84	69 - 108
Phenol	80.0	33.6	J	ug/L		42	20 - 53
Pyrene	80.0	69.2		ug/L		87	66 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*133*		*36 - 159*
2-Fluorobiphenyl	*87*		*42 - 127*
2-Fluorophenol (Surr)	*50*		*18 - 72*
Nitrobenzene-d5 (Surr)	*87*		*46 - 137*
Phenol-d5 (Surr)	*35*		*10 - 50*
Terphenyl-d14 (Surr)	*107*		*39 - 150*

Lab Sample ID: LCSD 460-744813/3-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 744813

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1'-Biphenyl	80.0	68.0		ug/L		85	59 - 102	0	30
1,2,4,5-Tetrachlorobenzene	80.0	76.4		ug/L		95	48 - 109	2	30
2,2'-oxybis[1-chloropropane]	80.0	53.1		ug/L		66	38 - 124	1	30
2,3,4,6-Tetrachlorophenol	80.0	85.6		ug/L		107	64 - 123	0	30
2,4,5-Trichlorophenol	80.0	79.1		ug/L		99	64 - 110	3	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-744813/3-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 744813

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,6-Trichlorophenol	80.0	83.2		ug/L		104	64 - 115	4	30
2,4-Dichlorophenol	80.0	74.6		ug/L		93	65 - 107	2	30
2,4-Dimethylphenol	80.0	65.7		ug/L		82	59 - 101	1	30
2,4-Dinitrophenol	160	193		ug/L		121	36 - 150	1	30
2,4-Dinitrotoluene	80.0	96.1		ug/L		120	63 - 122	0	30
2,6-Dinitrotoluene	80.0	85.1		ug/L		106	71 - 118	1	30
2-Chloronaphthalene	80.0	69.4		ug/L		87	57 - 102	0	30
2-Chlorophenol	80.0	63.5		ug/L		79	57 - 93	1	30
2-Methylnaphthalene	80.0	73.1		ug/L		91	57 - 103	2	30
2-Methylphenol	80.0	53.1		ug/L		66	45 - 86	3	30
2-Nitroaniline	80.0	61.8		ug/L		77	54 - 123	5	30
2-Nitrophenol	80.0	88.1		ug/L		110	60 - 126	0	30
3,3'-Dichlorobenzidine	80.0	73.6		ug/L		92	59 - 125	3	30
3-Nitroaniline	80.0	75.0		ug/L		94	57 - 110	3	30
4,6-Dinitro-2-methylphenol	160	188		ug/L		117	69 - 149	1	30
4-Bromophenyl phenyl ether	80.0	80.5		ug/L		101	65 - 115	3	30
4-Chloro-3-methylphenol	80.0	71.9		ug/L		90	60 - 107	2	30
4-Chloroaniline	80.0	68.9		ug/L		86	43 - 105	0	30
4-Chlorophenyl phenyl ether	80.0	78.0		ug/L		97	60 - 113	1	30
4-Methylphenol	80.0	51.9		ug/L		65	37 - 86	0	30
4-Nitroaniline	80.0	74.0		ug/L		92	52 - 122	0	30
4-Nitrophenol	160	52.6	J	ug/L		33	17 - 61	0	30
Acenaphthene	80.0	64.6		ug/L		81	54 - 108	1	30
Acenaphthylene	80.0	69.8		ug/L		87	64 - 102	0	30
Acetophenone	80.0	70.4		ug/L		88	65 - 109	3	30
Anthracene	80.0	67.3		ug/L		84	69 - 110	1	30
Atrazine	40.0	70.6	*	ug/L		177	10 - 150	2	30
Benzaldehyde	40.0	47.7		ug/L		119	47 - 134	1	30
Benzo[a]anthracene	80.0	68.5		ug/L		86	71 - 114	0	30
Benzo[a]pyrene	80.0	81.0		ug/L		101	67 - 106	1	30
Benzo[b]fluoranthene	80.0	81.4		ug/L		102	65 - 113	0	30
Benzo[g,h,i]perylene	80.0	87.4		ug/L		109	48 - 145	2	30
Benzo[k]fluoranthene	80.0	78.1		ug/L		98	66 - 116	1	30
Bis(2-chloroethoxy)methane	80.0	67.2		ug/L		84	64 - 114	3	30
Bis(2-chloroethyl)ether	80.0	68.9		ug/L		86	57 - 112	0	30
Bis(2-ethylhexyl) phthalate	80.0	72.4		ug/L		90	60 - 135	1	30
Butyl benzyl phthalate	80.0	81.8		ug/L		102	63 - 126	1	30
Caprolactam	40.0	23.8	J	ug/L		59	10 - 60	4	30
Carbazole	80.0	64.8		ug/L		81	68 - 113	0	30
Chrysene	80.0	68.5		ug/L		86	74 - 122	2	30
Dibenz(a,h)anthracene	80.0	89.0		ug/L		111	57 - 144	1	30
Dibenzofuran	80.0	72.6		ug/L		91	65 - 104	1	30
Diethyl phthalate	80.0	77.9		ug/L		97	65 - 105	1	30
Dimethyl phthalate	80.0	77.9		ug/L		97	68 - 105	0	30
Di-n-butyl phthalate	80.0	73.3		ug/L		92	66 - 113	1	30
Di-n-octyl phthalate	80.0	77.0		ug/L		96	40 - 133	0	30
Fluoranthene	80.0	70.7		ug/L		88	66 - 116	1	30
Fluorene	80.0	71.8		ug/L		90	64 - 108	1	30
Hexachlorobenzene	80.0	80.9		ug/L		101	59 - 129	1	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-744813/3-A
Matrix: Water
Analysis Batch: 744876

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 744813

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorobutadiene	80.0	78.8		ug/L		98	33 - 98	4	30
Hexachlorocyclopentadiene	80.0	64.4		ug/L		80	14 - 97	0	30
Hexachloroethane	80.0	59.9		ug/L		75	27 - 94	2	30
Indeno[1,2,3-cd]pyrene	80.0	95.3		ug/L		119	55 - 139	3	30
Isophorone	80.0	73.9		ug/L		92	64 - 113	1	30
Naphthalene	80.0	67.0		ug/L		84	56 - 99	0	30
Nitrobenzene	80.0	82.2		ug/L		103	67 - 109	4	30
N-Nitrosodi-n-propylamine	80.0	68.9		ug/L		86	60 - 111	2	30
N-Nitrosodiphenylamine	80.0	67.5		ug/L		84	67 - 110	1	30
Pentachlorophenol	160	138		ug/L		86	57 - 135	1	30
Phenanthrene	80.0	66.9		ug/L		84	69 - 108	1	30
Phenol	80.0	33.1	J	ug/L		41	20 - 53	2	30
Pyrene	80.0	69.0		ug/L		86	66 - 121	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*139*		*36 - 159*
2-Fluorobiphenyl	*88*		*42 - 127*
2-Fluorophenol (Surr)	*49*		*18 - 72*
Nitrobenzene-d5 (Surr)	*89*		*46 - 137*
Phenol-d5 (Surr)	*34*		*10 - 50*
Terphenyl-d14 (Surr)	*107*		*39 - 150*

Lab Sample ID: MB 460-747369/1-A
Matrix: Solid
Analysis Batch: 747421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 747369

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/16/20 16:17	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 16:17	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 16:17	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 16:17	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/16/20 16:17	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/16/20 16:17	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 16:17	1
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/16/20 16:17	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/16/20 16:17	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/16/20 16:17	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/16/20 16:17	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/16/20 16:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*81*		*36 - 159*	*12/16/20 10:10*	*12/16/20 16:17*	*1*
2-Fluorobiphenyl	*78*		*42 - 127*	*12/16/20 10:10*	*12/16/20 16:17*	*1*
2-Fluorophenol (Surr)	*43*		*18 - 72*	*12/16/20 10:10*	*12/16/20 16:17*	*1*
Nitrobenzene-d5 (Surr)	*73*		*46 - 137*	*12/16/20 10:10*	*12/16/20 16:17*	*1*
Phenol-d5 (Surr)	*28*		*10 - 50*	*12/16/20 10:10*	*12/16/20 16:17*	*1*
Terphenyl-d14 (Surr)	*86*		*39 - 150*	*12/16/20 10:10*	*12/16/20 16:17*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-747369/2-A
Matrix: Solid
Analysis Batch: 747421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747369

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	0.0800	0.0618		mg/L		77	37 - 93
2,4,5-Trichlorophenol	0.0800	0.0780		mg/L		98	64 - 110
2,4,6-Trichlorophenol	0.0800	0.0805		mg/L		101	64 - 115
3 & 4 Methylphenol	0.0800	0.0402		mg/L		50	37 - 86
2,4-Dinitrotoluene	0.0800	0.0904		mg/L		113	63 - 122
Pyridine	0.160	0.0634		mg/L		40	10 - 66
2-Methylphenol	0.0800	0.0474		mg/L		59	45 - 86
Hexachlorobenzene	0.0800	0.0719		mg/L		90	59 - 129
Hexachlorobutadiene	0.0800	0.0748		mg/L		93	33 - 98
Hexachloroethane	0.0800	0.0632		mg/L		79	27 - 94
Nitrobenzene	0.0800	0.0756		mg/L		95	67 - 109
Pentachlorophenol	0.160	0.116		mg/L		73	57 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*104*		*36 - 159*
2-Fluorobiphenyl	*92*		*42 - 127*
2-Fluorophenol (Surr)	*47*		*18 - 72*
Nitrobenzene-d5 (Surr)	*90*		*46 - 137*
Phenol-d5 (Surr)	*30*		*10 - 50*
Terphenyl-d14 (Surr)	*98*		*39 - 150*

Lab Sample ID: LCSD 460-747369/3-A
Matrix: Solid
Analysis Batch: 747421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 747369

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.0800	0.0615		mg/L		77	37 - 93	1	30
2,4,5-Trichlorophenol	0.0800	0.0761		mg/L		95	64 - 110	3	30
2,4,6-Trichlorophenol	0.0800	0.0792		mg/L		99	64 - 115	2	30
3 & 4 Methylphenol	0.0800	0.0400		mg/L		50	37 - 86	1	30
2,4-Dinitrotoluene	0.0800	0.0916		mg/L		114	63 - 122	1	30
Pyridine	0.160	0.0628		mg/L		39	10 - 66	1	30
2-Methylphenol	0.0800	0.0484		mg/L		60	45 - 86	2	30
Hexachlorobenzene	0.0800	0.0735		mg/L		92	59 - 129	2	30
Hexachlorobutadiene	0.0800	0.0739		mg/L		92	33 - 98	1	30
Hexachloroethane	0.0800	0.0611		mg/L		76	27 - 94	3	30
Nitrobenzene	0.0800	0.0772		mg/L		96	67 - 109	2	30
Pentachlorophenol	0.160	0.123		mg/L		77	57 - 135	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*107*		*36 - 159*
2-Fluorobiphenyl	*92*		*42 - 127*
2-Fluorophenol (Surr)	*46*		*18 - 72*
Nitrobenzene-d5 (Surr)	*91*		*46 - 137*
Phenol-d5 (Surr)	*29*		*10 - 50*
Terphenyl-d14 (Surr)	*101*		*39 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 460-747166/1-B
Matrix: Solid
Analysis Batch: 747421

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 747369

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00040	mg/L		12/16/20 10:10	12/16/20 22:36	1
2,4,5-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 22:36	1
2,4,6-Trichlorophenol	ND		0.010	0.00080	mg/L		12/16/20 10:10	12/16/20 22:36	1
3 & 4 Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 22:36	1
2,4-Dinitrotoluene	ND		0.0020	0.0010	mg/L		12/16/20 10:10	12/16/20 22:36	1
Pyridine	ND		0.010	0.0019	mg/L		12/16/20 10:10	12/16/20 22:36	1
2-Methylphenol	ND		0.010	0.00060	mg/L		12/16/20 10:10	12/16/20 22:36	1
Hexachlorobenzene	ND		0.0010	0.00040	mg/L		12/16/20 10:10	12/16/20 22:36	1
Hexachlorobutadiene	ND		0.0020	0.00080	mg/L		12/16/20 10:10	12/16/20 22:36	1
Hexachloroethane	ND		0.0020	0.0012	mg/L		12/16/20 10:10	12/16/20 22:36	1
Nitrobenzene	ND		0.0010	0.00060	mg/L		12/16/20 10:10	12/16/20 22:36	1
Pentachlorophenol	ND		0.030	0.0014	mg/L		12/16/20 10:10	12/16/20 22:36	1

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*104*		*36 - 159*	*12/16/20 10:10*	*12/16/20 22:36*	*1*
2-Fluorobiphenyl	*92*		*42 - 127*	*12/16/20 10:10*	*12/16/20 22:36*	*1*
2-Fluorophenol (Surr)	*47*		*18 - 72*	*12/16/20 10:10*	*12/16/20 22:36*	*1*
Nitrobenzene-d5 (Surr)	*89*		*46 - 137*	*12/16/20 10:10*	*12/16/20 22:36*	*1*
Phenol-d5 (Surr)	*31*		*10 - 50*	*12/16/20 10:10*	*12/16/20 22:36*	*1*
Terphenyl-d14 (Surr)	*99*		*39 - 150*	*12/16/20 10:10*	*12/16/20 22:36*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 460-747373/1-A
Matrix: Solid
Analysis Batch: 747478

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 747373

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:20	12/17/20 06:26	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:20	12/17/20 06:26	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:20	12/17/20 06:26	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:20	12/17/20 06:26	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:20	12/17/20 06:26	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:20	12/17/20 06:26	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:20	12/17/20 06:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*10 - 132*	*12/16/20 10:20*	*12/17/20 06:26*	*1*
Tetrachloro-m-xylene	*73*		*10 - 150*	*12/16/20 10:20*	*12/17/20 06:26*	*1*

Lab Sample ID: LCS 460-747373/2-A
Matrix: Solid
Analysis Batch: 747478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747373

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-Chlordane	0.000800	0.000755		mg/L		94	53 - 148
Endrin	0.000800	0.000820		mg/L		102	49 - 150
gamma-BHC (Lindane)	0.000800	0.000797		mg/L		100	53 - 140

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 460-747373/2-A
Matrix: Solid
Analysis Batch: 747478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747373

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-Chlordane	0.000800	0.000770		mg/L		96	54 - 148
Heptachlor	0.000800	0.000724		mg/L		91	49 - 140
Heptachlor epoxide	0.000800	0.000716		mg/L		89	55 - 146
Methoxychlor	0.000800	0.000735		mg/L		92	52 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*68*		*10 - 132*
Tetrachloro-m-xylene	*62*		*10 - 150*

Lab Sample ID: LCSD 460-747373/3-A
Matrix: Solid
Analysis Batch: 747478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 747373

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-Chlordane	0.000800	0.000771		mg/L		96	53 - 148	2	30
Endrin	0.000800	0.000836		mg/L		105	49 - 150	2	30
gamma-BHC (Lindane)	0.000800	0.000801		mg/L		100	53 - 140	1	30
trans-Chlordane	0.000800	0.000788		mg/L		99	54 - 148	2	30
Heptachlor	0.000800	0.000738		mg/L		92	49 - 140	2	30
Heptachlor epoxide	0.000800	0.000736		mg/L		92	55 - 146	3	30
Methoxychlor	0.000800	0.000747		mg/L		93	52 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*69*		*10 - 132*
Tetrachloro-m-xylene	*63*		*10 - 150*

Lab Sample ID: LB 460-747166/1-C
Matrix: Solid
Analysis Batch: 747478

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 747373

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000055	mg/L		12/16/20 10:21	12/17/20 08:29	1
Endrin	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 08:29	1
gamma-BHC (Lindane)	ND		0.00050	0.000012	mg/L		12/16/20 10:21	12/17/20 08:29	1
Heptachlor	ND		0.00050	0.0000030	mg/L		12/16/20 10:21	12/17/20 08:29	1
Heptachlor epoxide	ND		0.00050	0.0000050	mg/L		12/16/20 10:21	12/17/20 08:29	1
Methoxychlor	ND		0.00050	0.0000040	mg/L		12/16/20 10:21	12/17/20 08:29	1
Toxaphene	ND		0.0050	0.00011	mg/L		12/16/20 10:21	12/17/20 08:29	1

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*10 - 132*	*12/16/20 10:21*	*12/17/20 08:29*	*1*
Tetrachloro-m-xylene	*79*		*10 - 150*	*12/16/20 10:21*	*12/17/20 08:29*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 460-744724/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 745068 — **Prep Batch: 744724**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1221	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1232	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1242	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1248	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1254	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1260	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor-1262	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 19:42	1
Aroclor 1268	ND		0.40	0.086	ug/L		12/05/20 15:24	12/07/20 19:42	1
Polychlorinated biphenyls, Total	ND		0.40	0.095	ug/L		12/05/20 15:24	12/07/20 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*10 - 150*	*12/05/20 15:24*	*12/07/20 19:42*	*1*
Tetrachloro-m-xylene	*57*		*48 - 125*	*12/05/20 15:24*	*12/07/20 19:42*	*1*

Lab Sample ID: LCS 460-744724/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 745068 — **Prep Batch: 744724**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	4.00	3.72		ug/L		93	66 - 141
Aroclor 1260	4.00	3.52		ug/L		88	75 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*108*		*10 - 150*
Tetrachloro-m-xylene	*93*		*48 - 125*

Lab Sample ID: LCSD 460-744724/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 745068 — **Prep Batch: 744724**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	4.00	3.67		ug/L		92	66 - 141	1	30
Aroclor 1260	4.00	3.46		ug/L		87	75 - 150	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*108*		*10 - 150*
Tetrachloro-m-xylene	*96*		*48 - 125*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 460-744634/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 744971 — **Prep Batch: 744634**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		1.2	0.13	ug/L		12/04/20 23:53	12/07/20 07:58	1
Silvex (2,4,5-TP)	ND		1.2	0.11	ug/L		12/04/20 23:53	12/07/20 07:58	1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 460-744634/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 744971 — **Prep Batch: 744634**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		1.2	0.12	ug/L		12/04/20 23:53	12/07/20 07:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*93*		*39 - 145*	*12/04/20 23:53*	*12/07/20 07:58*	*1*

Lab Sample ID: LCS 460-744634/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 744971 — **Prep Batch: 744634**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	16.0	15.2		ug/L		95	10 - 150
Silvex (2,4,5-TP)	4.00	4.68		ug/L		117	35 - 150
2,4,5-T	4.00	4.34		ug/L		108	33 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*112*		*39 - 145*

Lab Sample ID: LCSD 460-744634/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 744971 — **Prep Batch: 744634**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	16.0	14.4		ug/L		90	10 - 150	5	30
Silvex (2,4,5-TP)	4.00	4.46		ug/L		112	35 - 150	5	30
2,4,5-T	4.00	3.94		ug/L		99	33 - 150	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*107*		*39 - 145*

Lab Sample ID: MB 460-747222/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 747297 — **Prep Batch: 747222**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.0030	0.0030	mg/L		12/15/20 22:54	12/16/20 07:13	1
Silvex (2,4,5-TP)	ND		0.0030	0.0030	mg/L		12/15/20 22:54	12/16/20 07:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*87*		*39 - 145*	*12/15/20 22:54*	*12/16/20 07:13*	*1*

Lab Sample ID: LCS 460-747222/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 747297 — **Prep Batch: 747222**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	0.0160	0.0134	E	mg/L		84	10 - 150
Silvex (2,4,5-TP)	0.00400	0.00411		mg/L		103	35 - 150

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 460-747222/2-A
Matrix: Solid
Analysis Batch: 747297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747222

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid	94		39 - 145

Lab Sample ID: LCSD 460-747222/3-A
Matrix: Solid
Analysis Batch: 747297

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 747222

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D			0.0160	0.0133	E	mg/L		83	10 - 150	1	30
Silvex (2,4,5-TP)			0.00400	0.00397		mg/L		99	35 - 150	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4-Dichlorophenylacetic acid	90		39 - 145

Lab Sample ID: LB 460-747166/1-D
Matrix: Solid
Analysis Batch: 747712

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 747222

Analyte	LB Result	LB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 09:14	1
Silvex (2,4,5-TP)	ND		0.083	0.083	mg/L		12/16/20 10:28	12/18/20 09:14	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	139		39 - 145	12/16/20 10:28	12/18/20 09:14	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 460-747381/1-A
Matrix: Solid
Analysis Batch: 747331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 747381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0033	mg/L		12/16/20 10:46	12/16/20 14:53	1
Barium	ND		0.20	0.013	mg/L		12/16/20 10:46	12/16/20 14:53	1
Cadmium	ND		0.0040	0.00033	mg/L		12/16/20 10:46	12/16/20 14:53	1
Chromium	ND		0.010	0.0050	mg/L		12/16/20 10:46	12/16/20 14:53	1
Lead	ND		0.010	0.0024	mg/L		12/16/20 10:46	12/16/20 14:53	1
Selenium	ND		0.020	0.0059	mg/L		12/16/20 10:46	12/16/20 14:53	1
Silver	ND		0.010	0.0058	mg/L		12/16/20 10:46	12/16/20 14:53	1

Lab Sample ID: LCS 460-747381/2-A ^2
Matrix: Solid
Analysis Batch: 747331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747381

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			5.00	5.02		mg/L		100	80 - 120		
Barium			10.0	10.2		mg/L		102	80 - 120		
Cadmium			1.00	1.04		mg/L		104	80 - 120		
Chromium			5.00	5.18		mg/L		104	80 - 120		

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 460-747381/2-A ^2
Matrix: Solid
Analysis Batch: 747331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	5.00	5.32		mg/L		106	80 - 120
Selenium	1.00	1.01		mg/L		101	80 - 120
Silver	0.500	0.513		mg/L		103	80 - 120

Lab Sample ID: LB 460-747166/1-E ^5
Matrix: Solid
Analysis Batch: 747331

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 747381

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 15:18	5
Barium	ND		1.0	0.066	mg/L		12/16/20 10:46	12/16/20 15:18	5
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 15:18	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 15:18	5
Lead	ND		0.050	0.012	mg/L		12/16/20 10:46	12/16/20 15:18	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 15:18	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 15:18	5

Lab Sample ID: LB 460-747167/1-D ^5
Matrix: Solid
Analysis Batch: 747331

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 747381

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.075	0.017	mg/L		12/16/20 10:46	12/16/20 15:14	5
Barium	ND		1.0	0.066	mg/L		12/16/20 10:46	12/16/20 15:14	5
Cadmium	ND		0.020	0.0016	mg/L		12/16/20 10:46	12/16/20 15:14	5
Chromium	ND		0.050	0.025	mg/L		12/16/20 10:46	12/16/20 15:14	5
Lead	ND		0.050	0.012	mg/L		12/16/20 10:46	12/16/20 15:14	5
Selenium	ND		0.10	0.029	mg/L		12/16/20 10:46	12/16/20 15:14	5
Silver	ND		0.050	0.029	mg/L		12/16/20 10:46	12/16/20 15:14	5

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 460-746249/1-A
Matrix: Water
Analysis Batch: 746597

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 746249

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		2.0	0.19	ug/L		12/11/20 11:53	12/13/20 08:45	1
Aluminum	ND		40	8.0	ug/L		12/11/20 11:53	12/13/20 08:45	1
Arsenic	ND		2.0	0.89	ug/L		12/11/20 11:53	12/13/20 08:45	1
Barium	ND		4.0	0.91	ug/L		12/11/20 11:53	12/13/20 08:45	1
Beryllium	ND		0.80	0.098	ug/L		12/11/20 11:53	12/13/20 08:45	1
Calcium	ND		200	23	ug/L		12/11/20 11:53	12/13/20 08:45	1
Cadmium	ND		2.0	0.16	ug/L		12/11/20 11:53	12/13/20 08:45	1
Cobalt	ND		4.0	0.26	ug/L		12/11/20 11:53	12/13/20 08:45	1
Chromium	ND		4.0	0.69	ug/L		12/11/20 11:53	12/13/20 08:45	1
Copper	ND		4.0	2.5	ug/L		12/11/20 11:53	12/13/20 08:45	1
Iron	ND		120	8.5	ug/L		12/11/20 11:53	12/13/20 08:45	1
Potassium	ND		200	110	ug/L		12/11/20 11:53	12/13/20 08:45	1
Magnesium	ND		200	15	ug/L		12/11/20 11:53	12/13/20 08:45	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 460-746249/1-A
Matrix: Water
Analysis Batch: 746597

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 746249

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		8.0	1.1	ug/L		12/11/20 11:53	12/13/20 08:45	1
Sodium	ND		200	58	ug/L		12/11/20 11:53	12/13/20 08:45	1
Nickel	ND		4.0	0.45	ug/L		12/11/20 11:53	12/13/20 08:45	1
Lead	ND		1.2	0.11	ug/L		12/11/20 11:53	12/13/20 08:45	1
Antimony	ND		2.0	0.76	ug/L		12/11/20 11:53	12/13/20 08:45	1
Selenium	ND		2.5	0.46	ug/L		12/11/20 11:53	12/13/20 08:45	1
Thallium	ND		0.80	0.17	ug/L		12/11/20 11:53	12/13/20 08:45	1
Vanadium	ND		4.0	0.37	ug/L		12/11/20 11:53	12/13/20 08:45	1
Zinc	ND		16	5.1	ug/L		12/11/20 11:53	12/13/20 08:45	1

Lab Sample ID: LCS 460-746249/2-A
Matrix: Water
Analysis Batch: 746597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 746249

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	25.0	23.8		ug/L		95	80 - 120
Aluminum	2500	2570		ug/L		103	80 - 120
Arsenic	50.0	51.4		ug/L		103	80 - 120
Barium	50.0	51.3		ug/L		103	80 - 120
Beryllium	25.0	24.6		ug/L		98	80 - 120
Calcium	2500	2480		ug/L		99	80 - 120
Cadmium	25.0	25.4		ug/L		102	80 - 120
Cobalt	25.0	25.3		ug/L		101	80 - 120
Chromium	50.0	51.3		ug/L		103	80 - 120
Copper	50.0	50.1		ug/L		100	80 - 120
Iron	2500	2540		ug/L		102	80 - 120
Potassium	2500	2610		ug/L		104	80 - 120
Magnesium	2500	2600		ug/L		104	80 - 120
Manganese	250	256		ug/L		103	80 - 120
Sodium	2500	2550		ug/L		102	80 - 120
Nickel	50.0	52.7		ug/L		105	80 - 120
Lead	25.0	25.0		ug/L		100	80 - 120
Antimony	25.0	25.6		ug/L		102	80 - 120
Selenium	50.0	49.3		ug/L		99	80 - 120
Thallium	20.0	20.2		ug/L		101	80 - 120
Vanadium	50.0	49.3		ug/L		99	80 - 120
Zinc	250	239		ug/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 460-746804/1-A
Matrix: Water
Analysis Batch: 746858

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 746804

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.091	ug/L		12/14/20 12:12	12/14/20 13:32	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 460-746804/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 746858 — **Prep Batch: 746804**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.03		ug/L		103	80 - 120

Lab Sample ID: MB 460-747832/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 747896 — **Prep Batch: 747832**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00020	mg/L		12/18/20 13:24	12/18/20 14:17	1

Lab Sample ID: LCS 460-747832/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 747896 — **Prep Batch: 747832**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00490		mg/L		98	80 - 120

Lab Sample ID: MB 460-747846/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 747896 — **Prep Batch: 747846**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00020	mg/L		12/18/20 14:21	12/18/20 17:05	1

Lab Sample ID: LCS 460-747846/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 747896 — **Prep Batch: 747846**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00549		mg/L		110	80 - 120

Lab Sample ID: 160-40623-5 MS — **Client Sample ID: HTCRV2-WC02-0612-01**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 747896 — **Prep Batch: 747832**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00500	0.00527		mg/L		105	75 - 125

Lab Sample ID: 160-40623-5 DU — **Client Sample ID: HTCRV2-WC02-0612-01**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 747896 — **Prep Batch: 747832**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	ND		ND		mg/L		NC	20

Lab Sample ID: LB 460-747166/1-F — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: TCLP**
Analysis Batch: 747896 — **Prep Batch: 747846**

Analyte	LB Result	LB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00020	mg/L		12/18/20 14:21	12/18/20 16:34	1

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 460-746607/1-A
Matrix: Water
Analysis Batch: 746908

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 746607

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010	0.0040	mg/L		12/13/20 11:48	12/14/20 17:12	1

Lab Sample ID: LCS 460-746607/2-A
Matrix: Water
Analysis Batch: 746908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 746607

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.109		mg/L		109	85 - 115

Method: 9014 - Cyanide, Reactive

Lab Sample ID: MB 460-747887/1-A
Matrix: Solid
Analysis Batch: 747891

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 747887

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive	ND		25	25	mg/Kg		12/18/20 16:39	12/18/20 16:49	1

Lab Sample ID: LCS 460-747887/2-A
Matrix: Solid
Analysis Batch: 747891

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747887

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Reactive	40.0	ND		mg/Kg		12	10 - 100

Method: 9034 - Sulfide, Reactive

Lab Sample ID: MB 460-747882/1-A
Matrix: Solid
Analysis Batch: 747889

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 747882

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		20	20	mg/Kg		12/18/20 16:29	12/18/20 16:44	1

Lab Sample ID: LCSSRM 460-747882/3-A
Matrix: Solid
Analysis Batch: 747889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 747882

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide, Reactive	62.6	67.6		mg/Kg		108.0	44.9 - 144.2

Method: 9045D - pH

Lab Sample ID: MB 460-747548/2
Matrix: Solid
Analysis Batch: 747548

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.6				SU			12/17/20 16:38	1
Corrosivity	6.6				SU			12/17/20 16:38	1

QC Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Method: 9045D - pH

Lab Sample ID: LCSSRM 460-747548/3
Matrix: Solid
Analysis Batch: 747548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			8.31	8.3		SU		99.3	97.6 - 102.4		
Corrosivity			8.31	8.3		SU		99.3	97.6 - 102.4		

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

GC/MS VOA

Leach Batch: 744845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	1311	
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	1311	
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	1311	
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	1311	
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	1311	
LB 460-744845/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 745491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 460-744845/1-A	Method Blank	TCLP	Solid	8260C	744845
MB 460-745491/7	Method Blank	Total/NA	Solid	8260C	
LCS 460-745491/4	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 460-745491/5	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 745705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	8260C	744845
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	8260C	744845
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	8260C	744845
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	8260C	744845
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	8260C	744845
MB 460-745705/8	Method Blank	Total/NA	Solid	8260C	
LCS 460-745705/4	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 460-745705/5	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 746752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	8260C	
MB 460-746752/9	Method Blank	Total/NA	Water	8260C	
LCS 460-746752/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 460-746752/5	Lab Control Sample Dup	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 744813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	3510C	
MB 460-744813/1-A	Method Blank	Total/NA	Water	3510C	
LCS 460-744813/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 460-744813/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 744876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	8270D	744813
MB 460-744813/1-A	Method Blank	Total/NA	Water	8270D	744813
LCS 460-744813/2-A	Lab Control Sample	Total/NA	Water	8270D	744813
LCSD 460-744813/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	744813

Leach Batch: 747166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	1311	

GC/MS Semi VOA (Continued)

Leach Batch: 747166 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	1311	
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	1311	
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	1311	
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	1311	
LB 460-747166/1-B	Method Blank	TCLP	Solid	1311	

Prep Batch: 747369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	3510C	747166
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	3510C	747166
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	3510C	747166
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	3510C	747166
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	3510C	747166
LB 460-747166/1-B	Method Blank	TCLP	Solid	3510C	747166
MB 460-747369/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 460-747369/2-A	Lab Control Sample	Total/NA	Solid	3510C	
LCSD 460-747369/3-A	Lab Control Sample Dup	Total/NA	Solid	3510C	

Analysis Batch: 747421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	8270D	747369
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	8270D	747369
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	8270D	747369
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	8270D	747369
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	8270D	747369
LB 460-747166/1-B	Method Blank	TCLP	Solid	8270D	747369
MB 460-747369/1-A	Method Blank	Total/NA	Solid	8270D	747369
LCS 460-747369/2-A	Lab Control Sample	Total/NA	Solid	8270D	747369
LCSD 460-747369/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	747369

GC Semi VOA

Prep Batch: 744634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	8151A	
MB 460-744634/1-A	Method Blank	Total/NA	Water	8151A	
LCS 460-744634/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 460-744634/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Prep Batch: 744724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	3510C	
MB 460-744724/1-A	Method Blank	Total/NA	Water	3510C	
LCS 460-744724/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 460-744724/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 744971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	8151A	744634
MB 460-744634/1-A	Method Blank	Total/NA	Water	8151A	744634
LCS 460-744634/2-A	Lab Control Sample	Total/NA	Water	8151A	744634

GC Semi VOA (Continued)

Analysis Batch: 744971 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 460-744634/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	744634

Analysis Batch: 745068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	8082A	744724
MB 460-744724/1-A	Method Blank	Total/NA	Water	8082A	744724
LCS 460-744724/2-A	Lab Control Sample	Total/NA	Water	8082A	744724
LCSD 460-744724/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	744724

Leach Batch: 747166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	1311	
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	1311	
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	1311	
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	1311	
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	1311	
LB 460-747166/1-C	Method Blank	TCLP	Solid	1311	
LB 460-747166/1-D	Method Blank	TCLP	Solid	1311	

Prep Batch: 747222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	8151A	747166
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	8151A	747166
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	8151A	747166
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	8151A	747166
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	8151A	747166
LB 460-747166/1-D	Method Blank	TCLP	Solid	8151A	747166
MB 460-747222/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 460-747222/2-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 460-747222/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	

Analysis Batch: 747297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 460-747222/1-A	Method Blank	Total/NA	Solid	8151A	747222
LCS 460-747222/2-A	Lab Control Sample	Total/NA	Solid	8151A	747222
LCSD 460-747222/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	747222

Prep Batch: 747373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	3510C	747166
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	3510C	747166
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	3510C	747166
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	3510C	747166
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	3510C	747166
LB 460-747166/1-C	Method Blank	TCLP	Solid	3510C	747166
MB 460-747373/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 460-747373/2-A	Lab Control Sample	Total/NA	Solid	3510C	
LCSD 460-747373/3-A	Lab Control Sample Dup	Total/NA	Solid	3510C	

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

GC Semi VOA

Analysis Batch: 747478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	8081B	747373
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	8081B	747373
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	8081B	747373
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	8081B	747373
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	8081B	747373
LB 460-747166/1-C	Method Blank	TCLP	Solid	8081B	747373
MB 460-747373/1-A	Method Blank	Total/NA	Solid	8081B	747373
LCS 460-747373/2-A	Lab Control Sample	Total/NA	Solid	8081B	747373
LCSD 460-747373/3-A	Lab Control Sample Dup	Total/NA	Solid	8081B	747373

Analysis Batch: 747712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	8151A	747222
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	8151A	747222
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	8151A	747222
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	8151A	747222
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	8151A	747222
LB 460-747166/1-D	Method Blank	TCLP	Solid	8151A	747222

Metals

Prep Batch: 746249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	3010A	
MB 460-746249/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-746249/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 746597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	6020B	746249
MB 460-746249/1-A	Method Blank	Total/NA	Water	6020B	746249
LCS 460-746249/2-A	Lab Control Sample	Total/NA	Water	6020B	746249

Prep Batch: 746804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	7470A	
MB 460-746804/1-A	Method Blank	Total/NA	Water	7470A	
LCS 460-746804/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 746858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	7470A	746804
MB 460-746804/1-A	Method Blank	Total/NA	Water	7470A	746804
LCS 460-746804/2-A	Lab Control Sample	Total/NA	Water	7470A	746804

Leach Batch: 747166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	1311	
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	1311	
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	1311	
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	1311	

Metals (Continued)

Leach Batch: 747166 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	1311	
LB 460-747166/1-E ^5	Method Blank	TCLP	Solid	1311	
LB 460-747166/1-F	Method Blank	TCLP	Solid	1311	
160-40623-5 MS	HTCRV2-WC02-0612-01	TCLP	Solid	1311	
160-40623-5 DU	HTCRV2-WC02-0612-01	TCLP	Solid	1311	

Leach Batch: 747167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 460-747167/1-D ^5	Method Blank	TCLP	Solid	1311	

Analysis Batch: 747331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	6010D	747381
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	6010D	747381
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	6010D	747381
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	6010D	747381
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	6010D	747381
LB 460-747166/1-E ^5	Method Blank	TCLP	Solid	6010D	747381
LB 460-747167/1-D ^5	Method Blank	TCLP	Solid	6010D	747381
MB 460-747381/1-A	Method Blank	Total/NA	Solid	6010D	747381
LCS 460-747381/2-A ^2	Lab Control Sample	Total/NA	Solid	6010D	747381

Prep Batch: 747381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	3010A	747166
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	3010A	747166
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	3010A	747166
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	3010A	747166
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	3010A	747166
LB 460-747166/1-E ^5	Method Blank	TCLP	Solid	3010A	747166
LB 460-747167/1-D ^5	Method Blank	TCLP	Solid	3010A	747167
MB 460-747381/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 460-747381/2-A ^2	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 747832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	7470A	747166
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	7470A	747166
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	7470A	747166
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	7470A	747166
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	7470A	747166
MB 460-747832/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 460-747832/2-A	Lab Control Sample	Total/NA	Solid	7470A	
160-40623-5 MS	HTCRV2-WC02-0612-01	TCLP	Solid	7470A	747166
160-40623-5 DU	HTCRV2-WC02-0612-01	TCLP	Solid	7470A	747166

Prep Batch: 747846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 460-747166/1-F	Method Blank	TCLP	Solid	7470A	747166
MB 460-747846/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 460-747846/2-A	Lab Control Sample	Total/NA	Solid	7470A	

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Metals

Analysis Batch: 747896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	TCLP	Solid	7470A	747832
160-40623-2	HTCRV2-COMP-0612-02	TCLP	Solid	7470A	747832
160-40623-4	HTCRV2-WC01-0612-01	TCLP	Solid	7470A	747832
160-40623-5	HTCRV2-WC02-0612-01	TCLP	Solid	7470A	747832
160-40623-6	HTCRV2-WC02-0612-02	TCLP	Solid	7470A	747832
LB 460-747166/1-F	Method Blank	TCLP	Solid	7470A	747846
MB 460-747832/1-A	Method Blank	Total/NA	Solid	7470A	747832
MB 460-747846/1-A	Method Blank	Total/NA	Solid	7470A	747846
LCS 460-747832/2-A	Lab Control Sample	Total/NA	Solid	7470A	747832
LCS 460-747846/2-A	Lab Control Sample	Total/NA	Solid	7470A	747846
160-40623-5 MS	HTCRV2-WC02-0612-01	TCLP	Solid	7470A	747832
160-40623-5 DU	HTCRV2-WC02-0612-01	TCLP	Solid	7470A	747832

General Chemistry

Prep Batch: 746607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	9012B	
MB 460-746607/1-A	Method Blank	Total/NA	Water	9012B	
LCS 460-746607/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 746908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	9012B	746607
MB 460-746607/1-A	Method Blank	Total/NA	Water	9012B	746607
LCS 460-746607/2-A	Lab Control Sample	Total/NA	Water	9012B	746607

Analysis Batch: 747103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	Moisture	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	Moisture	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	Moisture	
160-40623-4 DU	HTCRV2-WC01-0612-01	Total/NA	Solid	Moisture	

Analysis Batch: 747411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	Total/NA	Solid	1030	
160-40623-2	HTCRV2-COMP-0612-02	Total/NA	Solid	1030	
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	1030	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	1030	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	1030	

Analysis Batch: 747548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	Total/NA	Solid	9045D	
160-40623-2	HTCRV2-COMP-0612-02	Total/NA	Solid	9045D	
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	9045D	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	9045D	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	9045D	
MB 460-747548/2	Method Blank	Total/NA	Solid	9045D	
LCSSRM 460-747548/3	Lab Control Sample	Total/NA	Solid	9045D	

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

General Chemistry

Prep Batch: 747882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	Total/NA	Solid	7.3.4	
160-40623-2	HTCRV2-COMP-0612-02	Total/NA	Solid	7.3.4	
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	7.3.4	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	7.3.4	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	7.3.4	
MB 460-747882/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCSSRM 460-747882/3-A	Lab Control Sample	Total/NA	Solid	7.3.4	

Prep Batch: 747887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	Total/NA	Solid	7.3.3	
160-40623-2	HTCRV2-COMP-0612-02	Total/NA	Solid	7.3.3	
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	7.3.3	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	7.3.3	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	7.3.3	
MB 460-747887/1-A	Method Blank	Total/NA	Solid	7.3.3	
LCS 460-747887/2-A	Lab Control Sample	Total/NA	Solid	7.3.3	

Analysis Batch: 747889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	Total/NA	Solid	9034	747882
160-40623-2	HTCRV2-COMP-0612-02	Total/NA	Solid	9034	747882
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	9034	747882
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	9034	747882
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	9034	747882
MB 460-747882/1-A	Method Blank	Total/NA	Solid	9034	747882
LCSSRM 460-747882/3-A	Lab Control Sample	Total/NA	Solid	9034	747882

Analysis Batch: 747891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-1	HTCRV2-COMP-0612-01	Total/NA	Solid	9014	747887
160-40623-2	HTCRV2-COMP-0612-02	Total/NA	Solid	9014	747887
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	9014	747887
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	9014	747887
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	9014	747887
MB 460-747887/1-A	Method Blank	Total/NA	Solid	9014	747887
LCS 460-747887/2-A	Lab Control Sample	Total/NA	Solid	9014	747887

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-123)	(76-120)	(77-124)	(80-120)
LCS 460-745491/4	Lab Control Sample	95	120	110	101
LCS 460-745705/4	Lab Control Sample	81	92	97	85
LCSD 460-745491/5	Lab Control Sample Dup	93	119	111	99
LCSD 460-745705/5	Lab Control Sample Dup	95	90	84	85
MB 460-745491/7	Method Blank	94	121 X	111	100
MB 460-745705/8	Method Blank	84	116	96	88

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-123)	(76-120)	(77-124)	(80-120)
160-40623-1	HTCRV2-COMP-0612-01	87	126 X	95	97
160-40623-2	HTCRV2-COMP-0612-02	88	103	95	107
160-40623-4	HTCRV2-WC01-0612-01	85	102	95	98
160-40623-5	HTCRV2-WC02-0612-01	85	97	95	97
160-40623-6	HTCRV2-WC02-0612-02	90	101	98	107
LB 460-744845/1-A	Method Blank	94	120	112	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-123)	(76-120)	(77-124)	(80-120)
160-40623-3	HTCRV2-RB-120120	99	85	98	105
LCS 460-746752/4	Lab Control Sample	94	91	102	106
LCSD 460-746752/5	Lab Control Sample Dup	92	89	97	104
MB 460-746752/9	Method Blank	97	87	95	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPHL
Lab Sample ID	Client Sample ID	(36-159)	(42-127)	(18-72)	(46-137)	(10-50)	(39-150)
LCS 460-747369/2-A	Lab Control Sample	104	92	47	90	30	98
LCSD 460-747369/3-A	Lab Control Sample Dup	107	92	46	91	29	101
MB 460-747369/1-A	Method Blank	81	78	43	73	28	86

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPHL
Lab Sample ID	Client Sample ID	(36-159)	(42-127)	(18-72)	(46-137)	(10-50)	(39-150)
160-40623-1	HTCRV2-COMP-0612-01	103	95	51	89	34	100
160-40623-2	HTCRV2-COMP-0612-02	101	90	47	87	30	89
160-40623-4	HTCRV2-WC01-0612-01	100	89	49	90	32	87
160-40623-5	HTCRV2-WC02-0612-01	92	84	43	82	28	87
160-40623-6	HTCRV2-WC02-0612-02	109	93	47	93	31	95
LB 460-747166/1-B	Method Blank	104	92	47	89	31	99

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPHL
Lab Sample ID	Client Sample ID	(36-159)	(42-127)	(18-72)	(46-137)	(10-50)	(39-150)
160-40623-3	HTCRV2-RB-120120	60	75	32	75	18	95
LCS 460-744813/2-A	Lab Control Sample	133	87	50	87	35	107
LCSD 460-744813/3-A	Lab Control Sample Dup	139	88	49	89	34	107
MB 460-744813/1-A	Method Blank	146	95	54	98	35	117

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1	TCX1
Lab Sample ID	Client Sample ID	(10-132)	(10-150)
LCS 460-747373/2-A	Lab Control Sample	68	62
LCSD 460-747373/3-A	Lab Control Sample Dup	69	63
MB 460-747373/1-A	Method Blank	80	73

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1	TCX1
Lab Sample ID	Client Sample ID	(10-132)	(10-150)
160-40623-1	HTCRV2-COMP-0612-01	79	74
160-40623-2	HTCRV2-COMP-0612-02	73	67
160-40623-4	HTCRV2-WC01-0612-01	54	75
160-40623-5	HTCRV2-WC02-0612-01	81	85
LB 460-747166/1-C	Method Blank	92	79

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP2	TCX1
Lab Sample ID	Client Sample ID	(10-132)	(10-150)
160-40623-6	HTCRV2-WC02-0612-02	34	67

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1	TCX1
Lab Sample ID	Client Sample ID	(10-150)	(48-125)
160-40623-3	HTCRV2-RB-120120	84	60
LCS 460-744724/2-A	Lab Control Sample	108	93
LCSD 460-744724/3-A	Lab Control Sample Dup	108	96
MB 460-744724/1-A	Method Blank	64	57

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	DCPAA2 (39-145)
LCS 460-747222/2-A	Lab Control Sample	94
LCSD 460-747222/3-A	Lab Control Sample Dup	90
MB 460-747222/1-A	Method Blank	87

Percent Surrogate Recovery (Acceptance Limits)

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

Lab Sample ID	Client Sample ID	DCPAA1 (39-145)
160-40623-1	HTCRV2-COMP-0612-01	121

Percent Surrogate Recovery (Acceptance Limits)

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

Lab Sample ID	Client Sample ID	DCPAA2 (39-145)
160-40623-2	HTCRV2-COMP-0612-02	131
160-40623-4	HTCRV2-WC01-0612-01	117
160-40623-5	HTCRV2-WC02-0612-01	119
160-40623-6	HTCRV2-WC02-0612-02	124
LB 460-747166/1-D	Method Blank	139

Percent Surrogate Recovery (Acceptance Limits)

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	DCPAA2 (39-145)
160-40623-3	HTCRV2-RB-120120	97
LCS 460-744634/2-A	Lab Control Sample	112
LCSD 460-744634/3-A	Lab Control Sample Dup	107
MB 460-744634/1-A	Method Blank	93

Percent Surrogate Recovery (Acceptance Limits)

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40623-3
Client Project/Site: EPA RST2 - RFP No. 636

For:
Weston Solutions, Inc.
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Attn: Ms. Smita Sumbaly

Rhonda Ridenhower

Authorized for release by:
2/19/2021 4:43:46 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40623-3

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 636

Report Number: 160-40623-3

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/02/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 11.4º C.

Due to lab error, samples were logged for TCLP rather than total. This report contains the total results which were out of hold due to error.

Receipt Exceptions: The following samples were received at the laboratory outside the required temperature criteria: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6). The

Job ID: 160-40623-3 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

samples were logged with collection times listed on the container labels.

The vials, encores, and 1L Amber Glass containers were received within temp; however, the other containers associated with following samples were received at the laboratory outside the required temperature criteria: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

VOLATILE ORGANIC COMPOUNDS BY GC/MS

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 8260D. The samples were prepared on 02/03/2021 and analyzed on 02/04/2021.

The continuing calibration verification (CCV) associated with batch 460-756830 recovered above the upper control limit for Bromomethane and 1,1,2,2-Tetrachloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 460-756830 recovered outside control limits for the following analytes: Bromomethane, 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, 1,2-Dichlorobenzene, 1,4-Dioxane, 1,2,3-Trichlorobenzene, 2-Hexanone and 4-Methyl-2-pentanone (MIBK). These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Semivolatile Organic Compounds (GC/MS) in accordance with 8270E. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The continuing calibration verification (CCV) analyzed in batch 460-757182 was outside the method criteria for the following analyte(s): Benzaldehyde. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits due to poor performance. The LCS/LCSD associated with batch 460-757132 had (Atrazine, Benzaldehyde and Caprolactam) outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ORGANOCHLORINE PESTICIDES (GC)

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Organochlorine Pesticides (GC) in accordance with SW- 846 Method 8081B. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

The %RPD between the primary and confirmation column exceeded 40% for the following sample: 4,4'-DDTHTCRV2-WC01-0612-01

Job ID: 160-40623-3 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

(160-40623-4). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS) BY GAS CHROMATOGRAPHY
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Polychlorinated Biphenyls (PCBs) by Gas Chromatography in accordance with SW 846. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The laboratory control sample (LCS) laboratory control sample duplicate (LCSD) for preparation batch 460-757020 and analytical batch 460-757214 recovered outside control limits for the following analytes: Aroclor 1016 and Aroclor 1260 on the confirmation column These analytes were biased high in the LCS and LCSD and were not detected in the associated samples; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORINATED HERBICIDES
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The closing continuing calibration verification (CCVC) associated with batch 460-757242 recovered above the upper control limit for many analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS ICP/MS
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Metals ICP/MS in accordance with SW 846. The samples were prepared and analyzed on 02/12/2021.

Several analytes failed the recovery criteria low for the MS of sample HTCRV2-WC01-0612-01MS (160-40623-4) in batch 460-758639.

Cobalt, Iron, Magnesium and Selenium exceeded the RPD limit for the duplicate of sample HTCRV2-WC01-0612-01DU (160-40623-4). Refer to the QC report for details.

Samples HTCRV2-WC01-0612-01 (160-40623-4)[5X], HTCRV2-WC02-0612-01 (160-40623-5)[5X] and HTCRV2-WC02-0612-02 (160-40623-6)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 02/09/2021.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 02/14/2021 and analyzed

Job ID: 160-40623-3 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

on 02/15/2021.

Cyanide, Total failed the recovery criteria low for the MS/MSD of sample 460-227896-1 in batch 460-759149.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

160-40623 Chain of Custody

USEPA

DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-

Cooler
Lab: TestAmerica Laboratories, Inc. - St. L
Lab Phone: 314-298-8

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-COMP-0612-01	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	9	25-gram Encore	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-02	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	3	25-gram Encore	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-RB-120120	NA	Alpha/Gamma Spectroscopy	DI Water	12/1/2020	1	1 L poly	4 C	N
	HTCRV2-RB-120120	NA	TAL SVOC	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	PCBs	DI Water	12/1/2020	1	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	TAL Metals + Hg	DI Water	12/1/2020	1	1 L HDPE	HNO3 pH<2, 4 C	N
	HTCRV2-RB-120120	NA	Cyanide	DI Water	12/1/2020	1	1 L HDPE	NaOH pH>12, 4 C	N
	HTCRV2-RB-120120	NA	Herbicides	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-WC01-0612-01	WC01	Gamma/Alpha Spec	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC01-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC01-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All Analysis	[signature] Weston CHART V	12/1/2020 1700	Fed Ex		
	Fed Ex		Michal Konieczny ETA SRL	12/2/2020 01:47	

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-01
Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-WC01-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	9	5-gram Encore	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	2	4 oz glass with septum	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-02	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC02-0612-02	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC02-0612-02	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Sam Allan/LB	[signature] Weston Start	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Koninhuger ETA STL	12/2/2020 09:47	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-3

Login Number: 40623
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	11.4, 1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Additional 40mL vials were received for HTCRV2-RB-120120.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	A container was added for Rad Screen aliquot on samples -1 and -2
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-3

Login Number: 40623
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 12/04/20 03:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8, 1.0, 4.1°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS VOA TICs

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
A	The tentatively identified compound is a suspected aldol-condensation product.
H	Sample was prepped or analyzed beyond the specified holding time
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	TAL EDI
8081B	Organochlorine Pesticides (GC)	SW846	TAL EDI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL EDI
8151A	Herbicides (GC)	SW846	TAL EDI
6020B	Metals (ICP/MS)	SW846	TAL EDI
7471B	Mercury (CVAA)	SW846	TAL EDI
9012B	Cyanide, Total andor Amenable	SW846	TAL EDI
3050B	Preparation, Metals	SW846	TAL EDI
3546	Microwave Extraction	SW846	TAL EDI
5035	Closed System Purge and Trap	SW846	TAL EDI
7471B	Preparation, Mercury	SW846	TAL EDI
8151A	Extraction (Herbicides)	SW846	TAL EDI
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL EDI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40623-4	HTCRV2-WC01-0612-01	Solid	12/01/20 13:30	12/02/20 09:47	
160-40623-5	HTCRV2-WC02-0612-01	Solid	12/01/20 13:45	12/02/20 09:47	
160-40623-6	HTCRV2-WC02-0612-02	Solid	12/01/20 14:00	12/02/20 09:47	

Detection Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Client Sample ID: HTCRV2-WC01-0612-01 — Lab Sample ID: 160-40623-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	0.38	J H	1.2	0.33	ug/Kg	1	☼	8260D	Total/NA
Isopropylbenzene	0.88	J H	1.2	0.35	ug/Kg	1	☼	8260D	Total/NA
Methylene Chloride	6.5	H	2.5	1.4	ug/Kg	1	☼	8260D	Total/NA
m-Xylene & p-Xylene	0.22	J H	1.2	0.21	ug/Kg	1	☼	8260D	Total/NA
Toluene	0.50	J H	1.2	0.29	ug/Kg	1	☼	8260D	Total/NA
Benzo[b]fluoranthene	11	J H	43	11	ug/Kg	1	☼	8270E	Total/NA
4,4'-DDE	4.2	J H	8.7	1.0	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	2.6	J H p	8.7	1.6	ug/Kg	1	☼	8081B	Total/NA
Aluminum	17000		26	3.3	mg/Kg	1	☼	6020B	Total/NA
Arsenic	3.9		1.3	0.13	mg/Kg	1	☼	6020B	Total/NA
Barium	120		2.6	0.19	mg/Kg	1	☼	6020B	Total/NA
Beryllium	1.3		0.51	0.073	mg/Kg	1	☼	6020B	Total/NA
Cadmium	1.2	J	1.3	0.14	mg/Kg	1	☼	6020B	Total/NA
Calcium	130000		640	110	mg/Kg	5	☼	6020B	Total/NA
Chromium	23		2.6	0.22	mg/Kg	1	☼	6020B	Total/NA
Cobalt	13	F1	2.6	0.19	mg/Kg	1	☼	6020B	Total/NA
Copper	18	F1	2.6	0.28	mg/Kg	1	☼	6020B	Total/NA
Iron	20000		77	26	mg/Kg	1	☼	6020B	Total/NA
Lead	40		0.77	0.26	mg/Kg	1	☼	6020B	Total/NA
Magnesium	7900		130	13	mg/Kg	1	☼	6020B	Total/NA
Manganese	460		5.1	0.52	mg/Kg	1	☼	6020B	Total/NA
Nickel	21		2.6	0.25	mg/Kg	1	☼	6020B	Total/NA
Potassium	2500	F1	130	14	mg/Kg	1	☼	6020B	Total/NA
Selenium	0.69	J	1.6	0.15	mg/Kg	1	☼	6020B	Total/NA
Silver	0.13	J	1.3	0.11	mg/Kg	1	☼	6020B	Total/NA
Sodium	1000		130	20	mg/Kg	1	☼	6020B	Total/NA
Thallium	0.12	J	0.51	0.053	mg/Kg	1	☼	6020B	Total/NA
Vanadium	29		2.6	0.26	mg/Kg	1	☼	6020B	Total/NA
Zinc	83	F1	10	2.9	mg/Kg	1	☼	6020B	Total/NA
Mercury	0.061	H	0.022	0.0051	mg/Kg	1	☼	7471B	Total/NA
Cyanide, Total	2.2	H	0.28	0.14	mg/Kg	1	☼	9012B	Total/NA

Client Sample ID: HTCRV2-WC02-0612-01 — Lab Sample ID: 160-40623-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	0.30	J H	1.0	0.27	ug/Kg	1	☼	8260D	Total/NA
Isopropylbenzene	2.3	H	1.0	0.29	ug/Kg	1	☼	8260D	Total/NA
Aluminum	3200		20	2.6	mg/Kg	1	☼	6020B	Total/NA
Arsenic	0.17	J	1.0	0.10	mg/Kg	1	☼	6020B	Total/NA
Barium	33		2.0	0.15	mg/Kg	1	☼	6020B	Total/NA
Beryllium	0.62		0.40	0.057	mg/Kg	1	☼	6020B	Total/NA
Calcium	99000		500	85	mg/Kg	5	☼	6020B	Total/NA
Chromium	3.4		2.0	0.17	mg/Kg	1	☼	6020B	Total/NA
Cobalt	0.21	J	2.0	0.15	mg/Kg	1	☼	6020B	Total/NA
Copper	2.5		2.0	0.22	mg/Kg	1	☼	6020B	Total/NA
Iron	190		60	20	mg/Kg	1	☼	6020B	Total/NA
Lead	0.48	J	0.60	0.20	mg/Kg	1	☼	6020B	Total/NA
Magnesium	810		100	10	mg/Kg	1	☼	6020B	Total/NA
Manganese	47		4.0	0.40	mg/Kg	1	☼	6020B	Total/NA
Nickel	0.23	J	2.0	0.19	mg/Kg	1	☼	6020B	Total/NA
Potassium	280		100	11	mg/Kg	1	☼	6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: HTCRV2-WC02-0612-01 (Continued) — Lab Sample ID: 160-40623-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.32	J	1.3	0.12	mg/Kg	1	☼	6020B	Total/NA
Silver	0.22	J	1.0	0.089	mg/Kg	1	☼	6020B	Total/NA
Sodium	810		100	16	mg/Kg	1	☼	6020B	Total/NA
Vanadium	2.6		2.0	0.21	mg/Kg	1	☼	6020B	Total/NA
Zinc	11		8.0	2.3	mg/Kg	1	☼	6020B	Total/NA
Mercury	0.0090	J H	0.017	0.0039	mg/Kg	1	☼	7471B	Total/NA
Cyanide, Total	2.9	H	0.23	0.12	mg/Kg	1	☼	9012B	Total/NA

Client Sample ID: HTCRV2-WC02-0612-02 — Lab Sample ID: 160-40623-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.6	H	5.5	5.2	ug/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.44	J H	0.91	0.24	ug/Kg	1	☼	8260D	Total/NA
Isopropylbenzene	1.9	H	0.91	0.26	ug/Kg	1	☼	8260D	Total/NA
Aluminum	10000		21	2.7	mg/Kg	1	☼	6020B	Total/NA
Arsenic	0.51	J	1.0	0.10	mg/Kg	1	☼	6020B	Total/NA
Barium	88		2.1	0.15	mg/Kg	1	☼	6020B	Total/NA
Beryllium	1.5		0.41	0.059	mg/Kg	1	☼	6020B	Total/NA
Cadmium	0.24	J	1.0	0.12	mg/Kg	1	☼	6020B	Total/NA
Calcium	200000		510	87	mg/Kg	5	☼	6020B	Total/NA
Chromium	14		2.1	0.18	mg/Kg	1	☼	6020B	Total/NA
Cobalt	7.0		2.1	0.15	mg/Kg	1	☼	6020B	Total/NA
Copper	6.0		2.1	0.23	mg/Kg	1	☼	6020B	Total/NA
Iron	890		62	21	mg/Kg	1	☼	6020B	Total/NA
Lead	1.9		0.62	0.21	mg/Kg	1	☼	6020B	Total/NA
Magnesium	3900		100	10	mg/Kg	1	☼	6020B	Total/NA
Manganese	110		4.1	0.41	mg/Kg	1	☼	6020B	Total/NA
Nickel	3.2		2.1	0.20	mg/Kg	1	☼	6020B	Total/NA
Potassium	990		100	12	mg/Kg	1	☼	6020B	Total/NA
Selenium	1.2	J	1.3	0.12	mg/Kg	1	☼	6020B	Total/NA
Silver	0.16	J	1.0	0.092	mg/Kg	1	☼	6020B	Total/NA
Sodium	2300		100	16	mg/Kg	1	☼	6020B	Total/NA
Vanadium	13		2.1	0.21	mg/Kg	1	☼	6020B	Total/NA
Zinc	17		8.2	2.4	mg/Kg	1	☼	6020B	Total/NA
Mercury	0.013	J H	0.017	0.0040	mg/Kg	1	☼	7471B	Total/NA
Cyanide, Total	4.7	H	0.22	0.11	mg/Kg	1	☼	9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Client Sample ID: HTCRV2-WC01-0612-01

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-4

Matrix: Solid
Percent Solids: 77.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	1.2	0.29	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,1,2,2-Tetrachloroethane	ND	H *+	1.2	0.26	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	1.2	0.37	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,1,2-Trichloroethane	ND	H	1.2	0.22	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,1-Dichloroethane	ND	H	1.2	0.25	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,1-Dichloroethene	ND	H	1.2	0.28	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,2,3-Trichlorobenzene	ND	H *+	1.2	0.22	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,2,4-Trichlorobenzene	ND	H	1.2	0.44	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,2-Dibromo-3-Chloropropane	ND	H *+	1.2	0.57	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,2-Dichlorobenzene	ND	H *+	1.2	0.45	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,2-Dichloroethane	ND	H	1.2	0.36	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,2-Dichloropropane	ND	H	1.2	0.52	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,3-Dichlorobenzene	ND	H	1.2	0.45	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,4-Dichlorobenzene	ND	H	1.2	0.28	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
1,4-Dioxane	ND	H *+	25	11	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
2-Butanone (MEK)	ND	H	6.2	0.45	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
2-Hexanone	ND	H *+	6.2	2.1	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
4-Methyl-2-pentanone (MIBK)	ND	H *+	6.2	1.9	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Acetone	ND	H	7.4	7.1	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Benzene	ND	H	1.2	0.32	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Bromoform	ND	H	1.2	0.52	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Bromomethane	ND	H *+	2.5	1.2	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Carbon disulfide	**0.38**	**J H**	1.2	0.33	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Carbon tetrachloride	ND	H	1.2	0.48	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Chlorobenzene	ND	H	1.2	0.22	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Chlorobromomethane	ND	H	1.2	0.35	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Chlorodibromomethane	ND	H	1.2	0.24	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Chloroethane	ND	H	1.2	0.64	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Chloroform	ND	H	1.2	1.2	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Chloromethane	ND	H	1.2	0.54	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
cis-1,2-Dichloroethene	ND	H	1.2	0.44	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
cis-1,3-Dichloropropene	ND	H	1.2	0.34	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Cyclohexane	ND	H	1.2	0.27	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Dichlorobromomethane	ND	H	1.2	0.32	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Dichlorodifluoromethane	ND	H	1.2	0.42	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Ethylbenzene	ND	H	1.2	0.25	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Ethylene Dibromide	ND	H	1.2	0.22	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Isopropylbenzene	**0.88**	**J H**	1.2	0.35	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Methyl acetate	ND	H	6.2	5.3	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Methyl tert-butyl ether	ND	H	1.2	0.63	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Methylcyclohexane	ND	H	1.2	0.62	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Methylene Chloride	**6.5**	**H**	2.5	1.4	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
m-Xylene & p-Xylene	**0.22**	**J H**	1.2	0.21	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
o-Xylene	ND	H	1.2	0.24	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Styrene	ND	H	1.2	0.34	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Tetrachloroethene	ND	H	1.2	0.38	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Toluene	**0.50**	**J H**	1.2	0.29	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
trans-1,2-Dichloroethene	ND	H	1.2	0.30	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
trans-1,3-Dichloropropene	ND	H	1.2	0.33	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1

Client Sample ID: HTCRV2-WC01-0612-01

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-4

Matrix: Solid
Percent Solids: 77.2

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND	H	1.2	0.40	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Trichlorofluoromethane	ND	H	1.2	0.50	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1
Vinyl chloride	ND	H	1.2	0.67	ug/Kg	☼	02/03/21 20:11	02/04/21 00:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*	*H*	*ug/Kg*	☼			*02/03/21 20:11*	*02/04/21 00:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*77 - 145*	*02/03/21 20:11*	*02/04/21 00:49*	*1*
4-Bromofluorobenzene	*109*		*79 - 125*	*02/03/21 20:11*	*02/04/21 00:49*	*1*
Dibromofluoromethane (Surr)	*88*		*48 - 150*	*02/03/21 20:11*	*02/04/21 00:49*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*	*02/03/21 20:11*	*02/04/21 00:49*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	H	430	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Acenaphthylene	ND	H	430	4.3	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Acetophenone	ND	H	430	21	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Anthracene	ND	H	430	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Atrazine	ND	H *-	170	25	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Benzaldehyde	ND	H *-	430	71	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Benzo[a]anthracene	ND	H	43	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Benzo[a]pyrene	ND	H	43	11	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Benzo[b]fluoranthene	**11**	**J H**	43	11	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Benzo[g,h,i]perylene	ND	H	430	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Benzo[k]fluoranthene	ND	H	43	8.4	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
1,1'-Biphenyl	ND	H	430	5.7	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Bis(2-chloroethoxy)methane	ND	H	430	33	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Bis(2-chloroethyl)ether	ND	H	43	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Bis(2-ethylhexyl) phthalate	ND	H	430	23	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Bromophenyl phenyl ether	ND	H	430	17	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Butyl benzyl phthalate	ND	H	430	20	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Caprolactam	ND	H *-	430	67	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Carbazole	ND	H	430	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Chloroaniline	ND	H	430	76	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Chloro-3-methylphenol	ND	H	430	24	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2-Chloronaphthalene	ND	H	430	20	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2-Chlorophenol	ND	H	430	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Chlorophenyl phenyl ether	ND	H	430	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Chrysene	ND	H	430	7.2	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Dibenz(a,h)anthracene	ND	H	43	19	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Dibenzofuran	ND	H	430	6.0	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
3,3'-Dichlorobenzidine	ND	H	170	65	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,4-Dichlorophenol	ND	H	170	27	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Diethyl phthalate	ND	H	430	6.2	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,4-Dimethylphenol	ND	H	430	19	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Dimethyl phthalate	ND	H	430	97	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Di-n-butyl phthalate	ND	H	430	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4,6-Dinitro-2-methylphenol	ND	H	340	170	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,4-Dinitrophenol	ND	H	340	210	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1

Client Sample ID: HTCRV2-WC01-0612-01

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-4

Matrix: Solid
Percent Solids: 77.2

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	ND	H	87	46	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,6-Dinitrotoluene	ND	H	87	31	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Di-n-octyl phthalate	ND	H	430	23	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Fluoranthene	ND	H	430	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Fluorene	ND	H	430	5.8	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Hexachlorobenzene	ND	H	43	20	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Hexachlorobutadiene	ND	H	87	9.1	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Hexachlorocyclopentadiene	ND	H	430	38	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Hexachloroethane	ND	H	43	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Indeno[1,2,3-cd]pyrene	ND	H	43	17	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Isophorone	ND	H	170	120	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2-Methylnaphthalene	ND	H	430	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2-Methylphenol	ND	H	430	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Methylphenol	ND	H	430	27	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Naphthalene	ND	H	430	7.4	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2-Nitroaniline	ND	H	430	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
3-Nitroaniline	ND	H	430	48	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Nitroaniline	ND	H	430	49	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Nitrobenzene	ND	H	43	10	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2-Nitrophenol	ND	H	430	43	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
4-Nitrophenol	ND	H	870	70	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
N-Nitrosodi-n-propylamine	ND	H	43	31	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
N-Nitrosodiphenylamine	ND	H	430	35	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,2'-oxybis[1-chloropropane]	ND	H	430	7.7	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Pentachlorophenol	ND	H	340	88	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Phenanthrene	ND	H	430	7.5	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Phenol	ND	H	430	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
Pyrene	ND	H	430	11	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
1,2,4,5-Tetrachlorobenzene	ND	H	430	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,3,4,6-Tetrachlorophenol	ND	H	430	29	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,4,5-Trichlorophenol	ND	H	430	44	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1
2,4,6-Trichlorophenol	ND	H	170	55	ug/Kg	☼	02/04/21 18:38	02/05/21 03:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Aldol condensation product	*410*	*T H J A*	*ug/Kg*	☼	*3.05*		*02/04/21 18:38*	*02/05/21 03:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*25 - 104*	*02/04/21 18:38*	*02/05/21 03:25*	*1*
2-Fluorophenol (Surr)	*69*		*18 - 106*	*02/04/21 18:38*	*02/05/21 03:25*	*1*
Nitrobenzene-d5 (Surr)	*69*		*19 - 105*	*02/04/21 18:38*	*02/05/21 03:25*	*1*
Phenol-d5 (Surr)	*68*		*26 - 101*	*02/04/21 18:38*	*02/05/21 03:25*	*1*
Terphenyl-d14 (Surr)	*84*		*25 - 127*	*02/04/21 18:38*	*02/05/21 03:25*	*1*
2,4,6-Tribromophenol (Surr)	*65*		*10 - 123*	*02/04/21 18:38*	*02/05/21 03:25*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND	H	8.7	1.5	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
4,4'-DDE	**4.2**	**J H**	8.7	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
4,4'-DDT	**2.6**	**J H p**	8.7	1.6	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Aldrin	ND	H	8.7	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1

Client Sample ID: HTCRV2-WC01-0612-01

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-4

Matrix: Solid
Percent Solids: 77.2

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND	H	2.6	0.88	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
beta-BHC	ND	H	2.6	0.97	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Chlordane (technical)	ND	H	87	21	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
delta-BHC	ND	H	2.6	0.53	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Dieldrin	ND	H	2.6	1.1	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Endosulfan I	ND	H	8.7	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Endosulfan II	ND	H	8.7	2.2	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Endosulfan sulfate	ND	H	8.7	1.1	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Endrin	ND	H	8.7	1.2	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Endrin aldehyde	ND	H	8.7	2.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Endrin ketone	ND	H	8.7	1.7	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
gamma-BHC (Lindane)	ND	H	2.6	0.80	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Heptachlor	ND	H	8.7	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Heptachlor epoxide	ND	H	8.7	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Methoxychlor	ND	H	8.7	2.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1
Toxaphene	ND	H	87	31	ug/Kg	☼	02/04/21 09:46	02/05/21 08:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*28 - 148*	*02/04/21 09:46*	*02/05/21 08:43*	*1*
Tetrachloro-m-xylene	*60*		*34 - 118*	*02/04/21 09:46*	*02/05/21 08:43*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND	H	87	11	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1221	ND	H	87	11	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1232	ND	H	87	11	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1242	ND	H	87	11	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1248	ND	H	87	11	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1254	ND	H	87	12	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1260	ND	H	87	12	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor-1262	ND	H	87	12	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Aroclor 1268	ND	H	87	12	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1
Polychlorinated biphenyls, Total	ND	H	87	12	ug/Kg	☼	02/04/21 09:46	02/05/21 10:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*10 - 150*	*02/04/21 09:46*	*02/05/21 10:23*	*1*
Tetrachloro-m-xylene	*62*		*58 - 145*	*02/04/21 09:46*	*02/05/21 10:23*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	H	43	16	ug/Kg	☼	02/04/21 21:44	02/05/21 08:40	1
Silvex (2,4,5-TP)	ND	H	43	4.5	ug/Kg	☼	02/04/21 21:44	02/05/21 08:40	1
2,4,5-T	ND	H	43	9.2	ug/Kg	☼	02/04/21 21:44	02/05/21 08:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*133*		*30 - 150*	*02/04/21 21:44*	*02/05/21 08:40*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**17000**		26	3.3	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Antimony	ND	F1	1.3	0.19	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Matrix: Solid
Percent Solids: 77.2

Method: 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.9		1.3	0.13	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Barium	120		2.6	0.19	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Beryllium	1.3		0.51	0.073	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Cadmium	1.2	J	1.3	0.14	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Calcium	130000		640	110	mg/Kg	☼	02/12/21 10:23	02/12/21 20:03	5
Chromium	23		2.6	0.22	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Cobalt	13	F1	2.6	0.19	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Copper	18	F1	2.6	0.28	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Iron	20000		77	26	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Lead	40		0.77	0.26	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Magnesium	7900		130	13	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Manganese	460		5.1	0.52	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Nickel	21		2.6	0.25	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Potassium	2500	F1	130	14	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Selenium	0.69	J	1.6	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Silver	0.13	J	1.3	0.11	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Sodium	1000		130	20	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Thallium	0.12	J	0.51	0.053	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Vanadium	29		2.6	0.26	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1
Zinc	83	F1	10	2.9	mg/Kg	☼	02/12/21 10:23	02/12/21 18:18	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.061	H	0.022	0.0051	mg/Kg	☼	02/09/21 04:07	02/09/21 10:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.2	H	0.28	0.14	mg/Kg	☼	02/14/21 11:47	02/15/21 14:12	1

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Date Collected: 12/01/20 13:45
Date Received: 12/02/20 09:47

Matrix: Solid
Percent Solids: 97.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	1.0	0.24	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,1,2,2-Tetrachloroethane	ND	H *+	1.0	0.22	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	1.0	0.31	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,1,2-Trichloroethane	ND	H	1.0	0.18	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,1-Dichloroethane	ND	H	1.0	0.21	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,1-Dichloroethene	ND	H	1.0	0.23	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,2,3-Trichlorobenzene	ND	H *+	1.0	0.18	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,2,4-Trichlorobenzene	ND	H	1.0	0.36	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,2-Dibromo-3-Chloropropane	ND	H *+	1.0	0.47	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,2-Dichlorobenzene	ND	H *+	1.0	0.37	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,2-Dichloroethane	ND	H	1.0	0.30	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,2-Dichloropropane	ND	H	1.0	0.43	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,3-Dichlorobenzene	ND	H	1.0	0.37	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,4-Dichlorobenzene	ND	H	1.0	0.23	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
1,4-Dioxane	ND	H *+	20	9.3	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1

Client Sample ID: HTCRV2-WC02-0612-01

Date Collected: 12/01/20 13:45
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-5

Matrix: Solid
Percent Solids: 97.7

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND	H	5.1	0.37	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
2-Hexanone	ND	H *+	5.1	1.7	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
4-Methyl-2-pentanone (MIBK)	ND	H *+	5.1	1.6	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Acetone	ND	H	6.1	5.8	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Benzene	ND	H	1.0	0.26	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Bromoform	ND	H	1.0	0.43	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Bromomethane	ND	H *+	2.0	1.0	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Carbon disulfide	**0.30**	**J H**	1.0	0.27	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Carbon tetrachloride	ND	H	1.0	0.39	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Chlorobenzene	ND	H	1.0	0.18	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Chlorobromomethane	ND	H	1.0	0.29	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Chlorodibromomethane	ND	H	1.0	0.20	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Chloroethane	ND	H	1.0	0.53	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Chloroform	ND	H	1.0	0.99	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Chloromethane	ND	H	1.0	0.44	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
cis-1,2-Dichloroethene	ND	H	1.0	0.36	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
cis-1,3-Dichloropropene	ND	H	1.0	0.28	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Cyclohexane	ND	H	1.0	0.22	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Dichlorobromomethane	ND	H	1.0	0.26	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Dichlorodifluoromethane	ND	H	1.0	0.34	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Ethylbenzene	ND	H	1.0	0.20	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Ethylene Dibromide	ND	H	1.0	0.18	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Isopropylbenzene	**2.3**	**H**	1.0	0.29	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Methyl acetate	ND	H	5.1	4.4	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Methyl tert-butyl ether	ND	H	1.0	0.52	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Methylcyclohexane	ND	H	1.0	0.51	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Methylene Chloride	ND	H	2.0	1.2	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
m-Xylene & p-Xylene	ND	H	1.0	0.18	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
o-Xylene	ND	H	1.0	0.20	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Styrene	ND	H	1.0	0.28	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Tetrachloroethene	ND	H	1.0	0.31	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Toluene	ND	H	1.0	0.24	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
trans-1,2-Dichloroethene	ND	H	1.0	0.25	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
trans-1,3-Dichloropropene	ND	H	1.0	0.27	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Trichloroethene	ND	H	1.0	0.33	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Trichlorofluoromethane	ND	H	1.0	0.41	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1
Vinyl chloride	ND	H	1.0	0.55	ug/Kg	☼	02/03/21 20:12	02/04/21 01:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*	*H*	*ug/Kg*	☼			*02/03/21 20:12*	*02/04/21 01:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*77 - 145*	*02/03/21 20:12*	*02/04/21 01:13*	*1*
4-Bromofluorobenzene	*107*		*79 - 125*	*02/03/21 20:12*	*02/04/21 01:13*	*1*
Dibromofluoromethane (Surr)	*86*		*48 - 150*	*02/03/21 20:12*	*02/04/21 01:13*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*02/03/21 20:12*	*02/04/21 01:13*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	H	340	9.6	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1

Client Sample ID: HTCRV2-WC02-0612-01

Date Collected: 12/01/20 13:45
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-5

Matrix: Solid
Percent Solids: 97.7

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	ND	H	340	3.4	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Acetophenone	ND	H	340	17	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Anthracene	ND	H	340	10	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Atrazine	ND	H *-	140	20	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Benzaldehyde	ND	H *-	340	56	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Benzo[a]anthracene	ND	H	34	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Benzo[a]pyrene	ND	H	34	9.0	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Benzo[b]fluoranthene	ND	H	34	8.8	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Benzo[g,h,i]perylene	ND	H	340	10	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Benzo[k]fluoranthene	ND	H	34	6.6	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
1,1'-Biphenyl	ND	H	340	4.5	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Bis(2-chloroethoxy)methane	ND	H	340	26	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Bis(2-chloroethyl)ether	ND	H	34	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Bis(2-ethylhexyl) phthalate	ND	H	340	18	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Bromophenyl phenyl ether	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Butyl benzyl phthalate	ND	H	340	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Caprolactam	ND	H *-	340	53	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Carbazole	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Chloroaniline	ND	H	340	60	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Chloro-3-methylphenol	ND	H	340	19	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2-Chloronaphthalene	ND	H	340	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2-Chlorophenol	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Chlorophenyl phenyl ether	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Chrysene	ND	H	340	5.7	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Dibenz(a,h)anthracene	ND	H	34	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Dibenzofuran	ND	H	340	4.8	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
3,3'-Dichlorobenzidine	ND	H	140	51	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,4-Dichlorophenol	ND	H	140	22	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Diethyl phthalate	ND	H	340	4.9	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,4-Dimethylphenol	ND	H	340	15	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Dimethyl phthalate	ND	H	340	77	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Di-n-butyl phthalate	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4,6-Dinitro-2-methylphenol	ND	H	270	140	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,4-Dinitrophenol	ND	H	270	170	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,4-Dinitrotoluene	ND	H	69	36	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,6-Dinitrotoluene	ND	H	69	24	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Di-n-octyl phthalate	ND	H	340	18	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Fluoranthene	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Fluorene	ND	H	340	4.6	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Hexachlorobenzene	ND	H	34	16	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Hexachlorobutadiene	ND	H	69	7.2	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Hexachlorocyclopentadiene	ND	H	340	30	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Hexachloroethane	ND	H	34	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Indeno[1,2,3-cd]pyrene	ND	H	34	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Isophorone	ND	H	140	98	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2-Methylnaphthalene	ND	H	340	9.5	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2-Methylphenol	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Methylphenol	ND	H	340	21	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Naphthalene	ND	H	340	5.9	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1

Client Sample ID: HTCRV2-WC02-0612-01

Date Collected: 12/01/20 13:45
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-5

Matrix: Solid
Percent Solids: 97.7

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
3-Nitroaniline	ND	H	340	38	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Nitroaniline	ND	H	340	39	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Nitrobenzene	ND	H	34	8.1	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2-Nitrophenol	ND	H	340	34	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
4-Nitrophenol	ND	H	690	55	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
N-Nitrosodi-n-propylamine	ND	H	34	25	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
N-Nitrosodiphenylamine	ND	H	340	28	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,2'-oxybis[1-chloropropane]	ND	H	340	6.1	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Pentachlorophenol	ND	H	270	69	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Phenanthrene	ND	H	340	6.0	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Phenol	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
Pyrene	ND	H	340	8.4	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
1,2,4,5-Tetrachlorobenzene	ND	H	340	11	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,3,4,6-Tetrachlorophenol	ND	H	340	23	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,4,5-Trichlorophenol	ND	H	340	34	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1
2,4,6-Trichlorophenol	ND	H	140	43	ug/Kg	☼	02/04/21 18:38	02/05/21 03:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclic octaatomic sulfur	*790*	*T H J N*	*ug/Kg*	☼	*10.04*	*10544-50-0*	*02/04/21 18:38*	*02/05/21 03:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*25 - 104*	*02/04/21 18:38*	*02/05/21 03:47*	*1*
2-Fluorophenol (Surr)	*71*		*18 - 106*	*02/04/21 18:38*	*02/05/21 03:47*	*1*
Nitrobenzene-d5 (Surr)	*69*		*19 - 105*	*02/04/21 18:38*	*02/05/21 03:47*	*1*
Phenol-d5 (Surr)	*70*		*26 - 101*	*02/04/21 18:38*	*02/05/21 03:47*	*1*
Terphenyl-d14 (Surr)	*84*		*25 - 127*	*02/04/21 18:38*	*02/05/21 03:47*	*1*
2,4,6-Tribromophenol (Surr)	*67*		*10 - 123*	*02/04/21 18:38*	*02/05/21 03:47*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND	H	6.9	1.2	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
4,4'-DDE	ND	H	6.9	0.81	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
4,4'-DDT	ND	H	6.9	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Aldrin	ND	H	6.9	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
alpha-BHC	ND	H	2.0	0.70	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
beta-BHC	ND	H	2.0	0.77	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Chlordane (technical)	ND	H	69	17	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
delta-BHC	ND	H	2.0	0.42	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Dieldrin	ND	H	2.0	0.89	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Endosulfan I	ND	H	6.9	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Endosulfan II	ND	H	6.9	1.8	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Endosulfan sulfate	ND	H	6.9	0.86	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Endrin	ND	H	6.9	0.98	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Endrin aldehyde	ND	H	6.9	1.6	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Endrin ketone	ND	H	6.9	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
gamma-BHC (Lindane)	ND	H	2.0	0.63	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Heptachlor	ND	H	6.9	0.81	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Heptachlor epoxide	ND	H	6.9	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1
Methoxychlor	ND	H	6.9	1.6	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1

Client Sample ID: HTCRV2-WC02-0612-01

Date Collected: 12/01/20 13:45
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-5

Matrix: Solid
Percent Solids: 97.7

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toxaphene	ND	H	69	25	ug/Kg	☼	02/04/21 09:46	02/05/21 08:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*28 - 148*	*02/04/21 09:46*	*02/05/21 08:58*	*1*
Tetrachloro-m-xylene	*78*		*34 - 118*	*02/04/21 09:46*	*02/05/21 08:58*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND	H	69	9.1	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1221	ND	H	69	9.1	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1232	ND	H	69	9.1	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1242	ND	H	69	9.1	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1248	ND	H	69	9.1	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1254	ND	H	69	9.4	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1260	ND	H	69	9.4	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor-1262	ND	H	69	9.4	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Aroclor 1268	ND	H	69	9.4	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1
Polychlorinated biphenyls, Total	ND	H	69	9.4	ug/Kg	☼	02/04/21 09:46	02/05/21 10:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*111*		*10 - 150*	*02/04/21 09:46*	*02/05/21 10:38*	*1*
Tetrachloro-m-xylene	*106*		*58 - 145*	*02/04/21 09:46*	*02/05/21 10:38*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	H	34	12	ug/Kg	☼	02/04/21 21:44	02/05/21 08:55	1
Silvex (2,4,5-TP)	ND	H	34	3.6	ug/Kg	☼	02/04/21 21:44	02/05/21 08:55	1
2,4,5-T	ND	H	34	7.2	ug/Kg	☼	02/04/21 21:44	02/05/21 08:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*74*		*30 - 150*	*02/04/21 21:44*	*02/05/21 08:55*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3200**		20	2.6	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Antimony	ND		1.0	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Arsenic	**0.17**	**J**	1.0	0.10	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Barium	**33**		2.0	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Beryllium	**0.62**		0.40	0.057	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Cadmium	ND		1.0	0.11	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Calcium	**99000**		500	85	mg/Kg	☼	02/12/21 10:23	02/12/21 20:08	5
Chromium	**3.4**		2.0	0.17	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Cobalt	**0.21**	**J**	2.0	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Copper	**2.5**		2.0	0.22	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Iron	**190**		60	20	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Lead	**0.48**	**J**	0.60	0.20	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Magnesium	**810**		100	10	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Manganese	**47**		4.0	0.40	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Nickel	**0.23**	**J**	2.0	0.19	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Potassium	**280**		100	11	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Selenium	**0.32**	**J**	1.3	0.12	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5
Date Collected: 12/01/20 13:45
Matrix: Solid
Date Received: 12/02/20 09:47
Percent Solids: 97.7

Method: 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.22	J	1.0	0.089	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Sodium	810		100	16	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Thallium	ND		0.40	0.041	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Vanadium	2.6		2.0	0.21	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1
Zinc	11		8.0	2.3	mg/Kg	☼	02/12/21 10:23	02/12/21 18:22	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0090	J H	0.017	0.0039	mg/Kg	☼	02/09/21 04:07	02/09/21 09:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.9	H	0.23	0.12	mg/Kg	☼	02/14/21 11:47	02/15/21 14:13	1

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6
Date Collected: 12/01/20 14:00
Matrix: Solid
Date Received: 12/02/20 09:47
Percent Solids: 96.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	0.91	0.21	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,1,2,2-Tetrachloroethane	ND	H *+	0.91	0.19	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	0.91	0.27	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,1,2-Trichloroethane	ND	H	0.91	0.16	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,1-Dichloroethane	ND	H	0.91	0.19	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,1-Dichloroethene	ND	H	0.91	0.20	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,2,3-Trichlorobenzene	ND	H *+	0.91	0.16	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,2,4-Trichlorobenzene	ND	H	0.91	0.33	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,2-Dibromo-3-Chloropropane	ND	H *+	0.91	0.42	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,2-Dichlorobenzene	ND	H *+	0.91	0.33	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,2-Dichloroethane	ND	H	0.91	0.27	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,2-Dichloropropane	ND	H	0.91	0.38	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,3-Dichlorobenzene	ND	H	0.91	0.33	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,4-Dichlorobenzene	ND	H	0.91	0.20	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
1,4-Dioxane	ND	H *+	18	8.3	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
2-Butanone (MEK)	ND	H	4.5	0.33	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
2-Hexanone	ND	H *+	4.5	1.6	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
4-Methyl-2-pentanone (MIBK)	ND	H *+	4.5	1.4	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Acetone	5.6	H	5.5	5.2	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Benzene	ND	H	0.91	0.23	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Bromoform	ND	H	0.91	0.39	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Bromomethane	ND	H *+	1.8	0.91	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Carbon disulfide	0.44	J H	0.91	0.24	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Carbon tetrachloride	ND	H	0.91	0.35	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Chlorobenzene	ND	H	0.91	0.16	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Chlorobromomethane	ND	H	0.91	0.26	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Chlorodibromomethane	ND	H	0.91	0.18	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Chloroethane	ND	H	0.91	0.47	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Chloroform	ND	H	0.91	0.88	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Chloromethane	ND	H	0.91	0.40	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1

Client Sample ID: HTCRV2-WC02-0612-02

Date Collected: 12/01/20 14:00
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-6

Matrix: Solid
Percent Solids: 96.2

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND	H	0.91	0.33	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
cis-1,3-Dichloropropene	ND	H	0.91	0.25	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Cyclohexane	ND	H	0.91	0.20	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Dichlorobromomethane	ND	H	0.91	0.23	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Dichlorodifluoromethane	ND	H	0.91	0.31	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Ethylbenzene	ND	H	0.91	0.18	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Ethylene Dibromide	ND	H	0.91	0.16	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Isopropylbenzene	**1.9**	**H**	0.91	0.26	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Methyl acetate	ND	H	4.5	3.9	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Methyl tert-butyl ether	ND	H	0.91	0.47	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Methylcyclohexane	ND	H	0.91	0.45	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Methylene Chloride	ND	H	1.8	1.0	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
m-Xylene & p-Xylene	ND	H	0.91	0.16	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
o-Xylene	ND	H	0.91	0.18	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Styrene	ND	H	0.91	0.25	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Tetrachloroethene	ND	H	0.91	0.28	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Toluene	ND	H	0.91	0.21	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
trans-1,2-Dichloroethene	ND	H	0.91	0.22	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
trans-1,3-Dichloropropene	ND	H	0.91	0.24	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Trichloroethene	ND	H	0.91	0.29	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Trichlorofluoromethane	ND	H	0.91	0.37	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1
Vinyl chloride	ND	H	0.91	0.50	ug/Kg	☼	02/03/21 20:13	02/04/21 01:37	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*	*H*	*ug/Kg*	☼			*02/03/21 20:13*	*02/04/21 01:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*77 - 145*	*02/03/21 20:13*	*02/04/21 01:37*	*1*
4-Bromofluorobenzene	*109*		*79 - 125*	*02/03/21 20:13*	*02/04/21 01:37*	*1*
Dibromofluoromethane (Surr)	*90*		*48 - 150*	*02/03/21 20:13*	*02/04/21 01:37*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*	*02/03/21 20:13*	*02/04/21 01:37*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	H	340	9.8	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Acenaphthylene	ND	H	340	3.5	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Acetophenone	ND	H	340	17	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Anthracene	ND	H	340	10	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Atrazine	ND	H *-	140	20	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Benzaldehyde	ND	H *-	340	57	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Benzo[a]anthracene	ND	H	34	12	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Benzo[a]pyrene	ND	H	34	9.2	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Benzo[b]fluoranthene	ND	H	34	8.9	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Benzo[g,h,i]perylene	ND	H	340	10	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Benzo[k]fluoranthene	ND	H	34	6.7	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
1,1'-Biphenyl	ND	H	340	4.6	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Bis(2-chloroethoxy)methane	ND	H	340	27	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Bis(2-chloroethyl)ether	ND	H	34	12	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Bis(2-ethylhexyl) phthalate	ND	H	340	18	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Bromophenyl phenyl ether	ND	H	340	14	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1

Client Sample ID: HTCRV2-WC02-0612-02

Date Collected: 12/01/20 14:00
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-6

Matrix: Solid
Percent Solids: 96.2

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl benzyl phthalate	ND	H	340	16	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Caprolactam	ND	H *-	340	53	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Carbazole	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Chloroaniline	ND	H	340	61	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Chloro-3-methylphenol	ND	H	340	19	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2-Chloronaphthalene	ND	H	340	16	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2-Chlorophenol	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Chlorophenyl phenyl ether	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Chrysene	ND	H	340	5.8	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Dibenz(a,h)anthracene	ND	H	34	15	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Dibenzofuran	ND	H	340	4.8	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
3,3'-Dichlorobenzidine	ND	H	140	52	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,4-Dichlorophenol	ND	H	140	22	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Diethyl phthalate	ND	H	340	5.0	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,4-Dimethylphenol	ND	H	340	15	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Dimethyl phthalate	ND	H	340	78	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Di-n-butyl phthalate	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4,6-Dinitro-2-methylphenol	ND	H	280	140	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,4-Dinitrophenol	ND	H	280	170	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,4-Dinitrotoluene	ND	H	70	37	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,6-Dinitrotoluene	ND	H	70	25	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Di-n-octyl phthalate	ND	H	340	18	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Fluoranthene	ND	H	340	12	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Fluorene	ND	H	340	4.7	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Hexachlorobenzene	ND	H	34	16	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Hexachlorobutadiene	ND	H	70	7.3	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Hexachlorocyclopentadiene	ND	H	340	30	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Hexachloroethane	ND	H	34	12	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Indeno[1,2,3-cd]pyrene	ND	H	34	13	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Isophorone	ND	H	140	99	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2-Methylnaphthalene	ND	H	340	9.6	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2-Methylphenol	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Methylphenol	ND	H	340	21	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Naphthalene	ND	H	340	5.9	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2-Nitroaniline	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
3-Nitroaniline	ND	H	340	39	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Nitroaniline	ND	H	340	39	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Nitrobenzene	ND	H	34	8.3	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2-Nitrophenol	ND	H	340	34	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
4-Nitrophenol	ND	H	700	56	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
N-Nitrosodi-n-propylamine	ND	H	34	25	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
N-Nitrosodiphenylamine	ND	H	340	28	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,2'-oxybis[1-chloropropane]	ND	H	340	6.2	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Pentachlorophenol	ND	H	280	70	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Phenanthrene	ND	H	340	6.0	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Phenol	ND	H	340	13	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
Pyrene	ND	H	340	8.5	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
1,2,4,5-Tetrachlorobenzene	ND	H	340	11	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,3,4,6-Tetrachlorophenol	ND	H	340	23	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1

Client Sample ID: HTCRV2-WC02-0612-02

Date Collected: 12/01/20 14:00
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-6

Matrix: Solid
Percent Solids: 96.2

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND	H	340	35	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1
2,4,6-Trichlorophenol	ND	H	140	44	ug/Kg	☼	02/04/21 18:38	02/05/21 04:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*560*	*T H J*	*ug/Kg*	☼	*9.92*		*02/04/21 18:38*	*02/05/21 04:10*	*1*
Cyclic octaatomic sulfur	*400*	*T H J N*	*ug/Kg*	☼	*10.05*	*10544-50-0*	*02/04/21 18:38*	*02/05/21 04:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*25 - 104*	*02/04/21 18:38*	*02/05/21 04:10*	*1*
2-Fluorophenol (Surr)	*79*		*18 - 106*	*02/04/21 18:38*	*02/05/21 04:10*	*1*
Nitrobenzene-d5 (Surr)	*78*		*19 - 105*	*02/04/21 18:38*	*02/05/21 04:10*	*1*
Phenol-d5 (Surr)	*77*		*26 - 101*	*02/04/21 18:38*	*02/05/21 04:10*	*1*
Terphenyl-d14 (Surr)	*93*		*25 - 127*	*02/04/21 18:38*	*02/05/21 04:10*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*10 - 123*	*02/04/21 18:38*	*02/05/21 04:10*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND	H	6.9	1.2	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
4,4'-DDE	ND	H	6.9	0.82	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
4,4'-DDT	ND	H	6.9	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Aldrin	ND	H	6.9	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
alpha-BHC	ND	H	2.1	0.70	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
beta-BHC	ND	H	2.1	0.78	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Chlordane (technical)	ND	H	69	17	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
delta-BHC	ND	H	2.1	0.42	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Dieldrin	ND	H	2.1	0.90	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Endosulfan I	ND	H	6.9	1.1	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Endosulfan II	ND	H	6.9	1.8	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Endosulfan sulfate	ND	H	6.9	0.87	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Endrin	ND	H	6.9	0.99	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Endrin aldehyde	ND	H	6.9	1.6	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Endrin ketone	ND	H	6.9	1.3	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
gamma-BHC (Lindane)	ND	H	2.1	0.64	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Heptachlor	ND	H	6.9	0.82	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Heptachlor epoxide	ND	H	6.9	1.0	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Methoxychlor	ND	H	6.9	1.6	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1
Toxaphene	ND	H	69	25	ug/Kg	☼	02/04/21 09:46	02/05/21 09:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*28 - 148*	*02/04/21 09:46*	*02/05/21 09:34*	*1*
Tetrachloro-m-xylene	*81*		*34 - 118*	*02/04/21 09:46*	*02/05/21 09:34*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND	H	69	9.2	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1221	ND	H	69	9.2	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1232	ND	H	69	9.2	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1242	ND	H	69	9.2	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1248	ND	H	69	9.2	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1254	ND	H	69	9.5	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1260	ND	H	69	9.5	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1

Client Sample ID: HTCRV2-WC02-0612-02

Date Collected: 12/01/20 14:00
Date Received: 12/02/20 09:47

Lab Sample ID: 160-40623-6

Matrix: Solid
Percent Solids: 96.2

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1262	ND	H	69	9.5	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Aroclor 1268	ND	H	69	9.5	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1
Polychlorinated biphenyls, Total	ND	H	69	9.5	ug/Kg	☼	02/04/21 09:46	02/05/21 10:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*107*		*10 - 150*	*02/04/21 09:46*	*02/05/21 10:54*	*1*
Tetrachloro-m-xylene	*95*		*58 - 145*	*02/04/21 09:46*	*02/05/21 10:54*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	H	35	13	ug/Kg	☼	02/04/21 21:44	02/05/21 09:10	1
Silvex (2,4,5-TP)	ND	H	35	3.6	ug/Kg	☼	02/04/21 21:44	02/05/21 09:10	1
2,4,5-T	ND	H	35	7.4	ug/Kg	☼	02/04/21 21:44	02/05/21 09:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*114*		*30 - 150*	*02/04/21 21:44*	*02/05/21 09:10*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**10000**		21	2.7	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Antimony	ND		1.0	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Arsenic	**0.51**	**J**	1.0	0.10	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Barium	**88**		2.1	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Beryllium	**1.5**		0.41	0.059	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Cadmium	**0.24**	**J**	1.0	0.12	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Calcium	**200000**		510	87	mg/Kg	☼	02/12/21 10:23	02/12/21 20:10	5
Chromium	**14**		2.1	0.18	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Cobalt	**7.0**		2.1	0.15	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Copper	**6.0**		2.1	0.23	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Iron	**890**		62	21	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Lead	**1.9**		0.62	0.21	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Magnesium	**3900**		100	10	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Manganese	**110**		4.1	0.41	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Nickel	**3.2**		2.1	0.20	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Potassium	**990**		100	12	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Selenium	**1.2**	**J**	1.3	0.12	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Silver	**0.16**	**J**	1.0	0.092	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Sodium	**2300**		100	16	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Thallium	ND		0.41	0.042	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Vanadium	**13**		2.1	0.21	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1
Zinc	**17**		8.2	2.4	mg/Kg	☼	02/12/21 10:23	02/12/21 18:34	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.013**	**J H**	0.017	0.0040	mg/Kg	☼	02/09/21 04:07	02/09/21 09:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**4.7**	**H**	0.22	0.11	mg/Kg	☼	02/14/21 11:47	02/15/21 14:13	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-756830/8
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.23	ug/Kg			02/03/21 20:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/Kg			02/03/21 20:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.30	ug/Kg			02/03/21 20:23	1
1,1,2-Trichloroethane	ND		1.0	0.18	ug/Kg			02/03/21 20:23	1
1,1-Dichloroethane	ND		1.0	0.21	ug/Kg			02/03/21 20:23	1
1,1-Dichloroethene	ND		1.0	0.23	ug/Kg			02/03/21 20:23	1
1,2,3-Trichlorobenzene	ND		1.0	0.18	ug/Kg			02/03/21 20:23	1
1,2,4-Trichlorobenzene	ND		1.0	0.36	ug/Kg			02/03/21 20:23	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.46	ug/Kg			02/03/21 20:23	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/Kg			02/03/21 20:23	1
1,2-Dichloroethane	ND		1.0	0.30	ug/Kg			02/03/21 20:23	1
1,2-Dichloropropane	ND		1.0	0.42	ug/Kg			02/03/21 20:23	1
1,3-Dichlorobenzene	ND		1.0	0.37	ug/Kg			02/03/21 20:23	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/Kg			02/03/21 20:23	1
1,4-Dioxane	ND		20	9.2	ug/Kg			02/03/21 20:23	1
2-Butanone (MEK)	ND		5.0	0.37	ug/Kg			02/03/21 20:23	1
2-Hexanone	ND		5.0	1.7	ug/Kg			02/03/21 20:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.6	ug/Kg			02/03/21 20:23	1
Acetone	ND		6.0	5.7	ug/Kg			02/03/21 20:23	1
Benzene	ND		1.0	0.26	ug/Kg			02/03/21 20:23	1
Bromoform	ND		1.0	0.43	ug/Kg			02/03/21 20:23	1
Bromomethane	ND		2.0	1.0	ug/Kg			02/03/21 20:23	1
Carbon disulfide	ND		1.0	0.27	ug/Kg			02/03/21 20:23	1
Carbon tetrachloride	ND		1.0	0.39	ug/Kg			02/03/21 20:23	1
Chlorobenzene	ND		1.0	0.18	ug/Kg			02/03/21 20:23	1
Chlorobromomethane	ND		1.0	0.28	ug/Kg			02/03/21 20:23	1
Chlorodibromomethane	ND		1.0	0.19	ug/Kg			02/03/21 20:23	1
Chloroethane	ND		1.0	0.52	ug/Kg			02/03/21 20:23	1
Chloroform	ND		1.0	0.97	ug/Kg			02/03/21 20:23	1
Chloromethane	ND		1.0	0.44	ug/Kg			02/03/21 20:23	1
cis-1,2-Dichloroethene	ND		1.0	0.36	ug/Kg			02/03/21 20:23	1
cis-1,3-Dichloropropene	ND		1.0	0.27	ug/Kg			02/03/21 20:23	1
Cyclohexane	ND		1.0	0.22	ug/Kg			02/03/21 20:23	1
Dichlorobromomethane	ND		1.0	0.26	ug/Kg			02/03/21 20:23	1
Dichlorodifluoromethane	ND		1.0	0.34	ug/Kg			02/03/21 20:23	1
Ethylbenzene	ND		1.0	0.20	ug/Kg			02/03/21 20:23	1
Ethylene Dibromide	ND		1.0	0.18	ug/Kg			02/03/21 20:23	1
Isopropylbenzene	ND		1.0	0.29	ug/Kg			02/03/21 20:23	1
Methyl acetate	ND		5.0	4.3	ug/Kg			02/03/21 20:23	1
Methyl tert-butyl ether	ND		1.0	0.51	ug/Kg			02/03/21 20:23	1
Methylcyclohexane	ND		1.0	0.50	ug/Kg			02/03/21 20:23	1
Methylene Chloride	ND		2.0	1.1	ug/Kg			02/03/21 20:23	1
m-Xylene & p-Xylene	ND		1.0	0.17	ug/Kg			02/03/21 20:23	1
o-Xylene	ND		1.0	0.19	ug/Kg			02/03/21 20:23	1
Styrene	ND		1.0	0.28	ug/Kg			02/03/21 20:23	1
Tetrachloroethene	ND		1.0	0.31	ug/Kg			02/03/21 20:23	1
Toluene	ND		1.0	0.23	ug/Kg			02/03/21 20:23	1
trans-1,2-Dichloroethene	ND		1.0	0.25	ug/Kg			02/03/21 20:23	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 460-756830/8
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		1.0	0.27	ug/Kg			02/03/21 20:23	1
Trichloroethene	ND		1.0	0.32	ug/Kg			02/03/21 20:23	1
Trichlorofluoromethane	ND		1.0	0.41	ug/Kg			02/03/21 20:23	1
Vinyl chloride	ND		1.0	0.55	ug/Kg			02/03/21 20:23	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*					*02/03/21 20:23*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*77 - 145*		*02/03/21 20:23*	*1*
4-Bromofluorobenzene	*110*		*79 - 125*		*02/03/21 20:23*	*1*
Dibromofluoromethane (Surr)	*90*		*48 - 150*		*02/03/21 20:23*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*02/03/21 20:23*	*1*

Lab Sample ID: LCS 460-756830/4
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	19.6		ug/Kg		98	78 - 132
1,1,2,2-Tetrachloroethane	20.0	31.3	*+	ug/Kg		157	69 - 123
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	19.3		ug/Kg		96	78 - 136
1,1,2-Trichloroethane	20.0	24.0		ug/Kg		120	75 - 120
1,1-Dichloroethane	20.0	21.4		ug/Kg		107	76 - 129
1,1-Dichloroethene	20.0	20.4		ug/Kg		102	77 - 132
1,2,3-Trichlorobenzene	20.0	25.0	*+	ug/Kg		125	77 - 120
1,2,4-Trichlorobenzene	20.0	22.8		ug/Kg		114	75 - 120
1,2-Dibromo-3-Chloropropane	20.0	33.4	*+	ug/Kg		167	60 - 126
1,2-Dichlorobenzene	20.0	25.1	*+	ug/Kg		125	80 - 120
1,2-Dichloroethane	20.0	20.3		ug/Kg		102	70 - 132
1,2-Dichloropropane	20.0	22.7		ug/Kg		113	73 - 124
1,3-Dichlorobenzene	20.0	23.4		ug/Kg		117	80 - 120
1,4-Dichlorobenzene	20.0	24.0		ug/Kg		120	80 - 120
1,4-Dioxane	400	593	*+	ug/Kg		148	73 - 136
2-Butanone (MEK)	100	100		ug/Kg		100	75 - 120
2-Hexanone	100	141	*+	ug/Kg		141	78 - 120
4-Methyl-2-pentanone (MIBK)	100	130	*+	ug/Kg		130	80 - 122
Acetone	100	89.8		ug/Kg		90	63 - 131
Benzene	20.0	21.4		ug/Kg		107	80 - 123
Bromoform	20.0	25.2		ug/Kg		126	48 - 142
Bromomethane	20.0	31.3	*+	ug/Kg		157	68 - 136
Carbon disulfide	20.0	21.8		ug/Kg		109	67 - 136
Carbon tetrachloride	20.0	19.3		ug/Kg		96	72 - 136
Chlorobenzene	20.0	21.7		ug/Kg		109	80 - 120
Chlorobromomethane	20.0	18.9		ug/Kg		94	76 - 127
Chlorodibromomethane	20.0	23.2		ug/Kg		116	62 - 128
Chloroethane	20.0	19.6		ug/Kg		98	65 - 134

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 460-756830/4
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	20.0	20.1		ug/Kg		100	79 - 126
Chloromethane	20.0	20.6		ug/Kg		103	48 - 150
cis-1,2-Dichloroethene	20.0	20.3		ug/Kg		101	80 - 123
cis-1,3-Dichloropropene	20.0	23.1		ug/Kg		116	72 - 120
Cyclohexane	20.0	19.0		ug/Kg		95	80 - 132
Dichlorobromomethane	20.0	21.5		ug/Kg		108	73 - 124
Dichlorodifluoromethane	20.0	18.7		ug/Kg		93	40 - 146
Ethylbenzene	20.0	21.0		ug/Kg		105	80 - 120
Ethylene Dibromide	20.0	23.0		ug/Kg		115	79 - 120
Isopropylbenzene	20.0	21.0		ug/Kg		105	80 - 120
Methyl acetate	40.0	42.8		ug/Kg		107	58 - 143
Methyl tert-butyl ether	20.0	19.6		ug/Kg		98	80 - 125
Methylcyclohexane	20.0	17.0		ug/Kg		85	79 - 133
Methylene Chloride	20.0	20.0		ug/Kg		100	76 - 127
m-Xylene & p-Xylene	20.0	20.9		ug/Kg		105	80 - 120
o-Xylene	20.0	21.6		ug/Kg		108	80 - 120
Styrene	20.0	22.3		ug/Kg		112	80 - 120
Tetrachloroethene	20.0	18.6		ug/Kg		93	78 - 123
Toluene	20.0	21.0		ug/Kg		105	80 - 120
trans-1,2-Dichloroethene	20.0	19.7		ug/Kg		98	78 - 128
trans-1,3-Dichloropropene	20.0	23.5		ug/Kg		117	68 - 120
Trichloroethene	20.0	20.2		ug/Kg		101	79 - 120
Trichlorofluoromethane	20.0	19.0		ug/Kg		95	67 - 142
Vinyl chloride	20.0	19.3		ug/Kg		96	56 - 147

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*77 - 145*
4-Bromofluorobenzene	*101*		*79 - 125*
Dibromofluoromethane (Surr)	*88*		*48 - 150*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 460-756830/10
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	18.7		ug/Kg		94	78 - 132	4	30
1,1,2,2-Tetrachloroethane	20.0	26.0	*+	ug/Kg		130	69 - 123	19	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne	20.0	18.6		ug/Kg		93	78 - 136	4	30
1,1,2-Trichloroethane	20.0	22.9		ug/Kg		114	75 - 120	5	30
1,1-Dichloroethane	20.0	20.6		ug/Kg		103	76 - 129	4	30
1,1-Dichloroethene	20.0	19.5		ug/Kg		97	77 - 132	5	30
1,2,3-Trichlorobenzene	20.0	20.6		ug/Kg		103	77 - 120	19	30
1,2,4-Trichlorobenzene	20.0	19.6		ug/Kg		98	75 - 120	15	30
1,2-Dibromo-3-Chloropropane	20.0	25.8	*+	ug/Kg		129	60 - 126	26	30
1,2-Dichlorobenzene	20.0	21.0		ug/Kg		105	80 - 120	18	30
1,2-Dichloroethane	20.0	19.8		ug/Kg		99	70 - 132	3	30
1,2-Dichloropropane	20.0	22.0		ug/Kg		110	73 - 124	3	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 460-756830/10
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	20.0	20.4		ug/Kg		102	80 - 120	14	30
1,4-Dichlorobenzene	20.0	20.7		ug/Kg		103	80 - 120	15	30
1,4-Dioxane	400	530		ug/Kg		133	73 - 136	11	30
2-Butanone (MEK)	100	97.0		ug/Kg		97	75 - 120	3	30
2-Hexanone	100	112		ug/Kg		112	78 - 120	23	30
4-Methyl-2-pentanone (MIBK)	100	112		ug/Kg		112	80 - 122	15	30
Acetone	100	86.1		ug/Kg		86	63 - 131	4	30
Benzene	20.0	21.5		ug/Kg		107	80 - 123	0	30
Bromoform	20.0	21.4		ug/Kg		107	48 - 142	16	30
Bromomethane	20.0	29.1	*+	ug/Kg		146	68 - 136	7	30
Carbon disulfide	20.0	20.9		ug/Kg		105	67 - 136	4	30
Carbon tetrachloride	20.0	18.7		ug/Kg		93	72 - 136	3	30
Chlorobenzene	20.0	20.6		ug/Kg		103	80 - 120	5	30
Chlorobromomethane	20.0	17.8		ug/Kg		89	76 - 127	6	30
Chlorodibromomethane	20.0	20.7		ug/Kg		104	62 - 128	11	30
Chloroethane	20.0	18.9		ug/Kg		95	65 - 134	4	30
Chloroform	20.0	19.4		ug/Kg		97	79 - 126	4	30
Chloromethane	20.0	20.5		ug/Kg		103	48 - 150	0	30
cis-1,2-Dichloroethene	20.0	19.6		ug/Kg		98	80 - 123	4	30
cis-1,3-Dichloropropene	20.0	22.4		ug/Kg		112	72 - 120	3	30
Cyclohexane	20.0	18.6		ug/Kg		93	80 - 132	2	30
Dichlorobromomethane	20.0	20.2		ug/Kg		101	73 - 124	6	30
Dichlorodifluoromethane	20.0	19.6		ug/Kg		98	40 - 146	5	30
Ethylbenzene	20.0	20.1		ug/Kg		100	80 - 120	5	30
Ethylene Dibromide	20.0	21.8		ug/Kg		109	79 - 120	5	30
Isopropylbenzene	20.0	19.5		ug/Kg		98	80 - 120	7	30
Methyl acetate	40.0	42.6		ug/Kg		106	58 - 143	0	30
Methyl tert-butyl ether	20.0	19.4		ug/Kg		97	80 - 125	1	30
Methylcyclohexane	20.0	17.6		ug/Kg		88	79 - 133	4	30
Methylene Chloride	20.0	19.5		ug/Kg		97	76 - 127	3	30
m-Xylene & p-Xylene	20.0	19.8		ug/Kg		99	80 - 120	5	30
o-Xylene	20.0	19.8		ug/Kg		99	80 - 120	8	30
Styrene	20.0	20.2		ug/Kg		101	80 - 120	10	30
Tetrachloroethene	20.0	18.7		ug/Kg		93	78 - 123	0	30
Toluene	20.0	20.8		ug/Kg		104	80 - 120	1	30
trans-1,2-Dichloroethene	20.0	19.2		ug/Kg		96	78 - 128	2	30
trans-1,3-Dichloropropene	20.0	22.5		ug/Kg		112	68 - 120	4	30
Trichloroethene	20.0	19.7		ug/Kg		98	79 - 120	3	30
Trichlorofluoromethane	20.0	18.9		ug/Kg		95	67 - 142	0	30
Vinyl chloride	20.0	19.5		ug/Kg		98	56 - 147	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*77 - 145*
4-Bromofluorobenzene	*104*		*79 - 125*
Dibromofluoromethane (Surr)	*88*		*48 - 150*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB3 460-756870/2-A
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 756870

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.23	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.30	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,1,2-Trichloroethane	ND		1.0	0.18	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,1-Dichloroethane	ND		1.0	0.21	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,1-Dichloroethene	ND		1.0	0.23	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,2,3-Trichlorobenzene	ND		1.0	0.18	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.36	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.46	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,2-Dichloroethane	ND		1.0	0.30	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,2-Dichloropropane	ND		1.0	0.42	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,3-Dichlorobenzene	ND		1.0	0.37	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
1,4-Dioxane	ND		20	9.2	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
2-Butanone (MEK)	ND		5.0	0.37	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
2-Hexanone	ND		5.0	1.7	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.6	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Acetone	ND		6.0	5.7	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Benzene	ND		1.0	0.26	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Bromoform	ND		1.0	0.43	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Bromomethane	ND		2.0	1.0	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Carbon disulfide	ND		1.0	0.27	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Carbon tetrachloride	ND		1.0	0.39	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Chlorobenzene	ND		1.0	0.18	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Chlorobromomethane	ND		1.0	0.28	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Chlorodibromomethane	ND		1.0	0.19	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Chloroethane	ND		1.0	0.52	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Chloroform	ND		1.0	0.97	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Chloromethane	ND		1.0	0.44	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
cis-1,2-Dichloroethene	ND		1.0	0.36	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
cis-1,3-Dichloropropene	ND		1.0	0.27	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Cyclohexane	ND		1.0	0.22	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Dichlorobromomethane	ND		1.0	0.26	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Dichlorodifluoromethane	ND		1.0	0.34	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Ethylbenzene	ND		1.0	0.20	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Ethylene Dibromide	ND		1.0	0.18	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Isopropylbenzene	ND		1.0	0.29	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Methyl acetate	ND		5.0	4.3	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Methyl tert-butyl ether	ND		1.0	0.51	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Methylcyclohexane	ND		1.0	0.50	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Methylene Chloride	ND		2.0	1.1	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
m-Xylene & p-Xylene	ND		1.0	0.17	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
o-Xylene	ND		1.0	0.19	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Styrene	ND		1.0	0.28	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Tetrachloroethene	ND		1.0	0.31	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Toluene	ND		1.0	0.23	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
trans-1,2-Dichloroethene	ND		1.0	0.25	ug/Kg		02/03/21 20:10	02/04/21 00:24	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB3 460-756870/2-A
Matrix: Solid
Analysis Batch: 756830

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 756870

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		1.0	0.27	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Trichloroethene	ND		1.0	0.32	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Trichlorofluoromethane	ND		1.0	0.41	ug/Kg		02/03/21 20:10	02/04/21 00:24	1
Vinyl chloride	ND		1.0	0.55	ug/Kg		02/03/21 20:10	02/04/21 00:24	1

Tentatively Identified Compound	*LB3 Est. Result*	*LB3 Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*				*02/03/21 20:10*	*02/04/21 00:24*	*1*

Surrogate	*LB3 %Recovery*	*LB3 Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*77 - 145*	*02/03/21 20:10*	*02/04/21 00:24*	*1*
4-Bromofluorobenzene	*111*		*79 - 125*	*02/03/21 20:10*	*02/04/21 00:24*	*1*
Dibromofluoromethane (Surr)	*91*		*48 - 150*	*02/03/21 20:10*	*02/04/21 00:24*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*02/03/21 20:10*	*02/04/21 00:24*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-757132/1-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 757132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		330	9.4	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Acenaphthylene	ND		330	3.3	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Acetophenone	ND		330	16	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Anthracene	ND		330	10	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Atrazine	ND		130	19	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Benzaldehyde	ND		330	55	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Benzo[a]anthracene	ND		33	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Benzo[a]pyrene	ND		33	8.8	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Benzo[b]fluoranthene	ND		33	8.6	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Benzo[g,h,i]perylene	ND		330	9.8	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Benzo[k]fluoranthene	ND		33	6.5	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
1,1'-Biphenyl	ND		330	4.4	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Bis(2-chloroethoxy)methane	ND		330	26	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Bis(2-chloroethyl)ether	ND		33	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Bis(2-ethylhexyl) phthalate	ND		330	17	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Bromophenyl phenyl ether	ND		330	13	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Butyl benzyl phthalate	ND		330	16	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Caprolactam	ND		330	51	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Carbazole	ND		330	13	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Chloroaniline	ND		330	59	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Chloro-3-methylphenol	ND		330	19	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2-Chloronaphthalene	ND		330	15	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2-Chlorophenol	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Chlorophenyl phenyl ether	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Chrysene	ND		330	5.6	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Dibenz(a,h)anthracene	ND		33	14	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Dibenzofuran	ND		330	4.6	ug/Kg		02/04/21 18:38	02/05/21 01:10	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-757132/1-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 757132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	ND		130	50	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,4-Dichlorophenol	ND		130	21	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Diethyl phthalate	ND		330	4.8	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,4-Dimethylphenol	ND		330	15	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Dimethyl phthalate	ND		330	75	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Di-n-butyl phthalate	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4,6-Dinitro-2-methylphenol	ND		270	140	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,4-Dinitrophenol	ND		270	160	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,4-Dinitrotoluene	ND		67	36	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,6-Dinitrotoluene	ND		67	24	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Di-n-octyl phthalate	ND		330	18	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Fluoranthene	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Fluorene	ND		330	4.5	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Hexachlorobenzene	ND		33	16	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Hexachlorobutadiene	ND		67	7.0	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Hexachlorocyclopentadiene	ND		330	29	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Hexachloroethane	ND		33	11	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Indeno[1,2,3-cd]pyrene	ND		33	13	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Isophorone	ND		130	96	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2-Methylnaphthalene	ND		330	9.3	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2-Methylphenol	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Methylphenol	ND		330	21	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Naphthalene	ND		330	5.7	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2-Nitroaniline	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
3-Nitroaniline	ND		330	37	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Nitroaniline	ND		330	38	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Nitrobenzene	ND		33	7.9	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2-Nitrophenol	ND		330	33	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
4-Nitrophenol	ND		670	54	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
N-Nitrosodi-n-propylamine	ND		33	24	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
N-Nitrosodiphenylamine	ND		330	27	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,2'-oxybis[1-chloropropane]	ND		330	6.0	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Pentachlorophenol	ND		270	68	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Phenanthrene	ND		330	5.8	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Phenol	ND		330	12	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
Pyrene	ND		330	8.2	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
1,2,4,5-Tetrachlorobenzene	ND		330	10	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,3,4,6-Tetrachlorophenol	ND		330	22	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,4,5-Trichlorophenol	ND		330	34	ug/Kg		02/04/21 18:38	02/05/21 01:10	1
2,4,6-Trichlorophenol	ND		130	42	ug/Kg		02/04/21 18:38	02/05/21 01:10	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*				*02/04/21 18:38*	*02/05/21 01:10*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*25 - 104*	*02/04/21 18:38*	*02/05/21 01:10*	*1*
2-Fluorophenol (Surr)	*82*		*18 - 106*	*02/04/21 18:38*	*02/05/21 01:10*	*1*
Nitrobenzene-d5 (Surr)	*83*		*19 - 105*	*02/04/21 18:38*	*02/05/21 01:10*	*1*

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-757132/1-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 757132

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)	85		26 - 101	02/04/21 18:38	02/05/21 01:10	1
Terphenyl-d14 (Surr)	92		25 - 127	02/04/21 18:38	02/05/21 01:10	1
2,4,6-Tribromophenol (Surr)	87		10 - 123	02/04/21 18:38	02/05/21 01:10	1

Lab Sample ID: LCS 460-757132/2-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 757132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	3330	3040		ug/Kg		91	53 - 110
Acenaphthylene	3330	3030		ug/Kg		91	64 - 108
Acetophenone	3330	3110		ug/Kg		93	61 - 103
Anthracene	3330	2870		ug/Kg		86	67 - 114
Atrazine	6670	1150	*-	ug/Kg		17	44 - 145
Benzaldehyde	6670	1250	*-	ug/Kg		19	39 - 113
Benzo[a]anthracene	3330	2680		ug/Kg		80	67 - 115
Benzo[a]pyrene	3330	3180		ug/Kg		95	63 - 108
Benzo[b]fluoranthene	3330	3220		ug/Kg		97	64 - 116
Benzo[g,h,i]perylene	3330	2990		ug/Kg		90	61 - 113
Benzo[k]fluoranthene	3330	3110		ug/Kg		93	67 - 115
1,1'-Biphenyl	3330	2960		ug/Kg		89	65 - 110
Bis(2-chloroethoxy)methane	3330	2980		ug/Kg		89	62 - 107
Bis(2-chloroethyl)ether	3330	3090		ug/Kg		93	60 - 107
Bis(2-ethylhexyl) phthalate	3330	2710		ug/Kg		81	69 - 124
4-Bromophenyl phenyl ether	3330	2820		ug/Kg		85	67 - 113
Butyl benzyl phthalate	3330	2640		ug/Kg		79	70 - 123
Caprolactam	6670	1120	*-	ug/Kg		17	59 - 140
Carbazole	3330	2870		ug/Kg		86	64 - 113
4-Chloroaniline	3330	2850		ug/Kg		85	20 - 98
4-Chloro-3-methylphenol	3330	3030		ug/Kg		91	66 - 114
2-Chloronaphthalene	3330	2920		ug/Kg		88	65 - 109
2-Chlorophenol	3330	2990		ug/Kg		90	63 - 106
4-Chlorophenyl phenyl ether	3330	3050		ug/Kg		92	66 - 110
Chrysene	3330	2780		ug/Kg		83	71 - 122
Dibenz(a,h)anthracene	3330	3260		ug/Kg		98	66 - 119
Dibenzofuran	3330	2990		ug/Kg		90	65 - 108
3,3'-Dichlorobenzidine	3330	2440		ug/Kg		73	4 - 119
2,4-Dichlorophenol	3330	2960		ug/Kg		89	66 - 113
Diethyl phthalate	3330	2960		ug/Kg		89	63 - 109
2,4-Dimethylphenol	3330	3000		ug/Kg		90	63 - 107
Dimethyl phthalate	3330	2950		ug/Kg		89	65 - 109
Di-n-butyl phthalate	3330	2840		ug/Kg		85	66 - 114
4,6-Dinitro-2-methylphenol	6670	5860		ug/Kg		88	64 - 129
2,4-Dinitrophenol	6670	5580		ug/Kg		84	37 - 125
2,4-Dinitrotoluene	3330	3170		ug/Kg		95	65 - 124
2,6-Dinitrotoluene	3330	3140		ug/Kg		94	67 - 121
Di-n-octyl phthalate	3330	3000		ug/Kg		90	65 - 122
Fluoranthene	3330	2870		ug/Kg		86	64 - 113

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-757132/2-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 757132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluorene	3330	3070		ug/Kg		92	65 - 109
Hexachlorobenzene	3330	2900		ug/Kg		87	70 - 119
Hexachlorobutadiene	3330	3050		ug/Kg		92	62 - 109
Hexachlorocyclopentadiene	3330	2970		ug/Kg		89	22 - 124
Hexachloroethane	3330	3020		ug/Kg		91	61 - 102
Indeno[1,2,3-cd]pyrene	3330	3170		ug/Kg		95	62 - 121
Isophorone	3330	3010		ug/Kg		90	63 - 107
2-Methylnaphthalene	3330	3040		ug/Kg		91	64 - 108
2-Methylphenol	3330	3070		ug/Kg		92	63 - 108
4-Methylphenol	3330	3160		ug/Kg		95	61 - 108
Naphthalene	3330	2970		ug/Kg		89	63 - 106
2-Nitroaniline	3330	3010		ug/Kg		90	59 - 119
3-Nitroaniline	3330	2960		ug/Kg		89	31 - 102
4-Nitroaniline	3330	3020		ug/Kg		91	50 - 110
Nitrobenzene	3330	3060		ug/Kg		92	63 - 110
2-Nitrophenol	3330	2820		ug/Kg		85	64 - 112
4-Nitrophenol	6670	6190		ug/Kg		93	47 - 123
N-Nitrosodi-n-propylamine	3330	3220		ug/Kg		97	61 - 108
N-Nitrosodiphenylamine	3330	2810		ug/Kg		84	67 - 113
2,2'-oxybis[1-chloropropane]	3330	3000		ug/Kg		90	49 - 109
Pentachlorophenol	6670	6070		ug/Kg		91	44 - 126
Phenanthrene	3330	2830		ug/Kg		85	66 - 112
Phenol	3330	2990		ug/Kg		90	63 - 110
Pyrene	3330	2620		ug/Kg		79	71 - 122
1,2,4,5-Tetrachlorobenzene	3330	2950		ug/Kg		88	64 - 110
2,3,4,6-Tetrachlorophenol	3330	2910		ug/Kg		87	58 - 113
2,4,5-Trichlorophenol	3330	2910		ug/Kg		87	64 - 112
2,4,6-Trichlorophenol	3330	3070		ug/Kg		92	63 - 113

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*85*		*25 - 104*
2-Fluorophenol (Surr)	*86*		*18 - 106*
Nitrobenzene-d5 (Surr)	*85*		*19 - 105*
Phenol-d5 (Surr)	*87*		*26 - 101*
Terphenyl-d14 (Surr)	*87*		*25 - 127*
2,4,6-Tribromophenol (Surr)	*94*		*10 - 123*

Lab Sample ID: LCSD 460-757132/3-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 757132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	3330	3060		ug/Kg		92	53 - 110	1	30
Acenaphthylene	3330	3000		ug/Kg		90	64 - 108	1	30
Acetophenone	3330	3170		ug/Kg		95	61 - 103	2	30
Anthracene	3330	2920		ug/Kg		88	67 - 114	2	30
Atrazine	6670	1190	*-	ug/Kg		18	44 - 145	4	30
Benzaldehyde	6670	1290	*-	ug/Kg		19	39 - 113	3	30

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-757132/3-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 757132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	3330	2730		ug/Kg		82	67 - 115	2	30
Benzo[a]pyrene	3330	3240		ug/Kg		97	63 - 108	2	30
Benzo[b]fluoranthene	3330	3260		ug/Kg		98	64 - 116	1	30
Benzo[g,h,i]perylene	3330	3030		ug/Kg		91	61 - 113	1	30
Benzo[k]fluoranthene	3330	3210		ug/Kg		96	67 - 115	3	30
1,1'-Biphenyl	3330	2970		ug/Kg		89	65 - 110	0	30
Bis(2-chloroethoxy)methane	3330	3000		ug/Kg		90	62 - 107	1	30
Bis(2-chloroethyl)ether	3330	3080		ug/Kg		93	60 - 107	0	30
Bis(2-ethylhexyl) phthalate	3330	2780		ug/Kg		84	69 - 124	3	30
4-Bromophenyl phenyl ether	3330	2860		ug/Kg		86	67 - 113	1	30
Butyl benzyl phthalate	3330	2670		ug/Kg		80	70 - 123	1	30
Caprolactam	6670	1200	*-	ug/Kg		18	59 - 140	6	30
Carbazole	3330	2890		ug/Kg		87	64 - 113	1	30
4-Chloroaniline	3330	2830		ug/Kg		85	20 - 98	0	30
4-Chloro-3-methylphenol	3330	3020		ug/Kg		91	66 - 114	1	30
2-Chloronaphthalene	3330	2910		ug/Kg		87	65 - 109	0	30
2-Chlorophenol	3330	2970		ug/Kg		89	63 - 106	1	30
4-Chlorophenyl phenyl ether	3330	3040		ug/Kg		91	66 - 110	0	30
Chrysene	3330	2800		ug/Kg		84	71 - 122	1	30
Dibenz(a,h)anthracene	3330	3330		ug/Kg		100	66 - 119	2	30
Dibenzofuran	3330	2960		ug/Kg		89	65 - 108	1	30
3,3'-Dichlorobenzidine	3330	2460		ug/Kg		74	4 - 119	1	30
2,4-Dichlorophenol	3330	2940		ug/Kg		88	66 - 113	1	30
Diethyl phthalate	3330	2940		ug/Kg		88	63 - 109	1	30
2,4-Dimethylphenol	3330	2950		ug/Kg		89	63 - 107	2	30
Dimethyl phthalate	3330	2950		ug/Kg		89	65 - 109	0	30
Di-n-butyl phthalate	3330	2900		ug/Kg		87	66 - 114	2	30
4,6-Dinitro-2-methylphenol	6670	6020		ug/Kg		90	64 - 129	3	30
2,4-Dinitrophenol	6670	5600		ug/Kg		84	37 - 125	0	30
2,4-Dinitrotoluene	3330	3120		ug/Kg		94	65 - 124	1	30
2,6-Dinitrotoluene	3330	3110		ug/Kg		93	67 - 121	1	30
Di-n-octyl phthalate	3330	3010		ug/Kg		90	65 - 122	0	30
Fluoranthene	3330	2960		ug/Kg		89	64 - 113	3	30
Fluorene	3330	3030		ug/Kg		91	65 - 109	1	30
Hexachlorobenzene	3330	2940		ug/Kg		88	70 - 119	1	30
Hexachlorobutadiene	3330	3060		ug/Kg		92	62 - 109	0	30
Hexachlorocyclopentadiene	3330	2950		ug/Kg		89	22 - 124	1	30
Hexachloroethane	3330	3030		ug/Kg		91	61 - 102	0	30
Indeno[1,2,3-cd]pyrene	3330	3210		ug/Kg		96	62 - 121	1	30
Isophorone	3330	3070		ug/Kg		92	63 - 107	2	30
2-Methylnaphthalene	3330	3030		ug/Kg		91	64 - 108	0	30
2-Methylphenol	3330	3180		ug/Kg		95	63 - 108	4	30
4-Methylphenol	3330	3270		ug/Kg		98	61 - 108	3	30
Naphthalene	3330	2940		ug/Kg		88	63 - 106	1	30
2-Nitroaniline	3330	2980		ug/Kg		90	59 - 119	1	30
3-Nitroaniline	3330	2960		ug/Kg		89	31 - 102	0	30
4-Nitroaniline	3330	3070		ug/Kg		92	50 - 110	1	30
Nitrobenzene	3330	3190		ug/Kg		96	63 - 110	4	30
2-Nitrophenol	3330	2860		ug/Kg		86	64 - 112	1	30

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 460-757132/3-A
Matrix: Solid
Analysis Batch: 757182

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 757132

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Nitrophenol			6670	6230		ug/Kg		93	47 - 123	1	30
N-Nitrosodi-n-propylamine			3330	3300		ug/Kg		99	61 - 108	2	30
N-Nitrosodiphenylamine			3330	2870		ug/Kg		86	67 - 113	2	30
2,2'-oxybis[1-chloropropane]			3330	3090		ug/Kg		93	49 - 109	3	30
Pentachlorophenol			6670	6160		ug/Kg		92	44 - 126	2	30
Phenanthrene			3330	2900		ug/Kg		87	66 - 112	2	30
Phenol			3330	2970		ug/Kg		89	63 - 110	1	30
Pyrene			3330	2630		ug/Kg		79	71 - 122	0	30
1,2,4,5-Tetrachlorobenzene			3330	2940		ug/Kg		88	64 - 110	0	30
2,3,4,6-Tetrachlorophenol			3330	2900		ug/Kg		87	58 - 113	0	30
2,4,5-Trichlorophenol			3330	2970		ug/Kg		89	64 - 112	2	30
2,4,6-Trichlorophenol			3330	3010		ug/Kg		90	63 - 113	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*85*		*25 - 104*
2-Fluorophenol (Surr)	*87*		*18 - 106*
Nitrobenzene-d5 (Surr)	*85*		*19 - 105*
Phenol-d5 (Surr)	*90*		*26 - 101*
Terphenyl-d14 (Surr)	*89*		*25 - 127*
2,4,6-Tribromophenol (Surr)	*94*		*10 - 123*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 460-757019/1-A
Matrix: Solid
Analysis Batch: 757193

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 757019

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		6.7	1.1	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
4,4'-DDE	ND		6.7	0.79	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
4,4'-DDT	ND		6.7	1.2	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Aldrin	ND		6.7	1.0	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
alpha-BHC	ND		2.0	0.68	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
beta-BHC	ND		2.0	0.75	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Chlordane (technical)	ND		67	16	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
delta-BHC	ND		2.0	0.41	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Dieldrin	ND		2.0	0.87	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Endosulfan I	ND		6.7	1.0	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Endosulfan II	ND		6.7	1.7	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Endosulfan sulfate	ND		6.7	0.84	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Endrin	ND		6.7	0.96	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Endrin aldehyde	ND		6.7	1.6	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Endrin ketone	ND		6.7	1.3	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
gamma-BHC (Lindane)	ND		2.0	0.62	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Heptachlor	ND		6.7	0.79	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Heptachlor epoxide	ND		6.7	1.0	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Methoxychlor	ND		6.7	1.5	ug/Kg		02/04/21 09:46	02/05/21 06:46	1
Toxaphene	ND		67	24	ug/Kg		02/04/21 09:46	02/05/21 06:46	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 460-757019/1-A
Matrix: Solid
Analysis Batch: 757193

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 757019

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	109		28 - 148	02/04/21 09:46	02/05/21 06:46	1
Tetrachloro-m-xylene	101		34 - 118	02/04/21 09:46	02/05/21 06:46	1

Lab Sample ID: LCS 460-757019/2-A
Matrix: Solid
Analysis Batch: 757193

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 757019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	133	152		ug/Kg		114	70 - 140
4,4'-DDE	133	152		ug/Kg		114	71 - 137
4,4'-DDT	133	149		ug/Kg		112	63 - 131
Aldrin	133	144		ug/Kg		108	74 - 140
alpha-BHC	133	148		ug/Kg		111	72 - 142
beta-BHC	133	152		ug/Kg		114	65 - 137
delta-BHC	133	151		ug/Kg		113	70 - 143
Dieldrin	133	150		ug/Kg		113	70 - 135
Endosulfan I	133	147		ug/Kg		110	68 - 135
Endosulfan II	133	159		ug/Kg		120	64 - 130
Endosulfan sulfate	133	142		ug/Kg		106	66 - 143
Endrin	133	149		ug/Kg		112	68 - 136
Endrin aldehyde	133	131		ug/Kg		98	68 - 132
Endrin ketone	133	144		ug/Kg		108	60 - 150
gamma-BHC (Lindane)	133	149		ug/Kg		112	70 - 134
Heptachlor	133	145		ug/Kg		109	69 - 134
Heptachlor epoxide	133	143		ug/Kg		107	70 - 135
Methoxychlor	133	137		ug/Kg		103	57 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	93		28 - 148
Tetrachloro-m-xylene	81		34 - 118

Lab Sample ID: LCSD 460-757019/3-A
Matrix: Solid
Analysis Batch: 757193

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 757019

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDD	133	154		ug/Kg		116	70 - 140	1	30
4,4'-DDE	133	152		ug/Kg		114	71 - 137	0	30
4,4'-DDT	133	150		ug/Kg		112	63 - 131	0	30
Aldrin	133	145		ug/Kg		109	74 - 140	0	30
alpha-BHC	133	148		ug/Kg		111	72 - 142	0	30
beta-BHC	133	153		ug/Kg		114	65 - 137	0	30
delta-BHC	133	152		ug/Kg		114	70 - 143	0	30
Dieldrin	133	151		ug/Kg		113	70 - 135	0	30
Endosulfan I	133	146		ug/Kg		110	68 - 135	0	30
Endosulfan II	133	160		ug/Kg		120	64 - 130	1	30
Endosulfan sulfate	133	143		ug/Kg		107	66 - 143	1	30
Endrin	133	150		ug/Kg		112	68 - 136	1	30

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 460-757019/3-A
Matrix: Solid
Analysis Batch: 757193

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 757019

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endrin aldehyde			133	133		ug/Kg		99	68 - 132	1	30
Endrin ketone			133	152		ug/Kg		114	60 - 150	6	30
gamma-BHC (Lindane)			133	150		ug/Kg		112	70 - 134	0	30
Heptachlor			133	145		ug/Kg		109	69 - 134	0	30
Heptachlor epoxide			133	143		ug/Kg		107	70 - 135	0	30
Methoxychlor			133	136		ug/Kg		102	57 - 135	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*85*		*28 - 148*
Tetrachloro-m-xylene	*81*		*34 - 118*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 460-757020/1-A
Matrix: Solid
Analysis Batch: 757214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 757020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		67	8.9	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1221	ND		67	8.9	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1232	ND		67	8.9	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1242	ND		67	8.9	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1248	ND		67	8.9	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1254	ND		67	9.2	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1260	ND		67	9.2	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor-1262	ND		67	9.2	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Aroclor 1268	ND		67	9.2	ug/Kg		02/04/21 09:46	02/05/21 08:48	1
Polychlorinated biphenyls, Total	ND		67	9.2	ug/Kg		02/04/21 09:46	02/05/21 08:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*144*		*10 - 150*	*02/04/21 09:46*	*02/05/21 08:48*	*1*
Tetrachloro-m-xylene	*132*		*58 - 145*	*02/04/21 09:46*	*02/05/21 08:48*	*1*

Lab Sample ID: LCS 460-757020/2-A
Matrix: Solid
Analysis Batch: 757214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 757020

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aroclor 1016			333	437		ug/Kg		131	65 - 133		
Aroclor 1260			333	488		ug/Kg		146	71 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*132*		*10 - 150*
Tetrachloro-m-xylene	*115*		*58 - 145*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 460-757020/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757214 — **Prep Batch: 757020**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016			333	421		ug/Kg		126	65 - 133	4	30
Aroclor 1260			333	465		ug/Kg		139	71 - 150	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*129*		*10 - 150*
Tetrachloro-m-xylene	*108*		*58 - 145*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 460-757167/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757242 — **Prep Batch: 757167**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		33	12	ug/Kg		02/04/21 21:44	02/05/21 07:25	1
Silvex (2,4,5-TP)	ND		33	3.5	ug/Kg		02/04/21 21:44	02/05/21 07:25	1
2,4,5-T	ND		33	7.1	ug/Kg		02/04/21 21:44	02/05/21 07:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*119*		*30 - 150*	*02/04/21 21:44*	*02/05/21 07:25*	*1*

Lab Sample ID: LCS 460-757167/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757242 — **Prep Batch: 757167**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
2,4-D			333	314		ug/Kg		94	42 - 150		
Silvex (2,4,5-TP)			83.3	92.1		ug/Kg		111	58 - 150		
2,4,5-T			83.3	86.5		ug/Kg		104	59 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*131*		*30 - 150*

Lab Sample ID: LCSD 460-757167/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757242 — **Prep Batch: 757167**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D			333	309		ug/Kg		93	42 - 150	2	30
Silvex (2,4,5-TP)			83.3	90.5		ug/Kg		109	58 - 150	2	30
2,4,5-T			83.3	82.8		ug/Kg		99	59 - 150	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*130*		*30 - 150*

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 160-40623-4 MS — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757242 — **Prep Batch: 757167**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	ND	H	432	401		ug/Kg	☼	93	42 - 150
Silvex (2,4,5-TP)	ND	H	108	119		ug/Kg	☼	110	58 - 150
2,4,5-T	ND	H	108	107		ug/Kg	☼	99	59 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*171*	*S1+*	*30 - 150*

Lab Sample ID: 160-40623-4 MSD — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757242 — **Prep Batch: 757167**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	ND	H	432	408		ug/Kg	☼	95	42 - 150	2	30
Silvex (2,4,5-TP)	ND	H	108	117		ug/Kg	☼	109	58 - 150	2	30
2,4,5-T	ND	H	108	104		ug/Kg	☼	96	59 - 150	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*160*	*S1+*	*30 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 460-758638/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 758639 — **Prep Batch: 758638**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		20	2.6	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Antimony	ND		1.0	0.15	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Arsenic	ND		1.0	0.10	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Barium	ND		2.0	0.15	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Beryllium	ND		0.40	0.057	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Cadmium	ND		1.0	0.11	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Calcium	ND		100	17	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Chromium	ND		2.0	0.17	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Cobalt	ND		2.0	0.15	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Copper	ND		2.0	0.22	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Iron	ND		60	20	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Lead	ND		0.60	0.20	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Magnesium	ND		100	10	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Manganese	ND		4.0	0.40	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Nickel	ND		2.0	0.19	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Potassium	ND		100	11	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Selenium	ND		1.3	0.12	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Silver	ND		1.0	0.089	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Sodium	ND		100	16	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Thallium	ND		0.40	0.041	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Vanadium	ND		2.0	0.21	mg/Kg		02/12/21 10:23	02/12/21 18:07	1
Zinc	ND		8.0	2.3	mg/Kg		02/12/21 10:23	02/12/21 18:07	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSSRM 460-758638/2-A ^5
Matrix: Solid
Analysis Batch: 758639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 758638

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	8190	6470		mg/Kg		79.0	48.7 - 151.4
Antimony	110	57.0		mg/Kg		51.8	3.6 - 210.9
Arsenic	162	152		mg/Kg		94.0	82.7 - 117.9
Barium	138	149		mg/Kg		107.9	82.6 - 117.4
Beryllium	157	139		mg/Kg		88.6	82.8 - 117.2
Cadmium	135	127		mg/Kg		93.8	82.2 - 117.0
Calcium	4790	4240		mg/Kg		88.5	81.6 - 118.2
Chromium	117	108		mg/Kg		92.2	82.0 - 117.9
Cobalt	92.6	91.1		mg/Kg		98.4	83.4 - 116.6
Copper	143	133		mg/Kg		93.3	83.2 - 116.1
Iron	15100	10800		mg/Kg		71.8	63.0 - 137.1
Lead	77.6	70.4		mg/Kg		90.7	83.4 - 116.5
Magnesium	2320	2180		mg/Kg		94.1	75.9 - 124.1
Manganese	319	303		mg/Kg		94.9	82.1 - 118.2
Nickel	79.9	81.5		mg/Kg		102.0	82.1 - 117.9
Potassium	2050	1770		mg/Kg		86.6	70.2 - 129.8
Selenium	172	164		mg/Kg		95.5	79.1 - 120.9
Silver	24.7	23.1		mg/Kg		93.4	80.6 - 119.8
Sodium	137	103	J	mg/Kg		75.1	72.1 - 127.7
Thallium	88.0	84.8		mg/Kg		96.4	80.7 - 119.3
Vanadium	99.9	86.6		mg/Kg		86.7	79.0 - 121.1
Zinc	312	291		mg/Kg		93.1	80.4 - 119.6

Lab Sample ID: 160-40623-4 MS
Matrix: Solid
Analysis Batch: 758639

Client Sample ID: HTCRV2-WC01-0612-01
Prep Type: Total/NA
Prep Batch: 758638

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	17000		641	16800	4	mg/Kg	☼	-59	75 - 125
Antimony	ND	F1	6.41	2.79	F1	mg/Kg	☼	43	75 - 125
Arsenic	3.9		12.8	14.7		mg/Kg	☼	84	75 - 125
Barium	120		12.8	119	4	mg/Kg	☼	0.8	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-40623-4 MS — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 758639 — **Prep Batch: 758638**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.3		6.41	7.14		mg/Kg	☼	91	75 - 125
Cadmium	1.2	J	6.41	6.80		mg/Kg	☼	88	75 - 125
Chromium	23		12.8	33.3		mg/Kg	☼	82	75 - 125
Cobalt	13	F1	6.41	19.3		mg/Kg	☼	99	75 - 125
Copper	18	F1	12.8	26.4	F1	mg/Kg	☼	62	75 - 125
Iron	20000		641	14000	4	mg/Kg	☼	-935	75 - 125
Lead	40		6.41	38.5	4	mg/Kg	☼	-27	75 - 125
Magnesium	7900		641	7860	4	mg/Kg	☼	-2	75 - 125
Manganese	460		64.1	503	4	mg/Kg	☼	64	75 - 125
Nickel	21		12.8	30.8		mg/Kg	☼	79	75 - 125
Potassium	2500	F1	641	2920	F1	mg/Kg	☼	73	75 - 125
Selenium	0.69	J	12.8	12.3		mg/Kg	☼	91	75 - 125
Silver	0.13	J	6.41	6.04		mg/Kg	☼	92	75 - 125
Sodium	1000		641	1610		mg/Kg	☼	92	75 - 125
Thallium	0.12	J	5.13	5.06		mg/Kg	☼	96	75 - 125
Vanadium	29		12.8	38.6		mg/Kg	☼	75	75 - 125
Zinc	83	F1	64.1	130	F1	mg/Kg	☼	72	75 - 125

Lab Sample ID: 160-40623-4 MS — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 758639 — **Prep Batch: 758638**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	130000		641	92100	4	mg/Kg	☼	-5724	75 - 125

Lab Sample ID: 160-40623-4 DU — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 758639 — **Prep Batch: 758638**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	17000		18600		mg/Kg	☼	7	20
Antimony	ND	F1	ND		mg/Kg	☼	NC	20
Arsenic	3.9		3.78		mg/Kg	☼	4	20
Barium	120		123		mg/Kg	☼	3	20
Beryllium	1.3		1.34		mg/Kg	☼	0.4	20
Cadmium	1.2	J	1.25	J	mg/Kg	☼	5	20
Chromium	23		24.3		mg/Kg	☼	6	20
Cobalt	13	F1	8.54	F3	mg/Kg	☼	41	20
Copper	18	F1	18.7		mg/Kg	☼	1	20
Iron	20000		15700	F3	mg/Kg	☼	24	20
Lead	40		46.1		mg/Kg	☼	14	20
Magnesium	7900		15800	F3	mg/Kg	☼	67	20
Manganese	460		483		mg/Kg	☼	4	20
Nickel	21		21.4		mg/Kg	☼	4	20
Potassium	2500	F1	2590		mg/Kg	☼	5	20
Selenium	0.69	J	0.506	J F5	mg/Kg	☼	31	20
Silver	0.13	J	0.142	J	mg/Kg	☼	10	20
Sodium	1000		1080		mg/Kg	☼	6	20
Thallium	0.12	J	0.133	J	mg/Kg	☼	9	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-40623-4 DU — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 758639 — **Prep Batch: 758638**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Vanadium	29			31.2		mg/Kg	☼			7	20
Zinc	83	F1		95.6		mg/Kg	☼			14	20

Lab Sample ID: 160-40623-4 DU — **Client Sample ID: HTCRV2-WC01-0612-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 758639 — **Prep Batch: 758638**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Calcium	130000			110000		mg/Kg	☼			16	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 460-757851/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757949 — **Prep Batch: 757851**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.017	0.0040	mg/Kg		02/09/21 04:07	02/09/21 08:32	1

Lab Sample ID: LCSSRM 460-757851/2-A ^40 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 757949 — **Prep Batch: 757851**

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			27.2	26.8		mg/Kg		98.6	72.4 - 127.6		

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 460-758918/2-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 759149 — **Prep Batch: 758918**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.24	0.12	mg/Kg		02/14/21 11:47	02/15/21 13:59	1

Lab Sample ID: LCSSRM 460-758918/3-A ^20 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 759149 — **Prep Batch: 758918**

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			157	103		mg/Kg		65.7	23.5 - 110.2		

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

GC/MS VOA

Analysis Batch: 756830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	8260D	756870
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	8260D	756870
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	8260D	756870
LB3 460-756870/2-A	Method Blank	Total/NA	Solid	8260D	756870
MB 460-756830/8	Method Blank	Total/NA	Solid	8260D	
LCS 460-756830/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 460-756830/10	Lab Control Sample Dup	Total/NA	Solid	8260D	

Prep Batch: 756870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	5035	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	5035	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	5035	
LB3 460-756870/2-A	Method Blank	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 757132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	3546	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	3546	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	3546	
MB 460-757132/1-A	Method Blank	Total/NA	Solid	3546	
LCS 460-757132/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 460-757132/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 757182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	8270E	757132
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	8270E	757132
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	8270E	757132
MB 460-757132/1-A	Method Blank	Total/NA	Solid	8270E	757132
LCS 460-757132/2-A	Lab Control Sample	Total/NA	Solid	8270E	757132
LCSD 460-757132/3-A	Lab Control Sample Dup	Total/NA	Solid	8270E	757132

GC Semi VOA

Prep Batch: 757019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	3546	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	3546	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	3546	
MB 460-757019/1-A	Method Blank	Total/NA	Solid	3546	
LCS 460-757019/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 460-757019/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Prep Batch: 757020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	3546	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	3546	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	3546	
MB 460-757020/1-A	Method Blank	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 757020 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 460-757020/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 460-757020/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Prep Batch: 757167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	8151A	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	8151A	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	8151A	
MB 460-757167/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 460-757167/2-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 460-757167/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	
160-40623-4 MS	HTCRV2-WC01-0612-01	Total/NA	Solid	8151A	
160-40623-4 MSD	HTCRV2-WC01-0612-01	Total/NA	Solid	8151A	

Analysis Batch: 757193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	8081B	757019
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	8081B	757019
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	8081B	757019
MB 460-757019/1-A	Method Blank	Total/NA	Solid	8081B	757019
LCS 460-757019/2-A	Lab Control Sample	Total/NA	Solid	8081B	757019
LCSD 460-757019/3-A	Lab Control Sample Dup	Total/NA	Solid	8081B	757019

Analysis Batch: 757214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	8082A	757020
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	8082A	757020
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	8082A	757020
MB 460-757020/1-A	Method Blank	Total/NA	Solid	8082A	757020
LCS 460-757020/2-A	Lab Control Sample	Total/NA	Solid	8082A	757020
LCSD 460-757020/3-A	Lab Control Sample Dup	Total/NA	Solid	8082A	757020

Analysis Batch: 757242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	8151A	757167
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	8151A	757167
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	8151A	757167
MB 460-757167/1-A	Method Blank	Total/NA	Solid	8151A	757167
LCS 460-757167/2-A	Lab Control Sample	Total/NA	Solid	8151A	757167
LCSD 460-757167/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	757167
160-40623-4 MS	HTCRV2-WC01-0612-01	Total/NA	Solid	8151A	757167
160-40623-4 MSD	HTCRV2-WC01-0612-01	Total/NA	Solid	8151A	757167

Metals

Prep Batch: 757851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	7471B	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	7471B	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	7471B	
MB 460-757851/1-A	Method Blank	Total/NA	Solid	7471B	

Metals (Continued)

Prep Batch: 757851 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSSRM 460-757851/2-A ^4	Lab Control Sample	Total/NA	Solid	7471B	

Analysis Batch: 757949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	7471B	757851
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	7471B	757851
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	7471B	757851
MB 460-757851/1-A	Method Blank	Total/NA	Solid	7471B	757851
LCSSRM 460-757851/2-A ^4	Lab Control Sample	Total/NA	Solid	7471B	757851

Prep Batch: 758638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	3050B	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	3050B	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	3050B	
MB 460-758638/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 460-758638/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
160-40623-4 MS	HTCRV2-WC01-0612-01	Total/NA	Solid	3050B	
160-40623-4 DU	HTCRV2-WC01-0612-01	Total/NA	Solid	3050B	

Analysis Batch: 758639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	6020B	758638
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	6020B	758638
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	6020B	758638
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	6020B	758638
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	6020B	758638
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	6020B	758638
MB 460-758638/1-A	Method Blank	Total/NA	Solid	6020B	758638
LCSSRM 460-758638/2-A ^5	Lab Control Sample	Total/NA	Solid	6020B	758638
160-40623-4 MS	HTCRV2-WC01-0612-01	Total/NA	Solid	6020B	758638
160-40623-4 MS	HTCRV2-WC01-0612-01	Total/NA	Solid	6020B	758638
160-40623-4 DU	HTCRV2-WC01-0612-01	Total/NA	Solid	6020B	758638
160-40623-4 DU	HTCRV2-WC01-0612-01	Total/NA	Solid	6020B	758638

General Chemistry

Prep Batch: 758918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	9012B	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	9012B	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	9012B	
MB 460-758918/2-A	Method Blank	Total/NA	Solid	9012B	
LCSSRM 460-758918/3-A ^2	Lab Control Sample	Total/NA	Solid	9012B	

Analysis Batch: 759149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	9012B	758918
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	9012B	758918
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	9012B	758918
MB 460-758918/2-A	Method Blank	Total/NA	Solid	9012B	758918

General Chemistry (Continued)

Analysis Batch: 759149 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSSRM 460-758918/3-A ^2	Lab Control Sample	Total/NA	Solid	9012B	758918

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(77-145)	(79-125)	(48-150)	(80-120)
160-40623-4	HTCRV2-WC01-0612-01	90	109	88	98
160-40623-5	HTCRV2-WC02-0612-01	92	107	86	95
160-40623-6	HTCRV2-WC02-0612-02	96	109	90	97
LB3 460-756870/2-A	Method Blank	90	111	91	100
LCS 460-756830/4	Lab Control Sample	86	101	88	96
LCSD 460-756830/10	Lab Control Sample Dup	89	104	88	99
MB 460-756830/8	Method Blank	88	110	90	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHL	TBP
Lab Sample ID	Client Sample ID	(25-104)	(18-106)	(19-105)	(26-101)	(25-127)	(10-123)
160-40623-4	HTCRV2-WC01-0612-01	70	69	69	68	84	65
160-40623-5	HTCRV2-WC02-0612-01	70	71	69	70	84	67
160-40623-6	HTCRV2-WC02-0612-02	79	79	78	77	93	75
LCS 460-757132/2-A	Lab Control Sample	85	86	85	87	87	94
LCSD 460-757132/3-A	Lab Control Sample Dup	85	87	85	90	89	94
MB 460-757132/1-A	Method Blank	83	82	83	85	92	87

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1	TCX2
Lab Sample ID	Client Sample ID	(28-148)	(34-118)
160-40623-4	HTCRV2-WC01-0612-01	65	60
MB 460-757019/1-A	Method Blank	109	101

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1	TCX1
Lab Sample ID	Client Sample ID	(28-148)	(34-118)
160-40623-5	HTCRV2-WC02-0612-01	92	78
160-40623-6	HTCRV2-WC02-0612-02	92	81
LCS 460-757019/2-A	Lab Control Sample	93	81
LCSD 460-757019/3-A	Lab Control Sample Dup	85	81

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1	TCX2
Lab Sample ID	Client Sample ID	(10-150)	(58-145)
160-40623-4	HTCRV2-WC01-0612-01	64	62
160-40623-6	HTCRV2-WC02-0612-02	107	95
LCS 460-757020/2-A	Lab Control Sample	132	115
LCSD 460-757020/3-A	Lab Control Sample Dup	129	108
MB 460-757020/1-A	Method Blank	144	132

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCBP2	TCX2
Lab Sample ID	Client Sample ID	(10-150)	(58-145)
160-40623-5	HTCRV2-WC02-0612-01	111	106

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCPAA2
Lab Sample ID	Client Sample ID	(30-150)
160-40623-4	HTCRV2-WC01-0612-01	133
160-40623-4 MS	HTCRV2-WC01-0612-01	171 S1+
160-40623-4 MSD	HTCRV2-WC01-0612-01	160 S1+
160-40623-5	HTCRV2-WC02-0612-01	74

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Surrogate Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-3

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**DCPAA1 (30-150)**							
160-40623-6	HTCRV2-WC02-0612-02	114							
LCS 460-757167/2-A	Lab Control Sample	131							
LCSD 460-757167/3-A	Lab Control Sample Dup	130							
MB 460-757167/1-A	Method Blank	119							

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

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SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

START V-02-F-0069

TRANSMITTAL MEMO

To:	Mr. Peter Lisichenko, On-Scene Coordinator Superfund and Emergency Management Division U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer START V, Region II
Subject:	Holy Trinity Cemetery Site Data Validation Assessment
Date:	March 17, 2021

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

Full TAL and Herbicides	1 Sample
Full TCLP & RCRA Characteristics	5 Samples

- Matrices and Number of Samples

Soil/Rock/Slag	5 Samples
Aqueous/Rinsate Blank	1 Sample

- Sampling Date: December 11, 2020

The final data assessment narrative and original analytical data package are attached.

cc:	START V SPM:	Bernard Nwosu
	START V SITE FILE TD #:	TO-0036-0021
	START V ANALYTICAL TD #:	TO-0036-0089
	TASK#:	2089

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **March 17, 2021**

TO: **Mr. Peter Lisichenko**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
START V Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to the U.S. Environmental Protection Agency, Region II (EPA) standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Holding Time
Instrument Tuning	Calibration, Initial
Internal Standard	Calibration, Continuing
Blanks	MS/MSD
Laboratory Control Sample	Field Duplicate
Surrogate Recovery	Sample Quantification
Compound Identification	ICP Serial Dilution

Summary of Results

	TAL/TCLP VOCs	TAL/TCLP SVOCs	TAL/TCLP Pesticides	TAL PCBs	Herbicides/ TCLP Herbicides	TAL/TCLP Metals & RCRA
Acceptable as Submitted						
Acceptable with Comments	X	X	X	X	X	X
Unacceptable, Action Pending						
Unacceptable						

Data Reviewed by: Smita Sumbaly Date: 03/17/2021

Approved By: Date: 03/17/2021

Area Code/Phone No.: (732) 585-4410

NARRATIVE

TASK No/RFP No.: 2089/636

SITE NAME: Holy Trinity Cemetery Site
Lewiston
Niagara County
New York

Laboratory Name: Eurofins TestAmerica, 13715 Rider Trail North, Earth City, Missouri (TestAmerica-MO).

INTRODUCTION:

The laboratory's portion of this case consisted of one rinsate blank sample, for target analyte list (TAL) volatile organic compounds (VOCs), TAL semivolatile organic compounds (SVOCs), TAL polychlorinated biphenyls (PCBs), TAL metals, including mercury and cyanide, and herbicides, analyses; and five soil/rock/slag samples, including two field duplicates, for Resource Conservation and Recovery Act (RCRA) characteristics; and toxicity characteristic leaching procedure (TCLP) VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, and TCLP metals plus mercury, analyses. All samples were collected on December 1, 2020. The TestAmerica-MO job number is 160-40623-1.

Note: As per chain-of-custody (COC) records, three soil/rock/slag samples, including one field duplicate, were requested for TAL: VOCs, SVOC, pesticides, PCBs, metals, including mercury and cyanide, and herbicides, analyses; one rinsate blank was requested for TAL: VOCs, SVOCs, PCBs, metals, including mercury and cyanide; and herbicides, analyses; and two soil/rock/slag samples, including one field duplicate were requested for RCRA characteristics, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, and TCLP metals plus mercury, analyses. Laboratory incorrectly logged all samples and analyzed all five soil/rock/slag samples for full TCLP fractions and one rinsate blank for full TAL fractions, excluding TAL pesticides.

Additionally, as per COC, matrix spike/matrix spike duplicate (MS/MSD analyses were requested on sample HTCRV2-COMP-0612-01 for full TCLP fraction and on sample a HTCRV2-WC02-0612-01 for TAL fraction. MS/MSD analyses was not performed on either sample; for some fractions lab used different batch of sample for MS/MSD and indicated so in case narrative. Data reviewer contacted the laboratory for MS/MSD analyses and was informed that laboratory failed to login the analyses as indicated in COC.

The laboratory reported No problems with analyses of Full TAL (VOCs/SVOCs/pesticides/PCBs/TAL metals, mercury, cyanide and herbicides), Full TCLP (VOCs/SVOCs/pesticides/herbicides, metals + mercury), and RCRA characteristics.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Any statistical measures used to support the following conclusions are attached so that the information may be reviewed by others.

Organic:

Y Holding Time	NA MS/MSD
Y Compound ID (HSL, TIC)	Y Calibration, Initial
Y Calibration, Continuing	Y Standards
Y Blank	Y Chromatography
Y Surrogate Recovery	Y Data Completeness
Y Laboratory Control Sample	

Comments:

1. Refer to Data Assessment Narrative.

Inorganic:

Y Data Completeness	Y Holding Time
Y Calibration, Initial	NA Matrix Spike
Y Calibration, Continuing	NA Laboratory Duplicate
Y Blanks	NA ICP Interference Check
Y Laboratory Control Sample	Y Serial Dilution
Y Field Duplicate	

Comments: Refer to Data Assessment Narrative.

REGION II START V DATA ASSESSMENT REPORT

SITE: Holy Trinity Cemetery Site

Lab Order No.: 160-40623-1

No. of Samples/Matrix: 5 - Soil/Rock/Slag, 1/Aqueous (Rinsate Blank)

LAB: Eurofins TestAmerica, 13715 Rider Trail North, Earth City, Missouri (TestAmerica-MO).

ANALYSIS: Target Analyte List (TAL) Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (SVOCs), TAL Pesticides (PESTs), TAL Polychlorinated Biphenyls (PCBs), Herbicides, and TAL Metals, Mercury, & Cyanide; and Resource Conservation and Recovery Act (RCRA) Characteristics; and Toxicity Characteristic Leaching Procedure (TCLP) VOCs, TCLP SVOCs, TCLP Pesticides, TCLP Herbicides, and TCLP Metals plus Mercury.

CONTRACTOR: Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V)

The following table summarizes the analytical methods used for the requested analyses and the U.S. Environmental Protection Agency; Region II (EPA) data validation standard operating procedures (SOPs) used for data validation.

Analysis	Analytical Method	Data Validation SOP No.
TAL SVOCs & TCLP SVOCs	SW-846 Method 8270D	HW-22 (Revision 5), December 2010
TAL Pesticides & TCLP Pesticides	SW-846 Method 8081B	HW-44 (Revision 1.1), December 2010
TAL PCBs	SW-846 Method 8082A	HW-45 (Revision 1.1), December 2010
Herbicides & TCLP Herbicides	SW-846 Method 8151A	HW-17 (Revision 3.1), December 2010
TAL Metals plus Mercury and Cyanide, and TCLP Metals plus Mercury	SW-846 Method 6010D/7470A/9012B	SOP No. HW-3a/3c (Revision 1), December 2016 & Analytical Methods.
RCRA Characteristics	SW-846 Methods 9014, 9034, 1030, 9045	Laboratory provided QC criteria and analytical methods

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various quality control (QC) problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident, and the reported analyte concentration is unreliable.

Reviewer
Signature: **Smita Sumbaly** **Date:** 03/17/2021

Verified By: Bernard Nwosu **Date:** 03/ 17 /2021

On December 1, 2020, EPA and START V sampling personnel collected three soil/rock/slag samples, including one field duplicate, for TAL VOCs, TAL SVOCs, TAL pesticides, TAL PCBs, herbicides, and TAL metals including mercury, and cyanide, analyses; one rinsate blank for TAL SVOCs, TAL PCBs, TAL metals, including mercury and cyanide; and herbicides, analyses; and two soil/rock/slag samples, including one field duplicate, for RCRA characteristics, TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, and TCLP metals plus mercury analyses. All the samples were collected from the Holy Trinity Cemetery Site, located in Lewiston, Niagara County, New York. The samples were shipped by START V personnel to Eurofins TestAmerica (St. Louis) Laboratory located at 13715 Rider Trail North, Earth City, Missouri (TestAmerica-MO). The laboratory verified that samples were received intact, properly sealed, and refrigerated. Sample coolers temperature measured at 1.6 and 11.4 degree Celsius (^{o}C), respectively.

Note: Laboratory logged all samples incorrectly and analyzed all five soil/rock/slag samples for TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals and mercury; and analyzed one aqueous rinsate blank for TAL VOCs, SVOCs, TAL PCBs, herbicides, and TAL metals including mercury, and cyanide.

Field Sample ID	Lab Sample ID	Matrix	Analysis	Sampling Date
Sample Delivery Group No. 160-40623-1				
HTCRV2-COMP-0612-01	160-40623-1	Soil/Rock/Slag	Full TCLP & RCRA Characteristics	12/01/2020
HTCRV2-COMP-0612-02[1]	160-40623-2	Soil/Rock/Slag	Full TCLP & RCRA Characteristics	12/01/2020
HTCRV2-RB-120120	160-40623-3	Water	Full TAL, except Pesticides	12/01/2020
HTCRV2-WC01-0612-01	160-40623-4	Soil/Rock/Slag	Full TCLP & RCRA Characteristics	12/01/2020
HTCRV2-WC02-0612-01	160-40623-5	Soil/Rock/Slag	Full TCLP & RCRA Characteristics	12/01/2020
HTCRV2-WC02-0612-02[2]	160-40623-6	Soil/Rock/Slag	Full TCLP & RCRA Characteristics	12/01/2020

[1] A field duplicate of sample HTCRV2-COMP-0612-01
[2] A field duplicate of sample HTCRV2-WC02-0612-01
Full TCLP includes, TCLP VOCs, TCLP SVOCs, TCLP Pesticides, TCLP Herbicides, and TCLP Metals plus Hg
Full TAL includes, TAL VOCs, TAL SVOCs, TAL PCBs, Herbicides, and TAL Metals plus Hg and CN
Hg; Mercury CN: Cyanide

DATA ASSESSMENT

ANALYSIS: TAL VOC, TCLP VOC

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

TAL VOCs: No problems were found for this criterion.

TCLP VOCs: No problems were found for this criterion.

2. SURROGATE COMPOUNDS
All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured recovery limits were outside laboratory in-house control limits, qualifications were applied as per HW-24 (Revision 4), October 2014 to sample analytes as shown below.

TAL VOCs: No problems were found for this criterion.

TCLP VOCs: The recovery of the surrogate compound 4-bromofluorobenzene exceeded laboratory control limit in the analysis of sample HTCRV2-COMP-0612-01. Since all analytes were not detected in sample HTCRV2-COMP-0612-01, no action was required.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to sample analytes as shown below.

The laboratory conducted a full list spike for MS/MSD sample DUNR-TS001-01 and compared the recoveries to in-house recovery limits.

TAL VOCs: There was no MS/MSD analyses associated with the rinsate blank.

TCLP VOCs: Not Analyzed.

4. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per HW-24 (Revision 4), October 2014.

A) Method blank contamination:

TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

B) Field or rinse blank contamination:

TAL VOCs: Rinsate blank HTCRV2-RB-120120 was free of all contaminants and met criterion.

C) Trip blank contamination for Volatile Organic Analysis (VOA) aqueous samples:

Not applicable.

D) Lab Blank associated with VOA samples only:

No problems were found for this criterion.

E) Tentatively Identified Compounds (TICs):

TICs were not identified for VOA samples. Therefore, TICs were not reported for VOA samples on Form Is.

5. MASS SPECTROMETER TUNING:
Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB). If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:
The response factor measures the instrument's response to specific chemical compounds. All analytes for initial and continuing calibration should meet the minimum relative response factor (RRF) criteria as listed in Method 8260C. If RRF is less than minimum requirement for any target analyte, the undetected analyte will be rejected (R) and the positive result estimated (J) for sample(s) associated the non-compliant calibration.

TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):
Percent RSD is calculated for the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration verification (CCV) standard to the mean RRF from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be $\leq$20 for all target analytes. For the opening or closing CCV, %D must be $\leq$20 for all target analytes. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, positive results are flagged as estimated (J) and non-detects (UJ) for %D values outside criteria. If %RSD exceeds QC criteria, positive results

may be estimated (J) and use professional judgment to qualify non-detects. Qualifications were applied to the sample analytes as shown below.

TCLP VOCs: In the subsequent CCVs based on average response factor (ARF) or continuing calibration response factor (CCRF), the %D was greater than (>)20% for carbon tetrachloride (analyzed on 12/09/2020@10:03). Since none of the samples were associated with this CCV, no action was required.

TAL VOCs: No problems were found for this criterion.

7. INTERNAL STANDARDS PERFORMANCE GC/MS:
Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range of -50% to 100% of the associated continuing calibration internal standard area. The retention time of the internal standards must be within ± 0.5 minute of that in the associated CCV. If the area count is greater than the control limit, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the control limit, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time was not within the control limits, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample analysis. Qualifications were applied to sample analytes as shown below.

TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

8. FIELD DUPLICATES:

TAL VOCs: Not Applicable

TCLP VOCs: For TCLP VOCs, samples HTCRV2-COMP-0612-01 and HTCRV2-COMP-0612-02 were used for duplicate analysis which yielded comparable results.

For TCLP VOCs, samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were used for duplicate analysis which yielded comparable results.

9. COMPOUND IDENTIFICATION:
Target compounds are identified on the GC/MS by using the analyte relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have an ion spectrum which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

TAL VOCs: Target analytes were not detected in any samples.
TCLP VOCs: Target analytes were not detected in any samples.

10. METHOD NON-COMPLIANCE:

None.

12. OTHER PROBLEMS:

TCLP VOCs: LCS and LCSD recoveries in analytical batch 460-745491 yielded percent recoveries greater than upper QC limits for carbon tetrachloride. Since associated samples were not detected, data qualification was not required.

Laboratory indicated in the case narrative that, samples HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02 required 10 times (10x) dilution prior to analysis. The reporting limits were adjusted accordingly.

Rinsate blank for VOCs analysis was submitted to the laboratory; however, the Site Project Manager (SPM) failed to include the rinsate blank in the chain of custody. Laboratory was informed via email to perform the VOCs analysis for the rinsate blank.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following sample results were reported from a re-analysis.

None

ANALYSIS: TAL SVOC, TCLP SVOC

1. HOLDING TIME:
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

2. SURROGATE COMPOUNDS
All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured recovery limits were outside laboratory in-house control limits, qualifications were applied as per HW-22 (Revision 5), December 2010 to sample analytes as shown below.

TAL SVOCs: All surrogate compound recoveries were within control limits. No action was required.

TCLP SVOCs: All surrogate compound recoveries were within control limits. No action was required.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: There was no MS/MSD analyses associated with the rinsate blank.
TCLP SVOCs: Not Analyzed.

4. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per HW-22 (Revision 5), December 2010.

A) Method blank contamination:

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

B) Field or rinse blank contamination:

TAL SVOCs: Rinsate blank HTCRV2-RB-120120 was free of all contaminants and met criterion.
TCLP SVOCs: Not Applicable

C) Tentatively Identified Compounds:
TICs were not identified for SVOA samples. Therefore, TICs were not reported for SVOA samples on Form Is.

5. MASS SPECTROMETER TUNING:
Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for Semi-volatiles is decafluorotriphenylphosphine (DFTPP). If the mass calibration is in error, all associated data will be classified as unusable "R".

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:
The response factor measures the instrument's response to specific chemical compounds. All analytes for initial and continuing calibration should meet the minimum relative response factor (RRF) criteria as specified in Method 8270C. If the mean RRF failed the minimum requirement for any target analytes, use professional judgment to qualify positive result as estimated (J+) or rejected (R). All non-detects for that compound will be rejected (R). Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):
Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean relative response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be ≤20% for all target analytes. For the opening or closing continuing calibration verification (CCV), %D must be ≤20 for all target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated (J) and non-detects (UJ) for %D values outside criteria only. If %RSD exceeds 20, positive results may be estimated (J) and use professional judgment to qualify non-detects. Qualifications were applied to the sample analytes as shown below. Alternately, if the laboratory used a first or second order regression fit of the calibration curve and the r ≥ 0.99, then no data validation qualifiers are applied.

TAL SVOCs: In the subsequent CCVs based on average response factor (ARF) or continuing calibration response factor (CCRF), the %D was >20% (analyzed on 12/06/2020@18:00) for benzaldehyde, 2-2'-oxybis(1-chloropropane), 2,4-Dinitrotoluene, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol, atrazine, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Associated non-detected benzaldehyde, 2-2'-oxybis(1-chloropropane), 2,4-Dinitrotoluene, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol, atrazine, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene are qualified UJ in sample HTCRV2-RB-120120.

TCLP SVOCs: In the subsequent CCVs based on ARF or CCRF, the %D was was >20% (analyzed on 12/16/2020@15:34) for 2,4-Dinitrotoluene. Associated non-detected 2,4-Dinitrotoluene is qualified UJ in samples HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

7. INTERNAL STANDARDS PERFORMANCE GC/MS:
Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the

range of -50% to 100% of the associated continuing calibration internal standard area. The retention time of the internal standards must be within ± 0.5 minute of that in the associated CCV. If the area count is greater than the control limit, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the control limit, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time was not within the control limits, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample analysis. Qualifications were applied to sample analytes as shown below.

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

8. FIELD DUPLICATES:

TAL SVOCs: Not Applicable

TCLP SVOCs: For TCLP VOCs, samples HTCRV2-COMP-0612-01 and HTCRV2-COMP-0612-02 were used for duplicate analysis which yielded comparable results.

For TCLP SVOCs, samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were used for duplicate analysis which yielded comparable results.

9. COMPOUND IDENTIFICATION:
Target compounds are identified on the GC/MS by using the analyte relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have an ion spectrum which has a ratio of the primary and secondary m/z intensities within 15% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: Target analytes were not detected in any samples.
TCLP SVOCs: Target analytes were not detected in any samples.

10. METHOD NON-COMPLIANCE:

None

11. OTHER PROBLEMS:

TAL SVOCs: LCS and LCSD recoveries in analytical batches 460-744813 and 460-744876 yielded percent recoveries greater than upper QC limits for atrazine. Since atrazine was not detected in associated sample HTCRV2-RB-120120, data qualification was not required.

TCLP SVOCs: LCS and LCSD recoveries in analytical batches 460-747369-2A and 460-747369-3A yielded %R within the QC limits, data qualification was not required.

All soil/rock/slag samples were received with cooler temperature measuring 11.4ºC; all TCLP SVOCs results were estimated for positive results (J) and non-detects (UJ) in samples HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-RB-120120, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

2,4-Dinitrotoluene was previously qualified due to calibration QC criteria in TCLP SVOC fraction, therefore, no further action was required.

13. DILUTIONS, RE-EXTRACTIONS and REANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following sample results were reported from a dilution analysis.

None

ANALYSIS: TAL PESTICIDES, TCLP PESTICIDES

1. HOLDING TIME:
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits) if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides No problems were found for this criterion.

2. SURROGATES
All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery was outside the laboratory in-house control limits, qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides: No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides: Not Analyzed.

4. LABORATORY CONTROL SAMPLE (LCS) RECOVERY:
LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides: LCS and LCSD recoveries in analytical batches 460-747373/2-A and 60-747373/3-A yielded %R within the QC limits, data qualification was not required.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

A) Method/Instrument blank contamination:

TCLP Pesticides: No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Initial Calibration: For pesticide analysis, the relative standard deviation (RSD) must be ≤20%. If the RSD exceeds 20% for any analyte, qualify all associated positive results as estimated (J) and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides: No problems were found for this criterion.

B) Continuing Calibration Verification (CCV): The percent difference (%D) between the calibration factor (CF) for each of the analytes in the CCV and the mean calibration factor from the initial calibration must be greater than or equal to -20% and less than or equal to 20%. If the absolute value of %D is >20, the associated positive result will be qualified as estimated (J) and the associated non-detected result will be estimated (UJ). Qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides: No problems were found for this criterion.

7. FIELD DUPLICATES:

TCLP Pesticides: For TCLP Pesticides, samples HTCRV2-COMP-0612-01 and HTCRV2-COMP-0612-02 were used for duplicate analysis which yielded comparable results.

For TCLP Pesticides, samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were used for duplicate analysis which yielded comparable results.

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ug/mL in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

TCLP Pesticides: Target analytes were not detected in any samples.

9. METHOD NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

All soil/rock/slag samples were received with cooler temperature measuring 11.4ºC; all TCLP Pesticides results were estimated for positive results (J) and non-detects (UJ) in samples HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-RB-120120, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

11. OTHERS:

TCLP Pesticides: No problems were found for this criterion.

12. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following sample results were reported from a re-analysis.

None

ANALYSIS: PCB

1. HOLDING TIME:
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

2. SURROGATES:
All samples are spiked with a surrogate compound prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside the laboratory QC limits, qualifications were applied to samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: Not Applicable

4. Laboratory Control Samples (LCS):
LCS data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

TAL PCBs: No problems were found for this criterion.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects U. Qualifications were applied to the samples and analytes as shown below.

A) Method blank contamination:

TAL PCBs: No problems were found for this criterion.

B) Field or rinse blank contamination:

TAL PCBs: Not applicable.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD):
For Aroclor analysis, if RSD exceeds 20%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

B) Percent Difference (%D):
For initial calibration verification (ICV), if the %D exceeds 30 for any analytes, estimate (J) all associated positive results and use professional judgment to qualify non-detects. For opening continuing calibration verification (CCV) or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 20 for any analytes, qualify all associated positive results "J" and non-detects "UJ". For closing CCV, if %D exceeds 20% for any analytes, qualify all associated positive results "J" and non-detects "UJ". Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

7. FIELD DUPLICATES:

TAL PCBs: Not Applicable

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: Target analytes were not detected in any samples.

9. METHOD NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

TAL PCBs: No problems were found for this criterion.

11. OTHER PROBLEMS:

None

12. DILUTIONS, RE-EXTRACTIONS & RE-ANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following samples were re-analyzed. Data reviewer used the original samples for reporting purpose.

None

ANALYSIS: HERBICIDES, TCLP HERBICIDES

1. HOLDING TIME:
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "UJ", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

Herbicides: No problems were found for this criterion.
TCLP Herbicides: No problems were found for this criterion.

2. SURROGATES:
All samples are spiked with a surrogate compound prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside the laboratory QC limits of 43 – 172%, qualifications were applied to samples and analytes as shown below.

Herbicides: No problems were found for this criterion.
TCLP Herbicides: No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Herbicides: There was no MS/MSD analyses associated with the aqueous/rinsate blank sample.
TCLP herbicides: Not Analyzed.

4. LABORATORY CONTROL SAMPLES (LCS):
The LCS data provide information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

Herbicides: No problems were found for this criterion.
TCLP Herbicides: No problems were found for this criterion.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects (U). Qualifications were applied to the samples and analytes as shown below.
A) Method blank contamination:

Herbicide: Target analytes were not detected.

TCLP Herbicides: Target analytes were not detected.

B) Field or rinse blank contamination:

Herbicides: Rinsate blank HTCRV2-RB-120120 was free of all contaminants and met criterion.
TCLP Herbicides: Not Applicable

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD):
For herbicide analysis, if %RSD exceeds 20% for any analytes, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

Herbicides: No problems were found for this criterion.
TCLP Herbicides: No problems were found for this criterion.

B) Percent Difference (%D):
For initial calibration verification (ICV), if the %D exceeds 30% for any analytes, estimate (J) all associated positive results and use professional judgment to qualify non-detects. For opening continuing calibration verification (CCV) or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 20% for any analytes, qualify all associated positive results "J" and non-detects "UJ". For closing CCV, if %D exceeds 25% for any analytes, qualify all associated positive results "J" and non-detects "UJ". Qualifications were applied to the samples and analytes as shown below.

Herbicides: No problems were found with the ICVs or CCVs.
TCLP Herbicides: No problems were found with the ICVs or CCVs.

7. FIELD DUPLICATES:
Field duplicates may be taken and analyzed as an indication of overall precision. This analysis measures both field and laboratory precision. A control limit of 50% for the RPD was used for original and duplicate sample values. For field duplicate analysis that did not meet the technical criteria, the action was applied to only the field sample and its duplicate.

Herbicides: Not Applicable

TCLP Herbicides: For TCLP Herbicides, samples HTCRV2-COMP-0612-01 and HTCRV2-COMP-0612-02 were used for duplicate analysis which yielded comparable results.

For TCLP Herbicides, samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were used for duplicate analysis which yielded comparable results.

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns. Qualifications were applied to the samples and analytes as shown below.

Herbicides: Target analytes were not detected in any samples.
TCLP Herbicides: Target analytes were not detected in any samples.

9. METHOD NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

None

11. OTHER PROBLEMS:

All soil/rock/slag samples were received with cooler temperature measuring 11.4ºC; all TCLP Herbicide results were estimated for positive results (J) and non-detects (UJ) in samples HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-RB-120120, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

12. DILUTIONS, RE-EXTRACTIONS & RE-ANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following samples were re-analyzed. Data reviewer used the original samples for reporting purpose.

None

ANALYSIS: TAL METALS plus MERCURY, TCLP Metals plus Mercury

The current SOPs HW-3A (Revision 0) July 2015, USEPA Region II for the evaluation of metals data generated through Statement of Work ISM02.2, and the National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (based on SOW02.4) were followed for data qualifications.

1. HOLDING TIME AND PRESERVATION
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples) is not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding times (180 days for metals, 28 days for mercury, and 14 days for cyanide) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R".

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals, mercury, and cyanide. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the contract required quantitation limit (CRQL). The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL.

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution. The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%.

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks including initial calibration blank (ICB) and continuing calibration blank (CCB) are used to ensure a stable instrument baseline before and during sample analysis. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

TAL Metals: Calcium, iron, magnesium, and lead analytes have results greater than or equal (≥) method detection limits (MDLs) and less than or equal to (≤) CRQL in rinsate blank HTCRV2-RB-120120. Since no samples were associated with rinsate blank, no action was taken.

TCLP Metals: No problems were found for this criterion.

4. INTERFERENCE CHECK SAMPLE

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of aluminum, calcium, iron, and magnesium in the sample are found to be less than or equal to their respective concentrations in the ICS.

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike percent recovery (%R) shall be within the established acceptance limits of 75 – 125% or lab established QC limits. However, spike recovery limits do not apply when the sample concentration is ≥ four times (4x) the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

TAL Metals: Laboratory indicated in case narrative that calcium, iron, manganese, and sodium failed the MS recoveries below the QC criteria. The MS analysis was performed on sample 460-224225-1 in batch 460-746597, unrelated to this project, no action required.

TCLP Metals: Not applicable.

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (aqueous) and/or 35% (solid) for the relative percent difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the CRQL. A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

TAL Metals: The lab duplicate analysis was performed on sample 460-224225-1, unrelated to this project. Relative percent difference (RPD) exceeded the QC criteria for lead, no action required.

TCLP Metals: Not applicable.

7. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 50% for the RPD shall be used for original and duplicate sample values ≥ five times (5x) the CRQL. A control limit of two times the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

For TCLP Metals, samples HTCRV2-COMP-0612-01 and HTCRV2-COMP-0612-02 were used for duplicate analysis which yielded comparable results.

For TCLP Metals, samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were used for duplicate analysis which yielded comparable results.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS %R must fall within the control limits of 70-130%, except for antimony and silver which must fall within the control limits of 50-150%.

TAL and TCLP Metals: No problems were found for this criterion in all analyses.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by inductively coupled plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 25 times (25x) the CRQL], the difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15% (10% for aqueous sample). For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

TAL Metals: Not Applicable
Mercury: No problems were found for this criterion in all analyses.
TCLP Metals: Not Applicable.

10. METHOD NON-COMPLIANCE:

TAL Metals: No problems were identified.
TCLP Metals: No problems were identified.

11. FIELD DOCUMENTATION:

TAL and TCLP Metals: No problems were identified.

12. OTHER PROBLEMS:

Samples HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02 were diluted 5x prior to analysis. The reporting limits were adjusted accordingly.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report and the other report is marked as not to be used. The following sample results were reported from a dilution analysis.

None

Cyanide, RCRA Characteristics:

Total Cyanide: No qualification was required; data is acceptable as reported.

Total Cyanide: Laboratory indicated in case narrative that cyanide failed the MS recoveries above the QC criteria. The MS analysis was performed on sample 460-223902-3 in batch 460-746908, unrelated to this project, no action required.

RCRA Characteristics:

A) Reactive Cyanide: For all five soil/rock/slag samples, concentrations of reactive cyanide were reported below the MDL.

B) Reactive Sulfide: Four soil/rock/slag samples, concentrations of reactive sulfide were reported below the MDL and for sample HTCRV2-WC02-0612-01, reactive sulfide was reported at 22 mg/kg.

C) Corrosivity (as pH): For all the all five soil/rock/slag samples, corrosivity values were reported between 10.0 to 10.6 pH units.

Corrosivity as pH: All five soil/rock/slag samples were qualified as estimated "J" due to exceeding holding time criteria: Samples were collected on December 1, 2020 and analyzed on December 17, 2020.

Corrosivity as pH: “J” – HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

D) Ignitability: All five soil/rock/slag samples did not flash up to 200-degree Fahrenheit (^{0}F).

OTHERS:

pH: Due to holding time non-compliance, the laboratory qualified the associated analyte with HF qualifier. The data reviewer removed the HF qualifier from the Form I and initialed the changes.

OTHER PROBLEMS _ ALL FRACTIONS:

Laboratory logged all samples incorrectly and analyzed all five soil/rock/slag samples for TCLP VOCs, TCLP SVOCS, TCLP Pesticides, TCLP Herbicides, TCLP Metals and Mercury; and one aqueous rinsate blank sample for TAL VOC, SVOC, TAL pesticides, TAL PCBs, herbicides, and TAL metals including mercury, and cyanide, analyses. Data reviewer contacted the laboratory for this discrepancy and notified Site Project Manager (SPM) and EPA On-Scene Coordinators (OSC). As per SPM and OSC's instruction, data reviewer notified the laboratory to analyze three soil/rock/slag samples for TAL VOC, SVOC, TAL pesticides, TAL PCBs, herbicides, and TAL metals including mercury, and cyanide, analyses.

As per chain-of-custody records, MS/MSD analyses were requested on sample HTCRV2-COMP-0612-01 for full TCLP fraction and on sample HTCRV2-WC02-0612-01 for TAL fraction. MS/MSD analyses were not performed on either sample; for some fractions lab used different batch of sample for MS/MSD and indicated so in case narrative. Data reviewer contacted the laboratory for MS/MSD analyses and was informed that laboratory failed to log in the analyses as indicated in COC.

Laboratory indicated in case narrative that, vials, encores, and 1-liter amber glass containers were received within acceptable temperature criteria; however, the other containers associated with samples were received by the laboratory at a temperature of 11.4 ºC, which is outside the required temperature criteria. HTCRV2-COMP-0612-01, HTCRV2-COMP-0612-02, HTCRV2-RB-120120, HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

TCLP Analytes Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 01, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	HTCRV2-COMP-0612-01	HTCRV2-COMP-0612-02[1]	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02[2]
Lab sample ID No.:	160-40623-1	160-40623-2	160-40623-4	160-40623-5	160-40623-6
TCLP Volatiles	mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor	1	1	1	1	1
1,1-Dichloroethene	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U
1,2-Dichloroethane	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U
1,4-Dichlorobenzene	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U
2-Butanone (MEK)	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
Benzene	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon tetrachloride	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U
Chlorobenzene	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U
Chloroform	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U
Tetrachloroethene	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Trichloroethene	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U
Vinyl chloride	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
TCLP SemiVolatiles	mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor	1	1	1	1	1
1,4-Dichlorobenzene	0.0004 UJ	0.0004 UJ	0.0004 UJ	0.0004 UJ	0.0004 UJ
2,4,5-Trichlorophenol	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 UJ
2,4,6-Trichlorophenol	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 UJ
2,4-Dinitrotoluene	0.001 UJ	0.001 UJ	0.001 UJ	0.001 UJ	0.001 UJ
2-Methylphenol	0.0006 UJ	0.0006 UJ	0.0006 UJ	0.0006 UJ	0.0006 UJ
3+4-Methylphenols	0.0006 UJ	0.0006 UJ	0.0006 UJ	0.0006 UJ	0.0006 UJ
Hexachlorobenzene	0.0004 UJ	0.0004 UJ	0.0004 UJ	0.0004 UJ	0.0004 UJ
Hexachlorobutadiene	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 UJ
Hexachloroethane	0.0012 UJ	0.0012 UJ	0.0012 UJ	0.0012 UJ	0.0012 UJ
Nitrobenzene	0.0006 UJ	0.0006 UJ	0.0006 UJ	0.0006 UJ	0.0006 UJ
Pentachlorophenol	0.0014 UJ	0.0014 UJ	0.0014 UJ	0.0014 UJ	0.0014 UJ
Pyridine	0.0019 UJ	0.0019 UJ	0.0019 UJ	0.0019 UJ	0.0019 UJ
TCLP Pesticides	mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor	1	1	1	1	1
Chlordane	0.000055 UJ	0.000055 UJ	0.000055 UJ	0.000055 UJ	0.000055 UJ
Endrin	0.000004 UJ	0.000004 UJ	0.000004 UJ	0.000004 UJ	0.000004 UJ
gamma-BHC (Lindane)	0.000012 UJ	0.000012 UJ	0.000012 UJ	0.000012 UJ	0.000012 UJ
Heptachlor	0.000003 UJ	0.000003 UJ	0.000003 UJ	0.000003 UJ	0.000003 UJ
Heptachlor epoxide	0.000005 UJ	0.000005 UJ	0.000005 UJ	0.000005 UJ	0.000005 UJ
Methoxychlor	0.000004 UJ	0.000004 UJ	0.000004 UJ	0.000004 UJ	0.000004 UJ
Toxaphene	0.00011 UJ	0.00011 UJ	0.00011 UJ	0.00011 UJ	0.00011 UJ
TCLP Herbicides	mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor	1	1	1	1	1
2,4-D	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ
2,4,5-TP (Silvex)	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ	0.083 UJ

[1] A field duplicate of sample HTCRV2-COMP-0612-01
[2] A field duplicate of sample HTCRV2-WC02-0612-01
TCLP: Toxicity Characteristic Leaching Procedure
U: Not Detected
J: Estimated Result
mg/L: Milligrams per liter

TCLP Metals and RCRA Characteristics Analytes Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
START V Sample No.:	**HTCRV2-COMP-0612-01**	**HTCRV2-COMP-0612-02[1]**	**HTCRV2-WC01-0612-01**	**HTCRV2-WC02-0612-01**	**HTCRV2-WC02-0612-02[2]**
Lab sample ID No.:	**160-40623-1**	**160-40623-2**	**160-40623-4**	**160-40623-5**	**160-40623-6**
Dilution Factor	**1**	**1**	**1**	**1**	**1**
TCLP Metals					
Arsenic	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Barium	**0.15 J**	**0.22 J**	**0.3 J**	**0.099 J**	**0.08 J**
Cadmium	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Chromium	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Lead	**0.059**	**0.053**	**0.066**	**0.044 J**	**0.04 J**
Selenium	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U
Silver	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U
Mercury	0.0002 U	0.0002 U	**0.00026**	0.0002 U	**0.00031**
RCRA Characteristics					
Burn Rate (mm/sec)	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Cyanide, Reactive (mg/kg)	25 U	25 U	25 U	25 U	25 U
Sulfide, Reactive (mg/kg)	20 U	20 U	20 U	**22**	20 U
Corrosivity (SU)	**10.4 J**	**10.1 J**	**10 J**	**10.2 J**	**10.6 J**
pH (SU)	**10.4 J**	**10.1 J**	**10 J**	**10.2 J**	**10.6 J**

[1] A field duplicate of sample HTCRV2-COMP-0612-01

[2] A field duplicate of sample HTCRV2-WC02-0612-01

TCLP: Toxicity Characteristic Leaching Procedure

U: Not Detected

J: Estimated Result

mg/L: Milligrams per liter

mg/kg: milligrams per kilogram

SU: standard unit

mm/sec: millimeters per second

RCRA: Resource Conservation and Recovery Act

TAL Metals, Mercury, and Cyanide Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	Rinsate
START V Sample No.:	HTCRV2-RB-120120
Lab sample ID No.:	160-40623-3
Dilution Factor	1
TAL METALS by SW-846 Method 6010D (ug/L)	
Aluminum	8 U
Antimony	0.76 U
Arsenic	0.89 U
Barium	0.91 U
Beryllium	0.098 U
Cadmium	0.16 U
Calcium	**88 J**
Chromium	0.69 U
Cobalt	0.26 U
Copper	2.5 U
Iron	**13 J**
Lead	**0.29 J**
Magnesium	**20 J**
Manganese	1.1 U
Nickel	0.45 U
Potassium	110 U
Selenium	0.46 U
Silver	0.19 U
Sodium	210 U
Thallium	0.17 U
Vanadium	0.37 U
Zinc	5.1 U
Mercury by SW-846 Method 7470A (ug/L)	
Mercury	0.091 U
Total Cyanide by SW-846 Method 9012B (mg/L)	
Total Cyanide	0.004 U

U: Not Detected
J: Estimated Result

ug/L: Micrograms per liter

mg/L: milligrams per liter

Volatiles Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	**Rinsate**
START V Sample No.:	**HTCRV2-RB-120120**
Lab sample ID No.:	**160-40623-3**
Dilution Factor	**1**
Volatiles by SW-846 Method 8260C (ug/L)	
1,1,1-Trichloroethane	0.24 U
1,1,2,2-Tetrachloroethane	0.37 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31 U
1,1,2-Trichloroethane	0.2 U
1,1-Dichloroethane	0.26 U
1,1-Dichloroethene	0.26 U
1,2,3-Trichlorobenzene	0.36 U
1,2,4-Trichlorobenzene	0.37 U
1,2-Dibromo-3-Chloropropane	0.38 U
1,2-Dichlorobenzene	0.21 U
1,2-Dichloroethane	0.43 U
1,2-Dichloropropane	0.35 U
1,3-Dichlorobenzene	0.34 U
1,4-Dichlorobenzene	0.33 U
1,4-Dioxane	28 U
2-Butanone (MEK)	1.9 U
2-Hexanone	1.1 U
4-Methyl-2-pentanone (MIBK)	1.3 U
Acetone	4.4 U
Benzene	0.2 U
Bromoform	0.54 U
Bromomethane	0.55 U
Carbon disulfide	0.82 U
Carbon tetrachloride	0.21 U
Chlorobenzene	0.38 U
Chlorobromomethane	0.41 U
Chlorodibromomethane	0.28 U
Chloroethane	0.32 U
Chloroform	0.33 U
Chloromethane	0.4 U
cis-1,2-Dichloroethene	0.22 U
cis-1,3-Dichloropropene	0.22 U
Cyclohexane	0.32 U
Dichlorobromomethane	0.34 U
Dichlorodifluoromethane	0.31 U
Ethylbenzene	0.3 U
Ethylene Dibromide	0.5 U
Isopropylbenzene	0.34 U
Methyl acetate	0.79 U
Methyl tert-butyl ether	0.22 U
Methylcyclohexane	0.71 U
Methylene Chloride	0.32 U
m-Xylene & p-Xylene	0.3 U
o-Xylene	0.36 U
Styrene	0.42 U
Tetrachloroethene	0.25 U
Toluene	0.38 U
trans-1,2-Dichloroethene	0.24 U
trans-1,3-Dichloropropene	0.22 U
Trichloroethene	0.31 U
Trichlorofluoromethane	0.32 U
Vinyl chloride	0.17 U

U: Not Detected

ug/L: Micrograms per liter

Semivolatiles Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	**Rinsate**
START V Sample No.:	**HTCRV2-RB-120120**
Lab sample ID No.:	**160-40623-3**
Dilution Factor	**1**
Semivolatiles by SW-846 Method 8270D (ug/L)	
1,1'-Biphenyl	4.7 U
1,2,4,5-Tetrachlorobenzene	5 U
2,2'-oxybis[1-chloropropane]	2.5 UJ
2,3,4,6-Tetrachlorophenol	3 U
2,4,5-Trichlorophenol	3.5 U
2,4,6-Trichlorophenol	3.4 U
2,4-Dichlorophenol	4.3 U
2,4-Dimethylphenol	2.5 U
2,4-Dinitrophenol	11 U
2,4-Dinitrotoluene	4 UJ
2,6-Dinitrotoluene	3.3 U
2-Chloronaphthalene	4.7 U
2-Chlorophenol	1.5 U
2-Methylnaphthalene	2.1 U
2-Methylphenol	2.7 U
2-Nitroaniline	1.9 U
2-Nitrophenol	3 UJ
3,3'-Dichlorobenzidine	5.7 U
3-Nitroaniline	7.7 U
4,6-Dinitro-2-methylphenol	12 UJ
4-Bromophenyl phenyl ether	3 U
4-Chloro-3-methylphenol	2.3 U
4-Chloroaniline	7.5 U
4-Chlorophenyl phenyl ether	5.1 U
4-Methylphenol	2.6 U
4-Nitroaniline	4.9 U
4-Nitrophenol	16 U
Acenaphthene	4.3 U
Acenaphthylene	3.3 U
Acetophenone	9.3 U
Anthracene	5.2 U
Atrazine	5.4 UJ
Benzaldehyde	8.4 UJ
Benzo[a]anthracene	2.4 U
Benzo[a]pyrene	1.6 U
Benzo[b]fluoranthene	2.7 U
Benzo[g,h,i]perylene	2.8 UJ
Benzo[k]fluoranthene	2.7 U
Bis(2-chloroethoxy)methane	2.4 U
Bis(2-chloroethyl)ether	2.5 U
Bis(2-ethylhexyl) phthalate	3.2 U
Butyl benzyl phthalate	3.4 U
Caprolactam	8.9 U
Carbazole	2.7 U
Chrysene	3.6 U
Dibenz(a,h)anthracene	2.9 UJ
Dibenzofuran	4.4 U
Diethyl phthalate	3.9 U
Dimethyl phthalate	3.1 U
Di-n-butyl phthalate	3.4 U
Di-n-octyl phthalate	3 U
Fluoranthene	3.4 U
Fluorene	3.6 U
Hexachlorobenzene	1.6 U
Hexachlorobutadiene	3.1 U
Hexachlorocyclopentadiene	15 U
Hexachloroethane	3.2 U
Indeno[1,2,3-cd]pyrene	3.8 UJ

Semivolatiles Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	**Rinsate**
START V Sample No.:	**HTCRV2-RB-120120**
Lab sample ID No.:	**160-40623-3**
Dilution Factor	**1**
Semivolatiles by SW-846 Method 8270D (ug/L)	
Isophorone	3.2 U
Naphthalene	2.2 U
Nitrobenzene	2.3 U
N-Nitrosodi-n-propylamine	1.7 U
N-Nitrosodiphenylamine	3.6 U
Pentachlorophenol	5.8 U
Phenanthrene	5.1 U
Phenol	1.2 U
Pyrene	6.6 U

U: Not Detected

J: Estimated Result

ug/L: Micrograms per liter

PCBs and Herbicides Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	**Rinsate**
START V Sample No.:	**HTCRV2-RB-120120**
Lab sample ID No.:	**160-40623-3**
Dilution Factor	**1**
Polychlorinated Biphenyls (PCBs) by SW-846 Method 8082A (ug/L)	
Aroclor 1016	0.095 U
Aroclor 1221	0.095 U
Aroclor 1232	0.095 U
Aroclor 1242	0.095 U
Aroclor 1248	0.095 U
Aroclor 1254	0.086 U
Aroclor 1260	0.086 U
Aroclor 1268	0.086 U
Aroclor-1262	0.086 U
Polychlorinated biphenyls, Total	0.095 U
Herbicides by SW-846 Method 8151A (ug/L)	
2,4,5-T	0.12 UJ
2,4-D	0.13 UJ
Silvex (2,4,5-TP)	0.11 UJ

U: Not Detected

J: Estimated Result

ug/L: Micrograms per liter

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40623-1	HTCRV2-COMP-0612-01	Solid	12/01/20 13:00	12/02/20 09:47	
160-40623-2	HTCRV2-COMP-0612-02	Solid	12/01/20 13:15	12/02/20 09:47	
160-40623-3	HTCRV2-RB-120120	Water	12/01/20 00:00	12/02/20 09:47	
160-40623-4	HTCRV2-WC01-0612-01	Solid	12/01/20 13:30	12/02/20 09:47	
160-40623-5	HTCRV2-WC02-0612-01	Solid	12/01/20 13:45	12/02/20 09:47	
160-40623-6	HTCRV2-WC02-0612-02	Solid	12/01/20 14:00	12/02/20 09:47	

Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
X	Surrogate recovery exceeds control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 636

Report Number: 160-40623-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Revision 1- added Edison workshare COC to level II report.

RECEIPT

The samples were received on 12/02/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6° C and 11.4° C.

Receipt Exceptions: The container label for the following sample containers did not match the information listed on the Chain-of-Custody (COC): HTCRV2-RB-120120 (160-40623-3). The containers listed on the COC do not include three VOA VIAL 40mL - HCl.

The vials, encores, and 1L Amber Glass containers were received within temp; however, the other containers associated with following samples were received at the laboratory outside the required temperature criteria: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6). The samples were logged with collection times listed on the container labels.

TCLP VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4),

HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP volatile organic compounds (GC-MS) in accordance with EPA SW846 Method 1311/8260C. The samples were leached on 12/06/2020 and analyzed on 12/10/2020.

Surrogate recovery for the following sample was outside the upper control limit: HTCRV2-COMP-0612-01 (160-40623-1). This sample did not contain any target analytes; therefore, re-analysis was not performed.

The continuing calibration verification (CCV) associated with batch 460-745491 recovered above the upper control limit for Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 460-745491 recovered outside control limits for the following analyte: Carbon tetrachloride. This analyte was biased high in the LCS/LCSD and was not detected in the associated samples; therefore, the data have been reported.

Four surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-analysis. The following method blank contained an allowable number of surrogate compounds outside limits: (MB 460-745491/7). These results have been reported and qualified.

Samples HTCRV2-COMP-0612-01 (160-40623-1)[10X], HTCRV2-COMP-0612-02 (160-40623-2)[10X], HTCRV2-WC01-0612-01 (160-40623-4)[10X], HTCRV2-WC02-0612-01 (160-40623-5)[10X] and HTCRV2-WC02-0612-02 (160-40623-6)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GC MS)

Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for volatile organic compounds (GC MS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 12/14/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 1311 / 8270D. The samples were leached on 12/15/2020, prepared on 12/16/2020 and analyzed on 12/16/2020 and 12/17/2020.

2,4-Dinitrotoluene failed the recovery criteria high for the MS of sample 460-224839-4 in batch 460-747421.

2,4-Dinitrotoluene failed the recovery criteria high for the MSD of sample 460-224839-4 in batch 460-747421.

The continuing calibration verification (CCV) associated with batch 460-747421 recovered above the upper control limit for 2,4-Dinitrotoluene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC MS)

Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for semivolatile organic compounds (GC MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 12/06/2020 and analyzed on 12/07/2020.

The continuing calibration verification (CCV) analyzed in batch 460-744876 was outside the method criteria for the following analyte(s): Indeno[1,2,3-cd]pyrene, 2,2'-oxybis[1-chloropropane], Benzo[g,h,i]perylene, Atrazine, 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Benzaldehyde, Dibenz(a,h)anthracene and 2-Nitrophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 460-744813 and analytical batch 460-744876 recovered outside control limits for the following analytes: Atrazine. These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP CHLORINATED PESTICIDES

Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP chlorinated pesticides in accordance with EPA SW-846 Methods 1311/ 8081B. The samples were leached on 12/15/2020, prepared on 12/16/2020 and analyzed on 12/17/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The samples were prepared on 12/05/2020 and analyzed on 12/07/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP CHLORINATED HERBICIDES
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were leached on 12/15/2020, prepared on 12/16/2020 and analyzed on 12/18/2020.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORINATED HERBICIDES
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 12/04/2020 and analyzed on 12/07/2020.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP METALS (ICP)
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Method 1311/6010D. The samples were leached on 12/15/2020, and prepared and analyzed on 12/16/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP/MS)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for Metals (ICP/MS) in accordance with EPA SW-846 Method 6020B. The samples were prepared on 12/11/2020 and analyzed on 12/13/2020.

Calcium, Iron, Manganese and Sodium failed the recovery criteria low for the MS of sample 460-224225-1 in batch 460-746597.

Lead exceeded the RPD limit for the duplicate of sample 460-224225-1. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP MERCURY
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 12/15/2020, and prepared and analyzed on 12/18/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 12/14/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

FLASHPOINT
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for flashpoint in accordance with EPA SW-846 Method 1030. The samples were analyzed on 12/16/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 12/13/2020 and analyzed on 12/14/2020.

Cyanide, Total failed the recovery criteria high for the MS of sample 460-223902-3 in batch 460-746908.

Cyanide, Total failed the recovery criteria high for the MSD of sample 460-223902-3 in batch 460-746908.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REACTIVE CYANIDE
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for reactive cyanide in accordance with EPA SW-846 Method 9014. The samples were prepared and analyzed on 12/18/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REACTIVE SULFIDE
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for reactive sulfide in accordance with EPA SW-846 Method 7.3.4. The samples were prepared and analyzed on 12/18/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PH
Samples HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for pH in accordance with EPA SW-846 Method 9045D. The samples were analyzed on 12/17/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 12/15/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method 8260C

Volatile Organic Compounds (GC/MS) by Method 8260C

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Matrix: Solid (TCLP)
Lab File ID: P83007.D
Analysis Method: 8260C
Date Collected: 12/01/2020 13:00
Sample wt/vol: 5(mL)
Date Analyzed: 12/10/2020 04:34
Soil Aliquot Vol:
Dilution Factor: 10
Soil Extract Vol.:
GC Column: Rtx-624 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 745705
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.010	0.0026
107-06-2	1,2-Dichloroethane	ND		0.010	0.0043
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.0033
78-93-3	2-Butanone (MEK)	ND		0.050	0.019
71-43-2	Benzene	ND		0.010	0.0020
56-23-5	Carbon tetrachloride	ND		0.010	0.0021
108-90-7	Chlorobenzene	ND		0.010	0.0038
67-66-3	Chloroform	ND		0.010	0.0033
127-18-4	Tetrachloroethene	ND		0.010	0.0025
79-01-6	Trichloroethene	ND		0.010	0.0031
75-01-4	Vinyl chloride	ND		0.010	0.0017

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	87		75-123
460-00-4	4-Bromofluorobenzene	126	X	76-120
1868-53-7	Dibromofluoromethane (Surr)	95		77-124
2037-26-5	Toluene-d8 (Surr)	97		80-120

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Matrix: Solid (TCLP)
Lab File ID: P83008.D
Analysis Method: 8260C
Date Collected: 12/01/2020 13:15
Sample wt/vol: 5(mL)
Date Analyzed: 12/10/2020 05:00
Soil Aliquot Vol:
Dilution Factor: 10
Soil Extract Vol.:
GC Column: Rtx-624 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 745705
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.010	0.0026
107-06-2	1,2-Dichloroethane	ND		0.010	0.0043
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.0033
78-93-3	2-Butanone (MEK)	ND		0.050	0.019
71-43-2	Benzene	ND		0.010	0.0020
56-23-5	Carbon tetrachloride	ND		0.010	0.0021
108-90-7	Chlorobenzene	ND		0.010	0.0038
67-66-3	Chloroform	ND		0.010	0.0033
127-18-4	Tetrachloroethene	ND		0.010	0.0025
79-01-6	Trichloroethene	ND		0.010	0.0031
75-01-4	Vinyl chloride	ND		0.010	0.0017

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	88		75-123
460-00-4	4-Bromofluorobenzene	103		76-120
1868-53-7	Dibromofluoromethane (Surr)	95		77-124
2037-26-5	Toluene-d8 (Surr)	107		80-120

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: E20687.D
Analysis Method: 8260C
Date Collected: 12/01/2020 00:00
Sample wt/vol: 5(mL)
Date Analyzed: 12/14/2020 12:53
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: Rtx-VMS ID: 0.18(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 746752
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.24
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.37
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.20
75-34-3	1,1-Dichloroethane	ND		1.0	0.26
75-35-4	1,1-Dichloroethene	ND		1.0	0.26
87-61-6	1,2,3-Trichlorobenzene	ND		1.0	0.36
120-82-1	1,2,4-Trichlorobenzene	ND		1.0	0.37
96-12-8	1,2-Dibromo-3-Chloropropane	ND		1.0	0.38
95-50-1	1,2-Dichlorobenzene	ND		1.0	0.21
107-06-2	1,2-Dichloroethane	ND		1.0	0.43
78-87-5	1,2-Dichloropropane	ND		1.0	0.35
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.34
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.33
123-91-1	1,4-Dioxane	ND		50	28
78-93-3	2-Butanone (MEK)	ND		5.0	1.9
591-78-6	2-Hexanone	ND		5.0	1.1
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		5.0	1.3
67-64-1	Acetone	ND		5.0	4.4
71-43-2	Benzene	ND		1.0	0.20
75-25-2	Bromoform	ND		1.0	0.54
74-83-9	Bromomethane	ND		1.0	0.55
75-15-0	Carbon disulfide	ND		1.0	0.82
56-23-5	Carbon tetrachloride	ND		1.0	0.21
108-90-7	Chlorobenzene	ND		1.0	0.38
74-97-5	Chlorobromomethane	ND		1.0	0.41
124-48-1	Chlorodibromomethane	ND		1.0	0.28
75-00-3	Chloroethane	ND		1.0	0.32
67-66-3	Chloroform	ND		1.0	0.33
74-87-3	Chloromethane	ND		1.0	0.40
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.22
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.22
110-82-7	Cyclohexane	ND		1.0	0.32
75-27-4	Dichlorobromomethane	ND		1.0	0.34
75-71-8	Dichlorodifluoromethane	ND		1.0	0.31

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: E20687.D
Analysis Method: 8260C
Date Collected: 12/01/2020 00:00
Sample wt/vol: 5(mL)
Date Analyzed: 12/14/2020 12:53
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: Rtx-VMS
ID: 0.18(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 746752
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
100-41-4	Ethylbenzene	ND		1.0	0.30
106-93-4	Ethylene Dibromide	ND		1.0	0.50
98-82-8	Isopropylbenzene	ND		1.0	0.34
79-20-9	Methyl acetate	ND		5.0	0.79
1634-04-4	Methyl tert-butyl ether	ND		1.0	0.22
108-87-2	Methylcyclohexane	ND		1.0	0.71
75-09-2	Methylene Chloride	ND		1.0	0.32
179601-23-1	m-Xylene & p-Xylene	ND		1.0	0.30
95-47-6	o-Xylene	ND		1.0	0.36
100-42-5	Styrene	ND		1.0	0.42
127-18-4	Tetrachloroethene	ND		1.0	0.25
108-88-3	Toluene	ND		1.0	0.38
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.24
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.22
79-01-6	Trichloroethene	ND		1.0	0.31
75-69-4	Trichlorofluoromethane	ND		1.0	0.32
75-01-4	Vinyl chloride	ND		1.0	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		75-123
460-00-4	4-Bromofluorobenzene	85		76-120
1868-53-7	Dibromofluoromethane (Surr)	98		77-124
2037-26-5	Toluene-d8 (Surr)	105		80-120

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-40623-1

SDG No.:

Client Sample ID: HTCRV2-RB-120120 Lab Sample ID: 160-40623-3

Matrix: Water Lab File ID: E20687.D

Analysis Method: 8260C Date Collected: 12/01/2020 00:00

Sample wt/vol: 5(mL) Date Analyzed: 12/14/2020 12:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 746752 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

FORM I-TIC 8260C

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid (TCLP)
Lab File ID: P83009.D
Analysis Method: 8260C
Date Collected: 12/01/2020 13:30
Sample wt/vol: 5(mL)
Date Analyzed: 12/10/2020 05:25
Soil Aliquot Vol:
Dilution Factor: 10
Soil Extract Vol.:
GC Column: Rtx-624 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 745705
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.010	0.0026
107-06-2	1,2-Dichloroethane	ND		0.010	0.0043
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.0033
78-93-3	2-Butanone (MEK)	ND		0.050	0.019
71-43-2	Benzene	ND		0.010	0.0020
56-23-5	Carbon tetrachloride	ND		0.010	0.0021
108-90-7	Chlorobenzene	ND		0.010	0.0038
67-66-3	Chloroform	ND		0.010	0.0033
127-18-4	Tetrachloroethene	ND		0.010	0.0025
79-01-6	Trichloroethene	ND		0.010	0.0031
75-01-4	Vinyl chloride	ND		0.010	0.0017

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	85		75-123
460-00-4	4-Bromofluorobenzene	102		76-120
1868-53-7	Dibromofluoromethane (Surr)	95		77-124
2037-26-5	Toluene-d8 (Surr)	98		80-120

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid (TCLP)
Lab File ID: P83010.D
Analysis Method: 8260C
Date Collected: 12/01/2020 13:45
Sample wt/vol: 5(mL)
Date Analyzed: 12/10/2020 05:51
Soil Aliquot Vol:
Dilution Factor: 10
Soil Extract Vol.:
GC Column: Rtx-624 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 745705
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.010	0.0026
107-06-2	1,2-Dichloroethane	ND		0.010	0.0043
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.0033
78-93-3	2-Butanone (MEK)	ND		0.050	0.019
71-43-2	Benzene	ND		0.010	0.0020
56-23-5	Carbon tetrachloride	ND		0.010	0.0021
108-90-7	Chlorobenzene	ND		0.010	0.0038
67-66-3	Chloroform	ND		0.010	0.0033
127-18-4	Tetrachloroethene	ND		0.010	0.0025
79-01-6	Trichloroethene	ND		0.010	0.0031
75-01-4	Vinyl chloride	ND		0.010	0.0017

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	85		75-123
460-00-4	4-Bromofluorobenzene	97		76-120
1868-53-7	Dibromofluoromethane (Surr)	95		77-124
2037-26-5	Toluene-d8 (Surr)	97		80-120

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid (TCLP)
Lab File ID: P83012.D
Analysis Method: 8260C
Date Collected: 12/01/2020 14:00
Sample wt/vol: 5(mL)
Date Analyzed: 12/10/2020 06:41
Soil Aliquot Vol:
Dilution Factor: 10
Soil Extract Vol.:
GC Column: Rtx-624 ID: 0.25(mm)
% Moisture:
Level: (low/med) Low
Analysis Batch No.: 745705
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.010	0.0026
107-06-2	1,2-Dichloroethane	ND		0.010	0.0043
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.0033
78-93-3	2-Butanone (MEK)	ND		0.050	0.019
71-43-2	Benzene	ND		0.010	0.0020
56-23-5	Carbon tetrachloride	ND		0.010	0.0021
108-90-7	Chlorobenzene	ND		0.010	0.0038
67-66-3	Chloroform	ND		0.010	0.0033
127-18-4	Tetrachloroethene	ND		0.010	0.0025
79-01-6	Trichloroethene	ND		0.010	0.0031
75-01-4	Vinyl chloride	ND		0.010	0.0017

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	90		75-123
460-00-4	4-Bromofluorobenzene	101		76-120
1868-53-7	Dibromofluoromethane (Surr)	98		77-124
2037-26-5	Toluene-d8 (Surr)	107		80-120

Method 8270D

Semivolatile Organic Compounds (GC/MS) by Method 8270D

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Matrix: Solid (TCLP)
Lab File ID: P094316.D
Analysis Method: 8270D
Date Collected: 12/01/2020 13:00
Extract. Method: 3510C
Date Extracted: 12/16/2020 10:10
Sample wt/vol: 250(mL)
Date Analyzed: 12/16/2020 22:57
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747421
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.00040
95-95-4	2,4,5-Trichlorophenol	ND		0.010	0.00080
88-06-2	2,4,6-Trichlorophenol	ND		0.010	0.00080
121-14-2	2,4-Dinitrotoluene	ND		0.0020	0.0010
95-48-7	2-Methylphenol	ND		0.010	0.00060
15831-10-4	3 & 4 Methylphenol	ND		0.010	0.00060
118-74-1	Hexachlorobenzene	ND		0.0010	0.00040
87-68-3	Hexachlorobutadiene	ND		0.0020	0.00080
67-72-1	Hexachloroethane	ND		0.0020	0.0012
98-95-3	Nitrobenzene	ND		0.0010	0.00060
87-86-5	Pentachlorophenol	ND		0.030	0.0014
110-86-1	Pyridine	ND		0.010	0.0019

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	103		36-159
321-60-8	2-Fluorobiphenyl	95		42-127
367-12-4	2-Fluorophenol (Surr)	51		18-72
4165-60-0	Nitrobenzene-d5 (Surr)	89		46-137
4165-62-2	Phenol-d5 (Surr)	34		10-50
1718-51-0	Terphenyl-d14 (Surr)	100		39-150

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Matrix: Solid (TCLP)
Lab File ID: P094317.D
Analysis Method: 8270D
Date Collected: 12/01/2020 13:15
Extract. Method: 3510C
Date Extracted: 12/16/2020 10:10
Sample wt/vol: 250(mL)
Date Analyzed: 12/16/2020 23:18
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747421
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.00040
95-95-4	2,4,5-Trichlorophenol	ND		0.010	0.00080
88-06-2	2,4,6-Trichlorophenol	ND		0.010	0.00080
121-14-2	2,4-Dinitrotoluene	ND		0.0020	0.0010
95-48-7	2-Methylphenol	ND		0.010	0.00060
15831-10-4	3 & 4 Methylphenol	ND		0.010	0.00060
118-74-1	Hexachlorobenzene	ND		0.0010	0.00040
87-68-3	Hexachlorobutadiene	ND		0.0020	0.00080
67-72-1	Hexachloroethane	ND		0.0020	0.0012
98-95-3	Nitrobenzene	ND		0.0010	0.00060
87-86-5	Pentachlorophenol	ND		0.030	0.0014
110-86-1	Pyridine	ND		0.010	0.0019

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	101		36-159
321-60-8	2-Fluorobiphenyl	90		42-127
367-12-4	2-Fluorophenol (Surr)	47		18-72
4165-60-0	Nitrobenzene-d5 (Surr)	87		46-137
4165-62-2	Phenol-d5 (Surr)	30		10-50
1718-51-0	Terphenyl-d14 (Surr)	89		39-150

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: P094059.D
Analysis Method: 8270D
Date Collected: 12/01/2020 00:00
Extract. Method: 3510C
Date Extracted: 12/06/2020 09:20
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 02:10
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 744876
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
92-52-4	1,1'-Biphenyl	ND		40	4.7
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		40	5.0
108-60-1	2,2'-oxybis[1-chloropropane]	ND	J	40	2.5
58-90-2	2,3,4,6-Tetrachlorophenol	ND		40	3.0
95-95-4	2,4,5-Trichlorophenol	ND		40	3.5
88-06-2	2,4,6-Trichlorophenol	ND		40	3.4
120-83-2	2,4-Dichlorophenol	ND		40	4.3
105-67-9	2,4-Dimethylphenol	ND		40	2.5
51-28-5	2,4-Dinitrophenol	ND		80	11
121-14-2	2,4-Dinitrotoluene	ND	J	8.0	4.0
606-20-2	2,6-Dinitrotoluene	ND		8.0	3.3
91-58-7	2-Chloronaphthalene	ND		40	4.7
95-57-8	2-Chlorophenol	ND		40	1.5
91-57-6	2-Methylnaphthalene	ND		40	2.1
95-48-7	2-Methylphenol	ND		40	2.7
88-74-4	2-Nitroaniline	ND		40	1.9
88-75-5	2-Nitrophenol	ND	J	40	3.0
91-94-1	3,3'-Dichlorobenzidine	ND		40	5.7
99-09-2	3-Nitroaniline	ND		40	7.7
534-52-1	4,6-Dinitro-2-methylphenol	ND	J	80	12
101-55-3	4-Bromophenyl phenyl ether	ND		40	3.0
59-50-7	4-Chloro-3-methylphenol	ND		40	2.3
106-47-8	4-Chloroaniline	ND		40	7.5
7005-72-3	4-Chlorophenyl phenyl ether	ND		40	5.1
106-44-5	4-Methylphenol	ND		40	2.6
100-01-6	4-Nitroaniline	ND		40	4.9
100-02-7	4-Nitrophenol	ND		80	16
83-32-9	Acenaphthene	ND		40	4.3
208-96-8	Acenaphthylene	ND		40	3.3
98-86-2	Acetophenone	ND		40	9.3
120-12-7	Anthracene	ND		40	5.2
1912-24-9	Atrazine	ND	* J	40	5.4
100-52-7	Benzaldehyde	ND	J	40	8.4
56-55-3	Benzo[a]anthracene	ND		4.0	2.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: P094059.D
Analysis Method: 8270D
Date Collected: 12/01/2020 00:00
Extract. Method: 3510C
Date Extracted: 12/06/2020 09:20
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 02:10
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 744876
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
50-32-8	Benzo[a]pyrene	ND		4.0	1.6
205-99-2	Benzo[b]fluoranthene	ND		8.0	2.7
191-24-2	Benzo[g,h,i]perylene	ND	J	40	2.8
207-08-9	Benzo[k]fluoranthene	ND		4.0	2.7
111-91-1	Bis(2-chloroethoxy)methane	ND		40	2.4
111-44-4	Bis(2-chloroethyl)ether	ND		4.0	2.5
117-81-7	Bis(2-ethylhexyl) phthalate	ND		40	3.2
85-68-7	Butyl benzyl phthalate	ND		40	3.4
105-60-2	Caprolactam	ND		40	8.9
86-74-8	Carbazole	ND		40	2.7
218-01-9	Chrysene	ND		40	3.6
53-70-3	Dibenz(a,h)anthracene	ND	J	4.0	2.9
132-64-9	Dibenzofuran	ND		40	4.4
84-66-2	Diethyl phthalate	ND		40	3.9
131-11-3	Dimethyl phthalate	ND		40	3.1
84-74-2	Di-n-butyl phthalate	ND		40	3.4
117-84-0	Di-n-octyl phthalate	ND		40	3.0
206-44-0	Fluoranthene	ND		40	3.4
86-73-7	Fluorene	ND		40	3.6
118-74-1	Hexachlorobenzene	ND		4.0	1.6
87-68-3	Hexachlorobutadiene	ND		8.0	3.1
77-47-4	Hexachlorocyclopentadiene	ND		40	15
67-72-1	Hexachloroethane	ND		8.0	3.2
193-39-5	Indeno[1,2,3-cd]pyrene	ND	J	8.0	3.8
78-59-1	Isophorone	ND		40	3.2
91-20-3	Naphthalene	ND		8.0	2.2
98-95-3	Nitrobenzene	ND		4.0	2.3
621-64-7	N-Nitrosodi-n-propylamine	ND		4.0	1.7
86-30-6	N-Nitrosodiphenylamine	ND		40	3.6
87-86-5	Pentachlorophenol	ND		80	5.8
85-01-8	Phenanthrene	ND		40	5.1
108-95-2	Phenol	ND		40	1.2
129-00-0	Pyrene	ND		40	6.6

FORM I 8270D

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: P094059.D
Analysis Method: 8270D
Date Collected: 12/01/2020 00:00
Extract. Method: 3510C
Date Extracted: 12/06/2020 09:20
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 02:10
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 744876
Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	60		36-159
321-60-8	2-Fluorobiphenyl	75		42-127
367-12-4	2-Fluorophenol (Surr)	32		18-72
4165-60-0	Nitrobenzene-d5 (Surr)	75		46-137
4165-62-2	Phenol-d5 (Surr)	18		10-50
1718-51-0	Terphenyl-d14 (Surr)	95		39-150

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: P094059.D
Analysis Method: 8270D
Date Collected: 12/01/2020 00:00
Extract. Method: 3510C
Date Extracted: 12/06/2020 09:20
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 02:10
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 744876
Units: ug/L
Number TICs Found: 0
TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid (TCLP)
Lab File ID: P094318.D
Analysis Method: 8270D
Date Collected: 12/01/2020 13:30
Extract. Method: 3510C
Date Extracted: 12/16/2020 10:10
Sample wt/vol: 250(mL)
Date Analyzed: 12/16/2020 23:39
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747421
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
106-46-7	1,4-Dichlorobenzene	ND	J	0.010	0.00040
95-95-4	2,4,5-Trichlorophenol	ND		0.010	0.00080
88-06-2	2,4,6-Trichlorophenol	ND		0.010	0.00080
121-14-2	2,4-Dinitrotoluene	ND	J	0.0020	0.0010
95-48-7	2-Methylphenol	ND	J	0.010	0.00060
15831-10-4	3 & 4 Methylphenol	ND		0.010	0.00060
118-74-1	Hexachlorobenzene	ND		0.0010	0.00040
87-68-3	Hexachlorobutadiene	ND		0.0020	0.00080
67-72-1	Hexachloroethane	ND		0.0020	0.0012
98-95-3	Nitrobenzene	ND		0.0010	0.00060
87-86-5	Pentachlorophenol	ND		0.030	0.0014
110-86-1	Pyridine	ND		0.010	0.0019

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	100		36-159
321-60-8	2-Fluorobiphenyl	89		42-127
367-12-4	2-Fluorophenol (Surr)	49		18-72
4165-60-0	Nitrobenzene-d5 (Surr)	90		46-137
4165-62-2	Phenol-d5 (Surr)	32		10-50
1718-51-0	Terphenyl-d14 (Surr)	87		39-150

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid (TCLP)
Lab File ID: P094319.D
Analysis Method: 8270D
Date Collected: 12/01/2020 13:45
Extract. Method: 3510C
Date Extracted: 12/16/2020 10:10
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 00:00
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747421
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
106-46-7	1,4-Dichlorobenzene	ND		0.010	0.00040
95-95-4	2,4,5-Trichlorophenol	ND		0.010	0.00080
88-06-2	2,4,6-Trichlorophenol	ND		0.010	0.00080
121-14-2	2,4-Dinitrotoluene	ND		0.0020	0.0010
95-48-7	2-Methylphenol	ND		0.010	0.00060
15831-10-4	3 & 4 Methylphenol	ND		0.010	0.00060
118-74-1	Hexachlorobenzene	ND		0.0010	0.00040
87-68-3	Hexachlorobutadiene	ND		0.0020	0.00080
67-72-1	Hexachloroethane	ND		0.0020	0.0012
98-95-3	Nitrobenzene	ND		0.0010	0.00060
87-86-5	Pentachlorophenol	ND		0.030	0.0014
110-86-1	Pyridine	ND		0.010	0.0019

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	92		36-159
321-60-8	2-Fluorobiphenyl	84		42-127
367-12-4	2-Fluorophenol (Surr)	43		18-72
4165-60-0	Nitrobenzene-d5 (Surr)	82		46-137
4165-62-2	Phenol-d5 (Surr)	28		10-50
1718-51-0	Terphenyl-d14 (Surr)	87		39-150

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid (TCLP)
Lab File ID: P094320.D
Analysis Method: 8270D
Date Collected: 12/01/2020 14:00
Extract. Method: 3510C
Date Extracted: 12/16/2020 10:10
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 00:21
Con. Extract Vol.: 2(mL)
Dilution Factor: 1
Injection Volume: 5(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747421
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
106-46-7	1,4-Dichlorobenzene	ND	J	0.010	0.00040
95-95-4	2,4,5-Trichlorophenol	ND		0.010	0.00080
88-06-2	2,4,6-Trichlorophenol	ND		0.010	0.00080
121-14-2	2,4-Dinitrotoluene	ND	J	0.0020	0.0010
95-48-7	2-Methylphenol	ND	J	0.010	0.00060
15831-10-4	3 & 4 Methylphenol	ND		0.010	0.00060
118-74-1	Hexachlorobenzene	ND		0.0010	0.00040
87-68-3	Hexachlorobutadiene	ND		0.0020	0.00080
67-72-1	Hexachloroethane	ND		0.0020	0.0012
98-95-3	Nitrobenzene	ND		0.0010	0.00060
87-86-5	Pentachlorophenol	ND		0.030	0.0014
110-86-1	Pyridine	ND		0.010	0.0019

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	109		36-159
321-60-8	2-Fluorobiphenyl	93		42-127
367-12-4	2-Fluorophenol (Surr)	47		18-72
4165-60-0	Nitrobenzene-d5 (Surr)	93		46-137
4165-62-2	Phenol-d5 (Surr)	31		10-50
1718-51-0	Terphenyl-d14 (Surr)	95		39-150

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Method 8081B

Organochlorine Pesticides (GC) by Method 8081B

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Matrix: Solid (TCLP)
Lab File ID: PEST0022588.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:00
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 08:42
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	73		10-132
877-09-8	Tetrachloro-m-xylene	71		10-150

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Matrix: Solid (TCLP)
Lab File ID: PEST0022588.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:00
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 08:42
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12789-03-6	Chlordane (technical)	ND	J	0.0050	0.000055
72-20-8	Endrin	ND		0.00050	0.0000040
58-89-9	gamma-BHC (Lindane)	ND		0.00050	0.000012
76-44-8	Heptachlor	ND		0.00050	0.0000030
1024-57-3	Heptachlor epoxide	ND		0.00050	0.0000050
72-43-5	Methoxychlor	ND		0.00050	0.0000040
8001-35-2	Toxaphene	ND		0.0050	0.00011

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	79		10-132
877-09-8	Tetrachloro-m-xylene	74		10-150

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FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Matrix: Solid (TCLP)
Lab File ID: PEST0022589.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:15
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 08:54
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2
ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	65		10-132
877-09-8	Tetrachloro-m-xylene	64		10-150

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Matrix: Solid (TCLP)
Lab File ID: PEST0022589.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:15
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 08:54
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12789-03-6	Chlordane (technical)	ND		0.0050	0.000055
72-20-8	Endrin	ND		0.00050	0.0000040
58-89-9	gamma-BHC (Lindane)	ND		0.00050	0.000012
76-44-8	Heptachlor	ND		0.00050	0.0000030
1024-57-3	Heptachlor epoxide	ND		0.00050	0.0000050
72-43-5	Methoxychlor	ND		0.00050	0.0000040
8001-35-2	Toxaphene	ND		0.0050	0.00011

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	73		10-132
877-09-8	Tetrachloro-m-xylene	67		10-150

FORM I 8081B

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid (TCLP)
Lab File ID: PEST0022590.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:30
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 09:06
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	52		10-132
877-09-8	Tetrachloro-m-xylene	69		10-150

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid (TCLP)
Lab File ID: PEST0022590.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:30
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 09:06
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12789-03-6	Chlordane (technical)	ND		0.0050	0.000055
72-20-8	Endrin	ND		0.00050	0.0000040
58-89-9	gamma-BHC (Lindane)	ND		0.00050	0.000012
76-44-8	Heptachlor	ND		0.00050	0.0000030
1024-57-3	Heptachlor epoxide	ND		0.00050	0.0000050
72-43-5	Methoxychlor	ND		0.00050	0.0000040
8001-35-2	Toxaphene	ND		0.0050	0.00011

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	54		10-132
877-09-8	Tetrachloro-m-xylene	75		10-150

FORM I 8081B

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid (TCLP)
Lab File ID: PEST0022591.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:45
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 09:19
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	74		10-132
877-09-8	Tetrachloro-m-xylene	66		10-150

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid (TCLP)
Lab File ID: PEST0022591.D
Analysis Method: 8081B
Date Collected: 12/01/2020 13:45
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 09:19
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12789-03-6	Chlordane (technical)	ND	J	0.0050	0.000055
72-20-8	Endrin	ND		0.00050	0.0000040
58-89-9	gamma-BHC (Lindane)	ND		0.00050	0.000012
76-44-8	Heptachlor	ND		0.00050	0.0000030
1024-57-3	Heptachlor epoxide	ND		0.00050	0.0000050
72-43-5	Methoxychlor	ND		0.00050	0.0000040
8001-35-2	Toxaphene	ND		0.0050	0.00011

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	81		10-132
877-09-8	Tetrachloro-m-xylene	85		10-150

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FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid (TCLP)
Lab File ID: PEST0022592.D
Analysis Method: 8081B
Date Collected: 12/01/2020 14:00
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 09:31
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	34		10-132
877-09-8	Tetrachloro-m-xylene	61		10-150

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid (TCLP)
Lab File ID: PEST0022592.D
Analysis Method: 8081B
Date Collected: 12/01/2020 14:00
Extraction Method: 3510C
Date Extracted: 12/16/2020 10:21
Sample wt/vol: 250(mL)
Date Analyzed: 12/17/2020 09:31
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747478
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12789-03-6	Chlordane (technical)	ND		0.0050	0.000055
72-20-8	Endrin	ND		0.00050	0.0000040
58-89-9	gamma-BHC (Lindane)	ND		0.00050	0.000012
76-44-8	Heptachlor	ND		0.00050	0.0000030
1024-57-3	Heptachlor epoxide	ND		0.00050	0.0000050
72-43-5	Methoxychlor	ND		0.00050	0.0000040
8001-35-2	Toxaphene	ND		0.0050	0.00011

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	69		10-132
877-09-8	Tetrachloro-m-xylene	67		10-150

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FORM I 8081B

Method 8082A

Polychlorinated Biphenyls (PCBs) (GC) by Method 8082A

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: 14F0008446.D
Analysis Method: 8082A
Date Collected: 12/01/2020 00:00
Extraction Method: 3510C
Date Extracted: 12/05/2020 15:24
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 21:39
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 745068
Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	83		10-150
877-09-8	Tetrachloro-m-xylene	57		48-125

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: 14F0008446.D
Analysis Method: 8082A
Date Collected: 12/01/2020 00:00
Extraction Method: 3510C
Date Extracted: 12/05/2020 15:24
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 21:39
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 745068
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	Aroclor 1016	ND		0.40	0.095
11104-28-2	Aroclor 1221	ND		0.40	0.095
11141-16-5	Aroclor 1232	ND		0.40	0.095
53469-21-9	Aroclor 1242	ND		0.40	0.095
12672-29-6	Aroclor 1248	ND		0.40	0.095
11097-69-1	Aroclor 1254	ND		0.40	0.086
11096-82-5	Aroclor 1260	ND		0.40	0.086
37324-23-5	Aroclor-1262	ND		0.40	0.086
11100-14-4	Aroclor 1268	ND		0.40	0.086
1336-36-3	Polychlorinated biphenyls, Total	ND		0.40	0.095

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	84		10-150
877-09-8	Tetrachloro-m-xylene	60		48-125

Method 8151A

Herbicides (GC) by Method 8151A

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Matrix: Solid (TCLP)
Lab File ID: ZR177199.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:00
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 07:56
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-5 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	J	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	J	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	121		39-145

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FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Matrix: Solid (TCLP)
Lab File ID: ZR177199.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:00
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 07:56
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-608 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	121		39-145

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Matrix: Solid (TCLP)
Lab File ID: ZR177200.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:15
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:15
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-5
ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	J	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	J	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	125		39-145

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FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Matrix: Solid (TCLP)
Lab File ID: ZR177200.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:15
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:15
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-608 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	131		39-145

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: ZR177052.D
Analysis Method: 8151A
Date Collected: 12/01/2020 00:00
Extraction Method: 8151A
Date Extracted: 12/04/2020 23:53
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 08:42
Con. Extract Vol.: 3(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-5 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 744971
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
94-75-7	2,4-D	ND		1.2	0.13
93-72-1	Silvex (2,4,5-TP)	ND		1.2	0.11
93-76-5	2,4,5-T	ND		1.2	0.12

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	91		39-145

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Matrix: Water
Lab File ID: ZR177052.D
Analysis Method: 8151A
Date Collected: 12/01/2020 00:00
Extraction Method: 8151A
Date Extracted: 12/04/2020 23:53
Sample wt/vol: 250(mL)
Date Analyzed: 12/07/2020 08:42
Con. Extract Vol.: 3(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-608 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 744971
Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	97		39-145

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid (TCLP)
Lab File ID: ZR177201.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:30
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:30
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-5 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	J	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	J	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	111		39-145

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FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid (TCLP)
Lab File ID: ZR177201.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:30
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:30
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-608 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	117		39-145

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid (TCLP)
Lab File ID: ZR177202.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:45
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:45
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-5 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	U	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	U	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	114		39-145

313

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid (TCLP)
Lab File ID: ZR177202.D
Analysis Method: 8151A
Date Collected: 12/01/2020 13:45
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:45
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-608 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	119		39-145

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid (TCLP)
Lab File ID: ZR177203.D
Analysis Method: 8151A
Date Collected: 12/01/2020 14:00
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:59
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-5 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	J	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	J	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	119		39-145

8/31/21

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid (TCLP)
Lab File ID: ZR177203.D
Analysis Method: 8151A
Date Collected: 12/01/2020 14:00
Extraction Method: 8151A
Date Extracted: 12/16/2020 10:28
Sample wt/vol: 15(mL)
Date Analyzed: 12/18/2020 08:59
Con. Extract Vol.: 5(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: DB-608 ID: 0.53(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 747712
Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	124		39-145

METALS

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Edison Job Number: 160-40623-1

SDG No.:

Project: EPA RST2 - RFP No. 636

Client Sample ID	Lab Sample ID
HTCRV2-COMP-0612-01	160-40623-1
HTCRV2-COMP-0612-02	160-40623-2
HTCRV2-RB-120120	160-40623-3
HTCRV2-WC01-0612-01	160-40623-4
HTCRV2-WC02-0612-01	160-40623-5
HTCRV2-WC02-0612-02	160-40623-6

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-COMP-0612-01

Lab Sample ID: 160-40623-1

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:00

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	ND	0.075	0.017	mg/L			5	6010D
7440-39-3	Barium	0.15	1.0	0.066	mg/L	J		5	6010D
7440-43-9	Cadmium	ND	0.020	0.0016	mg/L			5	6010D
7440-47-3	Chromium	ND	0.050	0.025	mg/L			5	6010D
7439-92-1	Lead	0.059	0.050	0.012	mg/L			5	6010D
7782-49-2	Selenium	ND	0.10	0.029	mg/L			5	6010D
7440-22-4	Silver	ND	0.050	0.029	mg/L			5	6010D

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-COMP-0612-01

Lab Sample ID: 160-40623-1

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:00

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7439-97-6	Mercury	ND	0.00020		mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-COMP-0612-02

Lab Sample ID: 160-40623-2

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:15

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	ND	0.075	0.017	mg/L			5	6010D
7440-39-3	Barium	0.22	1.0	0.066	mg/L	J		5	6010D
7440-43-9	Cadmium	ND	0.020	0.0016	mg/L			5	6010D
7440-47-3	Chromium	ND	0.050	0.025	mg/L			5	6010D
7439-92-1	Lead	0.053	0.050	0.012	mg/L			5	6010D
7782-49-2	Selenium	ND	0.10	0.029	mg/L			5	6010D
7440-22-4	Silver	ND	0.050	0.029	mg/L			5	6010D

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-COMP-0612-02

Lab Sample ID: 160-40623-2

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:15

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7439-97-6	Mercury	ND	0.00020		mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Water
Date Sampled: 12/01/2020 00:00
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	2.0	0.19	ug/L			1	6020B
7429-90-5	Aluminum	ND	40	8.0	ug/L			1	6020B
7440-38-2	Arsenic	ND	2.0	0.89	ug/L			1	6020B
7440-39-3	Barium	ND	4.0	0.91	ug/L			1	6020B
7440-41-7	Beryllium	ND	0.80	0.098	ug/L			1	6020B
7440-70-2	Calcium	88	200	23	ug/L	J		1	6020B
7440-43-9	Cadmium	ND	2.0	0.16	ug/L			1	6020B
7440-48-4	Cobalt	ND	4.0	0.26	ug/L			1	6020B
7440-47-3	Chromium	ND	4.0	0.69	ug/L			1	6020B
7440-50-8	Copper	ND	4.0	2.5	ug/L			1	6020B
7439-89-6	Iron	13	120	8.5	ug/L	J		1	6020B
7440-09-7	Potassium	ND	200	110	ug/L			1	6020B
7439-95-4	Magnesium	20	200	15	ug/L	J		1	6020B
7439-96-5	Manganese	ND	8.0	1.1	ug/L			1	6020B
7440-23-5	Sodium	210	200	58	ug/L			1	6020B
7440-02-0	Nickel	ND	4.0	0.45	ug/L			1	6020B
7439-92-1	Lead	0.29	1.2	0.11	ug/L	J		1	6020B
7440-36-0	Antimony	ND	2.0	0.76	ug/L			1	6020B
7782-49-2	Selenium	ND	2.5	0.46	ug/L			1	6020B
7440-28-0	Thallium	ND	0.80	0.17	ug/L			1	6020B
7440-62-2	Vanadium	ND	4.0	0.37	ug/L			1	6020B
7440-66-6	Zinc	ND	16	5.1	ug/L			1	6020B
7439-97-6	Mercury	ND	0.20	0.091	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:30

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	ND	0.075	0.017	mg/L			5	6010D
7440-39-3	Barium	0.30	1.0	0.066	mg/L	J		5	6010D
7440-43-9	Cadmium	ND	0.020	0.0016	mg/L			5	6010D
7440-47-3	Chromium	ND	0.050	0.025	mg/L			5	6010D
7439-92-1	Lead	0.066	0.050	0.012	mg/L			5	6010D
7782-49-2	Selenium	ND	0.10	0.029	mg/L			5	6010D
7440-22-4	Silver	ND	0.050	0.029	mg/L			5	6010D

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:30

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7439-97-6	Mercury	0.00026	0.00020		mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:45

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	ND	0.075	0.017	mg/L			5	6010D
7440-39-3	Barium	0.099	1.0	0.066	mg/L	J		5	6010D
7440-43-9	Cadmium	ND	0.020	0.0016	mg/L			5	6010D
7440-47-3	Chromium	ND	0.050	0.025	mg/L			5	6010D
7439-92-1	Lead	0.044	0.050	0.012	mg/L	J		5	6010D
7782-49-2	Selenium	ND	0.10	0.029	mg/L			5	6010D
7440-22-4	Silver	ND	0.050	0.029	mg/L			5	6010D

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:45

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7439-97-6	Mercury	ND	0.00020		mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 14:00

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	ND	0.075	0.017	mg/L			5	6010D
7440-39-3	Barium	0.080	1.0	0.066	mg/L	J		5	6010D
7440-43-9	Cadmium	ND	0.020	0.0016	mg/L			5	6010D
7440-47-3	Chromium	ND	0.050	0.025	mg/L			5	6010D
7439-92-1	Lead	0.040	0.050	0.012	mg/L	J		5	6010D
7782-49-2	Selenium	ND	0.10	0.029	mg/L			5	6010D
7440-22-4	Silver	ND	0.050	0.029	mg/L			5	6010D

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TCLP

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 14:00

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7439-97-6	Mercury	0.00031	0.00020		mg/L			1	7470A

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job Number: 160-40623-1

SDG No.:

Project: EPA RST2 - RFP No. 636

Client Sample ID	Lab Sample ID
HTCRV2-COMP-0612-01	160-40623-1
HTCRV2-COMP-0612-02	160-40623-2
HTCRV2-RB-120120	160-40623-3
HTCRV2-WC01-0612-01	160-40623-4
HTCRV2-WC02-0612-01	160-40623-5
HTCRV2-WC02-0612-02	160-40623-6

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 13:00
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	10.4	J		SU		HF	1	9045D
	Corrosivity	10.4	J		SU		HF	1	9045D

3/3/21

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-COMP-0612-01
Lab Sample ID: 160-40623-1
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 13:00
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	ND	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 13:15
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	10.1		J	SU		~~HF~~	1	9045D
	Corrosivity	10.1		J	SU		~~HF~~	1	9045D

3/3/21

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-COMP-0612-02
Lab Sample ID: 160-40623-2
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 13:15
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	ND	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-RB-120120
Lab Sample ID: 160-40623-3
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Water
Date Sampled: 12/01/2020 00:00
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	0.010	0.0040	mg/L			1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:30

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	10	J		SU		HF	1	9045D
	Corrosivity	10	J		SU		HF	1	9045D

3/3/21

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 13:30
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	ND	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-1

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:45

Reporting Basis: WET

Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	10.2	J		SU		~~HF~~	1	9045D
	Corrosivity	10.2	J		SU		~~HF~~	1	9045D

3/3/21

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 13:45
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	22	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 14:00
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	10.6	J		SU		HF	1	9045D
	Corrosivity	10.6	J		SU		HF	1	9045D

(6) 3/3/21

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-1
SDG ID.:
Matrix: Solid
Date Sampled: 12/01/2020 14:00
Reporting Basis: WET
Date Received: 12/02/2020 09:47

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	ND	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

Shipping and Receiving Documents

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

160-40623 Chain of Custody

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-
Cooler
Lab: TestAmerica Laboratories, Inc. - St. L
Lab Phone: 314-298-8

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-COMP-0612-01	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	9	25-gram Encore	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-02	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	3	25-gram Encore	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-RB-120120	NA	Alpha/Gamma Spectroscopy	DI Water	12/1/2020	1	1 L poly	4 C	N
	HTCRV2-RB-120120	NA	TAL SVOC	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	PCBs	DI Water	12/1/2020	1	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	TAL Metals + Hg	DI Water	12/1/2020	1	1 L HDPE	HNO3 pH<2, 4 C	N
	HTCRV2-RB-120120	NA	Cyanide	DI Water	12/1/2020	1	1 L HDPE	NaOH pH>12, 4 C	N
	HTCRV2-RB-120120	NA	Herbicides	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-WC01-0612-01	WC01	Gamma/Alpha Spec	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC01-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC01-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All Analysis	[signature] WESTON START V	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Konishing ETA STL	12/2/2020 09:47	

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-01
Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-WC01-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	9	5-gram Encore	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	2	4 oz glass with septum	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-02	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC02-0612-02	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC02-0612-02	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
[illegible]	[illegible]	12/1/2020 1900	FedEx		
	FedEx		Micha Koninkinger ETA STL	12/2/2020 09:47	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-1

Login Number: 40623
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	11.4, 1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Additional 40mL vials were received for HTCRV2-RB-120120.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	A container was added for Rad Screen aliquot on samples -1 and -2
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-1

Login Number: 40623
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 12/04/20 03:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8, 1.0, 4.1°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Phone: 732-585-4400
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SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

START V-02-F-0071

TRANSMITTAL MEMO

To:	Mr. Peter Lisichenko, On-Scene Coordinator Superfund and Emergency Management Division U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer START V, Region II
Subject:	Holy Trinity Cemetery Site Data Validation Assessment
Date:	March 30, 2021

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TAL Metals and Mercury	3 Samples
TAL PCBs	3 Samples

- Matrices and Number of Samples

Soil/Rock/Slag	3 Samples

- Sampling Date: December 01, 2020

The final data assessment narrative and original analytical data package are attached.

cc:	START V SPM:	Bernard Nwosu
	START V SITE FILE TD #:	TO-0036-0021
	START V ANALYTICAL TD #:	TO-0036-0089
	TASK#:	2089

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **March 30, 2021**

TO: **Mr. Peter Lisichenko**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
START V Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to the U.S. Environmental Protection Agency, Region II (EPA) standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Holding Time
Instrument Tuning	Calibration, Initial
Internal Standard	Calibration, Continuing
Blanks	MS/MSD
Laboratory Control Sample	Field Duplicate
Surrogate Recovery	Sample Quantification
Compound Identification	ICP Serial Dilution

Summary of Results

	TAL PCBs	TAL Metals
Acceptable as Submitted		
Acceptable with Comments	X	X
Unacceptable, Action Pending		
Unacceptable		

Data Reviewed by: Smita Sumbaly Date: 03/30/2021

Approved By: Date: 03/30/2021

Area Code/Phone No.: (732) 585-4410

NARRATIVE

TASK No/RFP No.: 2089/636

SITE NAME: Holy Trinity Cemetery Site
Lewiston
Niagara County
New York

Laboratory Name: Eurofins TestAmerica, 13715 Rider Trail North, Earth City, Missouri (TestAmerica-MO).

INTRODUCTION:

The laboratory's portion of this case consisted of three soil/rock/slag samples, including one field duplicate, for target analyte list (TAL) metals, including mercury and TAL polychlorinated biphenyls (PCBs), analyses. All samples were collected on December 1, 2020. The TestAmerica-MO job number is 160-40623-3.

Note: As per chain-of-custody (COC) records, three soil/rock/slag samples, including one field duplicate, were requested for TAL: volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, PCBs, metals including mercury, cyanide, and herbicides, analyses. Laboratory incorrectly logged all three soil/rock/slag samples and analyzed all three samples for full toxicity characteristic leaching procedure (TCLP) fractions.

On February 3, 2021, Weston notified Eurofins TestAmerica (St. Louis) laboratory to complete TAL VOCs, TAL SVOCs, TAL pesticides, TAL PCBs, herbicides, TAL metals including mercury, and cyanide, analyses for the three soil/rock/slag samples. Since the three soil samples had exceeded the holding time criteria for TAL VOCs, SVOCs, pesticides, and herbicides analyses, and as per the Site Project Manager's (SPM) instruction, data validation was completed for only analytical results for TAL PCBs and TAL metals, including mercury.

Additionally, as per COC, matrix spike/matrix spike duplicate (MS/MSD) analyses were requested on sample HTCRV2-WC02-0612-01 for TAL fraction. MS/MSD analyses was not performed for PCBs.

The laboratory reported No problems with the analyses of TAL PCBs and TAL metals, including mercury.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Any statistical measures used to support the following conclusions are attached so that the information may be reviewed by others.

Organic:

Y Holding Time	NA MS/MSD
Y Compound ID (HSL, TIC)	Y Calibration, Initial
Y Calibration, Continuing	Y Standards
Y Blank	Y Chromatography
Y Surrogate Recovery	Y Data Completeness
Y Laboratory Control Sample	

Comments: Refer to Data Assessment Narrative.

Inorganic:

Y Data Completeness	Y Holding Time
Y Calibration, Initial	Y Matrix Spike
Y Calibration, Continuing	Y Laboratory Duplicate
Y Blanks	Y ICP Interference Check
Y Laboratory Control Sample	Y Serial Dilution
Y Field Duplicate	

Comments: Refer to Data Assessment Narrative.

REGION II START V DATA ASSESSMENT REPORT

SITE: Holy Trinity Cemetery Site

Lab Order No.: 160-40623-3

No. of Samples/Matrix: 3 - Soil/Rock/Slag

LAB: Eurofins TestAmerica, 13715 Rider Trail North, Earth City, Missouri (TestAmerica-MO).

ANALYSIS: Target Analyte List (TAL) Polychlorinated Biphenyls (PCBs) and TAL Metals, including Mercury.

CONTRACTOR: Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V)

The following table summarizes the analytical methods used for the requested analyses and the U.S. Environmental Protection Agency, Region II (EPA) data validation standard operating procedures (SOPs) used for data validation.

Analysis	Analytical Method	Data Validation SOP No.
TAL PCBs	SW-846 Method 8082A	HW-45 (Revision 1.1), December 2010
TAL Metals plus Mercury	SW-846 Method 6010D/7470A	SOP No. HW-3a/3c (Revision 1), December 2016 & Analytical Methods.

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various quality control (QC) problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident, and the reported analyte concentration is unreliable.

Reviewer
Signature: **Smita Sumbaly** **Date:** 03/30/2021

Verified By: Bernard Nwosu **Date:** 03/30/2021

On December 1, 2020, EPA and START V sampling personnel collected three soil/rock/slag samples, including one field duplicate, for Target Analyte List (TAL) Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (SVOCs), TAL Pesticides (PESTs), TAL PCBs, Herbicides, and TAL Metals, Mercury, and Cyanide analyses. All the samples were collected from the Holy Trinity Cemetery Site, located in Lewiston, Niagara County, New York. The samples were shipped by START V personnel under chain of custody (COC) record for the requested analysis to Eurofins TestAmerica (St. Louis) Laboratory located at 13715 Rider Trail North, Earth City, Missouri (TestAmerica- St. Louis). The laboratory verified that samples were received intact, properly sealed, and refrigerated. Sample coolers temperature measured at 1.6 and 11.4 degree Celsius (^{o}C), respectively.

Note: Laboratory logged all samples incorrectly and analyzed all three soil/rock/slag samples for toxicity characteristic leaching procedure (TCLP) VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals and mercury.

On February 3, 2021, Weston notified TestAmerica- St. Louis to complete TAL VOCs, TAL SVOCs, TAL pesticides, TAL PCBs, herbicides, TAL metals including mercury, and cyanide, analyses for the three soil/rock/slag samples. Since the three soil samples had exceeded the holding time criteria for TAL VOCs, SVOCs, pesticides, and herbicides analyses, and as per the Site Project Manager's (SPM) instruction, data validation was completed for only analytical results for TAL PCBs and TAL metals, including mercury.

Field Sample ID	Lab Sample ID	Matrix	Analysis	Sampling Date
Sample Delivery Group No. 160-40623-3				
HTCRV2-WC01-0612-01	160-40623-4	Soil/Rock/Slag	TAL PCBs, TAL Metals, and Mercury	12/01/2020
HTCRV2-WC02-0612-01	160-40623-5	Soil/Rock/Slag	TAL PCBs, TAL Metals, and Mercury	12/01/2020
HTCRV2-WC02-0612-02[2]	160-40623-6	Soil/Rock/Slag	TAL PCBs, TAL Metals, and Mercury	12/01/2020
[1] A field duplicate of sample HTCRV2-WC02-0612-01				

DATA ASSESSMENT

ANALYSIS: PCB

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

The PCBs samples were extracted outside the analytical holding time of 14 days from collection time. Samples were collected on December 1, 2020, extracted on February 4, 2021, and analyzed on February 5, 2021. According to SW-846 Method 8082, for aqueous, soil, and oil matrices, chapter 4 for states" none" (*refer to SW-846 "Recommended Holding Times" in Chapter Four of the SW-846 Compendium: Organic Analytes, Table 4-1*). and 40 CFR 136 specifies a one-year holding

time for PCBs. Using professional judgment, samples HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02 were not qualified due to holding time criteria.

TAL PCBs: All soil/rock/slag samples were received with cooler temperature measuring 11.4ºC; all PCBs results were estimated for positive results (J) and non-detects (UJ) in samples HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

2. SURROGATES:
All samples are spiked with a surrogate compound prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside the laboratory QC limits, qualifications were applied to samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: Not Applicable

4. Laboratory Control Samples (LCS) and Laboratory Control Samples Duplicate (LCSD):
LCS data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

TAL PCBs: The recoveries of Aroclor-1016 and Aroclor-1060 are above the acceptance criteria in the LCS/LCSD (preparation batch 460-757020 and analytical batch 460-757214) on both the columns. Since Aroclor-1016 and Aroclor-1060 were not detected in associated samples, no action was required.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects U. Qualifications were applied to the samples and analytes as shown below.

A) Method blank contamination:

TAL PCBs: No problems were found for this criterion.

B) Field or rinse blank contamination:

TAL PCBs: Not applicable.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD):
For Aroclor analysis, if RSD exceeds 20%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

B) Percent Difference (%D):
For initial calibration verification (ICV), if the %D exceeds 30 for any analytes, estimate (J) all associated positive results and use professional judgment to qualify non-detects. For opening continuing calibration verification (CCV) or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 20 for any analytes, qualify all associated positive results "J" and non-detects "UJ". For closing CCV, if %D exceeds 20% for any analytes, qualify all associated positive results "J" and non-detects "UJ". Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: No problems were found for this criterion.

7. FIELD DUPLICATES:

TAL PCBs: Samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were used for duplicate analysis which yielded comparable results.

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

TAL PCBs: Target analytes were not detected in any samples.

9. METHOD NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

TAL PCBs: No problems were found for this criterion.

11. OTHER PROBLEMS:

Laboratory logged all samples incorrectly and analyzed all three soil/rock/slag samples for TCLP VOCs, TCLP SVOCS, TCLP Pesticides, TCLP Herbicides, TCLP Metals and Mercury. Data reviewer contacted the laboratory regarding this discrepancy and notified SPM and EPA On-Scene Coordinator (OSC). As per SPM's and OSC's instructions, data reviewer notified the laboratory to analyze the three soil/rock/slag samples for TAL VOC, SVOC, TAL pesticides, TAL PCBs, herbicides, and TAL metals including mercury, and cyanide.

As per COC records, MS/MSD analyses were requested on sample HTCRV2-WC02-0612-01 for TAL fraction. MS/MSD analyses were not performed on the sample. Data reviewer contacted the laboratory for MS/MSD analyses and was informed that laboratory failed to log in the analyses as indicated in COC.

12. DILUTIONS, RE-EXTRACTIONS & RE-ANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following samples were re-analyzed. Data reviewer used the original samples for reporting purpose.

None

ANALYSIS: TAL METALS plus MERCURY

The current SOPs HW-3A (Revision 0) July 2015, USEPA Region II for the evaluation of metals data generated through Statement of Work ISM02.2, and the National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (based on SOW02.4) were followed for data qualifications.

1. HOLDING TIME AND PRESERVATION
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples) is not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding times (180 days for metals, 28 days for mercury, and 14 days for cyanide) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R".

TAL Metals: No problems were found for this criterion.

Mercury: The following samples were analyzed outside the analytical holding time of 28 days from collection time. Samples were collected on December 1, 2020 and analyzed on February 9, 2021. All three soil/rock/slag samples were qualified as estimated "J" for mercury due to exceedance of holding time criteria:

Mercury: "J" – HTCRV2-WC01-0612-01, HTCRV2-WC02-0612-01, and HTCRV2-WC02-0612-02.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals, mercury, and cyanide. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the contract required quantitation limit (CRQL). The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL.

TAL Metals: No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution. The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%.

TAL Metals: No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks including initial calibration blank (ICB) and continuing calibration blank (CCB) are used to ensure a stable instrument baseline before and during sample analysis. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

TAL Metals: No problems were found for this criterion.

4. INTERFERENCE CHECK SAMPLE

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the

true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of aluminum, calcium, iron, and magnesium in the sample are found to be less than or equal to their respective concentrations in the ICS.

TAL Metals: No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike percent recovery (%R) shall be within the established acceptance limits of 75 – 125% or lab established QC limits. However, spike recovery limits do not apply when the sample concentration is ≥ four times (4x) the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

TAL Metals: Sample HTCRV2-WC01-0612-01 was used for matrix spike (MS) analysis which yielded non-compliant recoveries for antimony, copper, potassium, and zinc below the QC criteria. The results reported for sample HTCRV2-WC01-0612-01 was estimated (J or UJ) for antimony, copper, and zinc.

Since, MS/MSD analyses are not required for potassium, therefore, data qualification was not necessary.

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (aqueous) and/or 35% (solid) for the relative percent difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the CRQL. A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

TAL Metals: Sample HTCRV2-WC01-0612-01 was used for duplicate analysis which yielded comparable results, except for cobalt, iron, magnesium, and selenium. The RPD was greater than (>) 35%, and original and duplicate sample values were greater than or equal to (≥) 5 times (5x) the reporting limit (RL) for magnesium. The positive results reported for magnesium in sample HTCRV2-WC01-0612-01 were estimated (J). For cobalt and selenium the RPDs were >20% but original and/or duplicate sample values were less than or equal to (≤) 5x the CRQL; and for iron RPD was >20% but <35%; and original and/or duplicate sample values were >5x the CRQL, No action was required.

7. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 50% for the RPD

shall be used for original and duplicate sample values ≥ five times (5x) the CRQL. A control limit of two times the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

TAL Metals: Field duplicate pair HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 met the technical criteria for all analytes except aluminum, calcium, barium, magnesium, manganese, potassium, and sodium (>50%RPD). The positive results reported in sample HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02, were estimated (J) for aluminum, calcium, barium, magnesium, manganese, potassium, and sodium.

Field duplicate pair HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 met the technical criteria for all analytes except chromium, cobalt, iron, lead, and vanadium (difference > 2X CRQL). The positive results reported in sample HTCRV2-WC02-0612-01 and its field duplicate HTCRV2-WC02-0612-02 were estimated (J) for chromium, cobalt, iron, lead, and vanadium.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS %R must fall within the control limits of 70-130%, except for antimony and silver which must fall within the control limits of 50-150%.

TAL Metals: No problems were found for this criterion in all analyses.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by inductively coupled plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 25 times (25x) the CRQL], the difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15% (10% for aqueous sample). For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

TAL Metals: No problems were found for this criterion in all analyses.

10. METHOD NON-COMPLIANCE:

TAL Metals: No problems were identified.

11. FIELD DOCUMENTATION:

TAL: No problems were identified.

12. OTHER PROBLEMS:

Mercury: Due to holding time non-compliance, the laboratory qualified the associated analyte with H qualifier. The data reviewer removed the H qualifier from the Form I and initialed the changes.

Due to non-compliant matrix spike results, laboratory qualified the associated analytes with J1 qualifier on associated sample results. Data reviewer removed the J1 qualifier from Form Is and initialed them.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report and the other report is marked as not to be used. The following sample results were reported from a dilution analysis.

None

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 636

Report Number: 160-40623-3

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

Revision 1- Report all batch QC in report

RECEIPT

The samples were received on 12/02/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 11.4º C.

Due to lab error, samples were logged for TCLP rather than total. This report contains the total results which were out of hold due to error.

Receipt Exceptions: The following samples were received at the laboratory outside the required temperature criteria: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6). The samples were logged with collection times listed on the container labels.

The vials, encores, and 1L Amber Glass containers were received within temp; however, the other containers associated with following samples were received at the laboratory outside the required temperature criteria: HTCRV2-COMP-0612-01 (160-40623-1), HTCRV2-COMP-0612-02 (160-40623-2), HTCRV2-RB-120120 (160-40623-3), HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

VOLATILE ORGANIC COMPOUNDS BY GC/MS

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 8260D. The samples were prepared on 02/03/2021 and analyzed on 02/04/2021.

The continuing calibration verification (CCV) associated with batch 460-756830 recovered above the upper control limit for Bromomethane and 1,1,2,2-Tetrachloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 460-756830 recovered outside control limits for the following analytes: Bromomethane, 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, 1,2-Dichlorobenzene, 1,4-Dioxane, 1,2,3-Trichlorobenzene, 2-Hexanone and 4-Methyl-2-pentanone (MIBK). These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Semivolatile Organic Compounds (GC/MS) in accordance with 8270E. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The continuing calibration verification (CCV) analyzed in batch 460-757182 was outside the method criteria for the following analyte(s): Benzaldehyde. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits due to poor performance. The LCS/LCSD associated with batch 460-757132 had (Atrazine, Benzaldehyde and Caprolactam) outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ORGANOCHLORINE PESTICIDES (GC)

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Organochlorine Pesticides (GC) in accordance with SW- 846 Method 8081B. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

The %RPD between the primary and confirmation column exceeded 40% for the following sample: 4,4'-DDTHTCRV2-WC01-0612-01 (160-40623-4). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS) BY GAS CHROMATOGRAPHY

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Polychlorinated Biphenyls (PCBs) by Gas Chromatography in accordance with SW 846. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The laboratory control sample (LCS) laboratory control sample duplicate (LCSD) for preparation batch 460-757020 and analytical batch 460-757214 recovered outside control limits for the following analytes: Aroclor 1016 and Aroclor 1260 on the confirmation column These analytes were biased high in the LCS and LCSD and were not detected in the associated samples; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORINATED HERBICIDES

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 02/04/2021 and analyzed on 02/05/2021.

The closing continuing calibration verification (CCVC) associated with batch 460-757242 recovered above the upper control limit for many analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS ICP/MS

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Metals ICP/MS in accordance with SW 846. The samples were prepared and analyzed on 02/12/2021.

Several analytes failed the recovery criteria low for the MS of sample HTCRV2-WC01-0612-01MS (160-40623-4) in batch 460-758639.

Cobalt, Iron, Magnesium and Selenium exceeded the RPD limit for the duplicate of sample HTCRV2-WC01-0612-01DU (160-40623-4). Refer to the QC report for details.

Samples HTCRV2-WC01-0612-01 (160-40623-4)[5X], HTCRV2-WC02-0612-01 (160-40623-5)[5X] and HTCRV2-WC02-0612-02 (160-40623-6)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 02/09/2021.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 02/14/2021 and analyzed on 02/15/2021.

Cyanide, Total failed the recovery criteria low for the MS/MSD of sample 460-227896-1 in batch 460-759149.

The following samples were analyzed outside of analytical holding time due to being activated past hold: HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS VOA TICs

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
A	The tentatively identified compound is a suspected aldol-condensation product.
H	Sample was prepped or analyzed beyond the specified holding time
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method 8082A

Polychlorinated Biphenyls (PCBs) (GC) by Method 8082A

PCBs Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
START V Sample No.:	**HTCRV2-WC01-0612-01**	**HTCRV2-WC02-0612-01**	**HTCRV2-WC02-0612-02**
Lab sample ID No.:	**160-40623-4**	**160-40623-5**	**160-40623-6**
Percent Moisture	**22.8**	**2.3**	**3.8**
Dilution Factor	**1**	**1**	**1**
Polychlorinated Biphenyls (PCBs) by SW-846 Method 8082A (ug/Kg)			
Aroclor 1016	11 UJ	9.1 UJ	9.2 UJ
Aroclor 1221	11 UJ	9.1 UJ	9.2 UJ
Aroclor 1232	11 UJ	9.1 UJ	9.2 UJ
Aroclor 1242	11 UJ	9.1 UJ	9.2 UJ
Aroclor 1248	11 UJ	9.1 UJ	9.2 UJ
Aroclor 1254	12 UJ	9.4 UJ	9.5 UJ
Aroclor 1260	12 UJ	9.4 UJ	9.5 UJ
Aroclor 1268	12 UJ	9.4 UJ	9.5 UJ
Aroclor-1262	12 UJ	9.4 UJ	9.5 UJ
Polychlorinated biphenyls, Total	12 UJ	9.4 UJ	9.5 UJ

U/ND: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-3
SDG No.:
Client Sample ID: HTCRV2-WC01-0612-01
Lab Sample ID: 160-40623-4
Matrix: Solid
Lab File ID: 13F0008898.D
Analysis Method: 8082A
Date Collected: 12/01/2020 13:30
Extraction Method: 3546
Date Extracted: 02/04/2021 09:46
Sample wt/vol: 15.03(g)
Date Analyzed: 02/05/2021 10:23
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture: 22.8
GPC Cleanup:(Y/N) N
Analysis Batch No.: 757214
Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	62		10-150
877-09-8	Tetrachloro-m-xylene	62		58-145

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-40623-3

SDG No.:

Client Sample ID: HTCRV2-WC01-0612-01 Lab Sample ID: 160-40623-4

Matrix: Solid Lab File ID: 13F0008898.D

Analysis Method: 8082A Date Collected: 12/01/2020 13:30

Extraction Method: 3546 Date Extracted: 02/04/2021 09:46

Sample wt/vol: 15.03(g) Date Analyzed: 02/05/2021 10:23

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: CLP-2 ID: 0.53(mm)

% Moisture: 22.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 757214 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	Aroclor 1016	ND	H	87	11
11104-28-2	Aroclor 1221	ND	H	87	11
11141-16-5	Aroclor 1232	ND	H	87	11
53469-21-9	Aroclor 1242	ND	H	87	11
12672-29-6	Aroclor 1248	ND	H	87	11
11097-69-1	Aroclor 1254	ND	H	87	12
11096-82-5	Aroclor 1260	ND	H	87	12
37324-23-5	Aroclor-1262	ND	H	87	12
11100-14-4	Aroclor 1268	ND	H	87	12
1336-36-3	Polychlorinated biphenyls, Total	ND	H	87	12

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	64		10-150
877-09-8	Tetrachloro-m-xylene	61		58-145

3/25/21

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-3
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid
Lab File ID: 13F0008899.D
Analysis Method: 8082A
Date Collected: 12/01/2020 13:45
Extraction Method: 3546
Date Extracted: 02/04/2021 09:46
Sample wt/vol: 15.01(g)
Date Analyzed: 02/05/2021 10:38
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture: 2.3
GPC Cleanup:(Y/N) N
Analysis Batch No.: 757214
Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	111		10-150
877-09-8	Tetrachloro-m-xylene	106		58-145

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-3
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-01
Lab Sample ID: 160-40623-5
Matrix: Solid
Lab File ID: 13F0008899.D
Analysis Method: 8082A
Date Collected: 12/01/2020 13:45
Extraction Method: 3546
Date Extracted: 02/04/2021 09:46
Sample wt/vol: 15.01(g)
Date Analyzed: 02/05/2021 10:38
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2
ID: 0.53(mm)
% Moisture: 2.3
GPC Cleanup:(Y/N) N
Analysis Batch No.: 757214
Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	Aroclor 1016	ND	H	69	9.1
11104-28-2	Aroclor 1221	ND	H	69	9.1
11141-16-5	Aroclor 1232	ND	H	69	9.1
53469-21-9	Aroclor 1242	ND	H	69	9.1
12672-29-6	Aroclor 1248	ND	H	69	9.1
11097-69-1	Aroclor 1254	ND	H	69	9.4
11096-82-5	Aroclor 1260	ND	H	69	9.4
37324-23-5	Aroclor-1262	ND	H	69	9.4
11100-14-4	Aroclor 1268	ND	H	69	9.4
1336-36-3	Polychlorinated biphenyls, Total	ND	H	69	9.4

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	109		10-150
877-09-8	Tetrachloro-m-xylene	104		58-145

3/25/21

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-3
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid
Lab File ID: 13F0008900.D
Analysis Method: 8082A
Date Collected: 12/01/2020 14:00
Extraction Method: 3546
Date Extracted: 02/04/2021 09:46
Sample wt/vol: 15.08(g)
Date Analyzed: 02/05/2021 10:54
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: Rtx-CLP
ID: 0.53(mm)
% Moisture: 3.8
GPC Cleanup:(Y/N) N
Analysis Batch No.: 757214
Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	97		10-150
877-09-8	Tetrachloro-m-xylene	95		58-145

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-40623-3
SDG No.:
Client Sample ID: HTCRV2-WC02-0612-02
Lab Sample ID: 160-40623-6
Matrix: Solid
Lab File ID: 13F0008900.D
Analysis Method: 8082A
Date Collected: 12/01/2020 14:00
Extraction Method: 3546
Date Extracted: 02/04/2021 09:46
Sample wt/vol: 15.08(g)
Date Analyzed: 02/05/2021 10:54
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP-2
ID: 0.53(mm)
% Moisture: 3.8
GPC Cleanup:(Y/N) N
Analysis Batch No.: 757214
Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	Aroclor 1016	ND	H	69	9.2
11104-28-2	Aroclor 1221	ND	H	69	9.2
11141-16-5	Aroclor 1232	ND	H	69	9.2
53469-21-9	Aroclor 1242	ND	H	69	9.2
12672-29-6	Aroclor 1248	ND	H	69	9.2
11097-69-1	Aroclor 1254	ND	H	69	9.5
11096-82-5	Aroclor 1260	ND	H	69	9.5
37324-23-5	Aroclor-1262	ND	H	69	9.5
11100-14-4	Aroclor 1268	ND	H	69	9.5
1336-36-3	Polychlorinated biphenyls, Total	ND	H	69	9.5

J

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	107		10-150
877-09-8	Tetrachloro-m-xylene	93		58-145

3/25/21

METALS

TAL Metals and Mercury Summary Table
Holy Trinity Cemetery Site
Lewiston, NIagara County, New York
December 1, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	HTCRV2-WC01-0612-01	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02
Lab sample ID No.:	160-40623-4	160-40623-5	160-40623-6
Percent Solid(%)	77.2	97.7	96.2
Dilution Factor	1	1	1
TAL METALS by SW-846 Method 6020B and Mercury by Method 7471B (mg/Kg)			
Aluminum	**17000**	**3200 J**	**10000 J**
Antimony	0.19 U	0.15 U	0.15 U
Arsenic	**3.9**	**0.17 J**	**0.51 J**
Barium	**120**	**33 J**	**88 J**
Beryllium	**1.3**	**0.62**	**1.5**
Cadmium	**1.2 J**	0.11 U	**0.24 J**
Calcium	**130000**	**99000 J**	**200000 J**
Chromium	**23**	**3.4 J**	**14 J**
Cobalt	**13**	**0.21 J**	**7 J**
Copper	**18 J**	**2.5**	**6**
Iron	**20000**	**190 J**	**890 J**
Lead	**40**	**0.48 J**	**1.9 J**
Magnesium	**7900 J**	**810 J**	**3900 J**
Manganese	**460**	**47 J**	**110 J**
Nickel	**21**	**0.23 J**	**3.2**
Potassium	**2500**	**280 J**	**990 J**
Selenium	**0.69 J**	**0.32 J**	**1.2 J**
Silver	**0.13 J**	**0.22 J**	**0.16 J**
Sodium	**1000**	**810 J**	**2300 J**
Thallium	**0.12 J**	0.041 U	0.042 U
Vanadium	**29**	**2.6 J**	**13 J**
Zinc	**83 J**	**11**	**17**
Mercury	**0.061 J**	**0.009 J**	**0.013 J**

U: Not Detected

J: Estimated Result

mg/Kg: milligrams per kilograms

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Edison Job Number: 160-40623-3

SDG No.:

Project: EPA RST2 - RFP No. 636

Client Sample ID	Lab Sample ID
HTCRV2-WC01-0612-01	160-40623-4
HTCRV2-WC02-0612-01	160-40623-5
HTCRV2-WC02-0612-02	160-40623-6

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-3

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:30

Reporting Basis: DRY

Date Received: 12/02/2020 09:47

% Solids: 77.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	17000	26	3.3	mg/Kg			1	6020B
7440-36-0	Antimony	ND	1.3	0.19	mg/Kg		~~F1~~ J	1	6020B
7440-38-2	Arsenic	3.9	1.3	0.13	mg/Kg			1	6020B
7440-39-3	Barium	120	2.6	0.19	mg/Kg			1	6020B
7440-41-7	Beryllium	1.3	0.51	0.073	mg/Kg			1	6020B
7440-43-9	Cadmium	1.2	1.3	0.14	mg/Kg	J		1	6020B
7440-70-2	Calcium	130000	640	110	mg/Kg			5	6020B
7440-47-3	Chromium	23	2.6	0.22	mg/Kg			1	6020B
7440-48-4	Cobalt	13	2.6	0.19	mg/Kg		~~F1~~	1	6020B
7440-50-8	Copper	18	2.6	0.28	mg/Kg		~~F1~~ J	1	6020B
7439-89-6	Iron	20000	77	26	mg/Kg			1	6020B
7439-92-1	Lead	40	0.77	0.26	mg/Kg			1	6020B
7439-95-4	Magnesium	7900	130	13	mg/Kg		J	1	6020B
7439-96-5	Manganese	460	5.1	0.52	mg/Kg			1	6020B
7440-02-0	Nickel	21	2.6	0.25	mg/Kg			1	6020B
7440-09-7	Potassium	2500	130	14	mg/Kg		~~F1~~	1	6020B
7782-49-2	Selenium	0.69	1.6	0.15	mg/Kg	J		1	6020B
7440-22-4	Silver	0.13	1.3	0.11	mg/Kg	J		1	6020B
7440-23-5	Sodium	1000	130	20	mg/Kg			1	6020B
7440-28-0	Thallium	0.12	0.51	0.053	mg/Kg	J		1	6020B
7440-62-2	Vanadium	29	2.6	0.26	mg/Kg			1	6020B
7440-66-6	Zinc	83	10	2.9	mg/Kg		~~F1~~ J	1	6020B
7439-97-6	Mercury	0.061	0.022	0.0051	mg/Kg		~~H~~ J	1	7471B

3/24/21

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-3

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 13:45

Reporting Basis: DRY

Date Received: 12/02/2020 09:47

% Solids: 97.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	3200	20	2.6	mg/Kg		J	1	6020B
7440-36-0	Antimony	ND	1.0	0.15	mg/Kg			1	6020B
7440-38-2	Arsenic	0.17	1.0	0.10	mg/Kg	J		1	6020B
7440-39-3	Barium	33	2.0	0.15	mg/Kg		J	1	6020B
7440-41-7	Beryllium	0.62	0.40	0.057	mg/Kg			1	6020B
7440-43-9	Cadmium	ND	1.0	0.11	mg/Kg			1	6020B
7440-70-2	Calcium	99000	500	85	mg/Kg		J	5	6020B
7440-47-3	Chromium	3.4	2.0	0.17	mg/Kg		J	1	6020B
7440-48-4	Cobalt	0.21	2.0	0.15	mg/Kg	J	J	1	6020B
7440-50-8	Copper	2.5	2.0	0.22	mg/Kg			1	6020B
7439-89-6	Iron	190	60	20	mg/Kg		J	1	6020B
7439-92-1	Lead	0.48	0.60	0.20	mg/Kg	J	J	1	6020B
7439-95-4	Magnesium	810	100	10	mg/Kg		J	1	6020B
7439-96-5	Manganese	47	4.0	0.40	mg/Kg		J	1	6020B
7440-02-0	Nickel	0.23	2.0	0.19	mg/Kg	J	J	1	6020B
7440-09-7	Potassium	280	100	11	mg/Kg		J	1	6020B
7782-49-2	Selenium	0.32	1.3	0.12	mg/Kg	J		1	6020B
7440-22-4	Silver	0.22	1.0	0.089	mg/Kg	J		1	6020B
7440-23-5	Sodium	810	100	16	mg/Kg		J	1	6020B
7440-28-0	Thallium	ND	0.40	0.041	mg/Kg			1	6020B
7440-62-2	Vanadium	2.6	2.0	0.21	mg/Kg		J	1	6020B
7440-66-6	Zinc	11	8.0	2.3	mg/Kg			1	6020B
7439-97-6	Mercury	0.0090	0.017	0.0039	mg/Kg	J	H J	1	7471B

3/24/21

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6

Lab Name: Eurofins TestAmerica, Edison

Job No.: 160-40623-3

SDG ID.:

Matrix: Solid

Date Sampled: 12/01/2020 14:00

Reporting Basis: DRY

Date Received: 12/02/2020 09:47

% Solids: 96.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	21	2.7	mg/Kg		J	1	6020B
7440-36-0	Antimony	ND	1.0	0.15	mg/Kg			1	6020B
7440-38-2	Arsenic	0.51	1.0	0.10	mg/Kg	J		1	6020B
7440-39-3	Barium	88	2.1	0.15	mg/Kg		J	1	6020B
7440-41-7	Beryllium	1.5	0.41	0.059	mg/Kg			1	6020B
7440-43-9	Cadmium	0.24	1.0	0.12	mg/Kg	J		1	6020B
7440-70-2	Calcium	200000	510	87	mg/Kg		J	5	6020B
7440-47-3	Chromium	14	2.1	0.18	mg/Kg		J	1	6020B
7440-48-4	Cobalt	7.0	2.1	0.15	mg/Kg		J	1	6020B
7440-50-8	Copper	6.0	2.1	0.23	mg/Kg			1	6020B
7439-89-6	Iron	890	62	21	mg/Kg		J	1	6020B
7439-92-1	Lead	1.9	0.62	0.21	mg/Kg		J	1	6020B
7439-95-4	Magnesium	3900	100	10	mg/Kg		J	1	6020B
7439-96-5	Manganese	110	4.1	0.41	mg/Kg		J	1	6020B
7440-02-0	Nickel	3.2	2.1	0.20	mg/Kg			1	6020B
7440-09-7	Potassium	990	100	12	mg/Kg		J	1	6020B
7782-49-2	Selenium	1.2	1.3	0.12	mg/Kg	J		1	6020B
7440-22-4	Silver	0.16	1.0	0.092	mg/Kg	J		1	6020B
7440-23-5	Sodium	2300	100	16	mg/Kg		J	1	6020B
7440-28-0	Thallium	ND	0.41	0.042	mg/Kg			1	6020B
7440-62-2	Vanadium	13	2.1	0.21	mg/Kg		J	1	6020B
7440-66-6	Zinc	17	8.2	2.4	mg/Kg			1	6020B
7439-97-6	Mercury	0.013	0.017	0.0040	mg/Kg	~~J~~	H ~~J~~	1	7471B

3/24/21

USEPA

DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

160-40623 Chain of Custody

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-

Cooler
Lab: TestAmerica Laboratories, Inc. - St. L
Lab Phone: 314-298-8

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-COMP-0612-01	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	9	25-gram Encore	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-02	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	3	25-gram Encore	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-RB-120120	NA	Alpha/Gamma Spectroscopy	DI Water	12/1/2020	1	1 L poly	4 C	N
	HTCRV2-RB-120120	NA	TAL SVOC	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	PCBs	DI Water	12/1/2020	1	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	TAL Metals + Hg	DI Water	12/1/2020	1	1 L HDPE	HNO3 pH<2, 4 C	N
	HTCRV2-RB-120120	NA	Cyanide	DI Water	12/1/2020	1	1 L HDPE	NaOH pH>12, 4 C	N
	HTCRV2-RB-120120	NA	Herbicides	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-WC01-0612-01	WC01	Gamma/Alpha Spec	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC01-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC01-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All Analysis	[signature] Weston START V	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Konirhinger ETA STL	12/2/2020 09:47	

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-01
Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-WC01-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	9	5-gram Encore	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	2	4 oz glass with septum	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-02	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC02-0612-02	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC02-0612-02	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Sam Allan [illegible]	[illegible]	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Koninhuizer ETA STL	12/2/2020 09:47	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-3

Login Number: 40623
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	11.4, 1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Additional 40mL vials were received for HTCRV2-RB-120120.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	A container was added for Rad Screen aliquot on samples -1 and -2
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-3

Login Number: 40623
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 12/04/20 03:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	tamper evident tape
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8, 1.0, 4.1°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
ATTN: Ms. Smita Sumbaly
S.Sumbaly@WestonSolutions.com

February 18, 2021

SUBJECT: Holy Trinity Cemetery, Data Validation

Dear Ms. Sumbaly,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on February 3, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #50414:

SDG #	**Fraction**
160-40639-1, 160-40623-2	Gamma Spectroscopy, Isotopic Uranium, Isotopic Thorium

The data validation was performed under Level IV guidelines. The analyses were validated using the following documents as applicable to each method:

- Multi Agency Radiological Laboratory Analytical Protocols, Manual, July 2004
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Pgeng@lab-data.com
Project Manager/Senior Chemist

66 pages-ADV EDD print out Attachment 1

Level IV EDD

LDC #50414 (Weston Solutions, Inc.-Edison, NJ / Holy Trinity Cemetery)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Ra-226 (GA-01 R)		U (A-01-R)		Th (A-01-R)																													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	160-40639-1	02/03/21	02/25/21	0	24	0	24	0	24																												
B	160-40623-2	02/03/21	02/25/21	1	3	1	3	1	3																												
Total	J/PG			1	27	1	27	1	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Weston Solutions\HTC\50414ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Holy Trinity Cemetery

LDC Report Date: February 12, 2021

Parameters: Gamma Spectroscopy

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-40639-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HTCRV2-SS01-1218-01	160-40639-1	Soil	12/01/20
HTCRV2-SS01-1824-01	160-40639-2	Soil	12/01/20
HTCRV2-SS02-0612-01	160-40639-3	Soil	12/01/20
HTCRV2-SS02-1218-01	160-40639-4	Soil	12/01/20
HTCRV2-SS02-1824-01	160-40639-5	Soil	12/01/20
HTCRV2-SS03-0006-01	160-40639-6	Soil	12/01/20
HTCRV2-SS03-0612-01	160-40639-7	Soil	12/01/20
HTCRV2-SS03-1218-01	160-40639-8	Soil	12/01/20
HTCRV2-SS03-1824-01	160-40639-9	Soil	12/01/20
HTCRV2-SS04-0006-01	160-40639-10	Soil	12/01/20
HTCRV2-SS04-0006-02	160-40639-11	Soil	12/01/20
HTCRV2-SS04-0612-01	160-40639-12	Soil	12/01/20
HTCRV2-SS04-1218-01	160-40639-13	Soil	12/01/20
HTCRV2-SS04-1821-01	160-40639-14	Soil	12/01/20
HTCRV2-SS05-0006-01	160-40639-15	Soil	12/01/20
HTCRV2-SS05-0612-01	160-40639-16	Soil	12/01/20
HTCRV2-SS05-1218-01	160-40639-17	Soil	12/01/20
HTCRV2-SS05-1824-01	160-40639-18	Soil	12/01/20
HTCRV2-SS06-0006-01	160-40639-19	Soil	12/01/20
HTCRV2-SS06-0006-02	160-40639-20	Soil	12/01/20
HTCRV2-SS06-0612-01	160-40639-21	Soil	12/01/20
HTCRV2-SS06-1218-01	160-40639-22	Soil	12/01/20
HTCRV2-SS06-1824-01	160-40639-23	Soil	12/01/20
HTCRV2-SS01-0612-01	160-40639-24	Soil	12/01/20
HTCRV2-SS06-1824-01DUP	160-40639-23DUP	Soil	12/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Gamma Spectroscopy by Method GA-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC).

V. Field Blanks

Sample HTCRV2-RB-120120 (from SDG 160-40623-2) was identified as a rinsate blank. No contaminants were found with the following exceptions:

Blank ID	Sampling Date	Isotope	Activity	Associated Samples
HTCRV2-RB-120120	12/01/20	Potassium-40 Thallium-208	87.2 pCi/L 8.14 pCi/L	All samples in SDG 160-40639-1

Sample activities were compared to activities detected in the field blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated field blanks with the following exceptions:

Sample	Isotope	Reported Activity	Modified Final Activity
HTCRV2-SS01-1218-01	Potassium-40 Thallium-208	19.4 pCi/g 0.509 pCi/g	19.4J pCi/g 0.509J pCi/g
HTCRV2-SS01-1824-01	Potassium-40 Thallium-208	16.4 pCi/g 0.387 pCi/g	16.4J pCi/g 0.387J pCi/g
HTCRV2-SS02-0612-01	Potassium-40	4.41 pCi/g	4.41J pCi/g

Sample	Isotope	Reported Activity	Modified Final Activity
HTCRV2-SS02-1218-01	Potassium-40	3.14 pCi/g	3.14J pCi/g
HTCRV2-SS02-1824-01	Potassium-40 Thallium-208	8.51 pCi/g 0.320 pCi/g	8.51J pCi/g 0.320J pCi/g
HTCRV2-SS03-1218-01	Potassium-40 Thallium-208	22.3 pCi/g 0.531 pCi/g	22.3J pCi/g 0.531J pCi/g
HTCRV2-SS03-1824-01	Potassium-40	11.5 pCi/g	11.5J pCi/g
HTCRV2-SS04-0006-01	Potassium-40	4.87 pCi/g	4.87J pCi/g
HTCRV2-SS04-0006-02	Potassium-40	4.29 pCi/g	4.29J pCi/g
HTCRV2-SS04-1218-01	Potassium-40 Thallium-208	22.7 pCi/g 0.398 pCi/g	22.7J pCi/g 0.398J pCi/g
HTCRV2-SS04-1821-01	Potassium-40 Thallium-208	18.0 pCi/g 0.388 pCi/g	18.0J pCi/g 0.388J pCi/g
HTCRV2-SS05-0612-01	Potassium-40	2.56 pCi/g	2.56J pCi/g
HTCRV2-SS05-1218-01	Potassium-40	9.04 pCi/g	9.04J pCi/g
HTCRV2-SS05-1824-01	Potassium-40 Thallium-208	9.35 pCi/g 0.474 pCi/g	9.35J pCi/g 0.474J pCi/g
HTCRV2-SS06-1218-01	Potassium-40	5.60 pCi/g	5.60J pCi/g
HTCRV2-SS06-1824-01	Potassium-40	5.42 pCi/g	5.42J pCi/g
HTCRV2-SS01-0612-01	Potassium-40 Thallium-208	5.16 pCi/g 0.338 pCi/g	5.16J pCi/g 0.338J pCi/g

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples HTCRV2-SS04-0006-01 and HTCRV2-SS04-0006-02 and samples HTCRV2-SS06-0006-01 and HTCRV2-SS06-0006-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	HTCRV2-SS04-0006-01	HTCRV2-SS04-0006-02	
Actinium-228	0.991	0.651U	Not calculable
Bismuth-214	37.5	37.5	0
Lead-214	40.0	38.2	5
Potassium-40	4.87	4.29	13
Radium-226	37.5	37.5	0
Radium-228	0.991	0.651U	Not calculable
Thorium-234	26.5	22.1	18

Isotope	Activity (pCi/g)		RPD
	HTCRV2-SS06-0006-01	HTCRV2-SS06-0006-02	
Bismuth-214	46.1	39.2	16
Lead-212	0.301U	0.524	Not calculable
Lead-214	47.7	42.8	11
Radium-224	0.301U	0.524	Not calculable
Radium-226	46.1	39.2	16
Thorium-234	28.7	31.1	8

X. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to rinsate blank contamination, data were qualified as estimated in seventeen samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

Holy Trinity Cemetery
Gamma Spectroscopy - Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 160-40639-1

Sample	Isotope	Modified Final Activity	A or P
HTCRV2-SS01-1218-01	Potassium-40 Thallium-208	19.4J pCi/g 0.509J pCi/g	A
HTCRV2-SS01-1824-01	Potassium-40 Thallium-208	16.4J pCi/g 0.387J pCi/g	A
HTCRV2-SS02-0612-01	Potassium-40	4.41J pCi/g	A
HTCRV2-SS02-1218-01	Potassium-40	3.14J pCi/g	A
HTCRV2-SS02-1824-01	Potassium-40 Thallium-208	8.51J pCi/g 0.320J pCi/g	A
HTCRV2-SS03-1218-01	Potassium-40 Thallium-208	22.3J pCi/g 0.531J pCi/g	A
HTCRV2-SS03-1824-01	Potassium-40	11.5J pCi/g	A
HTCRV2-SS04-0006-01	Potassium-40	4.87J pCi/g	A
HTCRV2-SS04-0006-02	Potassium-40	4.29J pCi/g	A
HTCRV2-SS04-1218-01	Potassium-40 Thallium-208	22.7J pCi/g 0.398J pCi/g	A
HTCRV2-SS04-1821-01	Potassium-40 Thallium-208	18.0J pCi/g 0.388J pCi/g	A
HTCRV2-SS05-0612-01	Potassium-40	2.56J pCi/g	A
HTCRV2-SS05-1218-01	Potassium-40	9.04J pCi/g	A

Sample	Isotope	Modified Final Activity	A or P
HTCRV2-SS05-1824-01	Potassium-40 Thallium-208	9.35J pCi/g 0.474J pCi/g	A
HTCRV2-SS06-1218-01	Potassium-40	5.60J pCi/g	A
HTCRV2-SS06-1824-01	Potassium-40	5.42J pCi/g	A
HTCRV2-SS01-0612-01	Potassium-40 Thallium-208	5.16J pCi/g 0.338J pCi/g	A

LDC #: 50414A29 35

SDG #: 160-40639-1

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/11/21

Page: 1 of 2

Reviewer:

2nd Reviewer:

METHOD: ~~Radium 226~~ (GA-01-R)
Gamma Spectroscopy

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	SW	RB= HTCRV2-RB-120120
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required (160-40623-2)
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(10,11)(19,20)
~~X.~~	~~Carrier recovery~~		
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HTCRV2-SS01-1218-01	160-40639-1	Soil	12/01/20
2	HTCRV2-SS01-1824-01	160-40639-2	Soil	12/01/20
3	HTCRV2-SS02-0612-01	160-40639-3	Soil	12/01/20
4	HTCRV2-SS02-1218-01	160-40639-4	Soil	12/01/20
5	HTCRV2-SS02-1824-01	160-40639-5	Soil	12/01/20
6	HTCRV2-SS03-0006-01	160-40639-6	Soil	12/01/20
7	HTCRV2-SS03-0612-01	160-40639-7	Soil	12/01/20
8	HTCRV2-SS03-1218-01	160-40639-8	Soil	12/01/20
9	HTCRV2-SS03-1824-01	160-40639-9	Soil	12/01/20
10	HTCRV2-SS04-0006-01	160-40639-10	Soil	12/01/20
11	HTCRV2-SS04-0006-02	160-40639-11	Soil	12/01/20
12	HTCRV2-SS04-0612-01	160-40639-12	Soil	12/01/20
13	HTCRV2-SS04-1218-01	160-40639-13	Soil	12/01/20
14	HTCRV2-SS04-1821-01	160-40639-14	Soil	12/01/20
15	HTCRV2-SS05-0006-01	160-40639-15	Soil	12/01/20
16	HTCRV2-SS05-0612-01	160-40639-16	Soil	12/01/20

LDC #: 50414A35

SDG #: 160-40639-1

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/11/21

Page: 2 of 2

Reviewer:

2nd Reviewer:

METHOD: Radium 226 (GA-01-R)

17	HTCRV2-SS05-1218-01	160-40639-17	Soil	12/01/20
18	HTCRV2-SS05-1824-01	160-40639-18	Soil	12/01/20
19	HTCRV2-SS06-0006-01	160-40639-19	Soil	12/01/20
20	HTCRV2-SS06-0006-02	160-40639-20	Soil	12/01/20
21	HTCRV2-SS06-0612-01	160-40639-21	Soil	12/01/20
22	HTCRV2-SS06-1218-01	160-40639-22	Soil	12/01/20
23	HTCRV2-SS06-1824-01	160-40639-23	Soil	12/01/20
24	HTCRV2-SS01-0612-01	160-40639-24	Soil	12/01/20
25	HTCRV2-SS06-1824-01DUP	160-40639-23DUP	Soil	12/01/20
26				
27				
28				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)			X	DUP only
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?	X			
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?			X	
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?		X		
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field	X			
X. Field Blanks				
Were field blanks identified in this SDG?	X			
Were target analytes detected in the field blanks?	X			

VALIDATION FINDINGS WORKSHEET

Field Blanks

Reviewer:CR

METHOD: Radiochemistry

Blank units: pCi/L

Associated sample units: pCi/g

Sampling Date: 12/1/20

Associated Samples: All

			Sample Identification									
Isotope	Blank ID: HTCRV2-RB 120120	Action Level	1	2	3	4	5	8	9	10	11	13
K-40	87.2		19.4J	16.4J	4.41J	3.14J	8.51J	22.3J	11.5J	4.87J	4.29J	22.7J
Tl-208	8.14		0.509J	0.387J			0.320J	0.531J				0.398J

			Sample Identification									
Isotope	Blank ID: HTCRV2-RB 120120	Action Level	14	16	17	18	22	23	24			
K-40	87.2		18.0J	2.56J	9.04J	9.35J	5.60J	5.42J	5.16J			
Tl-208	8.14		0.388J			0.474J			0.338J			

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	10	11	
Actinium-228	0.991	0.651U	NC
Bismuth-214	37.5	37.5	0
Lead-214	40.0	38.2	5
Potassium-40	4.87	4.29	13
Radium-226	37.5	37.5	0
Radium-228	0.991	0.651U	NC
Thorium-234	26.5	22.1	18

Isotope	Concentration (pCi/g)		RPD
	19	20	
Bismuth-214	46.1	39.2	16
Lead-212	0.301U	0.524	NC
Lead-214	47.7	42.8	11
Radium-226	46.1	39.2	16
Radium-224	0.301U	0.524	NC
Thorium-234	28.7	31.1	8

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD	Reported %R/RPD	Acceptable (Y/N)
LCS	LCS	Cs-137	26.52	26.7	99	99	Y
25	Duplicate	Ra-226	28	32.46	15	15	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer: CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (Bq)	Initial Weight (g)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	Ac-228	12.08	277.2	1.18	1.18	Y
2	Bi-214	27.19	249	2.95	2.95	Y
3	Pb-212	6.066	432.2	0.379	0.379	Y
4	Pb-214	574	399.6	38.8	38.8	Y
5	K-40	48.31	153.5	8.51	8.51	Y
6	Ra-226	489.8	371.4	35.6	35.6	Y
7	Ra-228	12.38	391.8	0.854	0.854	Y
8	Ra-224	12.72	298.5	1.15	1.15	Y
9	Th-234	107.9	331.3	8.8	8.8	Y
10	Ac-228	14.44	394.1	0.991	0.990	Y
11	Bi-214	536.7	386.4	37.5	37.5	Y
12	Pb-212	8.109	420.9	0.521	0.521	Y
13	Pb-214	37.28	291.6	3.46	3.46	Y
14	K-40	210.1	315.8	18	18.0	Y
15	Ra-226	568.4	341.1	45	45.0	Y
16	Ra-224	6.839	378.5	0.488	0.488	Y
17	Ra-228	12.42	350.3	0.958	0.958	Y
18	Tl-208	5.983	341.3	0.474	0.474	Y
19	Th-234	308.4	290.2	28.7	28.7	Y
20	Bi-214	495.1	341.1	39.2	39.2	Y
21	Pb-214	631.2	334.2	51	51	Y
22	Pa-234	12.05	379.8	0.857	0.858	Y
23	K-40	82.83	413.3	5.42	5.42	Y
24	Tl-208	2.217	177.2	0.338	0.338	Y

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Holy Trinity Cemetery

LDC Report Date: February 12, 2021

Parameters: Isotopic Uranium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-40639-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HTCRV2-SS01-1218-01	160-40639-1	Soil	12/01/20
HTCRV2-SS01-1824-01	160-40639-2	Soil	12/01/20
HTCRV2-SS02-0612-01	160-40639-3	Soil	12/01/20
HTCRV2-SS02-1218-01	160-40639-4	Soil	12/01/20
HTCRV2-SS02-1824-01	160-40639-5	Soil	12/01/20
HTCRV2-SS03-0006-01	160-40639-6	Soil	12/01/20
HTCRV2-SS03-0612-01	160-40639-7	Soil	12/01/20
HTCRV2-SS03-1218-01	160-40639-8	Soil	12/01/20
HTCRV2-SS03-1824-01	160-40639-9	Soil	12/01/20
HTCRV2-SS04-0006-01	160-40639-10	Soil	12/01/20
HTCRV2-SS04-0006-02	160-40639-11	Soil	12/01/20
HTCRV2-SS04-0612-01	160-40639-12	Soil	12/01/20
HTCRV2-SS04-1218-01	160-40639-13	Soil	12/01/20
HTCRV2-SS04-1821-01	160-40639-14	Soil	12/01/20
HTCRV2-SS05-0006-01	160-40639-15	Soil	12/01/20
HTCRV2-SS05-0612-01	160-40639-16	Soil	12/01/20
HTCRV2-SS05-1218-01	160-40639-17	Soil	12/01/20
HTCRV2-SS05-1824-01	160-40639-18	Soil	12/01/20
HTCRV2-SS06-0006-01	160-40639-19	Soil	12/01/20
HTCRV2-SS06-0006-02	160-40639-20	Soil	12/01/20
HTCRV2-SS06-0612-01	160-40639-21	Soil	12/01/20
HTCRV2-SS06-1218-01	160-40639-22	Soil	12/01/20
HTCRV2-SS06-1824-01	160-40639-23	Soil	12/01/20
HTCRV2-SS01-0612-01	160-40639-24	Soil	12/01/20
HTCRV2-SS05-0006-01DUP	160-40639-15DUP	Soil	12/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Uranium-233/234	0.07153 pCi/g	HTCRV2-SS04-1821-01

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks.

V. Field Blanks

Sample HTCRV2-RB-120120 (from SDG 160-40623-2) was identified as a rinsate blank. No contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples HTCRV2-SS04-0006-01 and HTCRV2-SS04-0006-02 and samples HTCRV2-SS06-0006-01 and HTCRV2-SS06-0006-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	HTCRV2-SS04-0006-01	HTCRV2-SS04-0006-02	
Uranium-233/234	31.5	33.9	7
Uranium-235/236	1.54	1.54	0
Uranium-238	29.8	34.9	16

Isotope	Activity (pCi/g)		RPD
	HTCRV2-SS06-0006-01	HTCRV2-SS06-0006-02	
Uranium-233/234	39.2	44.2	12
Uranium-235/236	1.67	2.47	39
Uranium-238	39.3	43.7	11

X. Tracer Recovery

All tracer recoveries were within validation criteria.

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

Holy Trinity Cemetery
Isotopic Uranium - Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

LDC #: 50414A59
SDG #: 160-40639-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 2/12/21
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Uranium (EML A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A SW	
V.	Field blanks	ND	RB= HTCRV2-RB-120120
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required (SDG: 160-40623-2)
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	
IX.	Field duplicates	SW	(10,11) (19,20)
X.	Tracer Recovery	A	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HTCRV2-SS01-1218-01	160-40639-1	Soil	12/01/20
2	HTCRV2-SS01-1824-01	160-40639-2	Soil	12/01/20
3	HTCRV2-SS02-0612-01	160-40639-3	Soil	12/01/20
4	HTCRV2-SS02-1218-01	160-40639-4	Soil	12/01/20
5	HTCRV2-SS02-1824-01	160-40639-5	Soil	12/01/20
6	HTCRV2-SS03-0006-01	160-40639-6	Soil	12/01/20
7	HTCRV2-SS03-0612-01	160-40639-7	Soil	12/01/20
8	HTCRV2-SS03-1218-01	160-40639-8	Soil	12/01/20
9	HTCRV2-SS03-1824-01	160-40639-9	Soil	12/01/20
10	HTCRV2-SS04-0006-01	160-40639-10	Soil	12/01/20
11	HTCRV2-SS04-0006-02	160-40639-11	Soil	12/01/20
12	HTCRV2-SS04-0612-01	160-40639-12	Soil	12/01/20
13	HTCRV2-SS04-1218-01	160-40639-13	Soil	12/01/20
14	HTCRV2-SS04-1821-01	160-40639-14	Soil	12/01/20
15	HTCRV2-SS05-0006-01	160-40639-15	Soil	12/01/20
16	HTCRV2-SS05-0612-01	160-40639-16	Soil	12/01/20

LDC #: 50414A59

SDG #: 160-40639-1

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/12/21

Page: 2 of 2

Reviewer:

2nd Reviewer:

METHOD: Isotopic Uranium (EML A-01-R)

17	HTCRV2-SS05-1218-01	160-40639-17	Soil	12/01/20
18	HTCRV2-SS05-1824-01	160-40639-18	Soil	12/01/20
19	HTCRV2-SS06-0006-01	160-40639-19	Soil	12/01/20
20	HTCRV2-SS06-0006-02	160-40639-20	Soil	12/01/20
21	HTCRV2-SS06-0612-01	160-40639-21	Soil	12/01/20
22	HTCRV2-SS06-1218-01	160-40639-22	Soil	12/01/20
23	HTCRV2-SS06-1824-01	160-40639-23	Soil	12/01/20
24	HTCRV2-SS01-0612-01	160-40639-24	Soil	12/01/20
25	HTCRV2-SS05-0006-01DUP	160-40639-15DUP	Soil	12/01/20
26				
27				
28				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)			X	
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?			X	
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?	X			
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?	X			
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?	X			
Were target analytes detected in the field blanks?		X		

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted:pCi/g Associated Samples: 14

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
U-233/234	0.07153										

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	10	11	
U-233/234	31.5	33.9	7
U-235/236	1.54	1.54	0
U-238	29.8	34.9	16

Isotope	Concentration (pCi/g)		RPD
	19	20	
U-233/234	39.2	44.2	12
U-235/236	1.67	2.47	39
U-238	39.3	43.7	11

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	U-233/234	5.736	6.37	90	90	Y
25	Duplicate	U-238	31.1	29.86	4	4	Y
13	Chemical recovery	U-232	5.07	6.71	75.6	75.2	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	U-233/234	290	99.8	0.9917	240	22.92	101.53	2.36	2.36	Y
2	U-235/236	8.5	80.2	0.9936	240	25.26	92.38	0.0858	0.0858	Y
3	U-238	1902	100	0.9936	240	22.9	47.21	33.2	33.2	Y
4	U-233/234	1432	99.8	1.0054	240	22.9	62.26	18.8	18.8	Y
5	U-235/236	64.5	80.2	1.0064	240	22.9	63.71	1.03	1.03	Y
6	U-238	1498.75	100	0.9921	240	26.67	53.88	19.7	19.7	Y
7	U-233/234	1957.75	99.8	1.0001	240	22.9	37.06	43.4	43.4	Y
8	U-235/236	12.25	80.2	1.0092	240	22.9	93.54	0.133	0.133	Y
9	U-238	970.25	100	1.0043	240	22.9	85.55	9.26	9.26	Y
10	U-233/234	1925	99.8	1.0084	240	22.9	49.71	31.5	31.5	Y
11	U-235/236	72.5	80.2	1.0002	240	22.9	48.13	1.54	1.54	Y
12	U-238	1955	100	0.9987	240	28	36.69	35.8	35.8	Y
13	U-233/234	382.5	99.8	1.0042	240	27.69	75.18	3.44	3.44	Y
14	U-235/236	14	80.2	1.0037	240	24.31	84.08	0.16	0.16	Y
15	U-238	1713	100	0.9962	240	26.84	38.69	31.1	31.1	Y
16	U-233/234	1948.25	99.8	0.9983	240	26.48	37.78	36.7	36.7	Y
17	U-235/236	51	80.2	0.9987	240	24.96	65.99	0.725	0.726	Y
18	U-238	746.25	100	1.0016	240	22.92	94.34	6.47	6.47	Y
19	U-233/234	2230	99.8	0.9927	240	25.26	42.7	39.2	39.2	Y
20	U-235/236	91	80.2	0.9995	240	27.26	31.61	2.47	2.47	Y
21	U-238	2004.25	100	0.9982	240	22.9	41.84	39.3	39.3	Y
22	U-233/234	595.5	99.8	0.9908	240	22.9	55.48	8.9	8.9	Y
23	U-235/236	57.25	80.2	1.0064	240	22.9	69.52	0.836	0.836	Y
24	U-238	2273.75	100	1.0074	240	22.9	52.25	35.4	35.4	Y

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Holy Trinity Cemetery

LDC Report Date: February 12, 2021

Parameters: Isotopic Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-40639-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HTCRV2-SS01-1218-01	160-40639-1	Soil	12/01/20
HTCRV2-SS01-1824-01	160-40639-2	Soil	12/01/20
HTCRV2-SS02-0612-01	160-40639-3	Soil	12/01/20
HTCRV2-SS02-1218-01	160-40639-4	Soil	12/01/20
HTCRV2-SS02-1824-01	160-40639-5	Soil	12/01/20
HTCRV2-SS03-0006-01	160-40639-6	Soil	12/01/20
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HTCRV2-SS05-0612-01	160-40639-16	Soil	12/01/20
HTCRV2-SS05-1218-01	160-40639-17	Soil	12/01/20
HTCRV2-SS05-1824-01	160-40639-18	Soil	12/01/20
HTCRV2-SS06-0006-01	160-40639-19	Soil	12/01/20
HTCRV2-SS06-0006-02	160-40639-20	Soil	12/01/20
HTCRV2-SS06-0612-01	160-40639-21	Soil	12/01/20
HTCRV2-SS06-1218-01	160-40639-22	Soil	12/01/20
HTCRV2-SS06-1824-01	160-40639-23	Soil	12/01/20
HTCRV2-SS01-0612-01	160-40639-24	Soil	12/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Thorium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

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U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC).

V. Field Blanks

Sample HTCRV2-RB-120120 (from SDG 160-40623-2) was identified as a rinsate blank. No contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was not required by the method.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples HTCRV2-SS04-0006-01 and HTCRV2-SS04-0006-02 and samples HTCRV2-SS06-0006-01 and HTCRV2-SS06-0006-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	HTCRV2-SS04-0006-01	HTCRV2-SS04-0006-02	
Thorium-228	0.519	0.480	8
Thorium-230	25.1	28.4	12
Thorium-232	0.522	0.540	3

Isotope	Activity (pCi/g)		RPD
	HTCRV2-SS06-0006-01	HTCRV2-SS06-0006-02	
Thorium-228	0.360	0.247	37
Thorium-230	43.7	41.8	4
Thorium-232	0.317	0.298	6

X. Tracer Recovery

All tracer recoveries were within validation criteria.

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

Holy Trinity Cemetery
Isotopic Thorium - Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Thorium - Laboratory Blank Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Thorium - Field Blank Data Qualification Summary - SDG 160-40639-1

No Sample Data Qualified in this SDG

LDC #: 50414A73

SDG #: 160-40639-1

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/12/21

Page: 1 of 2

Reviewer:

2nd Reviewer:

METHOD: Isotopic Thorium (EML A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	RB=HTCRV2-RB-120120
VI.	Matrix Spike/Matrix Spike Duplicates	N	not reviewed (SDG: 40623-2)
VII.	Duplicates	N	↓
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(10,11) (19,20)
X.	Tracer Recovery	A	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HTCRV2-SS01-1218-01	160-40639-1	Soil	12/01/20
2	HTCRV2-SS01-1824-01	160-40639-2	Soil	12/01/20
3	HTCRV2-SS02-0612-01	160-40639-3	Soil	12/01/20
4	HTCRV2-SS02-1218-01	160-40639-4	Soil	12/01/20
5	HTCRV2-SS02-1824-01	160-40639-5	Soil	12/01/20
6	HTCRV2-SS03-0006-01	160-40639-6	Soil	12/01/20
7	HTCRV2-SS03-0612-01	160-40639-7	Soil	12/01/20
8	HTCRV2-SS03-1218-01	160-40639-8	Soil	12/01/20
9	HTCRV2-SS03-1824-01	160-40639-9	Soil	12/01/20
10	HTCRV2-SS04-0006-01	160-40639-10	Soil	12/01/20
11	HTCRV2-SS04-0006-02	160-40639-11	Soil	12/01/20
12	HTCRV2-SS04-0612-01	160-40639-12	Soil	12/01/20
13	HTCRV2-SS04-1218-01	160-40639-13	Soil	12/01/20
14	HTCRV2-SS04-1821-01	160-40639-14	Soil	12/01/20
15	HTCRV2-SS05-0006-01	160-40639-15	Soil	12/01/20
16	HTCRV2-SS05-0612-01	160-40639-16	Soil	12/01/20

LDC #: 50414A73 **VALIDATION COMPLETENESS WORKSHEET** Date: 2/12/21
SDG #: 160-40639-1 Level IV Page: 2 of 2
Laboratory: Eurofins Reviewer:
2nd Reviewer:

METHOD: Isotopic Thorium (EML A-01-R)

17	HTCRV2-SS05-1218-01	160-40639-17	Soil	12/01/20
18	HTCRV2-SS05-1824-01	160-40639-18	Soil	12/01/20
19	HTCRV2-SS06-0006-01	160-40639-19	Soil	12/01/20
20	HTCRV2-SS06-0006-02	160-40639-20	Soil	12/01/20
21	HTCRV2-SS06-0612-01	160-40639-21	Soil	12/01/20
22	HTCRV2-SS06-1218-01	160-40639-22	Soil	12/01/20
23	HTCRV2-SS06-1824-01	160-40639-23	Soil	12/01/20
24	HTCRV2-SS01-0612-01	160-40639-24	Soil	12/01/20
25				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?		X		
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)			X	
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?			X	
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?	X			
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?	X			
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?	X			
Were target analytes detected in the field blanks?		X		

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	10	11	
Th-228	0.519	0.480	8
Th-230	25.1	28.4	12
Th-232	0.522	0.540	3

Isotope	Concentration (pCi/g)		RPD
	19	20	
Th-228	0.360	0.247	37
Th-230	43.7	41.8	4
Th-232	0.317	0.298	6

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	Th-230	23.95	24.5	98	98	Y
	Duplicate						
14	Chemical recovery	Th-229	5.28	5.93	89.0	89	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Th-229 correction	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	Th-228	132.75	99.8	0.9914	240	26.63	78.17	0.03914	1.17	1.17	Y
2	Th-230	234	99.7	0.9942	240	27.22	89.96	0.095339	1.71	1.71	Y
3	Th-232	39.75	100.2	0.9926	240	26.91	73.25	0.0071	0.374	0.373	Y
4	Th-228	106.5	99.8	1.004	240	27.14	65.4	0.03914	1.09	1.08	Y
5	Th-230	1261.25	99.7	1.0021	240	26.37	86.14	0.095339	10.3	10.3	Y
6	Th-232	51.75	100.2	1.0001	240	27.96	74.1	0.0071	0.461	0.461	Y
7	Th-228	35.5	99.8	1.0086	240	27.45	79.54	0.03914	0.264	0.264	Y
8	Th-230	341.25	99.7	0.9972	240	26.34	91.64	0.095339	2.57	2.57	Y
9	Th-232	116.25	100.2	0.996	240	26.63	85.41	0.0071	0.954	0.954	Y
10	Th-228	61.5	99.8	1.0085	240	27.1	75.83	0.03914	0.519	0.519	Y
11	Th-230	3250	99.7	0.9981	240	26.4	81.57	0.095339	28.4	28.4	Y
12	Th-232	54.5	100.2	0.9904	240	27.96	76.18	0.0071	0.477	0.477	Y
13	Th-228	119	99.8	0.9941	240	25.96	74.32	0.03914	1.13	1.13	Y
14	Th-230	749.75	99.7	1.0049	240	26.19	89.02	0.095339	5.93	5.93	Y
15	Th-232	32.5	100.2	1.0006	240	26.44	72.09	0.0071	0.312	0.312	Y
16	Th-228	37.75	99.8	1.0038	240	28	71.27	0.03914	0.315	0.315	Y
17	Th-230	1564.25	99.7	1.0062	240	27.66	70.33	0.095339	14.9	14.9	Y
18	Th-232	110	100.2	1.0058	240	27.03	77	0.0071	0.977	0.977	Y
19	Th-228	32.75	99.8	1.0066	240	26.45	58.01	0.03914	0.36	0.360	Y
20	Th-230	4139	99.7	0.9979	240	27.39	68.04	0.095339	41.8	41.8	Y
21	Th-232	37	100.2	1.0015	240	26.21	76.18	0.0071	0.339	0.339	Y
22	Th-228	98	99.8	0.9929	240	25.96	82.72	0.03914	0.825	0.825	Y
23	Th-230	2288.75	99.7	1.0054	240	27.43	87.38	0.095339	17.8	17.8	Y
24	Th-232	55	100.2	0.9949	240	25.81	81.27	0.0071	0.487	0.487	Y

Holy Trinity Cemetery - LDC# 50414A

SDG: 160-40639-1

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS01-1218-01	160-40639-1	Thorium-228	1/12/2021	1.17				0.240	0.126		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Thorium-230	1/12/2021	2.12				0.344	0.155		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Thorium-232	1/12/2021	0.976				0.208	0.078		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Uranium-233/234	1/5/2021	2.36				0.343	0.084		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Uranium-235/236	1/5/2021	0.175				0.0877	0.062		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Uranium-238	1/5/2021	2.49				0.353	0.045		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS01-1218-01	160-40639-1	Actinium 228	1/13/2021	1.18				0.515	0.479		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Bismuth-212	1/13/2021	0.0178	U		U	1.38	2.43		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Bismuth-214	1/13/2021	3.21				0.484	0.229		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Cesium-137	1/13/2021	0.217				0.0861	0.071		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Lead-212	1/13/2021	1.10				0.217	0.205		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Lead-214	1/13/2021	3.58				0.498	0.289		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Potassium-40	1/13/2021	19.4		J	J	3.14	0.899		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Protactinium-234	1/13/2021	-0.222	U		U	0.669	1.11		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Radium-224	1/13/2021	1.10				0.217	0.205		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Radium-226	1/13/2021	3.21				0.484	0.229		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Radium-228	1/13/2021	1.18				0.515	0.479		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Thallium-208	1/13/2021	0.509		J	J	0.133	0.093		pCi/g
HTCRV2-SS01-1218-01	160-40639-1	Thorium-234	1/13/2021	5.89				1.72	1.68		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-0006-01	160-40639-10	Thorium-228	1/11/2021	0.519				0.157	0.109		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Thorium-230	1/11/2021	25.1				2.32	0.178		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Thorium-232	1/11/2021	0.522				0.152	0.102		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Uranium-233/234	1/20/2021	31.5				3.01	0.049		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Uranium-235/236	1/20/2021	1.54				0.379	0.098		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Uranium-238	1/20/2021	29.8				2.86	0.091		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-0006-01	160-40639-10	Actinium 228	1/7/2021	0.991				0.877	0.927		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Bismuth-212	1/7/2021	-2.12	U		U	3.48	5.75		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Bismuth-214	1/7/2021	37.5				4.47	0.674		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Cesium-137	1/7/2021	-0.182	U		U	0.276	0.455		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Lead-212	1/7/2021	0.197	U		U	0.710	1.18		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Lead-214	1/7/2021	40.0				4.69	0.679		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Potassium-40	1/7/2021	4.87		J	J	2.19	2.16		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Protactinium-234	1/7/2021	0.496	U		U	1.03	1.28		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Radium-224	1/7/2021	0.197	U		U	0.710	1.18		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Radium-226	1/7/2021	37.5				4.47	0.674		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Radium-228	1/7/2021	0.991				0.877	0.927		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Thallium-208	1/7/2021	0.0577	U		U	0.0993	0.331		pCi/g
HTCRV2-SS04-0006-01	160-40639-10	Thorium-234	1/7/2021	26.5				4.21	3.67		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-0006-02	160-40639-11	Thorium-228	1/11/2021	0.480				0.148	0.101		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Thorium-230	1/11/2021	28.4				2.59	0.173		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Thorium-232	1/11/2021	0.540				0.147	0.056		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Uranium-233/234	1/20/2021	33.9				3.23	0.134		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Uranium-235/236	1/20/2021	1.54				0.385	0.119		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Uranium-238	1/20/2021	34.9				3.32	0.105		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-0006-02	160-40639-11	Actinium 228	1/7/2021	0.651	U		U	0.622	0.755		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Bismuth-212	1/7/2021	1.37	U		U	2.30	3.80		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Bismuth-214	1/7/2021	37.5				4.03	0.433		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Cesium-137	1/7/2021	-0.145	U		U	0.108	0.375		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Lead-212	1/7/2021	0.176	U		U	0.608	1.01		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Lead-214	1/7/2021	38.2				4.07	0.608		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Potassium-40	1/7/2021	4.29		J	J	1.70	1.55		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Protactinium-234	1/7/2021	-0.425	U		U	1.01	1.67		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Radium-224	1/7/2021	0.176	U		U	0.608	1.01		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Radium-226	1/7/2021	37.5				4.03	0.433		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Radium-228	1/7/2021	0.651	U		U	0.622	0.755		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Thallium-208	1/7/2021	-0.0257	U		U	0.0344	0.281		pCi/g
HTCRV2-SS04-0006-02	160-40639-11	Thorium-234	1/7/2021	22.1				3.40	3.34		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-0612-01	160-40639-12	Thorium-228	1/6/2021	0.523				0.157	0.110		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Thorium-230	1/6/2021	22.7				2.11	0.136		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Thorium-232	1/6/2021	0.477				0.152	0.136		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Uranium-233/234	1/19/2021	34.7				3.32	0.103		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Uranium-235/236	1/19/2021	1.94				0.451	0.068		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Uranium-238	1/19/2021	35.8				3.41	0.054		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-0612-01	160-40639-12	Actinium 228	1/7/2021	-0.351	U		U	1.02	1.15		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Bismuth-212	1/7/2021	1.84	U		U	3.38	5.60		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Bismuth-214	1/7/2021	34.5				3.75	0.469		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Cesium-137	1/7/2021	-0.107	U		U	0.636	0.404		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Lead-212	1/7/2021	0.521				0.263	0.403		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Lead-214	1/7/2021	35.8				3.83	0.589		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Potassium-40	1/7/2021	1.78	U		U	3.09	3.28		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Protactinium-234	1/7/2021	0.216	U		U	0.339	1.66		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Radium-224	1/7/2021	0.521				0.263	0.403		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Radium-226	1/7/2021	34.5				3.75	0.469		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Radium-228	1/7/2021	-0.351	U		U	1.02	1.15		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Thallium-208	1/7/2021	0.0759	U		U	0.233	0.285		pCi/g
HTCRV2-SS04-0612-01	160-40639-12	Thorium-234	1/7/2021	25.3				3.63	3.07		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-1218-01	160-40639-13	Thorium-228	1/6/2021	1.13				0.238	0.103		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Thorium-230	1/6/2021	2.49				0.386	0.130		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Thorium-232	1/6/2021	0.979				0.213	0.056		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Uranium-233/234	1/19/2021	3.44				0.456	0.050		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Uranium-235/236	1/19/2021	0.224				0.102	0.033		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Uranium-238	1/19/2021	3.93				0.500	0.043		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-1218-01	160-40639-13	Actinium 228	1/7/2021	1.72				0.374	0.117		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Bismuth-212	1/7/2021	-0.809	U		U	3.33	2.57		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Bismuth-214	1/7/2021	2.49				0.404	0.288		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Cesium-137	1/7/2021	0.0769	U		U	0.118	0.196		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Lead-212	1/7/2021	1.03				0.222	0.229		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Lead-214	1/7/2021	3.46				0.487	0.197		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Potassium-40	1/7/2021	22.7		J	J	3.39	0.687		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Protactinium-234	1/7/2021	-0.211	U		U	0.479	0.795		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Radium-224	1/7/2021	1.03				0.222	0.229		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Radium-226	1/7/2021	2.49				0.404	0.288		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Radium-228	1/7/2021	1.72				0.374	0.117		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Thallium-208	1/7/2021	0.398		J	J	0.122	0.105		pCi/g
HTCRV2-SS04-1218-01	160-40639-13	Thorium-234	1/7/2021	-1.86	U		U	1.42	6.25		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-1821-01	160-40639-14	Thorium-228	1/5/2021	0.927				0.198	0.100		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Thorium-230	1/5/2021	5.93				0.667	0.116		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Thorium-232	1/5/2021	1.02				0.202	0.048		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Uranium-233/234	1/7/2021	3.06				0.422	0.027		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Uranium-235/236	1/7/2021	0.160				0.0864	0.034		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Uranium-238	1/7/2021	3.05				0.421	0.044		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS04-1821-01	160-40639-14	Actinium 228	1/7/2021	1.09				0.475	0.759		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Bismuth-212	1/7/2021	3.03				1.61	1.50		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Bismuth-214	1/7/2021	11.8				1.37	0.300		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Cesium-137	1/7/2021	-0.0519	U		U	0.171	0.290		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Lead-212	1/7/2021	1.14				0.240	0.273		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Lead-214	1/7/2021	11.6				1.31	0.365		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Potassium-40	1/7/2021	18.0		J	J	3.19	1.44		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Protactinium-234	1/7/2021	-0.287	U		U	0.900	1.49		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Radium-224	1/7/2021	1.14				0.240	0.273		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Radium-226	1/7/2021	11.8				1.37	0.300		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Radium-228	1/7/2021	1.09				0.475	0.759		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Thallium-208	1/7/2021	0.388		J	J	0.175	0.175		pCi/g
HTCRV2-SS04-1821-01	160-40639-14	Thorium-234	1/7/2021	7.97				1.76	2.18		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-0006-01	160-40639-15	Thorium-228	1/5/2021	0.338				0.147	0.155		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Thorium-230	1/5/2021	36.1				3.26	0.155		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Thorium-232	1/5/2021	0.312				0.117	0.067		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Uranium-233/234	1/19/2021	35.0				3.34	0.149		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Uranium-235/236	1/19/2021	1.71				0.423	0.170		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Uranium-238	1/19/2021	31.1				3.01	0.149		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-0006-01	160-40639-15	Actinium 228	1/7/2021	0.975				0.825	0.870		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Bismuth-212	1/7/2021	-1.78	U		U	1.26	4.84		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Bismuth-214	1/7/2021	45.0				4.82	0.477		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Cesium-137	1/7/2021	-0.128	U		U	0.268	0.444		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Lead-212	1/7/2021	0.390	U		U	0.276	0.441		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Lead-214	1/7/2021	47.9				5.09	0.636		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Potassium-40	1/7/2021	1.22	U		U	2.53	2.57		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Protactinium-234	1/7/2021	0.0928	U		U	0.243	1.77		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Radium-224	1/7/2021	0.390	U		U	0.276	0.441		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Radium-226	1/7/2021	45.0				4.82	0.477		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Radium-228	1/7/2021	0.975				0.825	0.870		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Thallium-208	1/7/2021	-0.123	U		U	0.243	0.308		pCi/g
HTCRV2-SS05-0006-01	160-40639-15	Thorium-234	1/7/2021	32.3				4.40	3.40		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-0612-01	160-40639-16	Thorium-228	1/5/2021	0.315				0.132	0.123		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Thorium-230	1/5/2021	37.6				3.38	0.130		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Thorium-232	1/5/2021	0.309				0.113	0.059		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Uranium-233/234	1/20/2021	36.7				3.50	0.148		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Uranium-235/236	1/20/2021	1.96				0.460	0.113		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Uranium-238	1/20/2021	35.6				3.41	0.126		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-0612-01	160-40639-16	Actinium 228	1/7/2021	0.691	U		U	0.690	0.736		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Bismuth-212	1/7/2021	-1.66	U		U	2.52	4.16		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Bismuth-214	1/7/2021	40.4				4.31	0.406		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Cesium-137	1/7/2021	0.0364	U		U	0.217	0.363		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Lead-212	1/7/2021	0.488				0.240	0.370		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Lead-214	1/7/2021	44.0				4.63	0.502		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Potassium-40	1/7/2021	2.56		J	J	2.05	2.02		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Protactinium-234	1/7/2021	-0.442	U		U	1.28	2.11		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Radium-224	1/7/2021	0.488				0.240	0.370		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Radium-226	1/7/2021	40.4				4.31	0.406		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Radium-228	1/7/2021	0.691	U		U	0.690	0.736		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Thallium-208	1/7/2021	-0.0278	U		U	0.0388	0.284		pCi/g
HTCRV2-SS05-0612-01	160-40639-16	Thorium-234	1/7/2021	32.7				4.26	2.92		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-1218-01	160-40639-17	Thorium-228	1/5/2021	0.751				0.193	0.115		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Thorium-230	1/5/2021	14.9				1.47	0.133		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Thorium-232	1/5/2021	0.904				0.203	0.069		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Uranium-233/234	1/20/2021	14.6				1.47	0.070		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Uranium-235/236	1/20/2021	0.725				0.212	0.042		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Uranium-238	1/20/2021	13.7				1.40	0.063		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-1218-01	160-40639-17	Actinium 228	1/7/2021	0.958				0.571	0.813		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Bismuth-212	1/7/2021	-1.06	U		U	2.87	4.79		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Bismuth-214	1/7/2021	25.3				2.76	0.476		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Cesium-137	1/7/2021	-0.163	U		U	0.250	0.414		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Lead-212	1/7/2021	0.956				0.258	0.350		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Lead-214	1/7/2021	27.3				2.89	0.550		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Potassium-40	1/7/2021	9.04		J	J	3.17	2.73		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Protactinium-234	1/7/2021	-0.424	U		U	1.29	2.14		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Radium-224	1/7/2021	0.956				0.258	0.350		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Radium-226	1/7/2021	25.3				2.76	0.476		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Radium-228	1/7/2021	0.958				0.571	0.813		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Thallium-208	1/7/2021	0.0786	U		U	0.306	0.265		pCi/g
HTCRV2-SS05-1218-01	160-40639-17	Thorium-234	1/7/2021	20.1				3.20	3.15		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-1824-01	160-40639-18	Thorium-228	1/5/2021	0.862				0.201	0.116		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Thorium-230	1/5/2021	11.1				1.13	0.125		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Thorium-232	1/5/2021	0.977				0.205	0.053		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Uranium-233/234	1/20/2021	6.50				0.724	0.071		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Uranium-235/236	1/20/2021	0.254				0.116	0.107		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Uranium-238	1/20/2021	6.47				0.722	0.095		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS05-1824-01	160-40639-18	Actinium 228	1/7/2021	0.994				0.377	0.533		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Bismuth-212	1/7/2021	-1.18	U		U	2.09	3.46		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Bismuth-214	1/7/2021	23.9				2.59	0.342		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Cesium-137	1/7/2021	-0.0953	U		U	0.191	0.316		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Lead-212	1/7/2021	0.772				0.222	0.298		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Lead-214	1/7/2021	25.6				2.75	0.453		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Potassium-40	1/7/2021	9.35		J	J	2.24	1.51		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Protactinium-234	1/7/2021	0.273	U		U	0.322	1.68		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Radium-224	1/7/2021	0.772				0.222	0.298		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Radium-226	1/7/2021	23.9				2.59	0.342		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Radium-228	1/7/2021	0.994				0.377	0.533		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Thallium-208	1/7/2021	0.474		J	J	0.156	0.137		pCi/g
HTCRV2-SS05-1824-01	160-40639-18	Thorium-234	1/7/2021	18.3				2.76	2.56		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-0006-01	160-40639-19	Thorium-228	1/5/2021	0.360				0.159	0.154		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Thorium-230	1/5/2021	43.7				3.95	0.149		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Thorium-232	1/5/2021	0.317				0.130	0.074		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Uranium-233/234	1/20/2021	39.2				3.69	0.144		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Uranium-235/236	1/20/2021	1.67				0.409	0.122		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Uranium-238	1/20/2021	39.3				3.69	0.084		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-0006-01	160-40639-19	Actinium 228	1/7/2021	0.244	U		U	1.24	1.36		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Bismuth-212	1/7/2021	1.92	U		U	3.80	6.33		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Bismuth-214	1/7/2021	46.1				5.00	0.646		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Cesium-137	1/7/2021	-0.274	U		U	0.395	0.651		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Lead-212	1/7/2021	0.301	U		U	0.884	1.46		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Lead-214	1/7/2021	47.7				5.17	0.827		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Potassium-40	1/7/2021	-0.869	U		U	3.82	4.41		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Protactinium-234	1/7/2021	-0.162	U		U	0.432	3.03		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Radium-224	1/7/2021	0.301	U		U	0.884	1.46		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Radium-226	1/7/2021	46.1				5.00	0.646		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Radium-228	1/7/2021	0.244	U		U	1.24	1.36		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Thallium-208	1/7/2021	0.156	U		U	0.265	0.407		pCi/g
HTCRV2-SS06-0006-01	160-40639-19	Thorium-234	1/7/2021	28.7				5.12	5.31		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS01-1824-01	160-40639-2	Thorium-228	1/11/2021	0.683				0.169	0.111		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Thorium-230	1/11/2021	1.71				0.300	0.214		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Thorium-232	1/11/2021	0.606				0.148	0.051		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Uranium-233/234	1/5/2021	1.78				0.284	0.054		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Uranium-235/236	1/5/2021	0.0858				0.0614	0.056		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Uranium-238	1/5/2021	1.79				0.285	0.060		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS01-1824-01	160-40639-2	Actinium 228	1/13/2021	1.27				0.313	0.251		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Bismuth-212	1/13/2021	-1.02	U		U	1.53	2.54		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Bismuth-214	1/13/2021	2.95				0.441	0.182		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Cesium-137	1/13/2021	0.110				0.0570	0.057		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Lead-212	1/13/2021	1.04				0.203	0.159		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Lead-214	1/13/2021	3.25				0.425	0.232		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Potassium-40	1/13/2021	16.4		J	J	2.59	0.676		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Protactinium-234	1/13/2021	0.120	U		U	0.332	0.702		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Radium-224	1/13/2021	1.04				0.203	0.159		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Radium-226	1/13/2021	2.95				0.441	0.182		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Radium-228	1/13/2021	1.27				0.313	0.251		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Thallium-208	1/13/2021	0.387		J	J	0.105	0.080		pCi/g
HTCRV2-SS01-1824-01	160-40639-2	Thorium-234	1/13/2021	3.10				0.913	1.35		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-0006-02	160-40639-20	Thorium-228	1/5/2021	0.247				0.120	0.112		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Thorium-230	1/5/2021	41.8				3.75	0.139		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Thorium-232	1/5/2021	0.298				0.116	0.072		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Uranium-233/234	1/21/2021	44.2				4.20	0.172		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Uranium-235/236	1/21/2021	2.47				0.558	0.081		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Uranium-238	1/21/2021	43.7				4.16	0.105		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-0006-02	160-40639-20	Actinium 228	1/7/2021	-0.392	U		U	0.905	1.02		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Bismuth-212	1/7/2021	-1.86	U		U	3.09	5.12		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Bismuth-214	1/7/2021	39.2				4.21	0.662		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Cesium-137	1/7/2021	-0.125	U		U	0.173	0.434		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Lead-212	1/7/2021	0.524				0.280	0.434		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Lead-214	1/7/2021	42.8				4.55	0.646		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Potassium-40	1/7/2021	1.26	U		U	2.60	2.79		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Protactinium-234	1/7/2021	-0.132	U		U	0.381	2.48		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Radium-224	1/7/2021	0.524				0.280	0.434		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Radium-226	1/7/2021	39.2				4.21	0.662		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Radium-228	1/7/2021	-0.392	U		U	0.905	1.02		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Thallium-208	1/7/2021	-0.0399	U		U	0.0525	0.317		pCi/g
HTCRV2-SS06-0006-02	160-40639-20	Thorium-234	1/7/2021	31.1				4.34	3.53		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-0612-01	160-40639-21	Thorium-228	1/5/2021	0.452				0.147	0.098		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Thorium-230	1/5/2021	37.3				3.35	0.128		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Thorium-232	1/5/2021	0.339				0.119	0.054		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Uranium-233/234	1/20/2021	40.2				3.82	0.059		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Uranium-235/236	1/20/2021	2.14				0.493	0.137		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Uranium-238	1/20/2021	39.3				3.74	0.121		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-0612-01	160-40639-21	Actinium 228	1/7/2021	0.955	U		U	0.808	1.16		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Bismuth-212	1/7/2021	-1.02	U		U	3.36	5.62		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Bismuth-214	1/7/2021	49.4				5.88	0.654		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Cesium-137	1/7/2021	-0.228	U		U	0.354	0.585		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Lead-212	1/7/2021	0.247	U		U	0.866	1.43		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Lead-214	1/7/2021	51.0				6.01	0.784		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Potassium-40	1/7/2021	1.69	U		U	3.52	3.68		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Protactinium-234	1/7/2021	0.140	U		U	0.250	3.18		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Radium-224	1/7/2021	0.247	U		U	0.866	1.43		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Radium-226	1/7/2021	49.4				5.88	0.654		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Radium-228	1/7/2021	0.955	U		U	0.808	1.16		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Thallium-208	1/7/2021	0.0644	U		U	0.231	0.371		pCi/g
HTCRV2-SS06-0612-01	160-40639-21	Thorium-234	1/7/2021	35.5				5.29	4.19		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-1218-01	160-40639-22	Thorium-228	1/5/2021	0.825				0.193	0.095		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Thorium-230	1/5/2021	10.4				1.07	0.122		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Thorium-232	1/5/2021	0.862				0.190	0.052		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Uranium-233/234	1/20/2021	8.90				1.05	0.132		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Uranium-235/236	1/20/2021	0.423				0.182	0.090		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Uranium-238	1/20/2021	9.26				1.08	0.044		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-1218-01	160-40639-22	Actinium 228	1/7/2021	0.607	U		U	0.937	1.01		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Bismuth-212	1/7/2021	0.288	U		U	2.92	4.95		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Bismuth-214	1/7/2021	34.7				3.79	0.480		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Cesium-137	1/7/2021	-0.151	U		U	0.668	0.480		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Lead-212	1/7/2021	0.447				0.276	0.434		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Lead-214	1/7/2021	35.7				3.83	0.638		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Potassium-40	1/7/2021	5.60		J	J	3.19	3.16		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Protactinium-234	1/7/2021	0.857				0.619	0.818		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Radium-224	1/7/2021	0.447				0.276	0.434		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Radium-226	1/7/2021	34.7				3.79	0.480		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Radium-228	1/7/2021	0.607	U		U	0.937	1.01		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Thallium-208	1/7/2021	0.0502	U		U	0.235	0.289		pCi/g
HTCRV2-SS06-1218-01	160-40639-22	Thorium-234	1/7/2021	21.6				3.39	3.32		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-1824-01	160-40639-23	Thorium-228	1/5/2021	0.447				0.140	0.113		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Thorium-230	1/5/2021	17.8				1.67	0.119		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Thorium-232	1/5/2021	0.444				0.125	0.047		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Uranium-233/234	1/20/2021	13.0				1.34	0.103		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Uranium-235/236	1/20/2021	0.836				0.234	0.090		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Uranium-238	1/20/2021	13.1				1.35	0.065		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS06-1824-01	160-40639-23	Actinium 228	1/7/2021	0.612	U		U	0.988	0.897		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Bismuth-212	1/7/2021	-1.93	U		U	8.44	4.02		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Bismuth-214	1/7/2021	28.0				3.04	0.788		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Cesium-137	1/7/2021	0.00190	U		U	0.225	0.379		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Lead-212	1/7/2021	-0.0167	U		U	0.536	0.890		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Lead-214	1/7/2021	34.8				3.74	0.603		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Potassium-40	1/7/2021	5.42		J	J	1.77	1.61		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Protactinium-234	1/7/2021	0.836	U		U	1.22	1.82		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Radium-224	1/7/2021	-0.0167	U		U	0.536	0.890		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Radium-226	1/7/2021	28.0				3.04	0.788		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Radium-228	1/7/2021	0.612	U		U	0.988	0.897		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Thallium-208	1/7/2021	0.00981	U		U	0.248	0.270		pCi/g
HTCRV2-SS06-1824-01	160-40639-23	Thorium-234	1/7/2021	18.6				2.94	3.21		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS01-0612-01	160-40639-24	Thorium-228	1/5/2021	0.209				0.104	0.093		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Thorium-230	1/5/2021	25.2				2.32	0.125		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Thorium-232	1/5/2021	0.487				0.140	0.053		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Uranium-233/234	1/20/2021	35.0				3.29	0.075		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Uranium-235/236	1/20/2021	2.03				0.433	0.094		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Uranium-238	1/20/2021	35.4				3.32	0.075		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS01-0612-01	160-40639-24	Actinium 228	1/7/2021	1.23				0.506	0.669		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Bismuth-212	1/7/2021	-1.07	U		U	2.49	4.15		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Bismuth-214	1/7/2021	39.0				4.10	0.481		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Cesium-137	1/7/2021	0.000	U		U	0.113	0.378		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Lead-212	1/7/2021	0.357	U		U	0.228	0.363		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Lead-214	1/7/2021	40.8				4.23	0.524		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Potassium-40	1/7/2021	5.16		J	J	1.93	1.79		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Protactinium-234	1/7/2021	0.435	U		U	0.917	1.94		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Radium-224	1/7/2021	0.357	U		U	0.228	0.363		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Radium-226	1/7/2021	39.0				4.10	0.481		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Radium-228	1/7/2021	1.23				0.506	0.669		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Thallium-208	1/7/2021	0.338		J	J	0.166	0.178		pCi/g
HTCRV2-SS01-0612-01	160-40639-24	Thorium-234	1/7/2021	32.4				4.18	2.77		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS02-0612-01	160-40639-3	Thorium-228	1/11/2021	0.420				0.151	0.132		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Thorium-230	1/11/2021	38.3				3.44	0.180		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Thorium-232	1/11/2021	0.374				0.126	0.061		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Uranium-233/234	1/5/2021	35.6				3.39	0.154		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Uranium-235/236	1/5/2021	1.61				0.402	0.155		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Uranium-238	1/5/2021	33.2				3.18	0.117		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS02-0612-01	160-40639-3	Actinium 228	1/13/2021	0.165	U		U	0.709	0.802		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Bismuth-212	1/13/2021	0.547	U		U	2.34	3.92		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Bismuth-214	1/13/2021	36.4				3.89	0.369		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Cesium-137	1/13/2021	-0.0229	U		U	0.153	0.384		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Lead-212	1/13/2021	0.379				0.239	0.378		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Lead-214	1/13/2021	39.9				4.22	0.389		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Potassium-40	1/13/2021	4.41		J	J	1.96	1.71		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Protactinium-234	1/13/2021	0.584	U		U	0.573	0.721		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Radium-224	1/13/2021	0.379				0.239	0.378		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Radium-226	1/13/2021	36.4				3.89	0.369		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Radium-228	1/13/2021	0.165	U		U	0.709	0.802		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Thallium-208	1/13/2021	-0.140	U		U	0.155	0.275		pCi/g
HTCRV2-SS02-0612-01	160-40639-3	Thorium-234	1/13/2021	29.2				3.90	2.95		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS02-1218-01	160-40639-4	Thorium-228	1/5/2021	1.09				0.242	0.114		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Thorium-230	1/5/2021	44.0				3.94	0.142		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Thorium-232	1/5/2021	1.39				0.271	0.071		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Uranium-233/234	1/20/2021	18.8				1.86	0.087		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Uranium-235/236	1/20/2021	0.882				0.251	0.049		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Uranium-238	1/20/2021	19.4				1.92	0.073		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS02-1218-01	160-40639-4	Actinium 228	1/7/2021	0.435	U		U	0.694	0.793		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Bismuth-212	1/7/2021	-0.735	U		U	2.56	4.29		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Bismuth-214	1/7/2021	37.3				3.99	0.365		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Cesium-137	1/7/2021	-0.0861	U		U	0.238	0.370		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Lead-212	1/7/2021	0.171	U		U	0.643	1.06		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Lead-214	1/7/2021	38.8				4.14	0.645		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Potassium-40	1/7/2021	3.14		J	J	1.85	1.87		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Protactinium-234	1/7/2021	0.492	U		U	0.561	0.671		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Radium-224	1/7/2021	0.171	U		U	0.643	1.06		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Radium-226	1/7/2021	37.3				3.99	0.365		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Radium-228	1/7/2021	0.435	U		U	0.694	0.793		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Thallium-208	1/7/2021	0.0642	U		U	0.114	0.270		pCi/g
HTCRV2-SS02-1218-01	160-40639-4	Thorium-234	1/7/2021	24.4				3.59	3.31		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS02-1824-01	160-40639-5	Thorium-228	1/5/2021	0.845				0.190	0.091		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Thorium-230	1/5/2021	10.3				1.05	0.134		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Thorium-232	1/5/2021	0.871				0.187	0.066		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Uranium-233/234	1/20/2021	18.4				1.82	0.085		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Uranium-235/236	1/20/2021	1.03				0.271	0.089		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Uranium-238	1/20/2021	18.9				1.87	0.085		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS02-1824-01	160-40639-5	Actinium 228	1/7/2021	0.824	U		U	0.828	0.913		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Bismuth-212	1/7/2021	-1.83	U		U	2.99	4.96		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Bismuth-214	1/7/2021	31.0				3.29	0.382		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Cesium-137	1/7/2021	-0.174	U		U	0.281	0.464		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Lead-212	1/7/2021	0.599				0.222	0.329		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Lead-214	1/7/2021	31.6				3.30	0.494		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Potassium-40	1/7/2021	8.51		J	J	2.96	2.37		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Protactinium-234	1/7/2021	0.333	U		U	0.896	1.60		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Radium-224	1/7/2021	0.599				0.222	0.329		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Radium-226	1/7/2021	31.0				3.29	0.382		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Radium-228	1/7/2021	0.824	U		U	0.828	0.913		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Thallium-208	1/7/2021	0.320		J	J	0.161	0.179		pCi/g
HTCRV2-SS02-1824-01	160-40639-5	Thorium-234	1/7/2021	23.0				3.13	2.33		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-0006-01	160-40639-6	Thorium-228	1/5/2021	0.526				0.158	0.110		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Thorium-230	1/5/2021	21.0				1.97	0.128		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Thorium-232	1/5/2021	0.461				0.137	0.058		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Uranium-233/234	1/21/2021	20.0				1.97	0.081		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Uranium-235/236	1/21/2021	1.10				0.284	0.079		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Uranium-238	1/21/2021	19.7				1.95	0.063		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-0006-01	160-40639-6	Actinium 228	1/7/2021	0.373	U		U	0.907	1.03		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Bismuth-212	1/7/2021	1.82	U		U	3.51	5.84		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Bismuth-214	1/7/2021	35.6				3.87	0.373		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Cesium-137	1/7/2021	-0.225	U		U	0.638	0.554		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Lead-212	1/7/2021	0.535				0.274	0.420		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Lead-214	1/7/2021	36.5				3.90	0.551		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Potassium-40	1/7/2021	1.78	U		U	3.13	3.34		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Protactinium-234	1/7/2021	0.0237	U		U	0.0366	1.78		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Radium-224	1/7/2021	0.535				0.274	0.420		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Radium-226	1/7/2021	35.6				3.87	0.373		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Radium-228	1/7/2021	0.373	U		U	0.907	1.03		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Thallium-208	1/7/2021	0.212	U		U	0.168	0.336		pCi/g
HTCRV2-SS03-0006-01	160-40639-6	Thorium-234	1/7/2021	26.8				3.83	3.15		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-0612-01	160-40639-7	Thorium-228	1/5/2021	0.264				0.113	0.097		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Thorium-230	1/5/2021	36.8				3.29	0.121		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Thorium-232	1/5/2021	0.416				0.126	0.055		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Uranium-233/234	1/20/2021	43.4				4.14	0.107		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Uranium-235/236	1/20/2021	2.14				0.519	0.154		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Uranium-238	1/20/2021	42.8				4.09	0.148		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-0612-01	160-40639-7	Actinium 228	1/7/2021	0.854				0.596	0.615		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Bismuth-212	1/7/2021	1.46	U		U	2.34	3.87		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Bismuth-214	1/7/2021	38.2				4.07	0.399		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Cesium-137	1/7/2021	0.0762	U		U	0.205	0.341		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Lead-212	1/7/2021	0.196	U		U	0.575	0.950		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Lead-214	1/7/2021	41.6				4.39	0.567		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Potassium-40	1/7/2021	-0.106	U		U	2.67	2.70		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Protactinium-234	1/7/2021	0.0214	U		U	0.294	1.99		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Radium-224	1/7/2021	0.196	U		U	0.575	0.950		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Radium-226	1/7/2021	38.2				4.07	0.399		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Radium-228	1/7/2021	0.854				0.596	0.615		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Thallium-208	1/7/2021	-0.00648	U		U	0.00803	0.265		pCi/g
HTCRV2-SS03-0612-01	160-40639-7	Thorium-234	1/7/2021	30.2				4.01	2.94		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-1218-01	160-40639-8	Thorium-228	1/5/2021	1.13				0.220	0.110		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Thorium-230	1/5/2021	2.57				0.366	0.125		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Thorium-232	1/5/2021	0.979				0.194	0.051		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Uranium-233/234	1/20/2021	3.37				0.445	0.053		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Uranium-235/236	1/20/2021	0.133				0.0794	0.067		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Uranium-238	1/20/2021	3.49				0.456	0.048		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-1218-01	160-40639-8	Actinium 228	1/7/2021	0.889				0.616	0.637		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Bismuth-212	1/7/2021	0.335	U		U	2.19	3.73		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Bismuth-214	1/7/2021	10.5				1.26	0.358		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Cesium-137	1/7/2021	-0.104	U		U	0.169	0.282		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Lead-212	1/7/2021	1.15				0.239	0.261		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Lead-214	1/7/2021	10.2				1.18	0.397		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Potassium-40	1/7/2021	22.3		J	J	3.32	0.489		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Protactinium-234	1/7/2021	-0.316	U		U	0.940	1.56		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Radium-224	1/7/2021	1.15				0.239	0.261		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Radium-226	1/7/2021	10.5				1.26	0.358		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Radium-228	1/7/2021	0.889				0.616	0.637		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Thallium-208	1/7/2021	0.531		J	J	0.182	0.148		pCi/g
HTCRV2-SS03-1218-01	160-40639-8	Thorium-234	1/7/2021	9.69				2.01	2.23		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-1824-01	160-40639-9	Thorium-228	1/11/2021	0.856				0.195	0.117		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Thorium-230	1/11/2021	8.28				0.876	0.144		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Thorium-232	1/11/2021	0.954				0.198	0.072		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Uranium-233/234	1/20/2021	9.39				0.991	0.078		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Uranium-235/236	1/20/2021	0.506				0.162	0.066		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Uranium-238	1/20/2021	9.26				0.979	0.059		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-SS03-1824-01	160-40639-9	Actinium 228	1/7/2021	1.20				0.535	0.792		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Bismuth-212	1/7/2021	0.000	U		U	1.19	3.63		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Bismuth-214	1/7/2021	16.0				1.84	0.383		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Cesium-137	1/7/2021	-0.160	U		U	0.240	0.397		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Lead-212	1/7/2021	0.634				0.252	0.366		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Lead-214	1/7/2021	15.8				1.83	0.501		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Potassium-40	1/7/2021	11.5		J	J	2.31	1.11		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Protactinium-234	1/7/2021	0.251	U		U	0.199	1.79		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Radium-224	1/7/2021	0.634				0.252	0.366		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Radium-226	1/7/2021	16.0				1.84	0.383		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Radium-228	1/7/2021	1.20				0.535	0.792		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Thallium-208	1/7/2021	0.205	U		U	0.209	0.230		pCi/g
HTCRV2-SS03-1824-01	160-40639-9	Thorium-234	1/7/2021	8.80				2.27	3.11		pCi/g

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Holy Trinity Cemetery

LDC Report Date: February 12, 2021

Parameters: Gamma Spectroscopy

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-40623-2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HTCRV2-RB-120120	160-40623-3	Water	12/01/20
HTCRV2-WC01-0612-01	160-40623-4	Soil	12/01/20
HTCRV2-WC02-0612-01	160-40623-5	Soil	12/01/20
HTCRV2-WC02-0612-02	160-40623-6	Soil	12/01/20
HTCRV2-RB-120120DUP	160-40623-3DUP	Water	12/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Gamma Spectroscopy by Method GA-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Actinium-228 Radium-228	34.31 pCi/L 34.31 pCi/L	All water samples in SDG 160-40623-2
PB (prep blank)	Thallium-208	0.04508 pCi/g	All soil samples in SDG 160-40623-2

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks.

V. Field Blanks

Sample HTCRV2-RB-120120 was identified as a rinsate blank. No contaminants were found with the following exceptions:

Blank ID	Sampling Date	Isotope	Activity	Associated Samples
HTCRV2-RB-120120	12/01/20	Potassium-40 Thallium-208	87.2 pCi/L 8.14 pCi/L	All soil samples in SDG 160-40623-2

Sample activities were compared to activities detected in the field blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated field blanks with the following exceptions:

Sample	Isotope	Reported Activity	Modified Final Activity
HTCRV2-WC01-0612-01	Potassium-40 Thallium-208	2.89 pCi/g 0.297 pCi/g	2.89J pCi/g 0.297J pCi/g

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	
Bismuth-214	0.359U	1.06	Not calculable
Lead-212	48.4	46.6	4
Lead-214	53.0	48.2	9
Radium-226	48.4	46.6	4
Radium-228	0.359U	1.09	Not calculable
Thorium-234	35.5	35.3	1

X. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL) with the following exceptions:

Sample	Isotope	MDC	RL
HTCRV2-WC01-0612-01	Bismuth-212 Cesium-137 Potassium-40	3.37 pCi/g 0.326 pCi/g 2.31 pCi/g	3.00 pCi/g 0.200 pCi/g 1.50 pCi/g
HTCRV2-WC02-0612-01	Actinium-228 Bismuth-212 Cesium-137 Lead-212 Potassium-40 Protactinium-234 Radium-228 Thallium-208 Thallium-234	1.24 pCi/g 6.00 pCi/g 0.490 pCi/g 0.542 pCi/g 3.18 pCi/g 3.20 pCi/g 1.24 pCi/g 0.402 pCi/g 4.35 pCi/g	1.00 pCi/g 3.00 pCi/g 0.200 pCi/g 0.300 pCi/g 1.50 pCi/g 1.50 pCi/g 1.00 pCi/g 0.200 pCi/g 4.00 pCi/g
HTCRV2-WC02-0612-02	Bismuth-212 Cesium-137 Lead-212 Potassium-40 Thallium-208 Thallium-234	5.51 pCi/g 0.502 pCi/g 0.500 pCi/g 3.37 pCi/g 0.313 pCi/g 4.05 pCi/g	3.00 pCi/g 0.200 pCi/g 0.300 pCi/g 1.50 pCi/g 0.200 pCi/g 4.00 pCi/g

The MDC was greater than the RL as listed above.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to rinsate blank contamination, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

Holy Trinity Cemetery
Gamma Spectroscopy - Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 160-40623-2

Sample	Isotope	Modified Final Activity	A or P
HTCRV2-WC01-0612-01	Potassium-40 Thallium-208	2.89J pCi/g 0.297J pCi/g	A

LDC #: 50414B~~29~~ 35

SDG #: 160-40623-2

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/11/21

Page: 1 of 1

Reviewer: CA

2nd Reviewer: [illegible]

METHOD: ~~Radium 226~~ (GA-01-R)

Gamma Spectroscopy

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	SW	RB=1
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(3,4)
~~X.~~	~~Carrier recovery~~		
XI.	Minimum detectable activity (MDA)	SW	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HTCRV2-RB-120120	160-40623-3	Water	12/01/20
2	HTCRV2-WC01-0612-01	160-40623-4	Soil	12/01/20
3	HTCRV2-WC02-0612-01	160-40623-5	Soil	12/01/20
4	HTCRV2-WC02-0612-02	160-40623-6	Soil	12/01/20
5	HTCRV2-RB-120120DUP	160-40623-3DUP	Water	12/01/20
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)			X	DUP only
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?	X			
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?			X	
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?		X		
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field	X			
X. Field Blanks				
Were field blanks identified in this SDG?	X			
Were target analytes detected in the field blanks?	X			

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted:pCi/L Associated Samples: All water

			Sample Identification								
Isotope	**PB (pCi/L)**	**Action Level**	No quals								
Ac-228	34.31										
Ra-228	34.31										

Sample Concentration, unless otherwise noted:pCi/g Associated Samples: All soil

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
Tl-208	0.04508										

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:CR

METHOD: Radiochemistry

Blank units: pCi/L
Associated sample units: pCi/g
Sampling Date: 12/1/20
Associated Samples: All soil

			Sample Identification									
Isotope	Blank ID: 1	Action Level	2									
K-40	87.2		2.89J									
Tl-208	8.14		0.297J									

Comments: The action level, when applicable, is establised at 5X the highest concentration.

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	3	4	
Actinium-228	0.359U	1.06	NC
Bismuth-214	48.4	46.6	4
Lead-214	53.0	48.2	9
Radium-226	48.4	46.6	4
Radium-228	0.359U	1.09	NC
Thorium-234	35.5	35.3	1

VALIDATION FINDINGS WORKSHEETS

Minimal Detectable Concentration

Reviewer:CR

METHOD: Radiochemsitry

All requested minimal detectable concentrations (MDC) were met with the following exceptions.

Sample ID	Isotope	Laboratory MDC (pCi/g)	Reporing Limit (pCi/g)	Qualification
2	Bi-212	3.37	3.00	Text (MDC>RL)
	Cs-137	0.326	0.200	Text (MDC>RL)
	K-40	2.31	1.50	Text (MDC>RL)
3	Ac-228	1.24	1.00	Text (MDC>RL)
	Bi-212	6.00	3.00	Text (MDC>RL)
	Cs-137	0.490	0.200	Text (MDC>RL)
	Pb-212	0.542	0.300	Text (MDC>RL)
	K-40	3.18	1.50	Text (MDC>RL)
	Pa-234	3.20	1.50	Text (MDC>RL)
	Ra-228	1.24	1.00	Text (MDC>RL)
	Tl-208	0.402	0.200	Text (MDC>RL)
	Th-234	4.35	4.00	Text (MDC>RL)
4	Bi-212	5.51	3.00	Text (MDC>RL)
	Cs-137	0.502	0.200	Text (MDC>RL)
	Pb-212	0.500	0.300	Text (MDC>RL)
	K-40	3.37	1.50	Text (MDC>RL)
	Tl-208	0.313	0.200	Text (MDC>RL)
	Th-234	4.05	4.00	Text (MDC>RL)

Comments:

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/DER	Reported %R/DER	Acceptable (Y/N)
LCS	LCS	Am-241	91.53	96.4	95	95	Y
S	Duplicate	K-40	87.2	-98.72	2.96	2.96	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer: CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (Bq)	Initial Weight (g/L)	Reported Result (pCi/g, pCi/L)	Recalcuated Result (pCi/g, pCi/L)	Acceptable (Y/N)
1	K-40	3.226	1	87.2	87.2	Y
2	Ac-228	9.054	389.1	0.629	0.629	Y
3	Th-234	442.2	337.1	35.5	35.5	Y
4	Bi-214	616.8	357.4	46.6	46.6	Y

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Holy Trinity Cemetery

LDC Report Date: February 12, 2021

Parameters: Isotopic Uranium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-40623-2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HTCRV2-RB-120120	160-40623-3	Water	12/01/20
HTCRV2-WC01-0612-01	160-40623-4	Soil	12/01/20
HTCRV2-WC02-0612-01	160-40623-5	Soil	12/01/20
HTCRV2-WC02-0612-02	160-40623-6	Soil	12/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Uranium-233/234	0.07153 pCi/g	All soil samples in SDG 160-40623-2

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks.

V. Field Blanks

Sample HTCRV2-RB-120120 was identified as a rinsate blank. No contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	
Uranium-233/234	42.0	41.5	1
Uranium-235/236	1.74	2.27	26
Uranium-238	40.8	42.6	4

X. Tracer Recovery

All tracer recoveries were within validation criteria.

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

Holy Trinity Cemetery
Isotopic Uranium - Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

LDC #: 50414B59

SDG #: 160-40623-2

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/12/21

Page: 1 of 1

Reviewer: CG

2nd Reviewer: [illegible]

METHOD: Isotopic Uranium (EML A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	ND	RB=1
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	N	+
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	SW	(3,4)
X.	Tracer Recovery	A	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HTCRV2-RB-120120	160-40623-3	Water	12/01/20
2	HTCRV2-WC01-0612-01	160-40623-4	Soil	12/01/20
3	HTCRV2-WC02-0612-01	160-40623-5	Soil	12/01/20
4	HTCRV2-WC02-0612-02	160-40623-6	Soil	12/01/20
5				
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)			X	
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?			X	
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?	X			
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?	X			
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?	X			
Were target analytes detected in the field blanks?		X		

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted:pCi/g Associated Samples:All soil

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
U-233/234	0.07153										

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	3	4	
U-233/234	42.0	41.5	1
U-235/236	1.74	2.27	26
U-238	40.8	42.6	4

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	U-233/234	5.953	6.37	93	93	Y
	Duplicate						
2	Chemical recovery	U-232	4.53	6.71	67.5	67.2	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
2	U-235/236	28.75	80.2	1.0048	240	27.26	67.16	0.366	0.366	Y
3	U-233/234	2083	99.8	1.0033	240	26.69	34.82	42	42	Y
4	U-238	2338.75	100	1.0033	240	25.74	39.87	42.6	42.6	Y

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Holy Trinity Cemetery

LDC Report Date: February 12, 2021

Parameters: Isotopic Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-40623-2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HTCRV2-RB-120120	160-40623-3	Water	12/01/20
HTCRV2-WC01-0612-01	160-40623-4	Soil	12/01/20
HTCRV2-WC02-0612-01	160-40623-5	Soil	12/01/20
HTCRV2-WC02-0612-02	160-40623-6	Soil	12/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Thorium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC).

V. Field Blanks

Sample HTCRV2-RB-120120 was identified as a rinsate blank. No contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was not required by the method.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

Samples HTCRV2-WC02-0612-01 and HTCRV2-WC02-0612-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	HTCRV2-WC02-0612-01	HTCRV2-WC02-0612-02	
Thorium-228	0.379	0.267	35
Thorium-230	41.2	41.7	1
Thorium-232	0.290	0.355	20

X. Tracer Recovery

All tracer recoveries were within validation criteria.

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

Holy Trinity Cemetery
Isotopic Thorium - Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Thorium - Laboratory Blank Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

Holy Trinity Cemetery
Isotopic Thorium - Field Blank Data Qualification Summary - SDG 160-40623-2

No Sample Data Qualified in this SDG

LDC #: 50414B73

SDG #: 160-40623-2

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 2/12/21

Page: 1 of 1

Reviewer: CA

2nd Reviewer: [illegible]

METHOD: Isotopic Thorium (EML A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	RB=1
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	N	+
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	SW	(3,4)
X.	Tracer Recovery	A	(3,2)
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HTCRV2-RB-120120	160-40623-3	Water	12/01/20
2	HTCRV2-WC01-0612-01	160-40623-4	Soil	12/01/20
3	HTCRV2-WC02-0612-01	160-40623-5	Soil	12/01/20
4	HTCRV2-WC02-0612-02	160-40623-6	Soil	12/01/20
5				
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?		X		
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)			X	
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?			X	
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?	X			
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?	X			
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?	X			
Were target analytes detected in the field blanks?		X		

Field Duplicates

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	3	4	
Th-228	0.379	0.267	35
Th-230	41.2	41.7	1
Th-232	0.290	0.355	20

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	Th-230	23.95	24.5	98	98	Y
	Duplicate						
2	Chemical recovery	Th-229	4.92	5.98	82.3	82.3	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Th-229 correction	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
2	Th-228	95.25	99.8	0.9965	240	25.66	82.26	0.03914	0.813	0.812	Y
3	Th-230	4220.25	99.7	0.9912	240	27.9	69.5	0.095339	41.2	41.2	Y
4	Th-232	34.75	100.2	0.9922	240	26.42	68.65	0.0071	0.355	0.355	Y

Holy Trinity Cemetery - LDC# 50414B

SDG: 160-40623-2

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-RB-120120	160-40623-3	Thorium-228	1/13/2021	0.164	U		U	0.426	0.778		pCi/L
HTCRV2-RB-120120	160-40623-3	Thorium-230	1/13/2021	0.421	U		U	0.460	0.574		pCi/L
HTCRV2-RB-120120	160-40623-3	Thorium-232	1/13/2021	-0.00554	U		U	0.0511	0.264		pCi/L
HTCRV2-RB-120120	160-40623-3	Uranium-233/234	1/26/2021	0.144	U		U	0.145	0.179		pCi/L
HTCRV2-RB-120120	160-40623-3	Uranium-235/236	1/26/2021	0.000	U		U	0.0199	0.119		pCi/L
HTCRV2-RB-120120	160-40623-3	Uranium-238	1/26/2021	0.0239	U		U	0.0658	0.154		pCi/L

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-RB-120120	160-40623-3	Actinium 228	12/28/2020	11.5	U		U	19.0	31.2		pCi/L
HTCRV2-RB-120120	160-40623-3	Bismuth-212	12/28/2020	-30.5	U		U	109	186		pCi/L
HTCRV2-RB-120120	160-40623-3	Bismuth-214	12/28/2020	15.4	U		U	18.2	21.1		pCi/L
HTCRV2-RB-120120	160-40623-3	Cesium-137	12/28/2020	-3.32	U		U	6.61	11.1		pCi/L
HTCRV2-RB-120120	160-40623-3	Lead-212	12/28/2020	10.8	U		U	10.3	12.2		pCi/L
HTCRV2-RB-120120	160-40623-3	Lead-214	12/28/2020	2.67	U		U	9.93	14.8		pCi/L
HTCRV2-RB-120120	160-40623-3	Potassium-40	12/28/2020	87.2				55.0	49.3		pCi/L
HTCRV2-RB-120120	160-40623-3	Protactinium-234	12/28/2020	2.34	U		U	4.29	58.2		pCi/L
HTCRV2-RB-120120	160-40623-3	Radium-224	12/28/2020	10.8	U		U	10.3	12.2		pCi/L
HTCRV2-RB-120120	160-40623-3	Radium-226	12/28/2020	15.4	U		U	18.2	21.1		pCi/L
HTCRV2-RB-120120	160-40623-3	Radium-228	12/28/2020	11.5	U		U	19.0	31.2		pCi/L
HTCRV2-RB-120120	160-40623-3	Thallium-208	12/28/2020	8.14				6.45	7.18		pCi/L
HTCRV2-RB-120120	160-40623-3	Thorium-234	12/28/2020	-251	U		U	196	332		pCi/L

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-WC01-0612-01	160-40623-4	Thorium-228	1/5/2021	0.813				0.194	0.109		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Thorium-230	1/5/2021	12.5				1.25	0.128		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Thorium-232	1/5/2021	0.768				0.180	0.068		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Uranium-233/234	1/7/2021	7.08				0.803	0.072		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Uranium-235/236	1/7/2021	0.366				0.141	0.061		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Uranium-238	1/7/2021	7.37				0.827	0.049		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-WC01-0612-01	160-40623-4	Actinium 228	1/6/2021	0.629				0.452	0.514		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Bismuth-212	1/6/2021	-0.599	U G		U	5.16	3.37		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Bismuth-214	1/6/2021	22.1				2.42	0.316		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Cesium-137	1/6/2021	-0.124	U G		U	0.197	0.326		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Lead-212	1/6/2021	0.440				0.196	0.293		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Lead-214	1/6/2021	23.9				2.58	0.475		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Potassium-40	1/6/2021	2.89	G	J	J	2.36	2.31		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Protactinium-234	1/6/2021	0.0475	U		U	0.0790	1.25		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Radium-224	1/6/2021	0.440				0.196	0.293		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Radium-226	1/6/2021	22.1				2.42	0.316		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Radium-228	1/6/2021	0.629				0.452	0.514		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Thallium-208	1/6/2021	0.297		J	J	0.153	0.160		pCi/g
HTCRV2-WC01-0612-01	160-40623-4	Thorium-234	1/6/2021	16.6				2.54	2.36		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-WC02-0612-01	160-40623-5	Thorium-228	1/5/2021	0.379				0.146	0.134		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Thorium-230	1/5/2021	41.2				3.69	0.141		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Thorium-232	1/5/2021	0.290				0.113	0.066		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Uranium-233/234	1/7/2021	42.0				3.98	0.226		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Uranium-235/236	1/7/2021	1.74				0.445	0.141		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Uranium-238	1/7/2021	40.8				3.88	0.097		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-WC02-0612-01	160-40623-5	Actinium 228	1/6/2021	0.359	U G		U	1.04	1.24		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Bismuth-212	1/6/2021	-1.36	U G		U	3.59	6.00		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Bismuth-214	1/6/2021	48.4				5.75	0.765		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Cesium-137	1/6/2021	-0.196	U G		U	0.297	0.490		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Lead-212	1/6/2021	0.535	U G		U	0.342	0.542		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Lead-214	1/6/2021	53.0				6.27	0.853		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Potassium-40	1/6/2021	1.38	U G		U	3.02	3.18		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Protactinium-234	1/6/2021	0.351	U G		U	0.581	3.20		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Radium-224	1/6/2021	0.535	U		U	0.342	0.542		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Radium-226	1/6/2021	48.4				5.75	0.765		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Radium-228	1/6/2021	0.359	U G		U	1.04	1.24		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Thallium-208	1/6/2021	-0.184	U G		U	0.347	0.402		pCi/g
HTCRV2-WC02-0612-01	160-40623-5	Thorium-234	1/6/2021	35.5	G			5.44	4.35		pCi/g

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-WC02-0612-02	160-40623-6	Thorium-228	1/5/2021	0.267				0.126	0.115		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Thorium-230	1/5/2021	41.7				3.74	0.137		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Thorium-232	1/5/2021	0.355				0.128	0.065		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Uranium-233/234	1/7/2021	41.5				3.90	0.088		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Uranium-235/236	1/7/2021	2.27				0.493	0.110		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Uranium-238	1/7/2021	42.6				3.99	0.088		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
HTCRV2-WC02-0612-02	160-40623-6	Actinium 228	1/6/2021	1.06				0.647	0.739		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Bismuth-212	1/6/2021	0.652	U G		U	3.28	5.51		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Bismuth-214	1/6/2021	46.6				4.89	0.433		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Cesium-137	1/6/2021	-0.137	U G		U	0.302	0.502		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Lead-212	1/6/2021	0.438	U G		U	0.311	0.500		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Lead-214	1/6/2021	48.2				5.04	0.685		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Potassium-40	1/6/2021	0.000	U G		U	1.78	3.37		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Protactinium-234	1/6/2021	0.973	U		U	0.909	1.13		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Radium-224	1/6/2021	0.438	U		U	0.311	0.500		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Radium-226	1/6/2021	46.6				4.89	0.433		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Radium-228	1/6/2021	1.06				0.647	0.739		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Thallium-208	1/6/2021	0.209	U G		U	0.363	0.313		pCi/g
HTCRV2-WC02-0612-02	160-40623-6	Thorium-234	1/6/2021	35.3	G			4.93	4.05		pCi/g

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ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40639-1
Client Project/Site: EPA RST2 - RFP No. 636

For:
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837

Attn: Ms. Smita Sumbaly

Rhonda Ridenhower

Authorized for release by:
1/26/2021 10:20:09 PM

Rhonda Ridenhower, Client Service Manager
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40639-1

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 636

Report Number: 160-40639-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/03/2020; the samples arrived in good condition, properly preserved. The temperature of the coolers at receipt was 9.6 C.

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)

Job ID: 160-40639-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Samples HTCRV2-SS01-1218-01 (160-40639-1), HTCRV2-SS01-1824-01 (160-40639-2), HTCRV2-SS02-0612-01 (160-40639-3), HTCRV2-SS02-1218-01 (160-40639-4), HTCRV2-SS02-1824-01 (160-40639-5), HTCRV2-SS03-0006-01 (160-40639-6), HTCRV2-SS03-0612-01 (160-40639-7), HTCRV2-SS03-1218-01 (160-40639-8), HTCRV2-SS03-1824-01 (160-40639-9), HTCRV2-SS04-0006-01 (160-40639-10), HTCRV2-SS04-0006-02 (160-40639-11), HTCRV2-SS04-0612-01 (160-40639-12), HTCRV2-SS04-1218-01 (160-40639-13), HTCRV2-SS04-1821-01 (160-40639-14), HTCRV2-SS05-0006-01 (160-40639-15), HTCRV2-SS05-0612-01 (160-40639-16), HTCRV2-SS05-1218-01 (160-40639-17), HTCRV2-SS05-1824-01 (160-40639-18), HTCRV2-SS06-0006-01 (160-40639-19), HTCRV2-SS06-0006-02 (160-40639-20), HTCRV2-SS06-0612-01 (160-40639-21), HTCRV2-SS06-1218-01 (160-40639-22), HTCRV2-SS06-1824-01 (160-40639-23) and HTCRV2-SS01-0612-01 (160-40639-24) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE A01R_Th. The samples were dried on 12/14/2020 and 12/17/2020, prepared on 12/21/2020 and 12/23/2020 and analyzed on 01/05/2021, 01/06/2021, 01/11/2021 and 01/12/2021.

Isotopic Thorium Prep Batch 492664
Manual Integrations and adjustments to Regions of Interest (ROI) were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.
(LCS 160-492664/1-A)

A blank population correction was applied to account for contributions to the analyte count rate from sources other than the sample itself. Interferences may include, but are not limited to, impurities in reagents, tracers, or glassware, or effects due to the measurement process (such as tailing or crosstalk).HTCRV2-SS02-1218-01 (160-40639-4), HTCRV2-SS02-1824-01 (160-40639-5), HTCRV2-SS03-0006-01 (160-40639-6), HTCRV2-SS03-0612-01 (160-40639-7), HTCRV2-SS03-1218-01 (160-40639-8), HTCRV2-SS04-1821-01 (160-40639-14), HTCRV2-SS05-0006-01 (160-40639-15), HTCRV2-SS05-0612-01 (160-40639-16), HTCRV2-SS05-1218-01 (160-40639-17), HTCRV2-SS05-1824-01 (160-40639-18), HTCRV2-SS06-0006-01 (160-40639-19), HTCRV2-SS06-0006-02 (160-40639-20), HTCRV2-SS06-0612-01 (160-40639-21), HTCRV2-SS06-1218-01 (160-40639-22), HTCRV2-SS06-1824-01 (160-40639-23), HTCRV2-SS01-0612-01 (160-40639-24), (LCS 160-492664/1-A), (MB 160-492664/23-A), (180-114351-A-1-N) and (180-114351-A-1-P DU)

The LCS was inadvertently counted on a detector (152) that failed the daily check. the LCS recovery was within limits. 98%. The data is reported with this narrative. HTCRV2-SS02-1218-01 (160-40639-4), HTCRV2-SS02-1824-01 (160-40639-5), HTCRV2-SS03-0006-01 (160-40639-6), HTCRV2-SS03-0612-01 (160-40639-7), HTCRV2-SS03-1218-01 (160-40639-8), HTCRV2-SS04-1821-01 (160-40639-14), HTCRV2-SS05-0006-01 (160-40639-15), HTCRV2-SS05-0612-01 (160-40639-16), HTCRV2-SS05-1218-01 (160-40639-17), HTCRV2-SS05-1824-01 (160-40639-18), HTCRV2-SS06-0006-01 (160-40639-19), HTCRV2-SS06-0006-02 (160-40639-20), HTCRV2-SS06-0612-01 (160-40639-21), HTCRV2-SS06-1218-01 (160-40639-22), HTCRV2-SS06-1824-01 (160-40639-23), HTCRV2-SS01-0612-01 (160-40639-24), (LCS 160-492664/1-A), (MB 160-492664/23-A)

Isotopic Thorium Prep Batch 492880
A blank population correction was applied to account for contributions to the analyte count rate from sources other than the sample itself. Interferences may include, but are not limited to, impurities in reagents, tracers, or glassware, or effects due to the measurement process (such as tailing or crosstalk).HTCRV2-SS01-1218-01 (160-40639-1), HTCRV2-SS01-1824-01 (160-40639-2), HTCRV2-SS02-0612-01 (160-40639-3), HTCRV2-SS03-1824-01 (160-40639-9), HTCRV2-SS04-0006-01 (160-40639-10), HTCRV2-SS04-0006-02 (160-40639-11), HTCRV2-SS04-0612-01 (160-40639-12), HTCRV2-SS04-1218-01 (160-40639-13), (LCS 160-492880/2-A) and (MB 160-492880/1-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)
Samples HTCRV2-SS01-1218-01 (160-40639-1), HTCRV2-SS01-1824-01 (160-40639-2), HTCRV2-SS02-0612-01 (160-40639-3), HTCRV2-SS02-1218-01 (160-40639-4), HTCRV2-SS02-1824-01 (160-40639-5), HTCRV2-SS03-0006-01 (160-40639-6), HTCRV2-SS03-0612-01 (160-40639-7), HTCRV2-SS03-1218-01 (160-40639-8), HTCRV2-SS03-1824-01 (160-40639-9), HTCRV2-SS04-0006-01 (160-40639-10), HTCRV2-SS04-0006-02 (160-40639-11), HTCRV2-SS04-0612-01 (160-40639-12), HTCRV2-SS04-1218-01 (160-40639-13), HTCRV2-SS04-1821-01 (160-40639-14), HTCRV2-SS05-0006-01 (160-40639-15), HTCRV2-SS05-0612-01 (160-40639-16), HTCRV2-SS05-1218-01 (160-40639-17), HTCRV2-SS05-1824-01 (160-40639-18), HTCRV2-SS06-0006-01 (160-40639-19), HTCRV2-SS06-0006-02 (160-40639-20), HTCRV2-SS06-0612-01 (160-40639-21), HTCRV2-SS06-1218-01 (160-40639-22), HTCRV2-SS06-1824-01 (160-40639-23) and HTCRV2-SS01-0612-01 (160-40639-24) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were dried on 12/14/2020 and 12/17/2020, prepared on 12/21/2020, 12/22/2020 and 12/23/2020 and analyzed on 01/05/2021, 01/07/2021, 01/19/2021, 01/20/2021 and 01/21/2021.

Job ID: 160-40639-1 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-226 BY GAMMA SPEC (21 DAY INGROWTH)
Samples HTCRV2-SS01-1218-01 (160-40639-1), HTCRV2-SS01-1824-01 (160-40639-2), HTCRV2-SS02-0612-01 (160-40639-3), HTCRV2-SS02-1218-01 (160-40639-4), HTCRV2-SS02-1824-01 (160-40639-5), HTCRV2-SS03-0006-01 (160-40639-6), HTCRV2-SS03-0612-01 (160-40639-7), HTCRV2-SS03-1218-01 (160-40639-8), HTCRV2-SS03-1824-01 (160-40639-9), HTCRV2-SS04-0006-01 (160-40639-10), HTCRV2-SS04-0006-02 (160-40639-11), HTCRV2-SS04-0612-01 (160-40639-12), HTCRV2-SS04-1218-01 (160-40639-13), HTCRV2-SS04-1821-01 (160-40639-14), HTCRV2-SS05-0006-01 (160-40639-15), HTCRV2-SS05-0612-01 (160-40639-16), HTCRV2-SS05-1218-01 (160-40639-17), HTCRV2-SS05-1824-01 (160-40639-18), HTCRV2-SS06-0006-01 (160-40639-19), HTCRV2-SS06-0006-02 (160-40639-20), HTCRV2-SS06-0612-01 (160-40639-21), HTCRV2-SS06-1218-01 (160-40639-22), HTCRV2-SS06-1824-01 (160-40639-23) and HTCRV2-SS01-0612-01 (160-40639-24) were analyzed for Radium-226 by gamma spec (21 day ingrowth) in accordance with EPA GA_01_R. The samples were dried on 12/14/2020 and 12/17/2020, prepared on 12/17/2020 and 12/23/2020 and analyzed on 01/07/2021 and 01/13/2021.

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Insufficient samples were provided for the following samples to fill a geometry (e.g. tuna can) calibrated for Ra-226 analysis by gamma spectroscopy: HTCRV2-SS05-0006-01 (160-40639-15), HTCRV2-SS06-0006-01 (160-40639-19), HTCRV2-SS06-0006-02 (160-40639-20), HTCRV2-SS06-0612-01 (160-40639-21), HTCRV2-SS06-1218-01 (160-40639-22) and HTCRV2-SS01-0612-01 (160-40639-24. The samples were prepared with minimal headspace which could potentially bias the results low due to the loss of radon.

Insufficient samples were provided for the following samples to fill a geometry (e.g. tuna can) calibrated for Ra-226 analysis by gamma spectroscopy: HTCRV2-SS01-1218-01 (160-40639-1) and HTCRV2-SS01-1824-01 (160-40639-2). The samples were prepared with minimal headspace which could potentially bias the results low due to the loss of radon.

Due to sample matrix, the following sample is under the target prep weight 260g: HTCRV2-SS01-1824-01 (160-40639-2) .The sample is a low-density ground solid.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

USEPA

DateShipped: 12/2/2020
CarrierName: FedEx
AirbillNo: 772235722675

160-40639 Chain of Custody

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120220-0036-0021-01

Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-SS01-1218-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS01-1824-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS02-0612-01	WC02	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS02-1218-01	WC02	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS02-1824-01	WC02	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-0006-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-0612-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-1218-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS03-1824-01	WC03	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-0006-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-SS04-0006-02	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-0612-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-1218-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS04-1824-01	WC04	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-0006-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-0612-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-1218-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS05-1824-01	WC05	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-0006-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-SS06-0006-02	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-0612-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-1218-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-SS06-1824-01	WC06	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples/ All Analysis	Sean Weston/ START	12/2/2020 1100	FED EX		
	FED EX		ETASTL	12/3/2020 0955	

USEPA

DateShipped: 12/2/2020
CarrierName: FedEx
AirbillNo: 772235722675

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120220-0036-0021-01

Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-SS01-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples / All Analysis	Weston / START V	12/2/2020 1100	FED EX		
	FED EX		ETASTL	12/3/2020 0955	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40639-1

Login Number: 40639
List Number: 1
Creator: Greer, Diane A

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Method	Method Description	Protocol	Laboratory
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
GA-01-R	Radium-226 & Other Gamma Emitters (GS)	DOE	TAL SL
Dry and Grind	Preparation, Dry and Grind	None	TAL SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	TAL SL
Fill_Geo-21	Fill Geometry, 21-Day In-Growth	None	TAL SL

Protocol References:

DOE = U.S. Department of Energy
None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40639-1	HTCRV2-SS01-1218-01	Solid	12/01/20 13:03	12/03/20 09:55	
160-40639-2	HTCRV2-SS01-1824-01	Solid	12/01/20 13:09	12/03/20 09:55	
160-40639-3	HTCRV2-SS02-0612-01	Solid	12/01/20 13:13	12/03/20 09:55	
160-40639-4	HTCRV2-SS02-1218-01	Solid	12/01/20 13:16	12/03/20 09:55	
160-40639-5	HTCRV2-SS02-1824-01	Solid	12/01/20 13:21	12/03/20 09:55	
160-40639-6	HTCRV2-SS03-0006-01	Solid	12/01/20 13:26	12/03/20 09:55	
160-40639-7	HTCRV2-SS03-0612-01	Solid	12/01/20 13:29	12/03/20 09:55	
160-40639-8	HTCRV2-SS03-1218-01	Solid	12/01/20 13:33	12/03/20 09:55	
160-40639-9	HTCRV2-SS03-1824-01	Solid	12/01/20 13:35	12/03/20 09:55	
160-40639-10	HTCRV2-SS04-0006-01	Solid	12/01/20 13:37	12/03/20 09:55	
160-40639-11	HTCRV2-SS04-0006-02	Solid	12/01/20 13:38	12/03/20 09:55	
160-40639-12	HTCRV2-SS04-0612-01	Solid	12/01/20 13:41	12/03/20 09:55	
160-40639-13	HTCRV2-SS04-1218-01	Solid	12/01/20 13:43	12/03/20 09:55	
160-40639-14	HTCRV2-SS04-1821-01	Solid	12/01/20 13:46	12/03/20 09:55	
160-40639-15	HTCRV2-SS05-0006-01	Solid	12/01/20 13:49	12/03/20 09:55	
160-40639-16	HTCRV2-SS05-0612-01	Solid	12/01/20 13:51	12/03/20 09:55	
160-40639-17	HTCRV2-SS05-1218-01	Solid	12/01/20 13:55	12/03/20 09:55	
160-40639-18	HTCRV2-SS05-1824-01	Solid	12/01/20 13:57	12/03/20 09:55	
160-40639-19	HTCRV2-SS06-0006-01	Solid	12/01/20 14:02	12/03/20 09:55	
160-40639-20	HTCRV2-SS06-0006-02	Solid	12/01/20 14:03	12/03/20 09:55	
160-40639-21	HTCRV2-SS06-0612-01	Solid	12/01/20 14:05	12/03/20 09:55	
160-40639-22	HTCRV2-SS06-1218-01	Solid	12/01/20 14:05	12/03/20 09:55	
160-40639-23	HTCRV2-SS06-1824-01	Solid	12/01/20 14:07	12/03/20 09:55	
160-40639-24	HTCRV2-SS01-0612-01	Solid	12/01/20 13:00	12/03/20 09:55	

Client Sample ID: HTCRV2-SS01-1218-01

Lab Sample ID: 160-40639-1
Date Collected: 12/01/20 13:03
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	1.17		0.219	0.240	1.00	0.126	pCi/g	12/23/20 09:14	01/12/21 15:27	1
Thorium-230	2.12		0.295	0.344	1.00	0.155	pCi/g	12/23/20 09:14	01/12/21 15:27	1
Thorium-232	0.976		0.191	0.208	1.00	0.0787	pCi/g	12/23/20 09:14	01/12/21 15:27	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*78.2*		*30 - 110*	*12/23/20 09:14*	*01/12/21 15:27*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	2.36		0.280	0.343	1.00	0.0844	pCi/g	12/23/20 09:40	01/05/21 10:01	1
Uranium-235/236	0.175		0.0865	0.0877	1.00	0.0627	pCi/g	12/23/20 09:40	01/05/21 10:01	1
Uranium-238	2.49		0.285	0.353	1.00	0.0456	pCi/g	12/23/20 09:40	01/05/21 10:01	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*102*		*30 - 110*	*12/23/20 09:40*	*01/05/21 10:01*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.18		0.501	0.515		0.479	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Bismuth-212	0.0178	U	1.38	1.38		2.43	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Bismuth-214	3.21		0.357	0.484		0.229	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Cesium-137	0.217		0.0832	0.0861		0.0718	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Lead-212	1.10		0.184	0.217		0.205	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Lead-214	3.58		0.341	0.498		0.289	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Potassium-40	19.4		2.46	3.14		0.899	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Protactinium-234	-0.222	U	0.669	0.669		1.11	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Radium-226	3.21		0.357	0.484	1.00	0.229	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Radium-228	1.18		0.501	0.515		0.479	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Radium-224	1.10		0.184	0.217		0.205	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Thallium-208	0.509		0.123	0.133		0.0939	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Thorium-234	5.89		1.59	1.72		1.68	pCi/g	12/23/20 15:33	01/13/21 06:01	1

Client Sample ID: HTCRV2-SS01-1824-01

Lab Sample ID: 160-40639-2
Date Collected: 12/01/20 13:09
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.683		0.159	0.169	1.00	0.111	pCi/g	12/23/20 09:14	01/11/21 15:18	1
Thorium-230	1.71		0.263	0.300	1.00	0.214	pCi/g	12/23/20 09:14	01/11/21 15:18	1
Thorium-232	0.606		0.138	0.148	1.00	0.0512	pCi/g	12/23/20 09:14	01/11/21 15:18	1

Client Sample ID: HTCRV2-SS01-1824-01 — Lab Sample ID: 160-40639-2

Date Collected: 12/01/20 13:09
Date Received: 12/03/20 09:55
Matrix: Solid

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	90.0		30 - 110	12/23/20 09:14	01/11/21 15:18	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	1.78		0.241	0.284	1.00	0.0542	pCi/g	12/23/20 09:40	01/05/21 10:01	1
Uranium-235/236	0.0858		0.0610	0.0614	1.00	0.0565	pCi/g	12/23/20 09:40	01/05/21 10:01	1
Uranium-238	1.79		0.242	0.285	1.00	0.0608	pCi/g	12/23/20 09:40	01/05/21 10:01	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	92.4		30 - 110	12/23/20 09:40	01/05/21 10:01	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.27		0.285	0.313		0.251	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Bismuth-212	-1.02	U	1.53	1.53		2.54	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Bismuth-214	2.95		0.317	0.441		0.182	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Cesium-137	0.110		0.0558	0.0570		0.0578	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Lead-212	1.04		0.152	0.203		0.159	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Lead-214	3.25		0.257	0.425		0.232	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Potassium-40	16.4		1.97	2.59		0.676	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Protactinium-234	0.120	U	0.332	0.332		0.702	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Radium-226	2.95		0.317	0.441	1.00	0.182	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Radium-228	1.27		0.285	0.313		0.251	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Radium-224	1.04		0.152	0.203		0.159	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Thallium-208	0.387		0.0969	0.105		0.0807	pCi/g	12/23/20 15:33	01/13/21 06:01	1
Thorium-234	3.10		0.845	0.913		1.35	pCi/g	12/23/20 15:33	01/13/21 06:01	1

Client Sample ID: HTCRV2-SS02-0612-01 — Lab Sample ID: 160-40639-3

Date Collected: 12/01/20 13:13
Date Received: 12/03/20 09:55
Matrix: Solid

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.420		0.147	0.151	1.00	0.132	pCi/g	12/23/20 09:14	01/11/21 15:18	1
Thorium-230	38.3		1.22	3.44	1.00	0.180	pCi/g	12/23/20 09:14	01/11/21 15:18	1
Thorium-232	0.374		0.122	0.126	1.00	0.0611	pCi/g	12/23/20 09:14	01/11/21 15:18	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	73.3		30 - 110	12/23/20 09:14	01/11/21 15:18	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	35.6		1.58	3.39	1.00	0.154	pCi/g	12/23/20 09:40	01/05/21 10:01	1
Uranium-235/236	1.61		0.378	0.402	1.00	0.155	pCi/g	12/23/20 09:40	01/05/21 10:01	1

Client Sample ID: HTCRV2-SS02-0612-01

Lab Sample ID: 160-40639-3
Date Collected: 12/01/20 13:13
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-238	**33.2**		1.52	3.18	1.00	0.117	pCi/g	12/23/20 09:40	01/05/21 10:01	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*47.2*		*30 - 110*	*12/23/20 09:40*	*01/05/21 10:01*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.165	U	0.709	0.709		0.802	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Bismuth-212	0.547	U	2.34	2.34		3.92	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Bismuth-214	**36.4**		0.911	3.89		0.369	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Cesium-137	-0.0229	U	0.153	0.153		0.384	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Lead-212	**0.379**		0.234	0.239		0.378	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Lead-214	**39.9**		0.781	4.22		0.389	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Potassium-40	**4.41**		1.91	1.96		1.71	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Protactinium-234	0.584	U	0.570	0.573		0.721	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Radium-226	**36.4**		0.911	3.89	1.00	0.369	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Radium-228	0.165	U	0.709	0.709		0.802	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Radium-224	**0.379**		0.234	0.239		0.378	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Thallium-208	-0.140	U	0.154	0.155		0.275	pCi/g	12/23/20 15:33	01/13/21 06:03	1
Thorium-234	**29.2**		2.15	3.90		2.95	pCi/g	12/23/20 15:33	01/13/21 06:03	1

Client Sample ID: HTCRV2-SS02-1218-01

Lab Sample ID: 160-40639-4
Date Collected: 12/01/20 13:16
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**1.09**		0.224	0.242	1.00	0.114	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**44.0**		1.37	3.94	1.00	0.142	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**1.39**		0.244	0.271	1.00	0.0712	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*65.4*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**18.8**		0.993	1.86	1.00	0.0876	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**0.882**		0.240	0.251	1.00	0.0490	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**19.4**		1.01	1.92	1.00	0.0733	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*62.3*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS02-1218-01

Lab Sample ID: 160-40639-4
Date Collected: 12/01/20 13:16
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.435	U	0.693	0.694		0.793	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Bismuth-212	-0.735	U	2.56	2.56		4.29	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Bismuth-214	**37.3**		0.954	3.99		0.365	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Cesium-137	-0.0861	U	0.238	0.238		0.370	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Lead-212	0.171	U	0.642	0.643		1.06	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Lead-214	**38.8**		0.907	4.14		0.645	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Potassium-40	**3.14**		1.82	1.85		1.87	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Protactinium-234	0.492	U	0.559	0.561		0.671	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Radium-226	**37.3**		0.954	3.99	1.00	0.365	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Radium-228	0.435	U	0.693	0.694		0.793	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Radium-224	0.171	U	0.642	0.643		1.06	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Thallium-208	0.0642	U	0.114	0.114		0.270	pCi/g	12/17/20 09:12	01/07/21 06:40	1
Thorium-234	**24.4**		2.35	3.59		3.31	pCi/g	12/17/20 09:12	01/07/21 06:40	1

Client Sample ID: HTCRV2-SS02-1824-01

Lab Sample ID: 160-40639-5
Date Collected: 12/01/20 13:21
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.845**		0.176	0.190	1.00	0.0913	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**10.3**		0.591	1.05	1.00	0.134	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.871**		0.172	0.187	1.00	0.0669	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*86.1*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**18.4**		0.970	1.82	1.00	0.0855	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**1.03**		0.257	0.271	1.00	0.0893	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**18.9**		0.984	1.87	1.00	0.0854	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*63.7*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.824	U	0.824	0.828		0.913	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Bismuth-212	-1.83	U	2.99	2.99		4.96	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Bismuth-214	**31.0**		0.943	3.29		0.382	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Cesium-137	-0.174	U	0.280	0.281		0.464	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Lead-212	**0.599**		0.213	0.222		0.329	pCi/g	12/17/20 09:12	01/07/21 09:59	1

Client Sample ID: HTCRV2-SS02-1824-01

Lab Sample ID: 160-40639-5
Date Collected: 12/01/20 13:21
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lead-214	**31.6**		0.776	3.30		0.494	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Potassium-40	**8.51**		2.84	2.96		2.37	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Protactinium-234	0.333	U	0.896	0.896		1.60	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Radium-226	**31.0**		0.943	3.29	1.00	0.382	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Radium-228	0.824	U	0.824	0.828		0.913	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Radium-224	**0.599**		0.213	0.222		0.329	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Thallium-208	**0.320**		0.158	0.161		0.179	pCi/g	12/17/20 09:12	01/07/21 09:59	1
Thorium-234	**23.0**		1.80	3.13		2.33	pCi/g	12/17/20 09:12	01/07/21 09:59	1

Client Sample ID: HTCRV2-SS03-0006-01

Lab Sample ID: 160-40639-6
Date Collected: 12/01/20 13:26
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.526**		0.152	0.158	1.00	0.110	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**21.0**		0.877	1.97	1.00	0.128	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.461**		0.131	0.137	1.00	0.0583	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*74.1*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**20.0**		1.03	1.97	1.00	0.0816	pCi/g	12/22/20 08:21	01/21/21 18:32	1
Uranium-235/236	**1.10**		0.269	0.284	1.00	0.0794	pCi/g	12/22/20 08:21	01/21/21 18:32	1
Uranium-238	**19.7**		1.02	1.95	1.00	0.0637	pCi/g	12/22/20 08:21	01/21/21 18:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*53.9*		*30 - 110*	*12/22/20 08:21*	*01/21/21 18:32*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.373	U	0.906	0.907		1.03	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Bismuth-212	1.82	U	3.51	3.51		5.84	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Bismuth-214	**35.6**		1.11	3.87		0.373	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Cesium-137	-0.225	U	0.638	0.638		0.554	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Lead-212	**0.535**		0.265	0.274		0.420	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Lead-214	**36.5**		0.932	3.90		0.551	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Potassium-40	1.78	U	3.12	3.13		3.34	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Protactinium-234	0.0237	U	0.0365	0.0366		1.78	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Radium-226	**35.6**		1.11	3.87	1.00	0.373	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Radium-228	0.373	U	0.906	0.907		1.03	pCi/g	12/17/20 09:12	01/07/21 06:48	1

Client Sample ID: HTCRV2-SS03-0006-01

Lab Sample ID: 160-40639-6
Date Collected: 12/01/20 13:26
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-224	**0.535**		0.265	0.274		0.420	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Thallium-208	0.212	U	0.166	0.168		0.336	pCi/g	12/17/20 09:12	01/07/21 06:48	1
Thorium-234	**26.8**		2.40	3.83		3.15	pCi/g	12/17/20 09:12	01/07/21 06:48	1

Client Sample ID: HTCRV2-SS03-0612-01

Lab Sample ID: 160-40639-7
Date Collected: 12/01/20 13:29
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.264**		0.111	0.113	1.00	0.0970	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**36.8**		1.12	3.29	1.00	0.121	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.416**		0.121	0.126	1.00	0.0555	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*79.5*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**43.4**		1.96	4.14	1.00	0.107	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**2.14**		0.487	0.519	1.00	0.154	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**42.8**		1.95	4.09	1.00	0.148	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*37.1*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**0.854**		0.590	0.596		0.615	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Bismuth-212	1.46	U	2.34	2.34		3.87	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Bismuth-214	**38.2**		0.912	4.07		0.399	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Cesium-137	0.0762	U	0.205	0.205		0.341	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Lead-212	0.196	U	0.574	0.575		0.950	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Lead-214	**41.6**		0.732	4.39		0.567	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Potassium-40	-0.106	U	2.67	2.67		2.70	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Protactinium-234	0.0214	U	0.294	0.294		1.99	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Radium-226	**38.2**		0.912	4.07	1.00	0.399	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Radium-228	**0.854**		0.590	0.596		0.615	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Radium-224	0.196	U	0.574	0.575		0.950	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Thallium-208	-0.00648	U	0.00801	0.00803		0.265	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Thorium-234	**30.2**		2.17	4.01		2.94	pCi/g	12/17/20 09:12	01/07/21 07:59	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS03-1218-01

Lab Sample ID: 160-40639-8
Date Collected: 12/01/20 13:33
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	1.13		0.199	0.220	1.00	0.110	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	2.57		0.296	0.366	1.00	0.125	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.979		0.176	0.194	1.00	0.0517	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*91.6*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	3.37		0.343	0.445	1.00	0.0538	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	0.133		0.0786	0.0794	1.00	0.0670	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	3.49		0.349	0.456	1.00	0.0486	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*93.5*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.889		0.610	0.616		0.637	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Bismuth-212	0.335	U	2.19	2.19		3.73	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Bismuth-214	10.5		0.664	1.26		0.358	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Cesium-137	-0.104	U	0.169	0.169		0.282	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Lead-212	1.15		0.207	0.239		0.261	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Lead-214	10.2		0.576	1.18		0.397	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Potassium-40	22.3		2.43	3.32		0.489	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Protactinium-234	-0.316	U	0.940	0.940		1.56	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Radium-226	10.5		0.664	1.26	1.00	0.358	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Radium-228	0.889		0.610	0.616		0.637	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Radium-224	1.15		0.207	0.239		0.261	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Thallium-208	0.531		0.173	0.182		0.148	pCi/g	12/17/20 09:12	01/07/21 07:59	1
Thorium-234	9.69		1.70	2.01		2.23	pCi/g	12/17/20 09:12	01/07/21 07:59	1

Client Sample ID: HTCRV2-SS03-1824-01

Lab Sample ID: 160-40639-9
Date Collected: 12/01/20 13:35
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.856		0.181	0.195	1.00	0.117	pCi/g	12/23/20 09:14	01/11/21 15:18	1
Thorium-230	8.28		0.533	0.876	1.00	0.144	pCi/g	12/23/20 09:14	01/11/21 15:18	1
Thorium-232	0.954		0.181	0.198	1.00	0.0723	pCi/g	12/23/20 09:14	01/11/21 15:18	1

Client Sample ID: HTCRV2-SS03-1824-01 — Lab Sample ID: 160-40639-9

Date Collected: 12/01/20 13:35 — **Matrix: Solid**
Date Received: 12/03/20 09:55

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	85.4		30 - 110	12/23/20 09:14	01/11/21 15:18	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	9.39		0.600	0.991	1.00	0.0784	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	0.506		0.156	0.162	1.00	0.0666	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	9.26		0.595	0.979	1.00	0.0590	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	85.6		30 - 110	12/22/20 08:21	01/20/21 12:30	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.20		0.521	0.535		0.792	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Bismuth-212	0.000	U	1.19	1.19		3.63	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Bismuth-214	16.0		0.808	1.84		0.383	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Cesium-137	-0.160	U	0.240	0.240		0.397	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Lead-212	0.634		0.238	0.252		0.366	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Lead-214	15.8		0.815	1.83		0.501	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Potassium-40	11.5		1.99	2.31		1.11	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Protactinium-234	0.251	U	0.197	0.199		1.79	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Radium-226	16.0		0.808	1.84	1.00	0.383	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Radium-228	1.20		0.521	0.535		0.792	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Radium-224	0.634		0.238	0.252		0.366	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Thallium-208	0.205	U	0.208	0.209		0.230	pCi/g	12/17/20 09:12	01/07/21 08:01	1
Thorium-234	8.80		2.05	2.27		3.11	pCi/g	12/17/20 09:12	01/07/21 08:01	1

Client Sample ID: HTCRV2-SS04-0006-01 — Lab Sample ID: 160-40639-10

Date Collected: 12/01/20 13:37 — **Matrix: Solid**
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.519		0.151	0.157	1.00	0.109	pCi/g	12/23/20 09:14	01/11/21 09:33	1
Thorium-230	25.1		0.961	2.32	1.00	0.178	pCi/g	12/23/20 09:14	01/11/21 09:33	1
Thorium-232	0.522		0.146	0.152	1.00	0.102	pCi/g	12/23/20 09:14	01/11/21 09:33	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	75.8		30 - 110	12/23/20 09:14	01/11/21 09:33	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	31.5		1.44	3.01	1.00	0.0492	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	1.54		0.356	0.379	1.00	0.0987	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Client Sample ID: HTCRV2-SS04-0006-01

Lab Sample ID: 160-40639-10

Date Collected: 12/01/20 13:37

Matrix: Solid

Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-238	**29.8**		1.40	2.86	1.00	0.0916	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*49.7*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**0.991**		0.870	0.877		0.927	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Bismuth-212	-2.12	U	3.47	3.48		5.75	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Bismuth-214	**37.5**		1.11	4.47		0.674	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Cesium-137	-0.182	U	0.275	0.276		0.455	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Lead-212	0.197	U	0.709	0.710		1.18	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Lead-214	**40.0**		0.912	4.69		0.679	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Potassium-40	**4.87**		2.12	2.19		2.16	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Protactinium-234	0.496	U	1.02	1.03		1.28	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Radium-226	**37.5**		1.11	4.47	1.00	0.674	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Radium-228	**0.991**		0.870	0.877		0.927	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Radium-224	0.197	U	0.709	0.710		1.18	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Thallium-208	0.0577	U	0.0991	0.0993		0.331	pCi/g	12/17/20 09:12	01/07/21 08:02	1
Thorium-234	**26.5**		2.64	4.21		3.67	pCi/g	12/17/20 09:12	01/07/21 08:02	1

Client Sample ID: HTCRV2-SS04-0006-02

Lab Sample ID: 160-40639-11

Date Collected: 12/01/20 13:38

Matrix: Solid

Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.480**		0.142	0.148	1.00	0.101	pCi/g	12/23/20 09:14	01/11/21 09:33	1
Thorium-230	**28.4**		1.00	2.59	1.00	0.173	pCi/g	12/23/20 09:14	01/11/21 09:33	1
Thorium-232	**0.540**		0.139	0.147	1.00	0.0566	pCi/g	12/23/20 09:14	01/11/21 09:33	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*81.6*		*30 - 110*	*12/23/20 09:14*	*01/11/21 09:33*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**33.9**		1.52	3.23	1.00	0.134	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**1.54**		0.363	0.385	1.00	0.119	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**34.9**		1.54	3.32	1.00	0.105	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*48.1*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS04-0006-02

Lab Sample ID: 160-40639-11

Date Collected: 12/01/20 13:38
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.651	U	0.619	0.622		0.755	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Bismuth-212	1.37	U	2.29	2.30		3.80	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Bismuth-214	**37.5**		1.00	4.03		0.433	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Cesium-137	-0.145	U	0.107	0.108		0.375	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Lead-212	0.176	U	0.607	0.608		1.01	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Lead-214	**38.2**		0.875	4.07		0.608	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Potassium-40	**4.29**		1.65	1.70		1.55	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Protactinium-234	-0.425	U	1.01	1.01		1.67	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Radium-226	**37.5**		1.00	4.03	1.00	0.433	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Radium-228	0.651	U	0.619	0.622		0.755	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Radium-224	0.176	U	0.607	0.608		1.01	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Thallium-208	-0.0257	U	0.0343	0.0344		0.281	pCi/g	12/17/20 09:12	01/07/21 08:03	1
Thorium-234	**22.1**		2.34	3.40		3.34	pCi/g	12/17/20 09:12	01/07/21 08:03	1

Client Sample ID: HTCRV2-SS04-0612-01

Lab Sample ID: 160-40639-12

Date Collected: 12/01/20 13:41
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.523**		0.150	0.157	1.00	0.110	pCi/g	12/23/20 09:14	01/06/21 19:52	1
Thorium-230	**22.7**		0.904	2.11	1.00	0.136	pCi/g	12/23/20 09:14	01/06/21 19:52	1
Thorium-232	**0.477**		0.147	0.152	1.00	0.136	pCi/g	12/23/20 09:14	01/06/21 19:52	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*76.2*		*30 - 110*	*12/23/20 09:14*	*01/06/21 19:52*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**34.7**		1.60	3.32	1.00	0.103	pCi/g	12/22/20 08:21	01/19/21 19:14	1
Uranium-235/236	**1.94**		0.421	0.451	1.00	0.0684	pCi/g	12/22/20 08:21	01/19/21 19:14	1
Uranium-238	**35.8**		1.62	3.41	1.00	0.0549	pCi/g	12/22/20 08:21	01/19/21 19:14	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*36.7*		*30 - 110*	*12/22/20 08:21*	*01/19/21 19:14*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	-0.351	U	1.02	1.02		1.15	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Bismuth-212	1.84	U	3.37	3.38		5.60	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Bismuth-214	**34.5**		1.10	3.75		0.469	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Cesium-137	-0.107	U	0.636	0.636		0.404	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Lead-212	**0.521**		0.254	0.263		0.403	pCi/g	12/17/20 09:12	01/07/21 08:06	1

Client Sample ID: HTCRV2-SS04-0612-01 — Lab Sample ID: 160-40639-12

Date Collected: 12/01/20 13:41
Date Received: 12/03/20 09:55
Matrix: Solid

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lead-214	**35.8**		0.896	3.83		0.589	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Potassium-40	1.78	U	3.09	3.09		3.28	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Protactinium-234	0.216	U	0.338	0.339		1.66	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Radium-226	**34.5**		1.10	3.75	1.00	0.469	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Radium-228	-0.351	U	1.02	1.02		1.15	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Radium-224	**0.521**		0.254	0.263		0.403	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Thallium-208	0.0759	U	0.233	0.233		0.285	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Thorium-234	**25.3**		2.28	3.63		3.07	pCi/g	12/17/20 09:12	01/07/21 08:06	1

Client Sample ID: HTCRV2-SS04-1218-01 — Lab Sample ID: 160-40639-13

Date Collected: 12/01/20 13:43
Date Received: 12/03/20 09:55
Matrix: Solid

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**1.13**		0.219	0.238	1.00	0.103	pCi/g	12/23/20 09:14	01/06/21 19:52	1
Thorium-230	**2.49**		0.324	0.386	1.00	0.130	pCi/g	12/23/20 09:14	01/06/21 19:52	1
Thorium-232	**0.979**		0.197	0.213	1.00	0.0567	pCi/g	12/23/20 09:14	01/06/21 19:52	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*74.3*		*30 - 110*	*12/23/20 09:14*	*01/06/21 19:52*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**3.44**		0.352	0.456	1.00	0.0504	pCi/g	12/22/20 08:21	01/19/21 19:14	1
Uranium-235/236	**0.224**		0.100	0.102	1.00	0.0336	pCi/g	12/22/20 08:21	01/19/21 19:14	1
Uranium-238	**3.93**		0.376	0.500	1.00	0.0434	pCi/g	12/22/20 08:21	01/19/21 19:14	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*75.2*		*30 - 110*	*12/22/20 08:21*	*01/19/21 19:14*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**1.72**		0.330	0.374		0.117	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Bismuth-212	-0.809	U	3.32	3.33		2.57	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Bismuth-214	**2.49**		0.310	0.404		0.288	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Cesium-137	0.0769	U	0.118	0.118		0.196	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Lead-212	**1.03**		0.177	0.222		0.229	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Lead-214	**3.46**		0.329	0.487		0.197	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Potassium-40	**22.7**		2.47	3.39		0.687	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Protactinium-234	-0.211	U	0.478	0.479		0.795	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Radium-226	**2.49**		0.310	0.404	1.00	0.288	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Radium-228	**1.72**		0.330	0.374		0.117	pCi/g	12/17/20 09:12	01/07/21 08:07	1

Client Sample ID: HTCRV2-SS04-1218-01

Lab Sample ID: 160-40639-13

Date Collected: 12/01/20 13:43
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-224	1.03		0.177	0.222		0.229	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Thallium-208	0.398		0.115	0.122		0.105	pCi/g	12/17/20 09:12	01/07/21 08:07	1
Thorium-234	-1.86	U	1.40	1.42		6.25	pCi/g	12/17/20 09:12	01/07/21 08:07	1

Client Sample ID: HTCRV2-SS04-1821-01

Lab Sample ID: 160-40639-14

Date Collected: 12/01/20 13:46
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.927		0.182	0.198	1.00	0.100	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	5.93		0.444	0.667	1.00	0.116	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	1.02		0.182	0.202	1.00	0.0488	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*89.0*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	3.06		0.335	0.422	1.00	0.0275	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-235/236	0.160		0.0854	0.0864	1.00	0.0342	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-238	3.05		0.334	0.421	1.00	0.0443	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*84.1*		*30 - 110*	*12/21/20 14:05*	*01/07/21 12:47*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.09		0.462	0.475		0.759	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Bismuth-212	3.03		1.58	1.61		1.50	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Bismuth-214	11.8		0.664	1.37		0.300	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Cesium-137	-0.0519	U	0.171	0.171		0.290	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Lead-212	1.14		0.208	0.240		0.273	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Lead-214	11.6		0.569	1.31		0.365	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Potassium-40	18.0		2.62	3.19		1.44	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Protactinium-234	-0.287	U	0.900	0.900		1.49	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Radium-226	11.8		0.664	1.37	1.00	0.300	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Radium-228	1.09		0.462	0.475		0.759	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Radium-224	1.14		0.208	0.240		0.273	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Thallium-208	0.388		0.170	0.175		0.175	pCi/g	12/17/20 09:12	01/07/21 08:06	1
Thorium-234	7.97		1.52	1.76		2.18	pCi/g	12/17/20 09:12	01/07/21 08:06	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS05-0006-01

Lab Sample ID: 160-40639-15

Date Collected: 12/01/20 13:49
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.338		0.144	0.147	1.00	0.155	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	36.1		1.20	3.26	1.00	0.155	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.312		0.114	0.117	1.00	0.0670	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*72.1*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	35.0		1.60	3.34	1.00	0.149	pCi/g	12/22/20 08:21	01/19/21 08:38	1
Uranium-235/236	1.71		0.398	0.423	1.00	0.170	pCi/g	12/22/20 08:21	01/19/21 08:38	1
Uranium-238	31.1		1.50	3.01	1.00	0.149	pCi/g	12/22/20 08:21	01/19/21 08:38	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*38.7*		*30 - 110*	*12/22/20 08:21*	*01/19/21 08:38*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.975		0.819	0.825		0.870	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Bismuth-212	-1.78	U	1.25	1.26		4.84	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Bismuth-214	45.0		1.15	4.82		0.477	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Cesium-137	-0.128	U	0.267	0.268		0.444	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Lead-212	0.390	U	0.272	0.276		0.441	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Lead-214	47.9		1.05	5.09		0.636	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Potassium-40	1.22	U	2.53	2.53		2.57	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Protactinium-234	0.0928	U	0.243	0.243		1.77	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Radium-226	45.0		1.15	4.82	1.00	0.477	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Radium-228	0.975		0.819	0.825		0.870	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Radium-224	0.390	U	0.272	0.276		0.441	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Thallium-208	-0.123	U	0.243	0.243		0.308	pCi/g	12/17/20 09:12	01/07/21 08:08	1
Thorium-234	32.3		2.53	4.40		3.40	pCi/g	12/17/20 09:12	01/07/21 08:08	1

Client Sample ID: HTCRV2-SS05-0612-01

Lab Sample ID: 160-40639-16

Date Collected: 12/01/20 13:51
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.315		0.129	0.132	1.00	0.123	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	37.6		1.19	3.38	1.00	0.130	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.309		0.110	0.113	1.00	0.0599	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Client Sample ID: HTCRV2-SS05-0612-01 — Lab Sample ID: 160-40639-16

Date Collected: 12/01/20 13:51 — **Matrix: Solid**
Date Received: 12/03/20 09:55

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	71.3		30 - 110	12/21/20 15:12	01/05/21 10:15	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**36.7**		1.66	3.50	1.00	0.148	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**1.96**		0.430	0.460	1.00	0.113	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**35.6**		1.64	3.41	1.00	0.126	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	37.8		30 - 110	12/22/20 08:21	01/20/21 12:30	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.691	U	0.686	0.690		0.736	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Bismuth-212	-1.66	U	2.51	2.52		4.16	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Bismuth-214	**40.4**		0.957	4.31		0.406	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Cesium-137	0.0364	U	0.217	0.217		0.363	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Lead-212	**0.488**		0.231	0.240		0.370	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Lead-214	**44.0**		0.742	4.63		0.502	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Potassium-40	**2.56**		2.04	2.05		2.02	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Protactinium-234	-0.442	U	1.28	1.28		2.11	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Radium-226	**40.4**		0.957	4.31	1.00	0.406	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Radium-228	0.691	U	0.686	0.690		0.736	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Radium-224	**0.488**		0.231	0.240		0.370	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Thallium-208	-0.0278	U	0.0387	0.0388		0.284	pCi/g	12/17/20 09:12	01/07/21 08:34	1
Thorium-234	**32.7**		2.20	4.26		2.92	pCi/g	12/17/20 09:12	01/07/21 08:34	1

Client Sample ID: HTCRV2-SS05-1218-01 — Lab Sample ID: 160-40639-17

Date Collected: 12/01/20 13:55 — **Matrix: Solid**
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.751**		0.182	0.193	1.00	0.115	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**14.9**		0.763	1.47	1.00	0.133	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.904**		0.188	0.203	1.00	0.0695	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	70.3		30 - 110	12/21/20 15:12	01/05/21 10:15	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**14.6**		0.816	1.47	1.00	0.0707	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**0.725**		0.203	0.212	1.00	0.0427	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Client Sample ID: HTCRV2-SS05-1218-01

Lab Sample ID: 160-40639-17

Date Collected: 12/01/20 13:55
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-238	13.7		0.791	1.40	1.00	0.0639	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*66.0*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.958		0.562	0.571		0.813	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Bismuth-212	-1.06	U	2.87	2.87		4.79	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Bismuth-214	25.3		0.972	2.76		0.476	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Cesium-137	-0.163	U	0.250	0.250		0.414	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Lead-212	0.956		0.238	0.258		0.350	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Lead-214	27.3		0.842	2.89		0.550	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Potassium-40	9.04		3.03	3.17		2.73	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Protactinium-234	-0.424	U	1.29	1.29		2.14	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Radium-226	25.3		0.972	2.76	1.00	0.476	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Radium-228	0.958		0.562	0.571		0.813	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Radium-224	0.956		0.238	0.258		0.350	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Thallium-208	0.0786	U	0.306	0.306		0.265	pCi/g	12/17/20 09:12	01/07/21 08:35	1
Thorium-234	20.1		2.29	3.20		3.15	pCi/g	12/17/20 09:12	01/07/21 08:35	1

Client Sample ID: HTCRV2-SS05-1824-01

Lab Sample ID: 160-40639-18

Date Collected: 12/01/20 13:57
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.862		0.188	0.201	1.00	0.116	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	11.1		0.638	1.13	1.00	0.125	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.977		0.188	0.205	1.00	0.0531	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*77.0*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	6.50		0.476	0.724	1.00	0.0712	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	0.254		0.114	0.116	1.00	0.107	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	6.47		0.475	0.722	1.00	0.0955	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*94.3*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS05-1824-01

Lab Sample ID: 160-40639-18
Date Collected: 12/01/20 13:57
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**0.994**		0.363	0.377		0.533	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Bismuth-212	-1.18	U	2.08	2.09		3.46	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Bismuth-214	**23.9**		0.755	2.59		0.342	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Cesium-137	-0.0953	U	0.190	0.191		0.316	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Lead-212	**0.772**		0.198	0.222		0.298	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Lead-214	**25.6**		0.715	2.75		0.453	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Potassium-40	**9.35**		2.03	2.24		1.51	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Protactinium-234	0.273	U	0.321	0.322		1.68	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Radium-226	**23.9**		0.755	2.59	1.00	0.342	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Radium-228	**0.994**		0.363	0.377		0.533	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Radium-224	**0.772**		0.198	0.222		0.298	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Thallium-208	**0.474**		0.148	0.156		0.137	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Thorium-234	**18.3**		1.85	2.76		2.56	pCi/g	12/17/20 09:12	01/07/21 08:37	1

Client Sample ID: HTCRV2-SS06-0006-01

Lab Sample ID: 160-40639-19
Date Collected: 12/01/20 14:02
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.360**		0.156	0.159	1.00	0.154	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**43.7**		1.46	3.95	1.00	0.149	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.317**		0.128	0.130	1.00	0.0742	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*58.0*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**39.2**		1.66	3.69	1.00	0.144	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**1.67**		0.384	0.409	1.00	0.122	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**39.3**		1.66	3.69	1.00	0.0848	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*42.7*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.244	U	1.24	1.24		1.36	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Bismuth-212	1.92	U	3.80	3.80		6.33	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Bismuth-214	**46.1**		1.46	5.00		0.646	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Cesium-137	-0.274	U	0.394	0.395		0.651	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Lead-212	0.301	U	0.883	0.884		1.46	pCi/g	12/17/20 09:12	01/07/21 08:36	1

Client Sample ID: HTCRV2-SS06-0006-01

Lab Sample ID: 160-40639-19

Date Collected: 12/01/20 14:02

Matrix: Solid

Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lead-214	**47.7**		1.45	5.17		0.827	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Potassium-40	-0.869	U	3.82	3.82		4.41	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Protactinium-234	-0.162	U	0.432	0.432		3.03	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Radium-226	**46.1**		1.46	5.00	1.00	0.646	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Radium-228	0.244	U	1.24	1.24		1.36	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Radium-224	0.301	U	0.883	0.884		1.46	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Thallium-208	0.156	U	0.264	0.265		0.407	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Thorium-234	**28.7**		4.00	5.12		5.31	pCi/g	12/17/20 09:12	01/07/21 08:36	1

Client Sample ID: HTCRV2-SS06-0006-02

Lab Sample ID: 160-40639-20

Date Collected: 12/01/20 14:03

Matrix: Solid

Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.247**		0.119	0.120	1.00	0.112	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**41.8**		1.30	3.75	1.00	0.139	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.298**		0.114	0.116	1.00	0.0727	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*68.0*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**44.2**		1.97	4.20	1.00	0.172	pCi/g	12/22/20 08:21	01/21/21 18:32	1
Uranium-235/236	**2.47**		0.518	0.558	1.00	0.0815	pCi/g	12/22/20 08:21	01/21/21 18:32	1
Uranium-238	**43.7**		1.95	4.16	1.00	0.105	pCi/g	12/22/20 08:21	01/21/21 18:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*31.6*		*30 - 110*	*12/22/20 08:21*	*01/21/21 18:32*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	-0.392	U	0.904	0.905		1.02	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Bismuth-212	-1.86	U	3.09	3.09		5.12	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Bismuth-214	**39.2**		1.06	4.21		0.662	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Cesium-137	-0.125	U	0.173	0.173		0.434	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Lead-212	**0.524**		0.272	0.280		0.434	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Lead-214	**42.8**		0.988	4.55		0.646	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Potassium-40	1.26	U	2.60	2.60		2.79	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Protactinium-234	-0.132	U	0.381	0.381		2.48	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Radium-226	**39.2**		1.06	4.21	1.00	0.662	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Radium-228	-0.392	U	0.904	0.905		1.02	pCi/g	12/17/20 09:12	01/07/21 08:37	1

Client Sample ID: HTCRV2-SS06-0006-02

Lab Sample ID: 160-40639-20
Date Collected: 12/01/20 14:03
Matrix: Solid
Date Received: 12/03/20 09:55

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-224	**0.524**		0.272	0.280		0.434	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Thallium-208	-0.0399	U	0.0523	0.0525		0.317	pCi/g	12/17/20 09:12	01/07/21 08:37	1
Thorium-234	**31.1**		2.61	4.34		3.53	pCi/g	12/17/20 09:12	01/07/21 08:37	1

Client Sample ID: HTCRV2-SS06-0612-01

Lab Sample ID: 160-40639-21
Date Collected: 12/01/20 14:05
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.452**		0.142	0.147	1.00	0.0981	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**37.3**		1.19	3.35	1.00	0.128	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.339**		0.115	0.119	1.00	0.0549	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*76.2*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**40.2**		1.78	3.82	1.00	0.0590	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**2.14**		0.459	0.493	1.00	0.137	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**39.3**		1.76	3.74	1.00	0.121	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*41.8*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.955	U	0.801	0.808		1.16	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Bismuth-212	-1.02	U	3.35	3.36		5.62	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Bismuth-214	**49.4**		1.42	5.88		0.654	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Cesium-137	-0.228	U	0.353	0.354		0.585	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Lead-212	0.247	U	0.866	0.866		1.43	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Lead-214	**51.0**		1.24	6.01		0.784	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Potassium-40	1.69	U	3.52	3.52		3.68	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Protactinium-234	0.140	U	0.249	0.250		3.18	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Radium-226	**49.4**		1.42	5.88	1.00	0.654	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Radium-228	0.955	U	0.801	0.808		1.16	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Radium-224	0.247	U	0.866	0.866		1.43	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Thallium-208	0.0644	U	0.231	0.231		0.371	pCi/g	12/17/20 09:12	01/07/21 08:36	1
Thorium-234	**35.5**		2.94	5.29		4.19	pCi/g	12/17/20 09:12	01/07/21 08:36	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS06-1218-01

Lab Sample ID: 160-40639-22
Date Collected: 12/01/20 14:05
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.825		0.180	0.193	1.00	0.0957	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	10.4		0.612	1.07	1.00	0.122	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.862		0.175	0.190	1.00	0.0523	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*82.7*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	8.90		0.731	1.05	1.00	0.132	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	0.423		0.179	0.182	1.00	0.0900	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	9.26		0.743	1.08	1.00	0.0447	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*55.5*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.607	U	0.935	0.937		1.01	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Bismuth-212	0.288	U	2.92	2.92		4.95	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Bismuth-214	34.7		1.15	3.79		0.480	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Cesium-137	-0.151	U	0.668	0.668		0.480	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Lead-212	0.447		0.270	0.276		0.434	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Lead-214	35.7		0.964	3.83		0.638	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Potassium-40	5.60		3.14	3.19		3.16	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Protactinium-234	0.857		0.613	0.619		0.818	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Radium-226	34.7		1.15	3.79	1.00	0.480	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Radium-228	0.607	U	0.935	0.937		1.01	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Radium-224	0.447		0.270	0.276		0.434	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Thallium-208	0.0502	U	0.235	0.235		0.289	pCi/g	12/17/20 09:12	01/07/21 08:38	1
Thorium-234	21.6		2.38	3.39		3.32	pCi/g	12/17/20 09:12	01/07/21 08:38	1

Client Sample ID: HTCRV2-SS06-1824-01

Lab Sample ID: 160-40639-23
Date Collected: 12/01/20 14:07
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.447		0.135	0.140	1.00	0.113	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	17.8		0.750	1.67	1.00	0.119	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.444		0.119	0.125	1.00	0.0478	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Client Sample ID: HTCRV2-SS06-1824-01 — Lab Sample ID: 160-40639-23

Date Collected: 12/01/20 14:07 — **Matrix: Solid**
Date Received: 12/03/20 09:55

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	87.4		30 - 110	12/21/20 15:12	01/05/21 10:15	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**13.0**		0.781	1.34	1.00	0.103	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**0.836**		0.223	0.234	1.00	0.0904	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-238	**13.1**		0.782	1.35	1.00	0.0656	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	69.5		30 - 110	12/22/20 08:21	01/20/21 12:30	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.612	U	0.986	0.988		0.897	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Bismuth-212	-1.93	U	8.44	8.44		4.02	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Bismuth-214	**28.0**		0.879	3.04		0.788	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Cesium-137	0.00190	U	0.225	0.225		0.379	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Lead-212	-0.0167	U	0.536	0.536		0.890	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Lead-214	**34.8**		0.938	3.74		0.603	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Potassium-40	**5.42**		1.69	1.77		1.61	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Protactinium-234	0.836	U	1.21	1.22		1.82	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Radium-226	**28.0**		0.879	3.04	1.00	0.788	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Radium-228	0.612	U	0.986	0.988		0.897	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Radium-224	-0.0167	U	0.536	0.536		0.890	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Thallium-208	0.00981	U	0.248	0.248		0.270	pCi/g	12/17/20 09:12	01/07/21 08:39	1
Thorium-234	**18.6**		2.09	2.94		3.21	pCi/g	12/17/20 09:12	01/07/21 08:39	1

Client Sample ID: HTCRV2-SS01-0612-01 — Lab Sample ID: 160-40639-24

Date Collected: 12/01/20 13:00 — **Matrix: Solid**
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.209**		0.103	0.104	1.00	0.0932	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**25.2**		0.957	2.32	1.00	0.125	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.487**		0.134	0.140	1.00	0.0532	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	81.3		30 - 110	12/21/20 15:12	01/05/21 10:15	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**35.0**		1.48	3.29	1.00	0.0755	pCi/g	12/22/20 08:21	01/20/21 12:30	1
Uranium-235/236	**2.03**		0.398	0.433	1.00	0.0940	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Client Sample ID: HTCRV2-SS01-0612-01

Lab Sample ID: 160-40639-24

Date Collected: 12/01/20 13:00
Matrix: Solid
Date Received: 12/03/20 09:55

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-238	**35.4**		1.49	3.32	1.00	0.0754	pCi/g	12/22/20 08:21	01/20/21 12:30	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*52.2*		*30 - 110*	*12/22/20 08:21*	*01/20/21 12:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**1.23**		0.490	0.506		0.669	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Bismuth-212	-1.07	U	2.49	2.49		4.15	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Bismuth-214	**39.0**		1.01	4.10		0.481	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Cesium-137	0.000	U	0.113	0.113		0.378	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Lead-212	0.357	U	0.225	0.228		0.363	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Lead-214	**40.8**		0.841	4.23		0.524	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Potassium-40	**5.16**		1.86	1.93		1.79	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Protactinium-234	0.435	U	0.916	0.917		1.94	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Radium-226	**39.0**		1.01	4.10	1.00	0.481	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Radium-228	**1.23**		0.490	0.506		0.669	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Radium-224	0.357	U	0.225	0.228		0.363	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Thallium-208	**0.338**		0.163	0.166		0.178	pCi/g	12/17/20 12:01	01/07/21 13:05	1
Thorium-234	**32.4**		2.14	4.18		2.77	pCi/g	12/17/20 12:01	01/07/21 13:05	1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-492664/23-A
Matrix: Solid
Analysis Batch: 494010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 492664

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	-0.06381	U	0.0569	0.0571	1.00	0.133	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	0.04828	U	0.0969	0.0970	1.00	0.134	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.006297	U	0.0305	0.0305	1.00	0.0618	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*81.7*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Lab Sample ID: LCS 160-492664/1-A
Matrix: Solid
Analysis Batch: 493976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 492664

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			24.5	23.95		2.37	1.00	0.183	pCi/g	98	81 - 118		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*87.7*		*30 - 110*

Lab Sample ID: MB 160-492880/1-A
Matrix: Solid
Analysis Batch: 494706

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 492880

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	-0.02736	U	0.0419	0.0419	1.00	0.0847	pCi/g	12/23/20 09:14	01/11/21 09:33	1
Thorium-230	0.07752	U	0.0935	0.0937	1.00	0.118	pCi/g	12/23/20 09:14	01/11/21 09:33	1
Thorium-232	0.01635	U	0.0309	0.0309	1.00	0.0480	pCi/g	12/23/20 09:14	01/11/21 09:33	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*88.3*		*30 - 110*	*12/23/20 09:14*	*01/11/21 09:33*	*1*

Lab Sample ID: LCS 160-492880/2-A
Matrix: Solid
Analysis Batch: 494709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 492880

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			24.5	23.19		2.31	1.00	0.205	pCi/g	95	81 - 118		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*83.0*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-492653/23-A
Matrix: Solid
Analysis Batch: 494342

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 492653

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.07153		0.0508	0.0512	1.00	0.0471	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-235/236	0.0000	U	0.00524	0.00524	1.00	0.0314	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-238	0.008399	U	0.0168	0.0168	1.00	0.0252	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*79.8*		*30 - 110*	*12/21/20 14:05*	*01/07/21 12:47*	*1*

Lab Sample ID: LCS 160-492653/1-A
Matrix: Solid
Analysis Batch: 494355

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 492653

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Uranium-233/234	6.37	5.953		0.682	1.00	0.104	pCi/g	93	84 - 120
Uranium-238	6.51	5.972		0.682	1.00	0.0732	pCi/g	92	82 - 122

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*78.3*		*30 - 110*

Lab Sample ID: MB 160-492781/23-A
Matrix: Solid
Analysis Batch: 495793

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 492781

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.01771	U	0.0250	0.0251	1.00	0.0266	pCi/g	12/22/20 08:21	01/19/21 19:14	1
Uranium-235/236	0.01102	U	0.0220	0.0221	1.00	0.0331	pCi/g	12/22/20 08:21	01/19/21 19:14	1
Uranium-238	0.0000	U	0.00442	0.00442	1.00	0.0265	pCi/g	12/22/20 08:21	01/19/21 19:14	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*81.9*		*30 - 110*	*12/22/20 08:21*	*01/19/21 19:14*	*1*

Lab Sample ID: LCS 160-492781/1-A
Matrix: Solid
Analysis Batch: 495790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 492781

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Uranium-233/234	6.37	5.736		0.669	1.00	0.0282	pCi/g	90	84 - 120
Uranium-238	6.51	5.965		0.689	1.00	0.0453	pCi/g	92	82 - 122

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*82.4*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: 160-40639-15 DU — **Client Sample ID: HTCRV2-SS05-0006-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 495808 — **Prep Batch: 492781**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Uranium-233/234	35.0			30.85		2.97	1.00	0.123	pCi/g			0.65	1
Uranium-235/236	1.71			1.592		0.397	1.00	0.144	pCi/g			0.14	1
Uranium-238	31.1			29.86		2.89	1.00	0.115	pCi/g			0.21	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*43.0*		*30 - 110*

Lab Sample ID: MB 160-492886/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494227 — **Prep Batch: 492886**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.0000	U	0.0245	0.0245	1.00	0.0634	pCi/g	12/23/20 09:40	01/06/21 19:49	1
Uranium-235/236	-0.004811	U	0.00680	0.00682	1.00	0.0539	pCi/g	12/23/20 09:40	01/06/21 19:49	1
Uranium-238	0.01351	U	0.0222	0.0222	1.00	0.0373	pCi/g	12/23/20 09:40	01/06/21 19:49	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*91.3*		*30 - 110*	*12/23/20 09:40*	*01/06/21 19:49*	*1*

Lab Sample ID: LCS 160-492886/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494224 — **Prep Batch: 492886**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			6.37	6.362		0.712	1.00	0.0652	pCi/g	100	84 - 120		
Uranium-238			6.51	6.700		0.741	1.00	0.0260	pCi/g	103	82 - 122		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*79.5*		*30 - 110*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-492144/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494137 — **Prep Batch: 492144**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.07437	U	0.172	0.172	1.00	0.277	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Bismuth-212	0.0000	U	0.189	0.189	3.00	1.34	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Bismuth-214	0.1609	U	0.110	0.111	1.00	0.292	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Cesium-137	-0.03704	U	0.0791	0.0792	0.200	0.136	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Lead-212	0.0003981	U	0.0666	0.0666	0.300	0.120	pCi/g	12/17/20 09:12	01/07/21 08:47	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: MB 160-492144/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494137 — **Prep Batch: 492144**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lead-214	0.01404	U	0.104	0.104	1.00	0.186	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Potassium-40	0.1310	U	1.04	1.04	1.50	1.41	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Protactinium-234	-0.03008	U	0.204	0.204	1.50	0.351	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Radium-226	0.1609	U	0.110	0.111	1.00	0.292	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Radium-228	0.07437	U	0.172	0.172	1.00	0.277	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Radium-224	0.0003981	U	0.0666	0.0666	5.00	0.120	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Thallium-208	-0.01639	U	0.0855	0.0855	0.200	0.109	pCi/g	12/17/20 09:12	01/07/21 08:47	1
Thorium-234	-0.5514	U	0.712	0.715	4.00	1.28	pCi/g	12/17/20 09:12	01/07/21 08:47	1

Lab Sample ID: LCS 160-492144/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494140 — **Prep Batch: 492144**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	96.4	97.27		10.2		1.19	pCi/g	101	87 - 116
Cesium-137	26.7	26.52		2.83	0.200	0.192	pCi/g	99	87 - 120
Cobalt-60	9.38	9.072		0.960	0.200	0.0722	pCi/g	97	87 - 115

Lab Sample ID: 160-40639-23 DU — **Client Sample ID: HTCRV2-SS06-1824-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494138 — **Prep Batch: 492144**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Actinium 228	0.612	U	1.309		0.779		0.824	pCi/g	0.39	1
Bismuth-212	-1.93	U	1.950	U	1.52		2.39	pCi/g	0.39	1
Bismuth-214	28.0		32.46		3.54		0.495	pCi/g	0.67	1
Cesium-137	0.00190	U	-0.1977	U	0.180		0.483	pCi/g	0.49	1
Lead-212	-0.0167	U	0.4621		0.265		0.413	pCi/g	0.60	1
Lead-214	34.8		35.34		3.80		0.614	pCi/g	0.07	1
Potassium-40	5.42		3.210	U	3.30		3.43	pCi/g	0.44	1
Protactinium-234	0.836	U	0.4447	U	1.06		1.64	pCi/g	0.17	1
Radium-226	28.0		32.46		3.54	1.00	0.495	pCi/g	0.67	1
Radium-228	0.612	U	1.309		0.779		0.824	pCi/g	0.39	1
Radium-224	-0.0167	U	0.4621		0.265		0.413	pCi/g	0.60	1
Thallium-208	0.00981	U	0.05536	U	0.0874		0.313	pCi/g	0.14	1
Thorium-234	18.6		22.94		3.38		2.99	pCi/g	0.69	1

Lab Sample ID: MB 160-492279/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494134 — **Prep Batch: 492279**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	-0.09173	U	0.265	0.265	1.00	0.315	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Bismuth-212	-0.0000000 07273	U	0.690	0.690	3.00	1.25	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Bismuth-214	-0.1210	U	0.201	0.202	1.00	0.362	pCi/g	12/17/20 12:01	01/07/21 12:41	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: MB 160-492279/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494134 — **Prep Batch: 492279**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.005930	U	0.0498	0.0498	0.200	0.0893	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Lead-212	-0.01769	U	0.0734	0.0734	0.300	0.130	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Lead-214	-0.05322	U	0.109	0.109	1.00	0.195	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Potassium-40	-0.2908	U	0.865	0.865	1.50	1.25	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Protactinium-234	-0.08552	U	0.286	0.286	1.50	0.480	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Radium-226	-0.1210	U	0.201	0.202	1.00	0.362	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Radium-228	-0.09173	U	0.265	0.265	1.00	0.315	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Radium-224	-0.01769	U	0.0734	0.0734	5.00	0.130	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Thallium-208	-0.007371	U	0.0402	0.0402	0.200	0.104	pCi/g	12/17/20 12:01	01/07/21 12:41	1
Thorium-234	0.1546	U	0.567	0.568	4.00	0.911	pCi/g	12/17/20 12:01	01/07/21 12:41	1

Lab Sample ID: LCS 160-492279/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494137 — **Prep Batch: 492279**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	99.9	100.1		11.7		0.770	pCi/g	100	87 - 116
Cesium-137	30.5	29.64		3.10	0.200	0.217	pCi/g	97	87 - 120
Cobalt-60	16.9	16.01		1.65	0.200	0.0763	pCi/g	95	87 - 115

Lab Sample ID: MB 160-492966/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494786 — **Prep Batch: 492966**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.007941	U	0.0802	0.0802		0.156	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Bismuth-212	0.3039	U	0.503	0.504		0.853	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Bismuth-214	0.01035	U	0.0225	0.0225		0.239	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Cesium-137	0.008141	U	0.0619	0.0619		0.110	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Lead-212	0.0000	U	0.0181	0.0181		0.148	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Lead-214	-0.009542	U	0.0605	0.0605		0.113	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Potassium-40	-0.1425	U	0.692	0.692		0.995	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Protactinium-234	-0.02703	U	0.0557	0.0558		0.410	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Radium-226	0.01035	U	0.0225	0.0225	1.00	0.239	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Radium-228	0.007941	U	0.0802	0.0802		0.156	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Radium-224	0.0000	U	0.0181	0.0181		0.148	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Thallium-208	0.02718	U	0.0474	0.0475		0.0392	pCi/g	12/23/20 15:33	01/13/21 06:33	1
Thorium-234	0.1297	U	0.479	0.479		0.822	pCi/g	12/23/20 15:33	01/13/21 06:33	1

Lab Sample ID: LCS 160-492966/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494786 — **Prep Batch: 492966**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	96.4	91.79		9.64		1.03	pCi/g	95	87 - 116

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-492966/2-A
Matrix: Solid
Analysis Batch: 494786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 492966

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Cesium-137			26.7	25.11		2.67		0.146	pCi/g	94	87 - 120		
Cobalt-60			9.36	8.811		0.925		0.0308	pCi/g	94	87 - 115		

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Rad

Leach Batch: 491723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-4	HTCRV2-SS02-1218-01	Total/NA	Solid	Dry and Grind	
160-40639-5	HTCRV2-SS02-1824-01	Total/NA	Solid	Dry and Grind	
160-40639-6	HTCRV2-SS03-0006-01	Total/NA	Solid	Dry and Grind	
160-40639-7	HTCRV2-SS03-0612-01	Total/NA	Solid	Dry and Grind	
160-40639-8	HTCRV2-SS03-1218-01	Total/NA	Solid	Dry and Grind	
160-40639-9	HTCRV2-SS03-1824-01	Total/NA	Solid	Dry and Grind	
160-40639-10	HTCRV2-SS04-0006-01	Total/NA	Solid	Dry and Grind	
160-40639-11	HTCRV2-SS04-0006-02	Total/NA	Solid	Dry and Grind	
160-40639-12	HTCRV2-SS04-0612-01	Total/NA	Solid	Dry and Grind	
160-40639-13	HTCRV2-SS04-1218-01	Total/NA	Solid	Dry and Grind	
160-40639-14	HTCRV2-SS04-1821-01	Total/NA	Solid	Dry and Grind	
160-40639-15	HTCRV2-SS05-0006-01	Total/NA	Solid	Dry and Grind	
160-40639-16	HTCRV2-SS05-0612-01	Total/NA	Solid	Dry and Grind	
160-40639-17	HTCRV2-SS05-1218-01	Total/NA	Solid	Dry and Grind	
160-40639-18	HTCRV2-SS05-1824-01	Total/NA	Solid	Dry and Grind	
160-40639-19	HTCRV2-SS06-0006-01	Total/NA	Solid	Dry and Grind	
160-40639-20	HTCRV2-SS06-0006-02	Total/NA	Solid	Dry and Grind	
160-40639-21	HTCRV2-SS06-0612-01	Total/NA	Solid	Dry and Grind	
160-40639-22	HTCRV2-SS06-1218-01	Total/NA	Solid	Dry and Grind	
160-40639-23	HTCRV2-SS06-1824-01	Total/NA	Solid	Dry and Grind	
160-40639-24	HTCRV2-SS01-0612-01	Total/NA	Solid	Dry and Grind	
160-40639-15 DU	HTCRV2-SS05-0006-01	Total/NA	Solid	Dry and Grind	
160-40639-23 DU	HTCRV2-SS06-1824-01	Total/NA	Solid	Dry and Grind	

Prep Batch: 492144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-4	HTCRV2-SS02-1218-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-5	HTCRV2-SS02-1824-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-6	HTCRV2-SS03-0006-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-7	HTCRV2-SS03-0612-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-8	HTCRV2-SS03-1218-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-9	HTCRV2-SS03-1824-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-10	HTCRV2-SS04-0006-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-11	HTCRV2-SS04-0006-02	Total/NA	Solid	Fill_Geo-21	491723
160-40639-12	HTCRV2-SS04-0612-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-13	HTCRV2-SS04-1218-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-14	HTCRV2-SS04-1821-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-15	HTCRV2-SS05-0006-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-16	HTCRV2-SS05-0612-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-17	HTCRV2-SS05-1218-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-18	HTCRV2-SS05-1824-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-19	HTCRV2-SS06-0006-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-20	HTCRV2-SS06-0006-02	Total/NA	Solid	Fill_Geo-21	491723
160-40639-21	HTCRV2-SS06-0612-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-22	HTCRV2-SS06-1218-01	Total/NA	Solid	Fill_Geo-21	491723
160-40639-23	HTCRV2-SS06-1824-01	Total/NA	Solid	Fill_Geo-21	491723
MB 160-492144/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	
LCS 160-492144/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	
160-40639-23 DU	HTCRV2-SS06-1824-01	Total/NA	Solid	Fill_Geo-21	491723

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Rad

Leach Batch: 492150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-1	HTCRV2-SS01-1218-01	Total/NA	Solid	Dry and Grind	
160-40639-2	HTCRV2-SS01-1824-01	Total/NA	Solid	Dry and Grind	
160-40639-3	HTCRV2-SS02-0612-01	Total/NA	Solid	Dry and Grind	

Prep Batch: 492279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-24	HTCRV2-SS01-0612-01	Total/NA	Solid	Fill_Geo-21	491723
MB 160-492279/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	
LCS 160-492279/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	

Prep Batch: 492653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-14	HTCRV2-SS04-1821-01	Total/NA	Solid	ExtChrom	491723
MB 160-492653/23-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492653/1-A	Lab Control Sample	Total/NA	Solid	ExtChrom	

Prep Batch: 492664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-4	HTCRV2-SS02-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-5	HTCRV2-SS02-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-6	HTCRV2-SS03-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-7	HTCRV2-SS03-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-8	HTCRV2-SS03-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-14	HTCRV2-SS04-1821-01	Total/NA	Solid	ExtChrom	491723
160-40639-15	HTCRV2-SS05-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-16	HTCRV2-SS05-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-17	HTCRV2-SS05-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-18	HTCRV2-SS05-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-19	HTCRV2-SS06-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-20	HTCRV2-SS06-0006-02	Total/NA	Solid	ExtChrom	491723
160-40639-21	HTCRV2-SS06-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-22	HTCRV2-SS06-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-23	HTCRV2-SS06-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-24	HTCRV2-SS01-0612-01	Total/NA	Solid	ExtChrom	491723
MB 160-492664/23-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492664/1-A	Lab Control Sample	Total/NA	Solid	ExtChrom	

Prep Batch: 492781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-4	HTCRV2-SS02-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-5	HTCRV2-SS02-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-6	HTCRV2-SS03-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-7	HTCRV2-SS03-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-8	HTCRV2-SS03-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-9	HTCRV2-SS03-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-10	HTCRV2-SS04-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-11	HTCRV2-SS04-0006-02	Total/NA	Solid	ExtChrom	491723
160-40639-12	HTCRV2-SS04-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-13	HTCRV2-SS04-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-15	HTCRV2-SS05-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-16	HTCRV2-SS05-0612-01	Total/NA	Solid	ExtChrom	491723

Rad (Continued)

Prep Batch: 492781 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-17	HTCRV2-SS05-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-18	HTCRV2-SS05-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-19	HTCRV2-SS06-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-20	HTCRV2-SS06-0006-02	Total/NA	Solid	ExtChrom	491723
160-40639-21	HTCRV2-SS06-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-22	HTCRV2-SS06-1218-01	Total/NA	Solid	ExtChrom	491723
160-40639-23	HTCRV2-SS06-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-24	HTCRV2-SS01-0612-01	Total/NA	Solid	ExtChrom	491723
MB 160-492781/23-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492781/1-A	Lab Control Sample	Total/NA	Solid	ExtChrom	
160-40639-15 DU	HTCRV2-SS05-0006-01	Total/NA	Solid	ExtChrom	491723

Prep Batch: 492880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-1	HTCRV2-SS01-1218-01	Total/NA	Solid	ExtChrom	492150
160-40639-2	HTCRV2-SS01-1824-01	Total/NA	Solid	ExtChrom	492150
160-40639-3	HTCRV2-SS02-0612-01	Total/NA	Solid	ExtChrom	492150
160-40639-9	HTCRV2-SS03-1824-01	Total/NA	Solid	ExtChrom	491723
160-40639-10	HTCRV2-SS04-0006-01	Total/NA	Solid	ExtChrom	491723
160-40639-11	HTCRV2-SS04-0006-02	Total/NA	Solid	ExtChrom	491723
160-40639-12	HTCRV2-SS04-0612-01	Total/NA	Solid	ExtChrom	491723
160-40639-13	HTCRV2-SS04-1218-01	Total/NA	Solid	ExtChrom	491723
MB 160-492880/1-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492880/2-A	Lab Control Sample	Total/NA	Solid	ExtChrom	

Prep Batch: 492886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-1	HTCRV2-SS01-1218-01	Total/NA	Solid	ExtChrom	492150
160-40639-2	HTCRV2-SS01-1824-01	Total/NA	Solid	ExtChrom	492150
160-40639-3	HTCRV2-SS02-0612-01	Total/NA	Solid	ExtChrom	492150
MB 160-492886/1-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492886/2-A	Lab Control Sample	Total/NA	Solid	ExtChrom	

Prep Batch: 492966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40639-1	HTCRV2-SS01-1218-01	Total/NA	Solid	Fill_Geo-21	492150
160-40639-2	HTCRV2-SS01-1824-01	Total/NA	Solid	Fill_Geo-21	492150
160-40639-3	HTCRV2-SS02-0612-01	Total/NA	Solid	Fill_Geo-21	492150
MB 160-492966/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	
LCS 160-492966/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Solid **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Th-229 (30-110)							
160-40639-1	HTCRV2-SS01-1218-01	78.2							
160-40639-2	HTCRV2-SS01-1824-01	90.0							
160-40639-3	HTCRV2-SS02-0612-01	73.3							
160-40639-4	HTCRV2-SS02-1218-01	65.4							
160-40639-5	HTCRV2-SS02-1824-01	86.1							
160-40639-6	HTCRV2-SS03-0006-01	74.1							
160-40639-7	HTCRV2-SS03-0612-01	79.5							
160-40639-8	HTCRV2-SS03-1218-01	91.6							
160-40639-9	HTCRV2-SS03-1824-01	85.4							
160-40639-10	HTCRV2-SS04-0006-01	75.8							
160-40639-11	HTCRV2-SS04-0006-02	81.6							
160-40639-12	HTCRV2-SS04-0612-01	76.2							
160-40639-13	HTCRV2-SS04-1218-01	74.3							
160-40639-14	HTCRV2-SS04-1821-01	89.0							
160-40639-15	HTCRV2-SS05-0006-01	72.1							
160-40639-16	HTCRV2-SS05-0612-01	71.3							
160-40639-17	HTCRV2-SS05-1218-01	70.3							
160-40639-18	HTCRV2-SS05-1824-01	77.0							
160-40639-19	HTCRV2-SS06-0006-01	58.0							
160-40639-20	HTCRV2-SS06-0006-02	68.0							
160-40639-21	HTCRV2-SS06-0612-01	76.2							
160-40639-22	HTCRV2-SS06-1218-01	82.7							
160-40639-23	HTCRV2-SS06-1824-01	87.4							
160-40639-24	HTCRV2-SS01-0612-01	81.3							
LCS 160-492664/1-A	Lab Control Sample	87.7							
LCS 160-492880/2-A	Lab Control Sample	83.0							
MB 160-492664/23-A	Method Blank	81.7							
MB 160-492880/1-A	Method Blank	88.3							

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Solid **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	U-232 (30-110)							
160-40639-1	HTCRV2-SS01-1218-01	102							
160-40639-2	HTCRV2-SS01-1824-01	92.4							
160-40639-3	HTCRV2-SS02-0612-01	47.2							
160-40639-4	HTCRV2-SS02-1218-01	62.3							
160-40639-5	HTCRV2-SS02-1824-01	63.7							
160-40639-6	HTCRV2-SS03-0006-01	53.9							
160-40639-7	HTCRV2-SS03-0612-01	37.1							
160-40639-8	HTCRV2-SS03-1218-01	93.5							
160-40639-9	HTCRV2-SS03-1824-01	85.6							
160-40639-10	HTCRV2-SS04-0006-01	49.7							
160-40639-11	HTCRV2-SS04-0006-02	48.1							
160-40639-12	HTCRV2-SS04-0612-01	36.7							

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40639-1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**U-232 (30-110)**							
160-40639-13	HTCRV2-SS04-1218-01	75.2							
160-40639-14	HTCRV2-SS04-1821-01	84.1							
160-40639-15	HTCRV2-SS05-0006-01	38.7							
160-40639-15 DU	HTCRV2-SS05-0006-01	43.0							
160-40639-16	HTCRV2-SS05-0612-01	37.8							
160-40639-17	HTCRV2-SS05-1218-01	66.0							
160-40639-18	HTCRV2-SS05-1824-01	94.3							
160-40639-19	HTCRV2-SS06-0006-01	42.7							
160-40639-20	HTCRV2-SS06-0006-02	31.6							
160-40639-21	HTCRV2-SS06-0612-01	41.8							
160-40639-22	HTCRV2-SS06-1218-01	55.5							
160-40639-23	HTCRV2-SS06-1824-01	69.5							
160-40639-24	HTCRV2-SS01-0612-01	52.2							
LCS 160-492653/1-A	Lab Control Sample	78.3							
LCS 160-492781/1-A	Lab Control Sample	82.4							
LCS 160-492886/2-A	Lab Control Sample	79.5							
MB 160-492653/23-A	Method Blank	79.8							
MB 160-492781/23-A	Method Blank	81.9							
MB 160-492886/1-A	Method Blank	91.3							

Tracer/Carrier Legend

U-232 = Uranium-232

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

Laboratory Job ID: 160-40623-2
Client Project/Site: EPA RST2 - RFP No. 636

For:
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837

Attn: Ms. Smita Sumbaly

Rhonda Ridenhower

Authorized for release by:
1/27/2021 3:43:28 PM

Rhonda Ridenhower, Client Service Manager
(314)298-8566
Rhonda.Ridenhower@Eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-40623-2

Laboratory: Eurofins TestAmerica, St. Louis

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 636

Report Number: 160-40623-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 12/02/2020; the samples arrived in good condition, properly preserved. The temperatures of the 2 coolers at receipt time were 1.6º C and 11.4º C.

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)

Job ID: 160-40623-2 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE A01R_Th. The samples were dried on 12/07/2020, prepared on 12/21/2020 and analyzed on 01/05/2021.

Isotopic Thorium Prep Batch 492664
Manual Integrations and adjustments to Regions of Interest (ROI) were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.
(LCS 160-492664/1-A)

A blank population correction was applied to account for contributions to the analyte count rate from sources other than the sample itself. Interferences may include, but are not limited to, impurities in reagents, tracers, or glassware, or effects due to the measurement process (such as tailing or crosstalk).HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5), HTCRV2-WC02-0612-02 (160-40623-6), (LCS 160-492664/1-A), (MB 160-492664/23-A), (180-114351-A-1-N) and (180-114351-A-1-P DU)

The LCS was inadvertently counted on a detector (152) that failed the daily check. the LCS recovery was within limits. 98%. The data is reported with this narrative. HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5), HTCRV2-WC02-0612-02 (160-40623-6), (LCS 160-492664/1-A), (MB 160-492664/23-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 01/05/2021 and analyzed on 01/13/2021.

Isotopic Thorium Prep Batch 493934
A blank population correction was applied to account for contributions to the analyte count rate from sources other than the sample itself. Interferences may include, but are not limited to, impurities in reagents, tracers, or glassware, or effects due to the measurement process (such as tailing or crosstalk).HTCRV2-RB-120120 (160-40623-3), (LCS 160-493934/2-A), (LCSD 160-493934/3-A) and (MB 160-493934/1-A)

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: HTCRV2-RB-120120 (160-40623-3). A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)
Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were dried on 12/07/2020, prepared on 12/21/2020 and analyzed on 01/07/2021.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 01/19/2021 and analyzed on 01/26/2021.

Isotopic Uranium Prep Batch 495658
Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: HTCRV2-RB-120120 (160-40623-3). A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-226 BY GAMMA SPEC (21 DAY INGROWTH)

Job ID: 160-40623-2 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Samples HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6) were analyzed for Radium-226 by gamma spec (21 day ingrowth) in accordance with EPA GA_01_R. The samples were dried on 12/07/2020, prepared on 12/11/2020 and analyzed on 01/06/2021.

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Gamma prep batch 160-491600
The detection goal for several analytes was not met. This is caused by the elevated Compton Background due to elevated activity from bismuth-214 (and lead-214). The data have been reported with this narrative. HTCRV2-WC01-0612-01 (160-40623-4), HTCRV2-WC02-0612-01 (160-40623-5) and HTCRV2-WC02-0612-02 (160-40623-6)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

RADIUM-226 (GFPC)-21 DAY INGROWTH
Sample HTCRV2-RB-120120 (160-40623-3) was analyzed for Radium-226 (GFPC)-21 day ingrowth in accordance with GA-01-R. The samples were prepared on 12/07/2020 and analyzed on 12/28/2020.

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108

Job ID: 160-40623-2 (Continued)

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Gamma Prep Batch 490973
The Radium-226 MDC (63.4 pCi/L) for the method blank (MB) is above the requested limit (RL) of 50.0 pCi/L. Radium-226 activity was not observed above the RL in the MB. The data have been reported with the MDC achieved. (MB 160-490973/1-A)

The Radium-226 MDC (54.0 pCi/L) for the following sample is above the requested limit (RL) of 50.0 pCi/L. Radium-226 activity was not observed above the RL in the sample. The data have been reported with the MDC achieved. (160-40623-A-3-B DU)

The replicate precision (RER) does not meet QC criteria for K-40 and Tl-208 for the following sample and its duplicate (DU). This appears to be random in nature, and limited deviations such as this are statistically expected when larger analyte lists are reported. Such excursions are often caused by fluctuations in Compton background, force-fitting of peaks that are not found by the software peak-search algorithm, and inclusion of inferior peak results by the software in weighted averages. The laboratory SOP allows for such statistical exceedances.HTCRV2-RB-120120 (160-40623-3) and (160-40623-A-3-B DU)

The following sample duplicate (DU) exhibited a negative result greater in magnitude than the 3 sigma TPU for Th-234:(160-40623-A-3-B DU). This occurrence was evaluated and determined to be random in nature. Sporadic occurrences such as this are statistically expected. No further action is required.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

USEPA

DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

160-40623 Chain of Custody

CHAIN OF CUSTODY RECORD

Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-

Cooler
Lab: TestAmerica Laboratories, Inc. - St. L
Lab Phone: 314-298-8

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-COMP-0612-01	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	9	25-gram Encore	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-01	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-COMP-0612-02	WC01	TCLP Volatiles	Soil/Rock/Slag	12/1/2020	3	25-gram Encore	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Semivolatiles	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	TCLP Metals +Hg	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-COMP-0612-02	WC01	RCRA Charcteristics	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-RB-120120	NA	Alpha/Gamma Spectroscopy	DI Water	12/1/2020	1	1 L poly	4 C	N
	HTCRV2-RB-120120	NA	TAL SVOC	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	PCBs	DI Water	12/1/2020	1	1 liter amber	4 C	N
	HTCRV2-RB-120120	NA	TAL Metals + Hg	DI Water	12/1/2020	1	1 L HDPE	HNO3 pH<2, 4 C	N
	HTCRV2-RB-120120	NA	Cyanide	DI Water	12/1/2020	1	1 L HDPE	NaOH pH>12, 4 C	N
	HTCRV2-RB-120120	NA	Herbicides	DI Water	12/1/2020	2	1 liter amber	4 C	N
	HTCRV2-WC01-0612-01	WC01	Gamma/Alpha Spec	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC01-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC01-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All Analysis	[signature] Weston START V	12/1/2020 1900	Fed Ex		
	Fed Ex		Micha Koninkiewicz ETA STL	12/2/2020 09:47	

USEPA
DateShipped: 12/1/2020
CarrierName: FedEx
AirbillNo: 772228984130

CHAIN OF CUSTODY RECORD
Case #: 636
Contact Name: Sean Quinn
Contact Phone: 732-425-1175

No: 2-120120-0036-0021-01
Cooler #: 1
Lab: TestAmerica Laboratories, Inc. - St. Louis
Lab Phone: 314-298-8566

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	HTCRV2-WC01-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC01-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-01	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	2	16 oz poly jar	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	9	5-gram Encore	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	2	4 oz glass with septum	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	PCBs	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-01	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	2	8 oz glass	None	Y
	HTCRV2-WC02-0612-02	WC01	Alpha/Gamma Spectroscopy	Soil/Rock/Slag	12/1/2020	1	16 oz poly jar	None	N
	HTCRV2-WC02-0612-02	WC01	TAL VOC	Soil/Rock/Slag	12/1/2020	3	5-gram Encore	None	N
	HTCRV2-WC02-0612-02	WC01	TAL SVOC	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	Precent Moisture	Soil/Rock/Slag	12/1/2020	1	4 oz glass with septum	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Pesticides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	PCBs	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Metals + Hg and CN	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N
	HTCRV2-WC02-0612-02	WC01	TAL Herbicides	Soil/Rock/Slag	12/1/2020	1	8 oz glass	None	N

Special Instructions: Please email results to Sean.Quinn@westonsolutions.com, s.sumbaly@westonsolutions, and Ben.Nwosu@westonsolutions.com and a 21 days TAT for RFP # 636, 636A, and 636B.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
AIS Form Airbill	[illegible]	12/1/2020 1900	Fed Ex		
	Fed Ex		Michael Konichnyer ETA STL	12/2/2020 09:47	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-40623-2

Login Number: 40623
List Number: 1
Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	11.4, 1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Additional 40mL vials were received for HTCRV2-RB-120120.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	A container was added for Rad Screen aliquot on samples -1 and -2
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Qualifiers

Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Method	Method Description	Protocol	Laboratory
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
GA-01-R	Radium-226 & Other Gamma Emitters (GS)	DOE	TAL SL
Dry and Grind	Preparation, Dry and Grind	None	TAL SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	TAL SL
Fill_Geo-21	Fill Geometry, 21-Day In-Growth	None	TAL SL

Protocol References:

DOE = U.S. Department of Energy
None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
160-40623-3	HTCRV2-RB-120120	Water	12/01/20 00:00	12/02/20 09:47	
160-40623-4	HTCRV2-WC01-0612-01	Solid	12/01/20 13:30	12/02/20 09:47	
160-40623-5	HTCRV2-WC02-0612-01	Solid	12/01/20 13:45	12/02/20 09:47	
160-40623-6	HTCRV2-WC02-0612-02	Solid	12/01/20 14:00	12/02/20 09:47	

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Client Sample ID: HTCRV2-RB-120120

Lab Sample ID: 160-40623-3
Matrix: Water
Date Collected: 12/01/20 00:00
Date Received: 12/02/20 09:47

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.164	U	0.426	0.426	1.00	0.778	pCi/L	01/05/21 17:15	01/13/21 18:49	1
Thorium-230	0.421	U	0.458	0.460	1.00	0.574	pCi/L	01/05/21 17:15	01/13/21 18:49	1
Thorium-232	-0.00554	U	0.0511	0.0511	1.00	0.264	pCi/L	01/05/21 17:15	01/13/21 18:49	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*42.3*		*30 - 110*	*01/05/21 17:15*	*01/13/21 18:49*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.144	U	0.145	0.145	1.00	0.179	pCi/L	01/19/21 09:39	01/26/21 10:20	1
Uranium-235/236	0.000	U	0.0199	0.0199	1.00	0.119	pCi/L	01/19/21 09:39	01/26/21 10:20	1
Uranium-238	0.0239	U	0.0657	0.0658	1.00	0.154	pCi/L	01/19/21 09:39	01/26/21 10:20	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*90.9*		*30 - 110*	*01/19/21 09:39*	*01/26/21 10:20*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	11.5	U	19.0	19.0		31.2	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Bismuth-212	-30.5	U	109	109		186	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Bismuth-214	15.4	U	18.1	18.2		21.1	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Cesium-137	-3.32	U	6.60	6.61		11.1	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Lead-212	10.8	U	10.3	10.3		12.2	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Lead-214	2.67	U	9.92	9.93		14.8	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Potassium-40	**87.2**		54.0	55.0		49.3	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Protactinium-234	2.34	U	4.28	4.29		58.2	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Radium-226	15.4	U	18.1	18.2	50.0	21.1	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Radium-228	11.5	U	19.0	19.0	50.0	31.2	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Radium-224	10.8	U	10.3	10.3		12.2	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Thallium-208	**8.14**		6.38	6.45		7.18	pCi/L	12/07/20 10:09	12/28/20 09:17	1
Thorium-234	-251	U	194	196		332	pCi/L	12/07/20 10:09	12/28/20 09:17	1

Client Sample ID: HTCRV2-WC01-0612-01

Lab Sample ID: 160-40623-4
Matrix: Solid
Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.813**		0.182	0.194	1.00	0.109	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**12.5**		0.675	1.25	1.00	0.128	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.768**		0.168	0.180	1.00	0.0686	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Client Sample ID: HTCRV2-WC01-0612-01 — Lab Sample ID: 160-40623-4

Date Collected: 12/01/20 13:30
Date Received: 12/02/20 09:47
Matrix: Solid

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	82.3		30 - 110	12/21/20 15:12	01/05/21 10:15	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	7.08		0.539	0.803	1.00	0.0727	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-235/236	0.366		0.137	0.141	1.00	0.0616	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-238	7.37		0.549	0.827	1.00	0.0494	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	67.2		30 - 110	12/21/20 14:05	01/07/21 12:47	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.629		0.448	0.452	1.00	0.514	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Bismuth-212	-0.599	U G	5.16	5.16	3.00	3.37	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Bismuth-214	22.1		0.741	2.42	1.00	0.316	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Cesium-137	-0.124	U G	0.197	0.197	0.200	0.326	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Lead-212	0.440		0.187	0.196	0.300	0.293	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Lead-214	23.9		0.711	2.58	1.00	0.475	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Potassium-40	2.89	G	2.34	2.36	1.50	2.31	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Protactinium-234	0.0475	U	0.0789	0.0790	1.50	1.25	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Radium-226	22.1		0.741	2.42	1.00	0.316	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Radium-228	0.629		0.448	0.452	1.00	0.514	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Radium-224	0.440		0.187	0.196	5.00	0.293	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Thallium-208	0.297		0.150	0.153	0.200	0.160	pCi/g	12/11/20 13:23	01/06/21 10:19	1
Thorium-234	16.6		1.74	2.54	4.00	2.36	pCi/g	12/11/20 13:23	01/06/21 10:19	1

Client Sample ID: HTCRV2-WC02-0612-01 — Lab Sample ID: 160-40623-5

Date Collected: 12/01/20 13:45
Date Received: 12/02/20 09:47
Matrix: Solid

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.379		0.143	0.146	1.00	0.134	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	41.2		1.27	3.69	1.00	0.141	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.290		0.110	0.113	1.00	0.0665	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	69.5		30 - 110	12/21/20 15:12	01/05/21 10:15	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	42.0		1.84	3.98	1.00	0.226	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-235/236	1.74		0.420	0.445	1.00	0.141	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Client Sample ID: HTCRV2-WC02-0612-01

Lab Sample ID: 160-40623-5
Date Collected: 12/01/20 13:45
Matrix: Solid
Date Received: 12/02/20 09:47

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-238	**40.8**		1.81	3.88	1.00	0.0974	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*34.8*		*30 - 110*	*12/21/20 14:05*	*01/07/21 12:47*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.359	U G	1.04	1.04	1.00	1.24	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Bismuth-212	-1.36	U G	3.59	3.59	3.00	6.00	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Bismuth-214	**48.4**		1.35	5.75	1.00	0.765	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Cesium-137	-0.196	U G	0.296	0.297	0.200	0.490	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Lead-212	0.535	U G	0.336	0.342	0.300	0.542	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Lead-214	**53.0**		1.45	6.27	1.00	0.853	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Potassium-40	1.38	U G	3.01	3.02	1.50	3.18	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Protactinium-234	0.351	U G	0.580	0.581	1.50	3.20	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Radium-226	**48.4**		1.35	5.75	1.00	0.765	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Radium-228	0.359	U G	1.04	1.04	1.00	1.24	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Radium-224	0.535	U	0.336	0.342	5.00	0.542	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Thallium-208	-0.184	U G	0.346	0.347	0.200	0.402	pCi/g	12/11/20 13:23	01/06/21 10:20	1
Thorium-234	**35.5**	**G**	3.22	5.44	4.00	4.35	pCi/g	12/11/20 13:23	01/06/21 10:20	1

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6
Date Collected: 12/01/20 14:00
Matrix: Solid
Date Received: 12/02/20 09:47

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.267**		0.124	0.126	1.00	0.115	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	**41.7**		1.32	3.74	1.00	0.137	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	**0.355**		0.124	0.128	1.00	0.0654	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*68.7*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**41.5**		1.74	3.90	1.00	0.0884	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-235/236	**2.27**		0.455	0.493	1.00	0.110	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-238	**42.6**		1.76	3.99	1.00	0.0882	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*39.9*		*30 - 110*	*12/21/20 14:05*	*01/07/21 12:47*	*1*

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Client Sample ID: HTCRV2-WC02-0612-02

Lab Sample ID: 160-40623-6

Date Collected: 12/01/20 14:00
Matrix: Solid
Date Received: 12/02/20 09:47

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**1.06**		0.638	0.647	1.00	0.739	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Bismuth-212	0.652	U G	3.28	3.28	3.00	5.51	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Bismuth-214	**46.6**		1.15	4.89	1.00	0.433	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Cesium-137	-0.137	U G	0.302	0.302	0.200	0.502	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Lead-212	0.438	U G	0.308	0.311	0.300	0.500	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Lead-214	**48.2**		1.21	5.04	1.00	0.685	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Potassium-40	0.000	U G	1.78	1.78	1.50	3.37	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Protactinium-234	0.973	U	0.903	0.909	1.50	1.13	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Radium-226	**46.6**		1.15	4.89	1.00	0.433	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Radium-228	**1.06**		0.638	0.647	1.00	0.739	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Radium-224	0.438	U	0.308	0.311	5.00	0.500	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Thallium-208	0.209	U G	0.363	0.363	0.200	0.313	pCi/g	12/11/20 13:23	01/06/21 10:35	1
Thorium-234	**35.3**	**G**	2.98	4.93	4.00	4.05	pCi/g	12/11/20 13:23	01/06/21 10:35	1

QC Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-492664/23-A
Matrix: Solid
Analysis Batch: 494010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 492664

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	-0.06381	U	0.0569	0.0571	1.00	0.133	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-230	0.04828	U	0.0969	0.0970	1.00	0.134	pCi/g	12/21/20 15:12	01/05/21 10:15	1
Thorium-232	0.006297	U	0.0305	0.0305	1.00	0.0618	pCi/g	12/21/20 15:12	01/05/21 10:15	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*81.7*		*30 - 110*	*12/21/20 15:12*	*01/05/21 10:15*	*1*

Lab Sample ID: LCS 160-492664/1-A
Matrix: Solid
Analysis Batch: 493976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 492664

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			24.5	23.95		2.37	1.00	0.183	pCi/g	98	81 - 118		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*87.7*		*30 - 110*

Lab Sample ID: MB 160-493934/1-A
Matrix: Water
Analysis Batch: 495002

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493934

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	-0.1505	U	0.220	0.220	1.00	0.527	pCi/L	01/05/21 17:15	01/13/21 18:49	1
Thorium-230	0.3467	U	0.329	0.330	1.00	0.397	pCi/L	01/05/21 17:15	01/13/21 18:49	1
Thorium-232	0.02295	U	0.0835	0.0835	1.00	0.199	pCi/L	01/05/21 17:15	01/13/21 18:49	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*74.6*		*30 - 110*	*01/05/21 17:15*	*01/13/21 18:49*	*1*

Lab Sample ID: LCS 160-493934/2-A
Matrix: Water
Analysis Batch: 495003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493934

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			16.5	15.36		2.03	1.00	0.404	pCi/L	93	81 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*68.7*		*30 - 110*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCSD 160-493934/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 495005 — **Prep Batch: 493934**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Thorium-230			16.5	19.29		2.37	1.00	0.396	pCi/L	117	81 - 125	0.89	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Thorium-229	*73.1*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-492653/23-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494342 — **Prep Batch: 492653**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.07153		0.0508	0.0512	1.00	0.0471	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-235/236	0.0000	U	0.00524	0.00524	1.00	0.0314	pCi/g	12/21/20 14:05	01/07/21 12:47	1
Uranium-238	0.008399	U	0.0168	0.0168	1.00	0.0252	pCi/g	12/21/20 14:05	01/07/21 12:47	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*79.8*		*30 - 110*	*12/21/20 14:05*	*01/07/21 12:47*	*1*

Lab Sample ID: LCS 160-492653/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 494355 — **Prep Batch: 492653**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			6.37	5.953		0.682	1.00	0.104	pCi/g	93	84 - 120		
Uranium-238			6.51	5.972		0.682	1.00	0.0732	pCi/g	92	82 - 122		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*78.3*		*30 - 110*

Lab Sample ID: MB 160-495658/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 496719 — **Prep Batch: 495658**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.01569	U	0.0666	0.0666	1.00	0.176	pCi/L	01/19/21 09:39	01/26/21 10:20	1
Uranium-235/236	-0.009765	U	0.0195	0.0195	1.00	0.189	pCi/L	01/19/21 09:39	01/26/21 10:20	1
Uranium-238	-0.01566	U	0.0222	0.0222	1.00	0.175	pCi/L	01/19/21 09:39	01/26/21 10:20	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*93.1*		*30 - 110*	*01/19/21 09:39*	*01/26/21 10:20*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-495658/2-A
Matrix: Water
Analysis Batch: 496722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 495658

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			25.5	23.74		2.72	1.00	0.175	pCi/L	93	75 - 125		
Uranium-238			26.0	24.79		2.81	1.00	0.223	pCi/L	95	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*74.4*		*30 - 110*

Lab Sample ID: LCSD 160-495658/3-A
Matrix: Water
Analysis Batch: 496809

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 495658

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Uranium-233/234			25.5	25.10		2.88	1.00	0.116	pCi/L	99	75 - 125	0.24	1
Uranium-238			26.0	25.00		2.87	1.00	0.186	pCi/L	96	75 - 125	0.04	1

Tracer	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Uranium-232	*70.5*		*30 - 110*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-490973/1-A
Matrix: Water
Analysis Batch: 493142

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 490973

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	34.31		18.5	18.9		20.8	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Bismuth-212	-77.45	U	129	130		217	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Bismuth-214	-24.26	U	27.9	28.0		63.4	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Cesium-137	4.207	U	6.47	6.49		10.8	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Lead-212	-2.988	U	13.5	13.5		22.7	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Lead-214	-5.465	U	16.8	16.9		28.3	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Potassium-40	-44.61	U	105	105		147	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Protactinium-234	27.70	U	26.0	26.2		56.0	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Radium-226	-24.26	U G	27.9	28.0	50.0	63.4	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Radium-228	34.31		18.5	18.9	50.0	20.8	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Radium-224	-2.988	U	13.5	13.5		22.7	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Thallium-208	0.3723	U	0.785	0.787		15.5	pCi/L	12/07/20 10:09	12/28/20 10:09	1
Thorium-234	-345.3	U	243	246		489	pCi/L	12/07/20 10:09	12/28/20 10:09	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-490973/2-A
Matrix: Water
Analysis Batch: 493307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 490973

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	136000	137400		16200		310	pCi/L	101	90 - 111
Cesium-137	43000	43390		5100		70.8	pCi/L	101	90 - 111
Cobalt-60	23900	24640		2900		42.7	pCi/L	103	89 - 110

Lab Sample ID: 160-40623-3 DU
Matrix: Water
Analysis Batch: 493149

Client Sample ID: HTCRV2-RB-120120
Prep Type: Total/NA
Prep Batch: 490973

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Actinium 228	11.5	U	30.19	U	27.5		35.1	pCi/L	0.40	1
Bismuth-212	-30.5	U	21.64	U	110		193	pCi/L	0.24	1
Bismuth-214	15.4	U	2.017	U	6.01		54.0	pCi/L	0.55	1
Cesium-137	-3.32	U	-2.227	U	8.67		15.0	pCi/L	0.07	1
Lead-212	10.8	U	-9.203	U	16.5		27.7	pCi/L	0.75	1
Lead-214	2.67	U	-5.240	U	21.3		35.8	pCi/L	0.25	1
Potassium-40	87.2		-98.72	U F	113		173	pCi/L	1.11	1
Protactinium-234	2.34	U	12.89	U	28.0		46.7	pCi/L	0.33	1
Radium-226	15.4	U	2.017	U G	6.01	50.0	54.0	pCi/L	0.55	1
Radium-228	11.5	U	30.19	U	27.5	50.0	35.1	pCi/L	0.40	1
Radium-224	10.8	U	-9.203	U	16.5		27.7	pCi/L	0.75	1
Thallium-208	8.14		0.3929	U F	0.622		13.8	pCi/L	1.09	1
Thorium-234	-251	U	-473.2	U	219		591	pCi/L	0.54	1

Lab Sample ID: MB 160-491600/1-A
Matrix: Solid
Analysis Batch: 493692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 491600

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.1051	U	0.0859	0.0865	1.00	0.129	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Bismuth-212	-0.4349	U	0.903	0.904	3.00	1.55	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Bismuth-214	0.02127	U	0.0174	0.0175	1.00	0.483	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Cesium-137	0.0000	U	0.0189	0.0189	0.200	0.0953	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Lead-212	-0.003916	U	0.0876	0.0876	0.300	0.155	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Lead-214	-0.1014	U	0.159	0.159	1.00	0.222	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Potassium-40	0.1359	U	0.827	0.827	1.50	0.960	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Protactinium-234	-0.1081	U	0.329	0.329	1.50	0.554	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Radium-226	0.02127	U	0.0174	0.0175	1.00	0.483	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Radium-228	0.1051	U	0.0859	0.0865	1.00	0.129	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Radium-224	-0.003916	U	0.0876	0.0876	5.00	0.155	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Thallium-208	0.04508		0.0285	0.0289	0.200	0.0321	pCi/g	12/11/20 13:23	01/01/21 10:46	1
Thorium-234	-0.7381	U	0.880	0.884	4.00	1.54	pCi/g	12/11/20 13:23	01/01/21 10:46	1

QC Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-491600/2-A
Matrix: Solid
Analysis Batch: 493693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 491600

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	96.4	91.53		9.62		1.06	pCi/g	95	87 - 116
Cesium-137	26.7	25.43		2.70	0.200	0.174	pCi/g	95	87 - 120
Cobalt-60	9.40	8.613		0.905	0.200	0.110	pCi/g	92	87 - 115

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Rad

Leach Batch: 490963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	Dry and Grind	
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	Dry and Grind	
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	Dry and Grind	

Prep Batch: 490973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	Fill_Geo-21	
MB 160-490973/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-490973/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	
160-40623-3 DU	HTCRV2-RB-120120	Total/NA	Water	Fill_Geo-21	

Prep Batch: 491600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	Fill_Geo-21	490963
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	Fill_Geo-21	490963
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	Fill_Geo-21	490963
MB 160-491600/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	
LCS 160-491600/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	

Prep Batch: 492653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	ExtChrom	490963
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	ExtChrom	490963
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	ExtChrom	490963
MB 160-492653/23-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492653/1-A	Lab Control Sample	Total/NA	Solid	ExtChrom	

Prep Batch: 492664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-4	HTCRV2-WC01-0612-01	Total/NA	Solid	ExtChrom	490963
160-40623-5	HTCRV2-WC02-0612-01	Total/NA	Solid	ExtChrom	490963
160-40623-6	HTCRV2-WC02-0612-02	Total/NA	Solid	ExtChrom	490963
MB 160-492664/23-A	Method Blank	Total/NA	Solid	ExtChrom	
LCS 160-492664/1-A	Lab Control Sample	Total/NA	Solid	ExtChrom	

Prep Batch: 493934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	ExtChrom	
MB 160-493934/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-493934/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-493934/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Prep Batch: 495658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-40623-3	HTCRV2-RB-120120	Total/NA	Water	ExtChrom	
MB 160-495658/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-495658/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
LCSD 160-495658/3-A	Lab Control Sample Dup	Total/NA	Water	ExtChrom	

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 636

Job ID: 160-40623-2

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Solid **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Th-229 (30-110)
160-40623-4	HTCRV2-WC01-0612-01	82.3
160-40623-5	HTCRV2-WC02-0612-01	69.5
160-40623-6	HTCRV2-WC02-0612-02	68.7
LCS 160-492664/1-A	Lab Control Sample	87.7
MB 160-492664/23-A	Method Blank	81.7

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Th-229 (30-110)
160-40623-3	HTCRV2-RB-120120	42.3
LCS 160-493934/2-A	Lab Control Sample	68.7
LCSD 160-493934/3-A	Lab Control Sample Dup	73.1
MB 160-493934/1-A	Method Blank	74.6

Tracer/Carrier Legend

Th-229 = Thorium-229

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Solid **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
160-40623-4	HTCRV2-WC01-0612-01	67.2
160-40623-5	HTCRV2-WC02-0612-01	34.8
160-40623-6	HTCRV2-WC02-0612-02	39.9
LCS 160-492653/1-A	Lab Control Sample	78.3
MB 160-492653/23-A	Method Blank	79.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
160-40623-3	HTCRV2-RB-120120	90.9
LCS 160-495658/2-A	Lab Control Sample	74.4
LCSD 160-495658/3-A	Lab Control Sample Dup	70.5
MB 160-495658/1-A	Method Blank	93.1

Tracer/Carrier Legend

U-232 = Uranium-232