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REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

August 25, 2016

Mr. Daniel Gaughan, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Removal Action Branch
2890 Woodbridge Avenue
Edison, New Jersey 08837

EPA CONTRACT NO: EP-S2-14-01
TDD No: TO-0007-0023
DC No: RST3-03-F-0012
SUBJECT: FINAL REMOVAL ASSESSMENT TRIP REPORT – CANADIAN RADIUM AND URANIUM CORP. SITE, MOUNT KISCO, WESTCHESTER COUNTY, NEW YORK

Dear Mr. Gaughan,

Enclosed please find the Final Removal Assessment Trip Report for the on-site activities conducted at the Canadian Radium and Uranium Corp. Site located in Mount Kisco, Westchester County, New York. This phase of the Removal Assessment was conducted on August 3 through 7 and 18, 2015 and October 23 through 26, 2015.

If you have any questions or comments, please contact me at (732) 585-4413.

Sincerely,

WESTON SOLUTIONS, INC.

Bernard Nwosu
RST 3 Site Project Manager

Enclosure
cc: TDD File: TO-0007-0023

REMOVAL ASSESSMENT TRIP REPORT

SITE NAME: Canadian Radium and Uranium Corp. Site
DC No.: RST3-03-D-0001
TDD No.: 0007-0023
CERCLIS ID: NYD987001468
EPA ID: A23P
EVENT DATES: August 3 through 7 and 18, 2015 and October 23 through 26, 2015

1.0 Site Location: 103-105 Kisco Avenue
Mount Kisco, Westchester, New York
(Refer to Attachment A, Figure 1A: Site Location Map)

2.0 Site History and Conditions

From 1943 until approximately 1966, the Canadian Radium and Uranium (CRU) facility operations at the Canadian Radium and Uranium Corporation Site (the Site) included the recovery of uranium and other radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. This work began as part of the federal government's Manhattan Engineering District (Manhattan Project). From 1943 to the 1950s, the primary product was uranium; subsequently, radium became the principal product until the facility's closure. According to a Village of Mount Kisco memorandum, in 1957, CRU pleaded guilty to charges of allowing three employees to be overexposed to radiation. From March 5, 1958, until sometime after May 19, 1961, decontamination procedures and expectations were established for the CRU facility.

In November and December 1966, the facility buildings (a two-story concrete block building and two smaller one-story concrete block buildings) were decontaminated and demolished. Removal of radioactive dirt to a depth of 12 inches was required on the CRU premises. The most contaminated demolition materials were disposed of by Nuclear Diagnostic Laboratories located in Peekskill, New York, while the less contaminated materials were disposed of at Croton Point Sanitary Landfill located in Croton-on-Hudson, New York. After demolition and decontamination, a post-operation survey was conducted by Isotopes, Inc. Two locations on the Haggerty Millwork wall, which originally shared a wall with the CRU facility that was demolished during the 1966 demolition and decontamination process, were found above specifications. One contaminated location was removed by chiseling out the masonry of a wall. The second was a result of tailings from a leaking waste drum, which CRU had stored on the second floor fire escape. Since contamination was low here, the area was sealed with 1 to 2 inches of mortar. Railroad Avenue was constructed where the main CRU building once stood and was put in place by the urban renewal efforts in the area. Between 1964 (pre-demolition/decontamination) and 1971 (post-demolition/decontamination), the building layout of the Site completely changed and it is believed that none of the original CRU facility buildings remained after the year 1971.

On April 5, 1979, a local newspaper reported the 1957 death of the CRU plant manager due to leukemia from high radioactivity levels found in his body. On April 20, 1979, a survey was performed by the Assistant Commissioner of Health for Environmental Quality, Westchester Department of Health. Based on the surveys, the highest dose rates were found in a small portion of a locked, chain-link fenced area south of the old wood freight station on Railroad Avenue and east of the L. B. Richard's Lumber yard (*i.e.*, an area located adjacent to the railroad). All other

elevated dose rates were found in areas covered by soil and vegetative growth. The 1979 investigation reported that the high readings were obtained from an area covering approximately one square yard of the property within an area not being used by the public. In addition, the report indicated that the dose rates found did not pose a public health hazard to persons passing the fenced area, to persons working in buildings adjacent to the area, or to persons living across the railroad tracks to the east.

In a memorandum dated February 7, 1980, the Westchester County Health Department described investigation findings in more detail. The area in question was approximately 78 feet by 60 feet, enclosed by a chain-link fence located between the railroad tracks and a concrete paved area. The most significant contaminated area was a strip 15 feet by 5 feet, containing two separate "hot spots". A surface reading using an alpha probe survey meter measured 50 disintegrations per minute (dpm). Elevated readings several times above background were reported for an area extending about 50 feet south from the chain-link fence. The memorandum stated that the origin of this contamination was unknown and that it was not discovered in previous surveys.

In September 1993, the Bureau of Environmental Radiation Protection of the New York State Department of Health (NYSDOH) completed a survey of the Site; indoor radon measurements were collected (*i.e.*, office, show room, storage/sale floor) which documented a maximum concentration of 9.8 picocuries per liter (pCi/L), and the average of the different detectors was about 8.1 pCi/L. The NYSDOH also identified two outdoor areas where presence of radioactive materials were indicated at the back of Richard's Lumber, and the road that runs next to the railroad tracks and adjacent to a fence post inside the fenced portion of what appeared to be Richard's Lumber property on the south side of Railroad Avenue.

In 1994, the U.S. Environmental Protection Agency (EPA) conducted an on-site inspection to measure radon levels, collect air and soil samples, and measure exposure rates. The purpose of the investigation was to determine if conditions required immediate action and if the Site was eligible for long-term remediation under the federal Superfund Program. Elevated exposure rate measurements were observed on both the northern [10–700 microroentgens per hour (μR/hr)] and southern (10 –240 μR/hr) portions of the Site property. Radium-226 (Ra-226) concentrations in soil samples taken from the top 1.5 feet ranged from 3 to 150 picocuries per gram (pCi/g). All of the radon measurements were below EPA's guideline (*i.e.*, 4 pCi/L) and the air samples collected at the Site did not detect any radioactive contamination. The EPA concluded that the Site was not a potential candidate for inclusion in the National Priorities List (NPL) and, therefore, was not eligible for long-term remediation.

In July 1998, a complete radiological survey of the Village of Mt. Kisco and Richard's Lumber (former CRU) was conducted by New York State Department of Environmental Conservation (NYSDEC). The property owned by the Village of Mount Kisco (103 Kisco Avenue) was found to have contamination over one large unpaved area [about 4,000 to 5,000 square feet (ft^2)] and a few smaller areas. The July 1998 report stated that, on the Mt. Kisco property, the highest concentrations of radium observed were a few hundred pCi/g and that most of the contamination was in the top one foot of soil. The report stated that the distribution suggests that uranium-containing material was placed on the surface and then the area was leveled. A new road (Railroad Avenue) had been built where the CRU facility once stood; soil sampling completed near the road showed elevated levels of radium a few feet below the surface. The NYSDEC reported that the

distribution of radioactive material near the road appeared to be consistent with movement of soil as part of the building demolition and subsequent construction of the road. Sampling beneath the road surface was not performed. There is no documentation of shielding or other control measures implemented on the 103 Kisco Avenue property, though current conditions suggest that the property was recently paved with asphalt (of an unknown depth) or other cover materials.

The 1998 report further stated that the survey of the Richard's Lumber (105 Kisco Avenue) property indicated that radioactive materials were present under the parking lot, but no samples were taken beneath the asphalt. The highest concentration of radium at the Site was found just north of Railroad Avenue (about 6,000 pCi/g). A large part of the main outside storage area was reported to be contaminated with radium near the surface as well as within some soil profiles to depths of about 4 feet. Survey data suggested that the contamination stopped abruptly at the edges of the paved areas. Railroad Avenue showed count rates that were lower than background soils; NYSDEC attributed these results to absorption by the road surface material (*i.e.*, shielding). The July 1998 report indicated that radiation doses to workers or visitors to the Site as it was used at the time were not significant. The Site location where the dose rate was highest was a small area near Richard's Lumber, just north of Railroad Avenue. Time spent at this location was small; therefore, the accumulated dose was also estimated to be small. The July 1998 report suggested that significant radium contamination was present on both Mt. Kisco and Richard's Lumber properties. The NYSDEC did not consider the Site to be fully characterized at the completion of the survey.

In September 2013, Weston Solutions, Inc., Site Assessment Team (SAT), performed an on-site reconnaissance and gamma radiation screening of the historic CRU property and other possible areas of contamination. Based upon SAT's *Final Site Reassessment Summary Letter Report,* dated June 11, 2014, background readings taken north and northeast of the Site in the right-of-way (ROW) area alongside Kisco Avenue showed background gamma radiation levels of approximately 7,500 counts per minute (cpm). The highest reading of 73,637 cpm was located on the 105 Kisco Avenue property. Most readings were below 2 times (2x) background. There were three areas with readings that exceeded 2x background, ranging from 30,000 cpm to 73,637 cpm. All three areas above 2x background were located in the back portion of the 105 Kisco Avenue property, east of the historic CRU facility. No signs of ground discoloration were observed.

Site conditions during SAT's radiological reconnaissance for the 105 Kisco Avenue property, New York Stone and Masonry Supply, were typical for a stone, masonry, and landscaping business and had not changed significantly since the 1998 report. In the back portion of the property, surplus materials were stored in corrals, separating different materials such as gravel, sand, wood chips, etc. The most southeastern portion of the property consisted of a newly paved asphalt parking area for customers. Although historical redevelopment activities at the Site were unclear, it is believed that none of the current buildings are part of the original CRU facility. Materials and heavy machinery were present throughout the property, including the concrete corrals for materials. Many areas were not accessible for screening due to obstructions (*e.g.*, wood piles, heavy machinery, roll-offs). The property owner did not allow SAT to perform gamma radiation screenings inside the main building; however, the owner allowed SAT to perform screenings in outdoor sheds and other storage warehouse-type buildings.

Site conditions during SAT's radiological reconnaissance for the 103 Kisco Avenue property, Hickory Homes and Properties, Inc., were typical for a landscaping supply and material storage facility. The property was semi-paved (during the 1998 report, the property was not paved), and completely fenced with an access gate. The access gate was closed and locked when employees were not on site. There was one small work trailer located at the northernmost portion of the property which included an employee break room, office, and reception area. Trucks, forklifts, and other heavy machinery were parked on the property. Various on-site roll-offs were filled with debris and materials. Cement corrals for materials were also located on-site. A manhole was located at the northeast corner of the Site, although no elevated gamma screenings were detected. Many areas were not accessible for screening due to obstructions (*e.g.*, wood piles, heavy machinery, roll-offs). No elevated gamma radiation was observed on the 103 Kisco Avenue property. Gamma screenings of Railroad Avenue and the ROW area bordering Railroad Avenue showed gamma screening readings ranging from background (~7,500 cpm) to 15,000 cpm, with one elevated area located at the corner of the 105 Kisco Avenue property, which had readings ranging from 15,000 cpm to 30,000 cpm.

In November 2013, SAT conducted a soil screening and sampling event. Eight boreholes were advanced to depth of 10 feet at the Site. During the event a gamma scintillation meter (Ludlum 2221 Scaler Ratemeter) was utilized for field gamma screening. Field screening data was collected to document the gamma exposure rates at 6-inch depth intervals vertically down each sample location borehole. The soil samples collected represent the highest levels of gamma radiation recorded for each borehole. All the soil samples were analyzed for radionuclides and target analyte list (TAL) metals. Based upon SAT's June 2014 report, all analytical results for the thorium-232 (Th-232) decay series (Th-232, Th-228, and Ra-228) ranged from 0.6 to 1.2 pCi/g, and were therefore considered to be at background levels. In addition, all of the individual radioisotopes in this decay series were observed to be in equilibrium in each sample. Analytical results reported for the uranium-238 (U-238) decay series (U-238, U-234, Th-230, and Ra-226) did not appear to be in equilibrium. Concentrations of the parent isotopes U-238 and U-234 were at background levels ranging from 0.4 pCi/g to 0.8 pCi/g. Th-230 concentrations in three of the samples [S01(24-36), S07(12-24), and S08(24-36)] were at background concentrations. Th-230 concentrations in samples S02(0-12), S03(0-12), S04(36-48), S06(0-12), and S09(36-48) exhibited significantly elevated levels ranging from 4.6 to 83.3 pCi/g. Th-230 analytical results for sample S05(0-12) may or may not be elevated, as the measured result was 1.8 +/- 0.3 pCi/g. Based upon the above, it can be concluded that the contaminants represent residual contamination from processed material and not uranium ore.

Ra-226 analytical results in samples S01(24-36), S02(0-12), S03(0-12), S04(36-48), S05(0-12), S06(0-12), and S09(36-48) were all significantly elevated, ranging from 15.4 pCi/g to 135 pCi/g. Sample location S07(12-24) was, as expected, at a background level of 0.9 pCi/g. Sample S08(24-36), which was collected at an assumed background location near the northeast corner of the subject property, showed a Ra-226 concentration of 3.4 pCi/g, which is slightly elevated above the background level. In all instances, when an elevated concentration of Th-230 was detected in a sample, the Ra-226 was also elevated.

Lead and thallium isotopes are a result of the decay chain of U-238 and Th-232. Sample location S04(36-48)/S09(36-48) [duplicate] exhibited greater than three times (3x) the highest background level of lead with concentrations at 1,000 mg/kg and 440 mg/kg, respectively. It is unknown if

this exceedance is linked to the residual radioactive contamination on the CRU site. There were no detections of thallium at the Site. Mercury concentrations greater than 3x the highest background level were also documented at S01, S03, and S04. It is not known if this elevated concentration of mercury can be linked to the former CRU site operations. However, all the analytical data from this event suggest that there is measureable residual contamination remaining at the CRU site.

3.0 On-Site Personnel

Name	Affiliation	Duties On-Site
Eric Daly	U.S. EPA, Region II	Lead On-Scene Coordinator
Daniel Gaughan	U.S. EPA, Region II	On-Scene Coordinator
Oleg Povetko	U.S. EPA, Region II	Lead Radiation Health Physicist
Bernard Nwosu	RST 3, Region II	Team Lead, Site Health & Safety, Written and Photographic Documentation
Joel Siegel	RST 3, Region II	Field Support
Robert Croskey	RST 3, Region II	Field Support
Lionel Montanez	RST 3, Region II	Field Support
Andreas Andreou	Precision Environmental, Inc.	Radon Sampling

4.0 Removal Assessment Summary

The CRU facility's operations involved the recovery of radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. The main products of the facility's operations, uranium and radium, are naturally occurring elements found at low levels in virtually all rocks, soil, and water. Several isotopes of radium originate from the radioactive decay of uranium or thorium.

Uranium (half-life of 4.5 billion years) is a naturally occurring radioactive isotope, decaying primarily by alpha emission with accompanying gamma radiation. Uranium produces several radioactive isotopes including Ra-226 and radon-222 (Rn-222), which have a half-life of 1,602 years and 3.8 days, respectively. Rn-222 is a radioactive isotope which naturally forms as a gas, producing several radioactive radon decay products, including polonium-218 (Po-218), lead-214 (Pb-214), bismuth-214 (Bi-214), and polonium-214 (Po-214).

Thorium (half-life of 14 billion years) is a naturally occurring radioactive isotope, decaying primarily by alpha emissions with accompanying gamma radiation. Thorium produces several radioactive isotopes, including gamma emitting actinium-228 (Ac-228), lead-212 (Pb-212), bismuth-212 (Bi-212), radium-224 (Ra-224) and thoron-220 gas (Rn-220). Ra-224 and Rn-220 have a half-life of 3.6 days and 55 seconds, respectively.

The U.S. Department of Health and Human Services' (DOHHS) Agency for Toxic Substances and Diseases Registry (ATSDR) has established that long-term exposure to gamma radiation poses a health risk and radon gases in air can buildup in the lungs with the potential to cause lung cancer after prolonged exposure.

Weston Solutions, Inc., Removal Support Team 3 (RST 3) was tasked by the EPA to provide support for a Removal Assessment of the Site. RST 3 determined the presence or absence of radon and thoron gases and gamma radiation through radiological surveys and delineated areas of observed contamination by measuring the gamma radiation exposure rates within the suspected source areas and at a background location. RST 3 also utilized laboratory analyses to ascertain the concentration of radon gas being emitted within living spaces in on-site buildings and verified the presence of residual contamination and potential releases of radiation-containing materials in soils associated with the former CRU facility. The geographical location of soil sampling and radiological survey locations were recorded using an RST 3-procured Trimble® Global Positioning System (GPS) unit. Locational data from radiological survey instruments equipped with GPS capabilities were also recorded. RST 3 performed photographic documentation and maintained a Site logbook to document all Site activities throughout the Removal Assessment.

5.0 Radiological Survey and Methodology

As part of this phase of the Removal Assessment, on August 3 through 7, 2015, EPA and RST 3 conducted radiological surveys at the on-site properties including, Metropolitan Transit Authority (MTA), Milepost 136, 103 Kisco Avenue (Property C001), Hickory Homes and Properties, Inc., 103 Kisco Avenue (Property C002), New York Stone and Building Supply, 105 Kisco Avenue (Property C003), and at a background location (comprising a strip mall), 145-159 Kisco Avenue (Property C004). The following summary describes the radiological survey methods, instruments used, and how data was collected.

Refer to Attachment A, Figure 1A for Site Overview Map and Attachment D for Photographic Documentation of Site Activities.

5.1 Gamma Survey

Gamma radiological surveys were conducted by EPA and RST 3 using Fluke Pressurized Ionization Chamber (FPIC) Model 451P, Ludlum Model 2241 (Ludlum-2241), and Reuter-Stokes RSS-131ER High Pressure Ion Chamber (HPIC) gamma survey meters. Specific isotopes were identified using a Berkeley Nucleonics Corporation (BNC) SAM 940™ (SAM 940) portable, radioisotope identification system. All the gamma survey instruments were provided by EPA and used to identify on-site locations with above-background gamma readings and to determine off-site locations least likely impacted by historic site activities in order to select a location to obtain background readings. The background reading of each instrument was recorded daily and collected from a pre-determined background location selected by the EPA On-Scene Coordinator (OSC).

5.1.1 Ludlum Model 2241

Two Ludlum-2241 units [(Serial Numbers (Nos.) 207757 and 249263)] were utilized by EPA for gross gamma survey throughout the Site. A sodium iodide (NaI) gamma scintillator was attached to each of the Ludlum-2241 units and held approximately 6-inches above the ground when collecting measurements. The survey was mobile and required the user to walk the Site along pre-determined paths. In order to determine gamma exposure rates, the NaI scintillator was held in place for approximately 60 seconds at each location selected for gamma survey. The instantaneous highest and lowest readings measured in cpm by the instrument were recorded as a range in the Site logbook and were compared with the background gamma values measured by the instrument.

5.1.2 Fluke Pressurized Ionization Chamber (FPIC) Model 451P

The FPIC (Serial No.: 5067) was mostly used in the on-site buildings to further determine the level of gamma radiation at specific locations after gross gamma survey with Ludlum-2241. Two instantaneous measurements from the FPIC were recorded at each location selected for survey; one at contact (1 inch above the ground) and one at waist height (1 meter/3 feet above the ground). Survey time for each reading was for approximately 30 seconds, depending on how quickly the equipment drift settled to an instantaneous value. At the discretion of the EPA OSC, FPIC data was collected within 5 feet by 5 feet grids in the main building of Property C003 and within 10 feet by 10 feet grids in the exterior Warehouse -1 & -2. FPIC gamma readings were not collected from Property C001 due to access issues; and since the one office trailer in Property C002 is elevated 2 feet above the ground, the EPA OSC determined that it was not necessary to conduct FPIC gamma survey inside the office trailer. The instantaneous highest and lowest readings measured by the instrument at waist level and at contact were recorded as a range in µR/hr on field sheets and compared with the background gamma values measured by the instrument.

5.1.3 Reuter-Stokes RSS-131ER High Pressure Ion Chamber (HPIC)

A HPIC (Serial No.: 06D127799/ERT-524) was used to measure gamma radiation in areas where low gamma measurements were obtained after using Ludlum-2241 and FPIC, and at the discretion of the OSC. On a daily basis, prior to utilizing the HPIC for radiological surveys, the instrument was turned on and allowed to warmup for approximately 60 minutes at the offsite background location. The instrument was then connected to a computer which was used to run the RSS-131 utility program in order to configure the desired settings for the field survey. At least three of the known radioactive source options provided with the equipment, including cesium-137 (Cs-137), cobalt-60 (Co-60), europium-152 (Eu-152), thorium-232 (Th-232), and americium-241 (Am-241), with known gamma values, were used to calibrate the instrument daily. When the known radioactive source was placed next to the HPIC, the gamma reading displayed on the computer monitor was noted and compared with the known gamma value of that radioactive source. The instrument was turned off after calibration. When a location was selected for gamma survey, the HPIC was turned on with the computer still connected. Instantaneous gamma readings were recorded every 60 seconds for the duration of each survey. The HPIC is normally uncollimated (*i.e.*, it measures cosmic, terrestrial, and foreign source contributions without discrimination), however, it is highly sensitive, precise, and accurate to vast changes in exposure rate, but it lacks the ability to distinguish either energy spectral characteristics or source type. For these reasons, the first two readings recorded by the HPIC at the beginning of each survey were not utilized in calculating the average gamma radiation exposure rate at that location. At least five data points were collected during each survey. When the data was downloaded unto the computer, the gamma radiation exposure rate in µR/hr was determined by calculating the average of the five data points collected at each specific location. The average gamma radiation exposure rate was compared with the background gamma value measured by the instrument.

5.1.4 BNC SAM 940™

At the discretion of the EPA OSC, the SAM-940 (Model: 6997, Serial No.: 42285) was used to identify radioisotopes at specific areas where elevated gamma radiation was indicated by prior use of other gamma survey instruments. After the instrument was turned on, a known radiation source (*i.e.* Cs-137) was used to calibrate the unit at the background location. The accuracy of the calibration was acceptable if the confidence level of the detected known radiation source was 97

percent (%) or greater. When the instrument was placed at a survey location for approximately 60 seconds the instantaneous readings including GPS location and survey data, displayed on the screen of the instrument was stored in the internal memory of the instrument in files identified by the prefix "Spectra". The OSC downloaded the stored files unto a computer and provided RST 3 with the data generated by the instrument.

5.2 Radon and Thoron Survey

A Durridge RAD7 electronic radon/thoron detector with a printer attachment was utilized by RST 3 to measure the concentration of radon and thoron in air. The RAD7 setup consisted of a 6-inch dryer tube filled with desiccant (which removes moisture from the air sample and prevents it from entering the RAD7 unit). The dryer tube was attached to a 3-foot long vinyl tube connected to an inlet particulate filter that was plugged into the RAD7 intake port. On a daily basis, the RAD7 unit was purged for 10-minutes prior to conducting a "Sniff" (10-minute test) or "Run" (30-minute test). When the RAD7 unit was set to Sniff or Run, ambient air flowed through the desiccant-filled tube into the intake port of the unit. Whenever the desiccant became saturated (color changed from blue to pink) it was changed out prior to initiating a new test; and if the desiccant needed to be changed in the middle of a test, the unit was paused until the change out was completed. At the end of the Sniff/Run time, the analytical data processed by the unit was stored in the internal memory; but the attached printer also provided the option of printing out a hardcopy of the analytical results which were recorded on field data sheets in pCi/L. Since the precision of this instrument is affected, although to a much lower degree, by humidity and temperature factors, both were minimized by applying the system-generated standard deviation values to the final data. Weather and atmospheric measurements, including temperature, humidity, wind speed and direction, barometric pressure, dew point, and ultraviolet (UV) index were recorded for each test period from the nearest weather station of an online weather website (*i.e.* http://www.wunderground.com/) unto field data sheets.

Throughout the Removal Assessment of the Site, two RAD7 units (Serial Nos.: 2895 & 2534) were used to conduct radon/thoron tests at each selected survey location. For the first RAD7 unit, the 6-inch dryer tube filled with desiccant was set at 1-inch above the ground (contact measurement) and for the second RAD7 unit, the 6-inch dryer tube filled with desiccant was set at approximately 3-feet above the ground (waist level measurement). On a daily basis, the background concentrations of radon and thoron were collected with the RAD7 units from the offsite background location and documented on field data sheets prior to conducting any on-site Sniff/Run tests. RAD7 units measure and report the concentrations of radon and thoron simultaneously; and the accuracy of the measurements depends primarily on the counting statistics as determined by the test duration for each measurement. Therefore, due to statistical uncertainty based on test duration, Run test results are more accurate than Sniff test results; however, Sniff test results were documented at locations where Run tests were not conducted. At each location to be surveyed, a Sniff test was usually conducted first. If the radon and/or thoron results of the Sniff test equal or exceeds the background values of 0 to <4 pCi/L (including the sum of the result value and the upper limit of the standard deviation value), then a Run test was conducted. If after the Run test, a reading greater than 4.0 piC/L (including the sum of the result value and the upper limit of the standard deviation value) was obtained, other options, including potential additional surveys at that location with other instruments, was determined at the discretion of the EPA OSC.

6.0 Sample Collection and Methodology

On August 3 through 7, 2015, RST 3 subcontractor conducted pre-mitigation radon sampling in all the on-site buildings at Properties C001 through C003. On August 5 through 7, 2015, RST 3 collected soil samples from Properties C002, C003, and at a background location on Property C004. On August 18, 2015, RST 3 provided oversight for a soil sampling event at Property C001 and EPA collected wipe samples from locations at Properties C001 through C003. On October 23 through 26, 2015, post-mitigation radon sampling was conducted by RST 3 subcontractor, following the installation of a radon mitigation system in the main building of Property C003 by the property owner. All sampling activities were conducted in accordance with EPA Environmental Response Team (ERT) Standard Operating Procedure (SOP) 2001: *General Field Sampling Guidelines*. The following summary describes the sampling, data collection and analytical methods utilized for the sampling events. Refer to Attachment D for Photographic Documentation of Site Activities.

6.1 Radon Sampling

RST 3 procured the services of a National Radon Proficiency Program (NRPP)-certified company, Precision Environmental, Inc. (PEI), located in Long Island, New York, to provide field support in identifying radon canister placement locations in living spaces of on-site buildings, placing the canisters, picking up the canisters, and delivering to a private laboratory, Radon Testing Corporation of America (RTCA), located in Elmsford, New York, for radon analysis. Radon sampling was conducted inside Building B36 at Property C001, inside the office and storage trailers at Property C002, and in the main building and Warehouses 1 & 2 in Property C003.

Passive activated charcoal canisters were used to conduct short-term radon sampling tests that lasted a minimum of approximately 72 hours. Weather information including, temperature, humidity, wind speed and direction, and barometric pressure were documented during canister deployment and pickup. Canister placement was conducted in accordance with the guidelines presented in the American National Standards Institute (ANSI)/American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings* (MAMF 2012) and as directed by the OSC. Radon testing locations were focused on frequently occupied spaces in each on-site building. Bathrooms, kitchens, utility closets, and hallways were not tested to avoid biased results. The canisters were raised no less than approximately 20 inches above the ground, and where possible, away from draft and vents. When the protective covering of the canister inlet was peeled off, ambient air was allowed to collect in the canisters for a minimum of approximately 72 hours at each location. The samples were collected for definitive data and quality assurance/quality control (QA/QC) objectives. Field duplicates (co-located samples) and field blank samples were collected at a rate of 10% of the total field samples.

6.2 Soil Sampling

Soil sampling was conducted in accordance with EPA ERT SOP 2012: *Soil Sampling*. On-site locations suspected to contain radioisotopes and metals/metalloids were determined and flagged in the field as soil sampling locations by the EPA OSC. The soil sampling locations were selected based on information from prior SAT site investigation and from radiological survey measurements collected as part of this phase of the Removal Assessment of the Site. Locations exhibiting significantly high radioactivity measurements were selected for soil sampling. At the

request of RST 3, Dig Safely New York conducted a subsurface utilities mark-out to clear the locations within the ROW areas. RST 3 employed the services of a subcontractor, Environmental Field Services (EFS), located in Marlton, New Jersey, to conduct subsurface utilities mark-out around all the proposed soil sampling locations within the Site, including the background location, and to operate a Geoprobe®. EFS utilized a Geoprobe® in accordance with EPA ERT SOP 2050: *Geoprobe Operation*, to facilitate soil sample collection by extracting soil cores from depths 0 to 4 feet below ground surface (bgs) at each soil sampling location. Each soil core was screened at every 6-inch interval for gamma radiation using Ludlum-2241. Soil samples were selected from the interval exhibiting the highest level of gamma radiation and/or where a fill layer was observed and/or at the discretion of the EPA OSC. Unutilized sections of the soil cores were placed back into the bore holes and then filled with bentonite.

Background soil sampling was conducted at a location presumed to be least likely impacted by historic site activities. The Geoprobe® was not utilized for soil sampling at the selected background location, C004-SS001, due of concerns regarding damage to subsurface utilities. However, the background soil sample was obtained by utilizing a decontaminated post digger and shovel to dig a hole to 2-feet bgs at C004-SS001. The background soil sample was collected directly from the hole.

Decontamination of non-dedicated sampling equipment (*i.e.* Geoprobe® cutting shoe) was conducted in accordance with EPA ERT SOP 2006: *Sampling Equipment Decontamination* and was performed before and after the sampling event and between soil sampling locations, and it consisted of a soap (Alconox®) solution scrub, tap water rinse, steam-clean with deionized (DI) water, air dry, and screening with Ludlum-2241 for residual radiological contamination. In order to confine potential surface runoff to areas of contamination, the decontamination fluid was discarded on-site at the location indicating the highest levels of contamination based on radiological screening data.

Due to access agreement issues, RST 3 was not permitted to conduct soil sampling at C001. However, EPA reached an agreement with MTA to utilize their subcontractor to perform the soil sampling on their property. During the soil sampling event, the MTA subcontractor utilized a single stainless steel hand auger to advance three borings at the selected locations, C001-SS001 through C001-SS003, to depths 4 feet bgs. Decontamination of the hand auger was not done between depth intervals while sampling at C001-SS001. However, after RST 3 completed soil sampling at C001-SS001, the MTA subcontractor decontaminated the hand auger by scrubbing with a soap (Alconox®) solution and rinsing with tap. Thereafter, RST 3 collected a rinsate blank sample, and no further decontamination of the hand auger was performed by the MTA subcontractor between C001-SS002 and C001-SS003 and at any depth intervals.

All the soil samples were collected using dedicated disposable plastic scoops, placed directly into re-sealable plastic bags, homogenized in the plastic bags, and then placed into glass sample jars. Fresh nitrile gloves were donned between each sampling interval and location. A rinsate blank was collected to demonstrate adequate decontamination of non-dedicated sampling equipment. The soil and aqueous samples were collected for definitive data QA/QC objectives. Field duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples were collected at a rate of one per 20 field samples. The soil and aqueous samples were shipped for laboratory analysis via FedEx to an RST 3-procured, National Environmental Laboratory Accreditation Program (NELAP)-certified

laboratory, Test America Laboratories, Inc. (Test America), located in St. Louis, Missouri, for analyses.

6.3 Wipe Sampling

Wipe sampling was conducted in the on-site buildings by the EPA OSC. Wipe sampling locations were biased towards floor cracks and entryways. Each wipe sample was collected within an estimated 100 square centimeters (cm^2) area by wiping the sampling location firmly, vertically, and then horizontally, to ensure complete surface coverage. All the wipe samples were analyzed by EPA's Radiation Health Physicist (RHP) using a Ludlum-3030 (Serial No.: 190638), calibrated on June 7, 2015. Each wipe sample was analyzed by counting the Minimum Detectable Concentration (MDC) of alpha and beta particles, measured in dpm, over a specified period of time. For the selected counting durations the Minimum Detectable Activity (MDA) for 100 cm^2 was determined in dpm for alpha and beta counts. The MDA of a counting system as defined by the U.S. Department of Commerce (DOC), National Bureau of Standards (NBS), is that amount of activity which in the same counting time gives a count which is different from the background by three times the standard deviation of the background counting rate. The MDC is the minimum detectable activity measured in concentration units and is often used interchangeably with MDA.

7.0 Sample Collection Summary

On August 3, 2015, PEI deployed a total of 33 activated charcoal canisters, including two field duplicates and two field blanks, in on-site buildings at Property C003, and one office blank at PEI's facility. The radon canister samples were picked up on August 6, 2015. On August 4, 2015, PEI deployed five activated charcoal canisters in Property C001 and six activated charcoal canisters in Property C002. The radon canister samples were picked up on August 7, 2015. On October 23, 2015, following the installation of a radon mitigation system in Property C003, PEI deployed a total of 27 activated charcoal canisters, including two field duplicates and two field blanks. The radon canister samples were picked up on October 26, 2015. All the radon canister samples were submitted to RTCA by PEI for radon analysis. Details of the radon sample collection are presented in Table 1A: Validated Pre-Remedial Radon Analytical Results Summary Table and Table 1B: Validated Post-Remedial Radon Analytical Results Summary Table.

On August 5, 2015, RST 3 collected four soil samples from Property C002, four soil samples, including one field duplicate from Property C003, and one aqueous rinsate blank sample. On August 7, 2015, RST 3 collected one soil sample from a background location at Property C004. On August 18, 2015, RST 3 collected four soil samples, including one field duplicate, from Property C001, and one aqueous rinsate blank sample. All the soil and aqueous samples collected from the Site on August 5 and 7, 2015, were shipped via Fedex airbill No.: 8037-9662-5810 under chain of custody (COC) record No: 2-080515-230111-0001 to Test America for laboratory analyses. All the soil and aqueous samples collected from the Site on August 18, 2015, were shipped via Fedex airbill No.: 8037-9662-5864 under COC record No: 2-081815-162509-0004 to Test America for laboratory analyses.

All the Soil samples were analyzed for TAL metals, in accordance with EPA SW846 Method 6010C; total mercury, in accordance with EPA SW846 Method 7471B; isotopic thorium (Th-228, Th-230 and Th-232) and isotopic uranium (U-233/234, U-235/236 and U-238), in accordance with U.S. Department of Energy (DOE) alpha spectroscopy Health and Safety Laboratory (HASL)-300

Method A-01-R; Ra-226 (21-day ingrowth), Ra-228, and other gamma emitting radioisotopes, in accordance with DOE gamma spectroscopy HASL-300 Method GA-01-R. Aqueous rinsate blank samples were analyzed for TAL metals, in accordance with EPA SW846 Method 6010C; total mercury, in accordance with EPA SW846 Method 7471B; isotopic thorium and isotopic uranium, in accordance with DOE alpha spectroscopy HASL-300 Method A-01-R; other gamma emitting radioisotopes, in accordance with DOE gamma spectroscopy Method GA-01-R; Ra-226, in accordance with EPA SW-846 Method 9315, and Ra-228 by Gas Flow Proportional Counter (GFPC), in accordance with EPA SW-846 Method 9320. Refer to Attachment C for chain of custody records and FedEx Airbills.

On August 18, 2005, a total of eight wipes samples were collected from Properties C001 through C003 by the EPA OSC. Three wipe samples, including one field blank, was collected from Property C001. One wipe sample was collected from Property C002 and four wipe samples were collected from Property C003. The wipe samples were hand-delivered to EPA's RHP under COC record No: 2-081815-170145-0005 for analyses. Refer to Attachment C for chain of custody record.

8.0 Radiological Survey Results Summary

For reference purposes, Chart 1 provides the background readings obtained for gamma radiation and radon/thoron at the selected offsite background location. Results of the radiological surveys were compared with the background readings.

Chart 1: Background Radiological Survey Reading

Survey Instrument	Radiological Parameter	Background Values
Ludlum-2241	Gamma	7,500 - 9,500 cpm
FPIC	Gamma	Waist-high = 9 - 12 µR/hr, Contact = 11 - 13 µR/hr
HPIC	Gamma	8.9 µR/hr
SAM-940	Gamma	No nuclide detected
RAD7	Radon/Thoron	0 - <4 pCi/L

Five cubic yard bags staged along the northeast fence of Property C002 were suspected to contain radioactive soils. According to the tenant of Property C002, the bagged soils were from a previous 3-feet deep excavation across Railroad Avenue (where the CRU main building once stood) created to allow for the installation of an electrical line to provide power supply to the property. The location of these bagged soils was identified as C002-TRENCH. All the bagged soils were screened with each field survey instrument and determined to contain radioactive material.

Ludlum-2241 gamma surveys were conducted in all the on-site buildings and at all the soil sampling locations at the Site. Ludlum-2241 gamma survey results were above background values at the southeast corner of Warehouse-2 (12,000 – 15,000 cpm), more than 2x background values at G-1 (20,000 – 22,000 cpm), soil sampling location C001-SS001; G-7 (80,000 – 120,000 cpm), soil sampling location C002-TRENCH; G-8 (140,000 – 180,000 cpm), soil sampling location C003-SS001; G-9 (25,000 – 102,000 cpm), soil sampling location C003-SS002; and G-10 (24,700 – 64,600 cpm), soil sampling location C003-SS003. It is suspected that the high gamma readings

observed at G1 located on the Property C001 side of the shared fence with Property C002, may have been due to leaching from the bagged contaminated soils staged on Property C002.

Refer to Chat 1 for background radiological survey readings. Ludlum-2241 gamma survey locations and results are presented in Attachment A, Figure 2A: C001 Radon and Wipe Analytical Results and Gamma Survey Map, Figure 2B: C002 Radon and Wipe Analytical Results and Gamma Survey Map, Figure 4B: C003 Indoor Radon/Thoron (RAD7) and Gamma (HPIC, SAM-90 & Ludlum-2241) Survey Map, and Attachment B, Table 4: Gamma (Ludlum-2241) Field Survey Results Summary Table.

FPIC gamma survey was not conducted inside any buildings at Properties C001 and C002 and at any outdoor locations throughout the Site. However, at Property C003, FPIC gamma survey was conducted in the main building and in Warehouses 1 & 2. FPIC gamma survey results indicated above-background values in the Electrical Room of the main building and at the southeast corner of Warehouse-2.

Refer to Chat 1 for background radiological survey readings. FPIC gamma survey locations and results are presented in Attachment A, Figure 3: C003 Indoor Gamma (FPIC) Survey Map, Attachment B, Table 2A: C003 Indoor Gamma (FPIC) Field Survey Results Summary Table and Table 2B: C003 Indoor Gamma (FPIC) Field Survey Results Summary Table.

HPIC gamma survey was conducted in the Electrical Room of the main building at Property C003 and at all the soil sampling locations throughout the Site. HPIC gamma survey results indicated above-background values at C003-RS001 located in the Electrical Room and at soil sampling locations C001-SS001 and C002-SS002. HPIC gamma survey results were more than 2x above background values at soil sampling locations C002-TRENCH, C003-SS001, C003-SS002 and C003-SS003. HPIC gamma survey results did not indicate above-background readings at soil sampling locations C002-SS001 and C002-SS003.

Refer to Chat 1 for background radiological survey readings. HPIC gamma survey locations and results are presented in Attachment A, Figure 4B: C003 Indoor Radon/Thoron (RAD7) and Gamma (HPIC, SAM-940 & Ludlum-2241) Survey Map, Figure 5: Outdoor Radon/Thoron and Gamma Survey Map, and Attachment B, Table 6: Gamma (HPIC) Field Survey Results Summary Table.

SAM-940 gamma survey was conducted inside C003 to ascertain the presence of radionuclides at a radon/thoron (RAD7) survey location, C003-AA011 (near a waterfall display), which was identified with above-background concentrations of thoron. Based upon the SAM-940 survey results, radionuclides including, K-40, Ra-226 and Th-232 were identified at CRU Spectra 122 and CRU Spectra 125, northeast of C003-A011. In addition, Th-232 was identified at CRU Spectra 121 and CRU Spectra 124, south of C003-A011. SAM-940 gamma survey was not conducted inside any other on-site building. On October 23, 2015, during the post-mitigation radon sampling event, RST 3 observed that the waterfall display which indicated elevated thoron levels and presence of radionuclides had been removed from the showroom. No additional screening was performed at the location.

Outdoor SAM-940 gamma survey indicated the presence of Ra-226 at CRU Spectra 110; and Ra-226 and K-40 were detected at CRU Spectra 120. All the jarred soil samples collected on-site

from Properties C002 and C003 were screened with SAM-940 for the presence of radionuclides. The screening results (CRU Spectra 111 through 115, CRU Spectra 117 and 118) did not indicate the presence of any radionuclides except for CRU Spectra 116 which indicated the presence of Ra-226.

Refer to Chat 1 for background radiological survey readings. SAM-940 survey locations and results are presented in Attachment A, Figure 4B: C003 Indoor Radon/Thoron (RAD7) and Gamma (HPIC, SAM-940 & Ludlum-2241) Survey Map, Figure 5: Outdoor Radon/Thoron and Gamma Survey Map, and Attachment B, Table 7: Gamma (SAM-940) Field Survey Results Summary Table.

Radon/thoron (RAD7) surveys were conducted inside the office and storage trailers at Property C002, in the main building at Property C003, and at all the on-site soil sampling locations. Due to statistical uncertainty based on test duration, Run test results are preferred over Sniff test results; however, Sniff test results were considered at locations where Run tests were not conducted. Radon/thoron survey results were normal inside the office and storage trailers at Property C002. Radon and/or thoron concentrations were above background values in nine of the 13 locations surveyed in the main building at Property C003.

Refer to Chat 1 for background radiological survey readings. Radon/thoron (RAD7) survey locations and results are presented in Attachment A, Figure 4A: C002 Indoor Radon/Thoron (RAD7) Survey Map, Figure 4B: C003 Indoor Radon/Thoron (RAD7) and Gamma (HPIC, SAM-940 & Ludlum-2241) Survey Map, Attachment B, Table 3: Indoor Radon/Thoron (RAD7) Field Survey Results Summary Table, Table 5: Outdoor Radon/Thoron (RAD7) Field Survey Results Summary Table, and Appendix 1: Radon/Thoron Field Survey Data Sheets.

9.0 Analytical Results Summary

Radon sampling was conducted in Building B36 at Property C001, in the office and storage trailers at Property C002, and in the main building, Warehouse-1 and Warehouse-2 at Property C003. Validated analytical results were compared with EPA Site-Specific Action Level (SSAL) of 4.0 pCi/L. Validated analytical results did not indicate radon concentration above the EPA SSAL in any living spaces sampled at Properties C001, C002, and Warehouse-1 in Property C003. Analytical results were above EPA SSAL in 11 of the 13 samples, including one duplicate, collected from the main building at Property C003, with concentrations ranging from 0.6 to 19.5 pCi/L. Validated analytical results were above EPA SSAL in two of the four samples collected in Warehouse-2 at Property C003, with concentration ranging from 2.6 to 5.2 pCi/L. It is noteworthy that the two samples with exceedance of radon in Warehouse-2 were collected from the southeast corner of the warehouse. Following the installation of a radon mitigation system in the main building of Property C003, a post-remedial radon sampling event was conducted. Validated analytical results indicated that radon concentrations were below the EPA SSAL throughout the living spaces in the main building of Property C003.

Refer to Attachment A, Figure 2A: C001 Radon Analytical Results and Gamma Survey Map, Figure 2B: C002 Radon and Wipe Analytical Results and Gamma Survey Map, Figure 2C: C003 Pre-Remedial Radon and Wipe Analytical Results Map, Figure 2D: C003 Post-Remedial Radon Analytical Results Map, Attachment B, Table 1A: Validated Pre-Remedial Radon Analytical

Results Summary Table, Table 1B: Validated Post-Remedial Radon Analytical Results Summary Table, and Attachment E: Data Validation Memo - Radon Analytical Results.

All the soil and aqueous samples collected during this event were analyzed for radiological parameters and TAL metals, including mercury. The validated analytical results for radioisotopes were compared with the respective EPA SSALs. The validated analytical results for TAL metals and mercury were compared with the EPA Removal Management Levels (RML).

Based upon the validated analytical results, Ra-226 was detected above the EPA SSAL of 2.52 pCi/g in one of the four soil samples, C001-SS001-0012-01 (3.43 J pCi/g) and its field duplicate, C001-SS001-0012-02 (3.64 J pCi/g), both collected from Property C001. It is suspected that the high gamma readings observed at G-1 (20,000 – 22,000 cpm), soil sampling location C001-SS001, may have been due to leaching from the bagged contaminated soils staged on Property C002 at location C002-TRENCH. Ra-226 was detected above the SSAL in two of the four soil samples, C002-SS003-2448-01 (9.84 J pCi/g) and C002-TRENCH-0036-01 (10.4 J pCi/g), collected from Property C002. In addition, Ra-226 was detected above the EPA SSAL in all four soil samples, C003-SS001-2448-01 (10.3 J pCi/g), C003-SS001-2448-02 (11.3 J pCi/g), C003-SS002-0024-01 (129 J pCi/g), and C003-SS003-2448-01 (15.1 J pCi/g), collected from Property C003. No radioisotope was detected above the EPA SSAL in soil samples collected from the background location at Property C004. Although no SSAL was provided by EPA for the aqueous samples, based on the validated analytical results, radioisotope concentrations were generally, not detected.

At the request of the EPA OSC, the validated analytical results of nine soil samples collected by SAT during the November 2013 site investigation were compared against the EPA SSAL. It is noteworthy that the laboratory analyses of SAT's soil samples, specifically for Ra-226, was not performed by 21-days ingrowth method. However, with the exception of the background soil sample collected from S07, Ra-226 was detected at concentrations above the EPA SSAL in the remaining eight soils samples collected by SAT during the November 2013 sampling event. Specifically, S08 (24-36) which was collected by SAT at an assumed background location near the northeast corner of the Property C003, indicated Ra-226 concentration of 3.44 pCi/g, which exceeds the SSAL of 2.52 pCi/g.

Based upon the validated analytical results, the concentration of TAL metals were below the respective EPA RMLs except for lead [510 milligrams per kilogram (mg/kg)] which exceeded the EPA RML of 400 mg/kg in C002-SS003-2448-01.

Refer to Attachment A, Figure 6: Soil Analytical Results Map (Radium Only), Attachment B, Table 8A: Validated Soil Analytical Results Summary Table - Radioisotopes, Table 8B: Validated Soil Analytical Results Summary Table - TAL Metals and Mercury, Table 9: Validated SAT Soil Analytical Results Summary Table - Radioisotopes, Attachment F: Data Validation Memo - Soil Analytical Results (Radioisotopes), and Attachment G: Data Validation Memo - Soil Analytical Results (TAL Metals and Mercury).

Based upon the analytical results of wipe samples for the selected counting durations, the MDA for 100 cm^2 was determined as 0.80 dpm and 29.50 dpm, respectively for alpha and beta particle counts. These levels are below 100 dpm and 1,000 dpm, respectively for alpha and beta counts as outlined in 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 counts. Alpha and beta counts for all the wipe samples were at the natural background level conservatively estimated by counting a blank wipe.

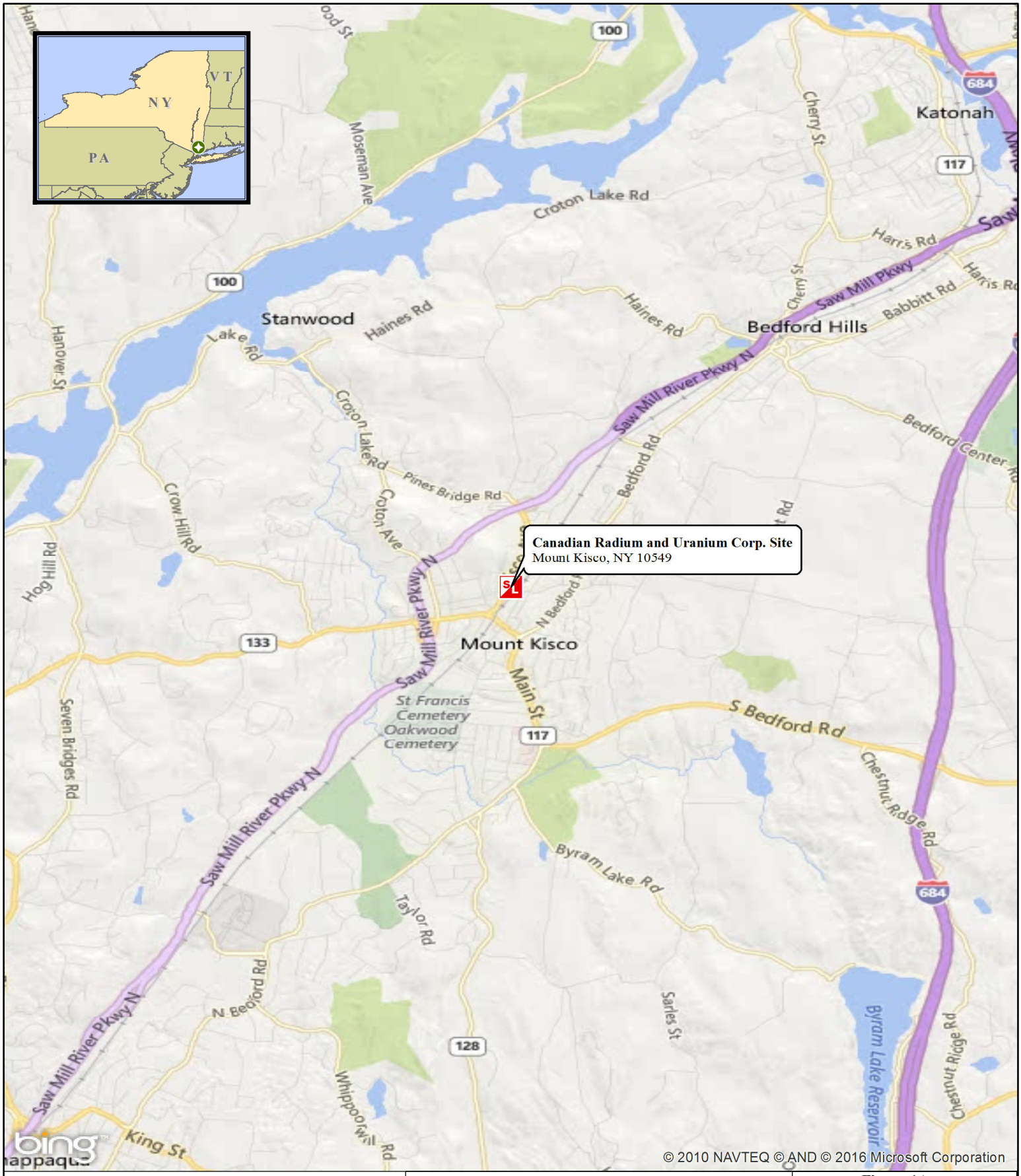
Refer to Attachment A, Figure 2A: C001 Radon and Wipe Analytical Results and Gamma Survey Map, Figure 2B: C002 Radon and Wipe Analytical Results and Gamma Survey Map, Figure 2C: C003 Pre-Remedial Radon and Wipe Analytical Results Map, Attachment B, Table 10: Wipe Analytical Results Summary Table and Attachment H: Wipe QA/QC Form and Ludlum 3030 Calibration Sheet.

Report prepared by: _____ 8/25/2016
Bernard Nwosu Date
RST 3 Site Project Manager

Report reviewed by: _____ 8/25/2016
Timothy Benton Date
RST 3 Operations Leader

ATTACHMENT A

Figure 1A: Site Location Map
Figure 1B: Site Overview Map
Figure 2A: C001 Radon and Wipe Analytical Results and Gamma Survey Map
Figure 2B: C002 Radon and Wipe Analytical Results and Gamma Survey Map
Figure 2C: C003 Pre-Remedial Radon and Wipe Analytical Results Map
Figure 2D: C003 Post-Remedial Radon Analytical Results Map
Figure 3: C003 Indoor Gamma (FPIC) Survey Map
Figure 4A: C002 Indoor Radon/Thoron (RAD7) Survey Map
Figure 4B: C003 Indoor Radon/Thoron (RAD7) and Gamma (HPIC, SAM-940 & Ludlum-2241) Survey Map
Figure 5: Outdoor Radon/Thoron and Gamma Survey Map
Figure 6: Soil Analytical Results Map (Radium Only)



Legend

Site Location

N

0 0.3 0.6 1.2 1.8 2.4 Miles

Weston Solutions, Inc.
Federal East Division

In Association With
Scientific and Environmental Associates, Inc.,
Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC, On-Site Environmental,
Inc.and Sovereign Consulting, Inc

Figure 1A:
Site Location Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

DATE MODIFIED: 6/29/2016

GIS ANALYST:	T. Benton
EPA OSC:	D. Gaughan
RST SPM:	B. Nwosu
FILENAME:	140725_SITELOCATIONMAP.MXD

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Legend

Site Boundary

Site Location

Weston Solutions, Inc.
Federal East Division

In Association With
Scientific and Environmental Associates, Inc.,
Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC, On-Site Environmental,
Inc.and Sovereign Consulting, Inc

DATE MODIFIED: 6/29/2016

Attachment 1B:
Site Overview Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

GIS ANALYST:	T. BENTON
EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023

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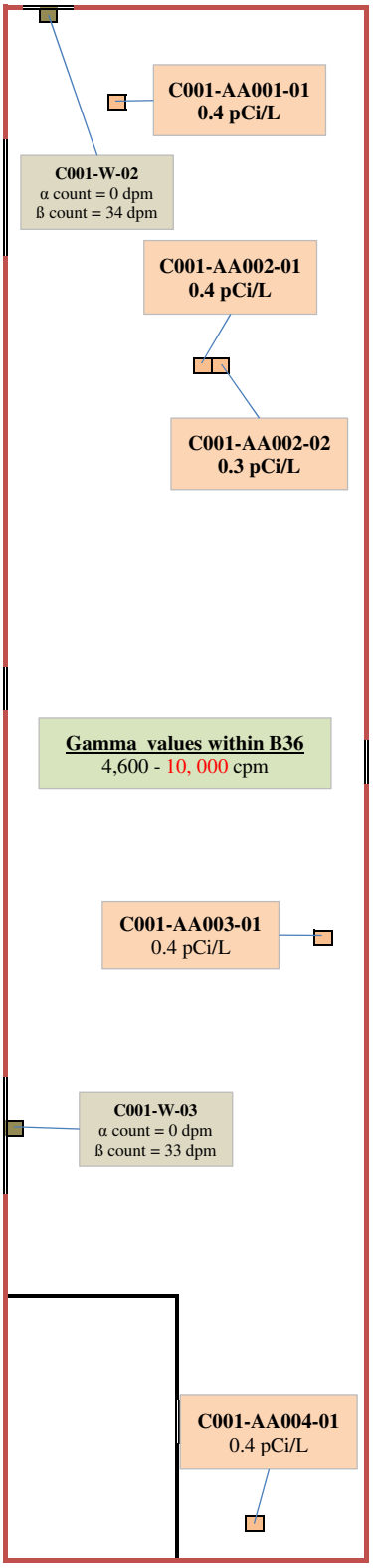

Metropolitan Transit Authority (MTA) Building B36
Milepost 136, 103 Kisco Avenue (Property C001)

Legend

- Radon Sample Location
- Wipe Sample Location
- Exteriror Wall
- Interior Wall
- Entry door

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In Association with Scientific and Environmental Associates, Inc, Environmental Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc, and Soveriegn Consulting, Inc.

Figure 2A:
C001 Radon and Wipe Analytical Results and Gamma Survey Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

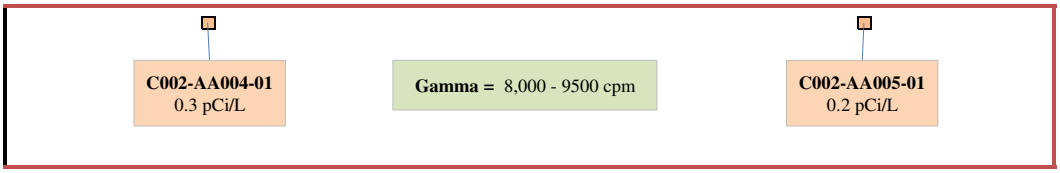
EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023

Notes:

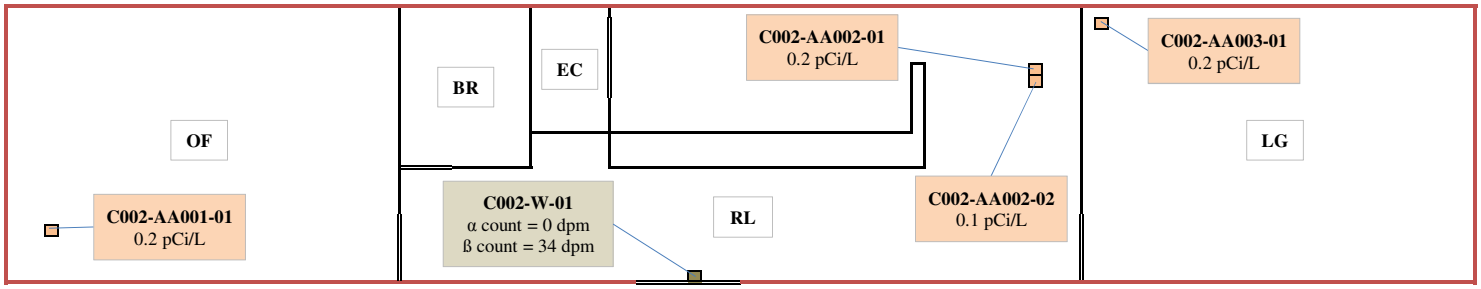
Gamma survey was conducted using Ludlum-2241. Background gamma values = 7,500 - 9,500 counts per minute (cpm). **Value in red exceeds background gamma values.**

The U.S. Environmental Protection Agency's (EPA) Site-Specific Action Level (SSAL) for radon = 4.0 picocuries per liter (pCi/L).

Wipe samples were analyzed for Alpha (α) and Beta (ß) counts. The Minimum Detectable Activity (MDA) for α and ß count were below the SSAL of 100 dpm for α counts and 1,000 dpm for ß counts.



Storage Trailer



Office Trailer

103 Kisco Avenue, Mount Kisco (Property C002)

Legend

- Radon Sample Location
- Wipe Sample Location
- Exteriror Wall
- Interior Wall
- Entry door

OF - Office
BR - Bathroom
EC - Electrical Closet
RL - Reception/Lobby
LG - Lounge

Weston Solutions, Inc.

In Association with Scientific and Environmental Associates, Inc, Environmental Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc, and Soveriegn Consulting, Inc.

Figure 2B:
C002 Radon and Wipe Analytical Results and Gamma Survey Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

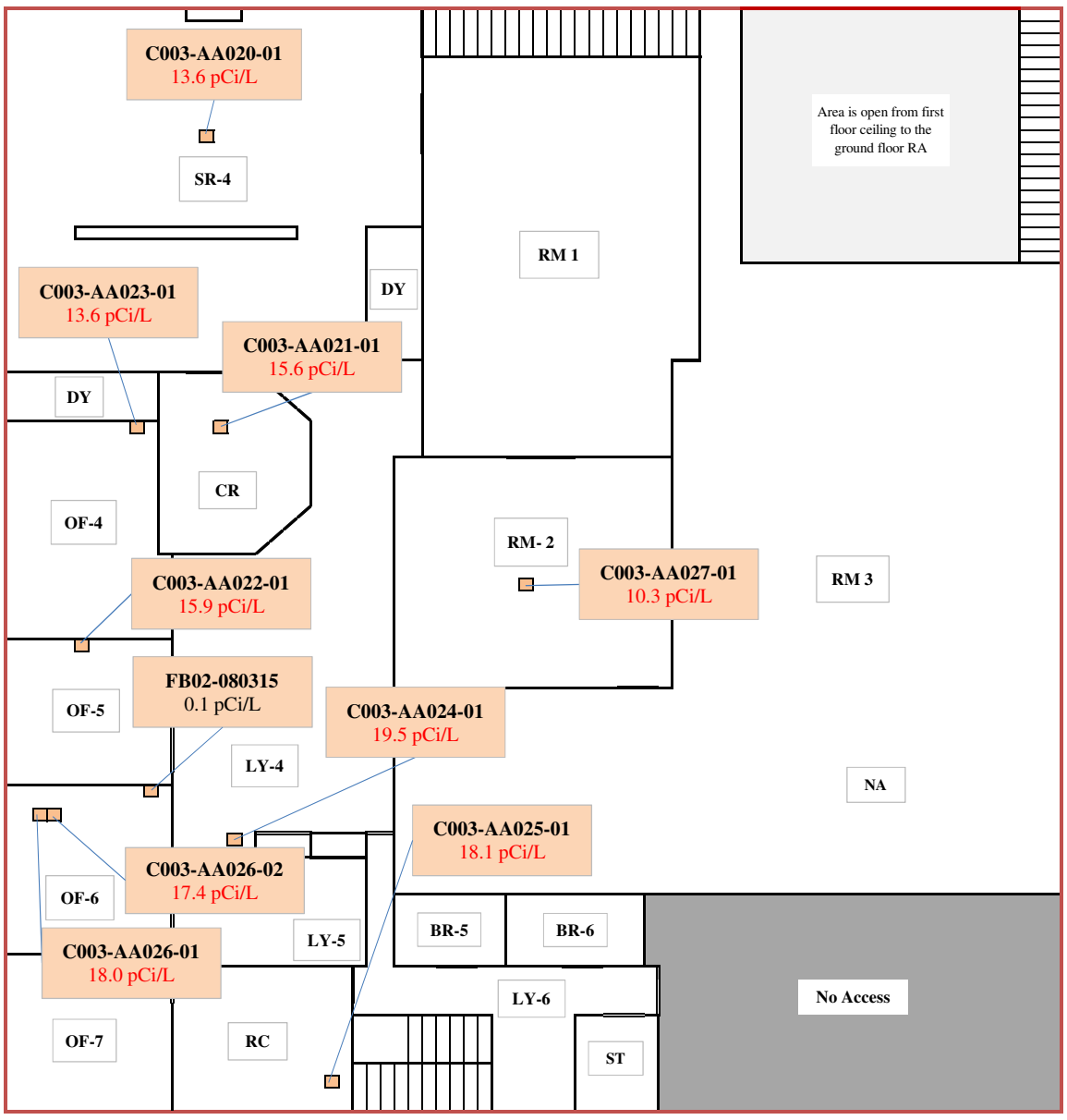
Notes:

Gamma survey was conducted using Ludlum-2241. Background gamma values = 7,500 - 9,500 counts per minute (cpm).

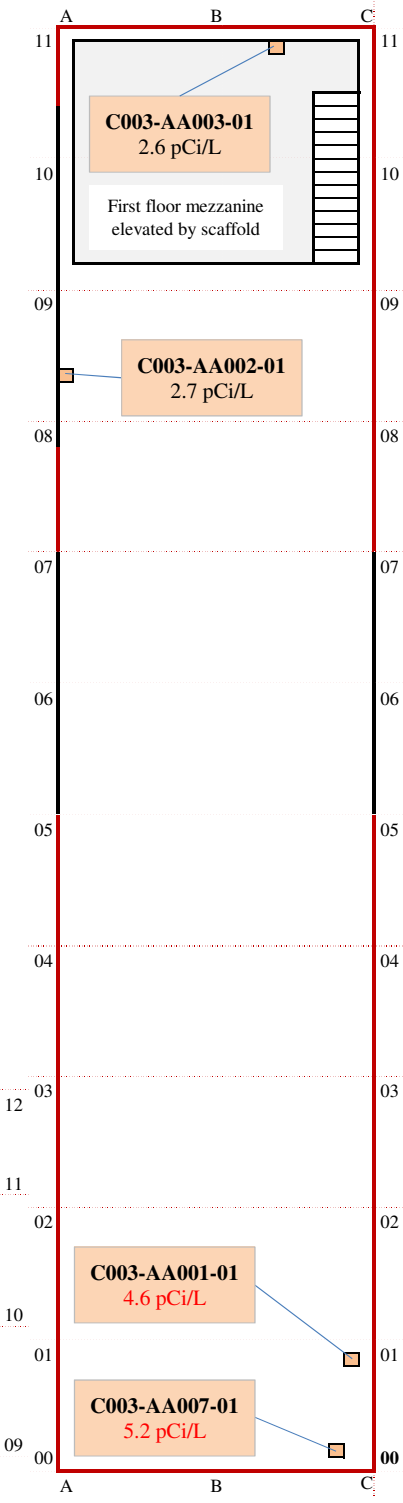
The U.S. Environmental Protection Agency's (EPA) Site-Specific Action Level (SSAL) for radon = 4.0 picocuries per liter (pCi/L).

Wipe samples were analyzed for Alpha (α) and Beta (ß) counts. The Minimum Detectable Activity (MDA) for α and ß count were below the SSAL of 100 dpm for α counts and 1,000 dpm for ß counts.

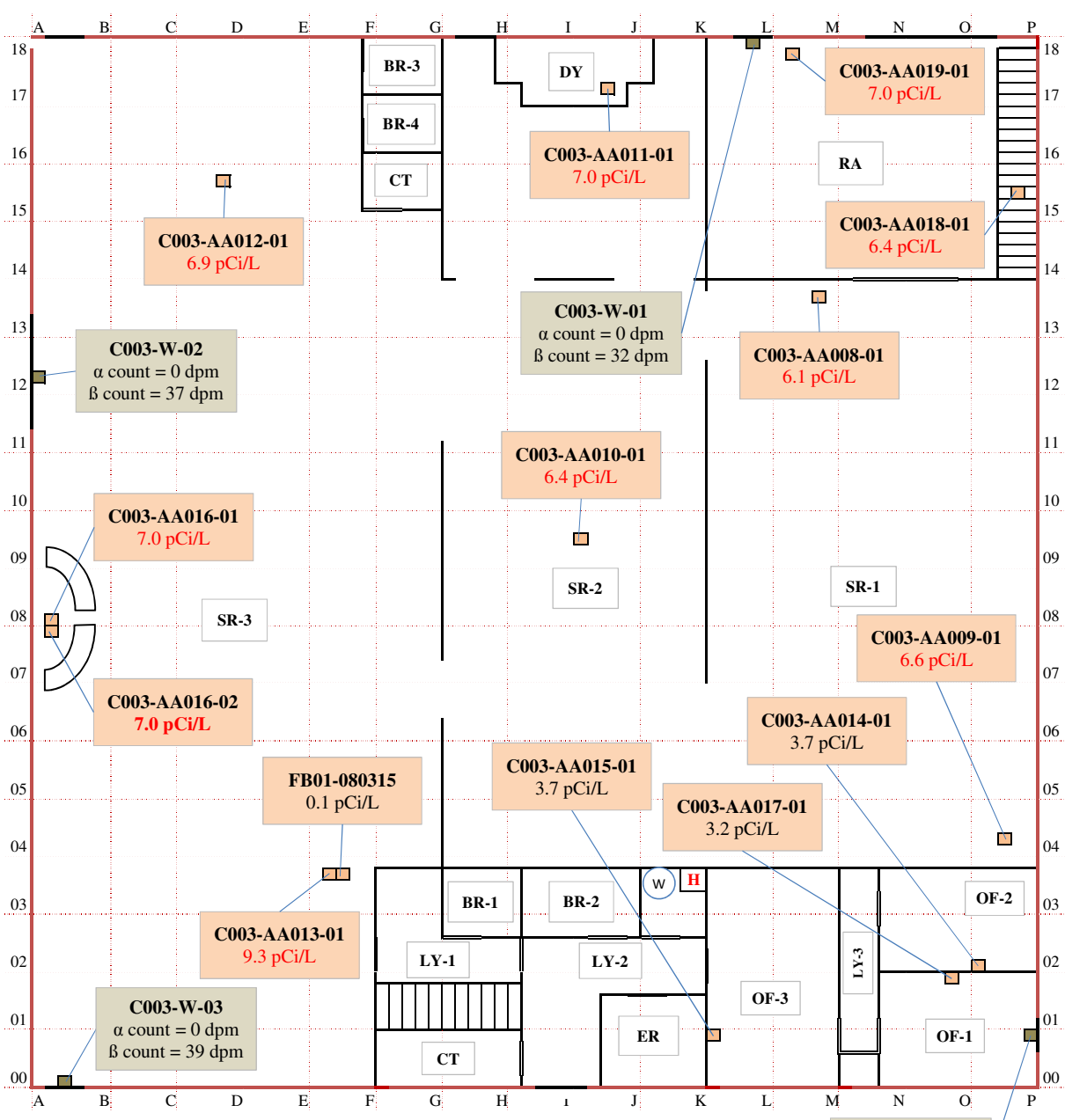
EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023



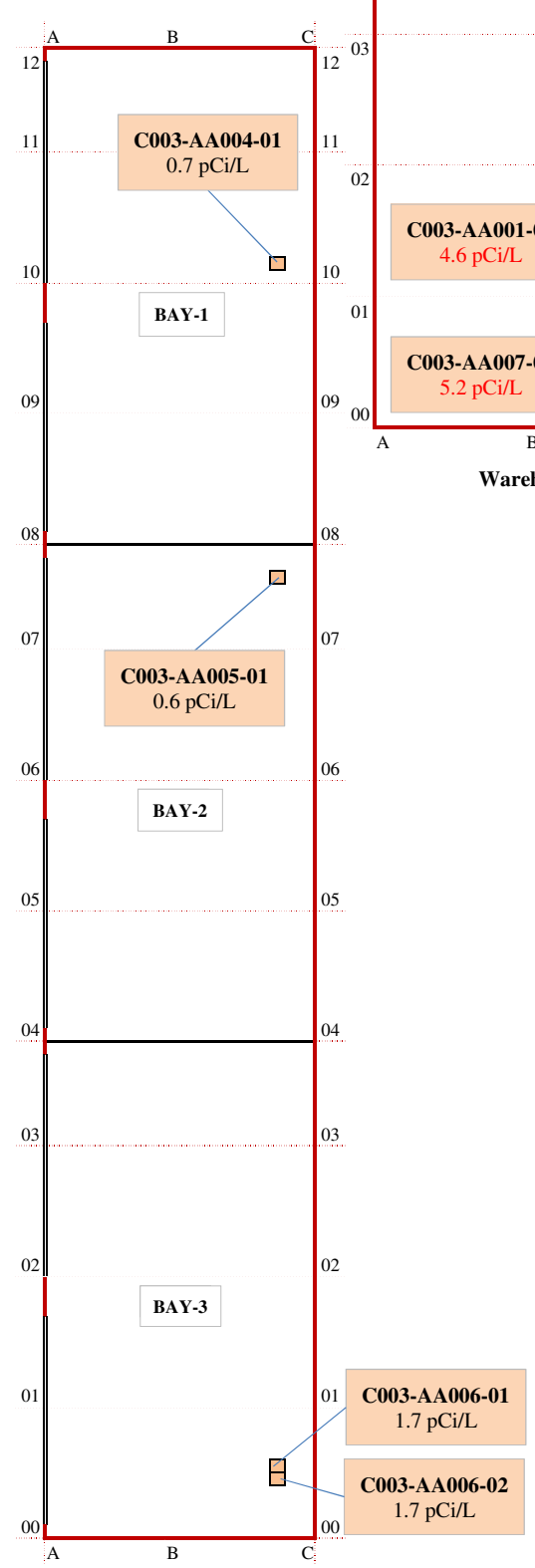
Second Floor
105 Kisco Avenue Mount Kisco (Property C003)



Warehouse-2



Ground Floor
105 Kisco Avenue Mount Kisco (Property C003)



Warehouse-1

Legend

- Radon Sample Location
- Wipe Sample Location
- Exteriror Wall
- Interior Wall
- Entry door
- H - HVAC Unit
- W - Water Heater
- Stairs
- SR - Showroom
- OF - Office
- RM - Room
- LY - Lobby
- ST - Storage
- DY - Display
- CT - Closet
- RA - Receiving Area
- BR - Bathroom
- ER - Electrical Room
- CR - Conference Room
- RC - Reception

Weston Solutions, Inc.

In Association with Scientific and Environmental Associates, Inc, Environmental Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc, and Soveriegn Consulting, Inc.

Figure 2C:
C003 Pre-Remedial Radon and Wipe Analytical Results Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

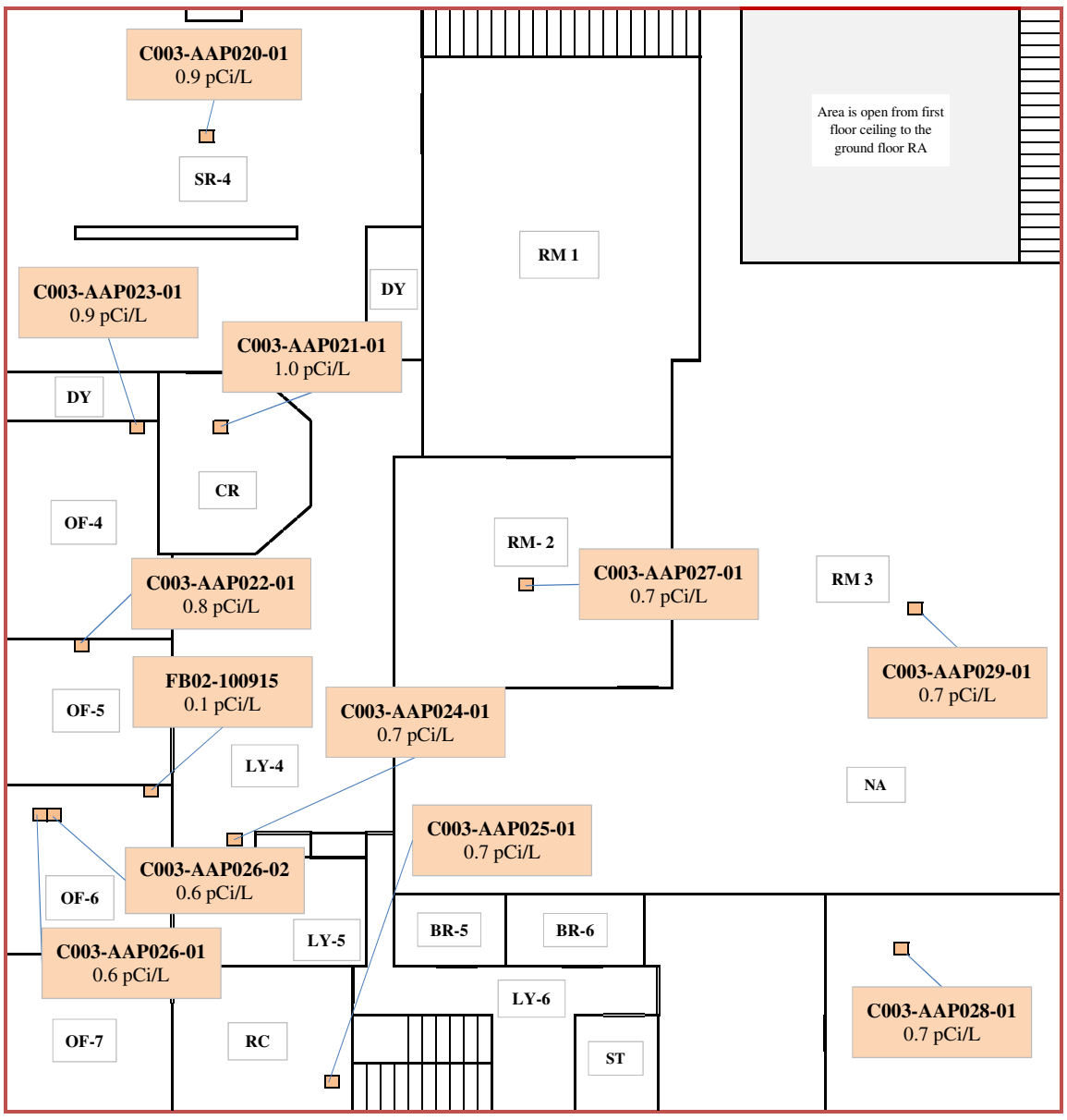
U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023

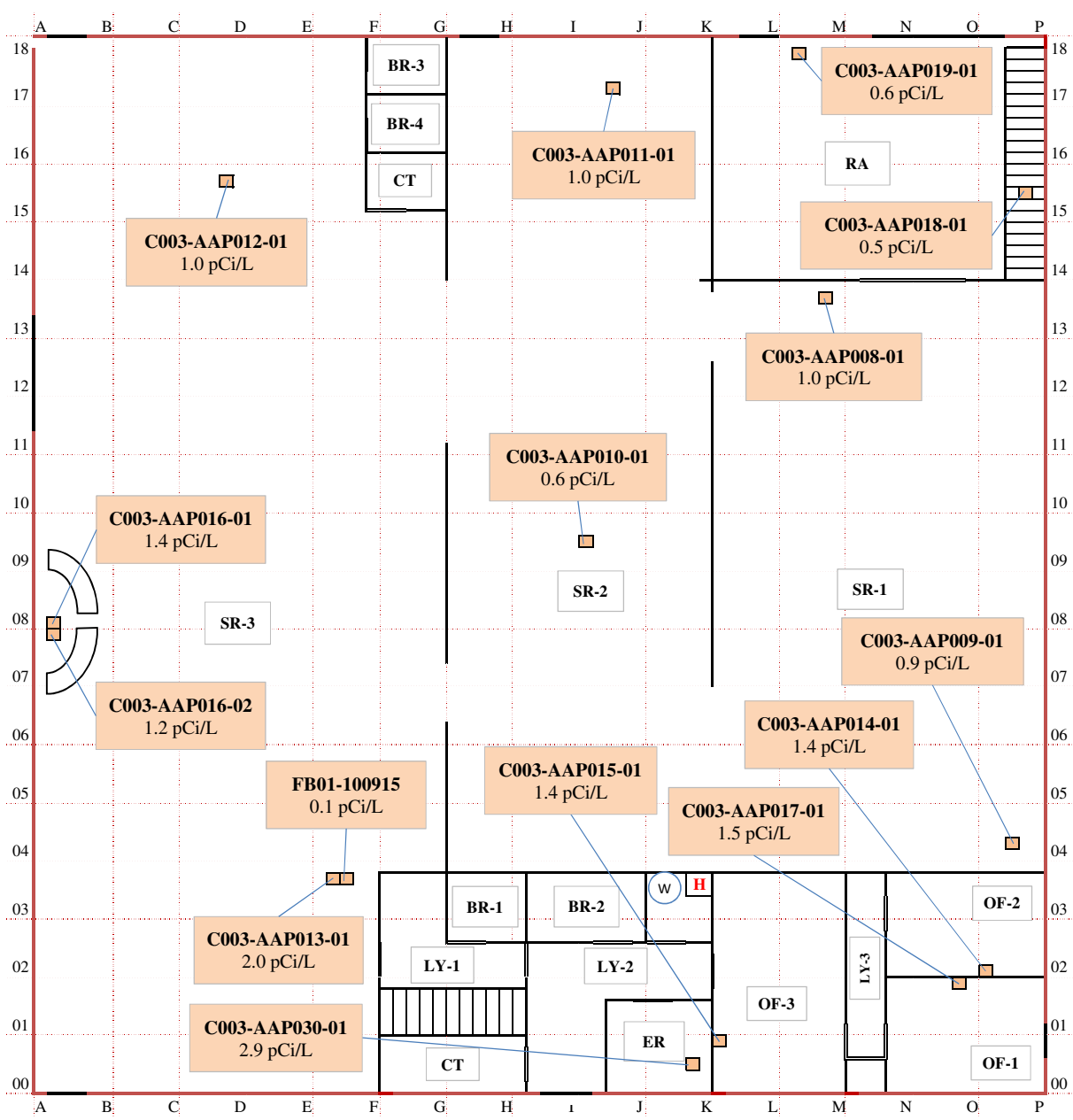
Notes:

The U.S. Environmental Protection Agency's (EPA) Site-Specific Action Level (SSAL) for radon = 4.0 picocuries per liter (pCi/L).
Values in red equal or exceed the EPA SSAL for radon.

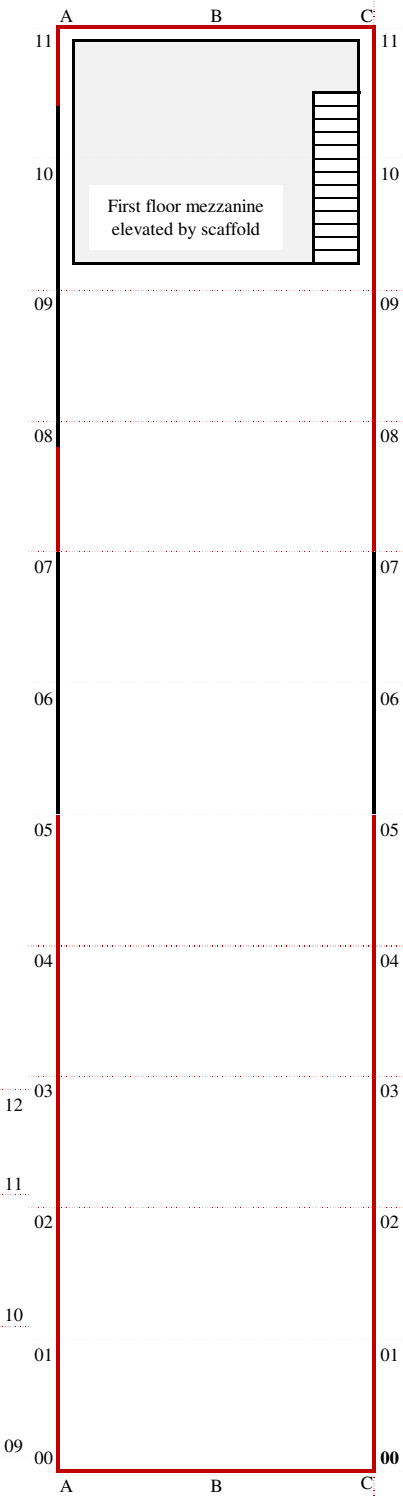
Wipe samples were analyzed for Alpha (α) and Beta (ß) counts. The Minimum Detectable Activity (MDA) for α and ß count were below the SSAL of 100 dpm for α counts and 1,000 dpm for ß counts.



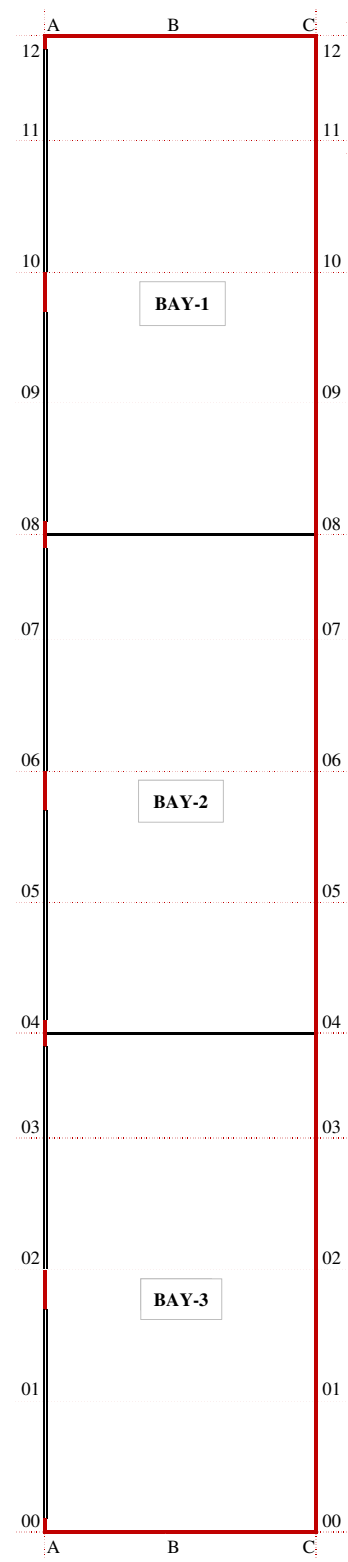
Second Floor
105 Kisco Avenue Mount Kisco (Property C003)



Ground Floor
105 Kisco Avenue Mount Kisco (Property C003)



Warehouse-2



Warehouse-1

Legend

- Radon Sample Location
- Exteriror Wall
- Interior Wall
- Entry door
- H - HVAC Unit
- W - Water Heater
- Stairs

SR - Showroom
OF - Office
RM - Room
LY - Lobby
RC - Reception
ST - Storage

DY - Display
CT - Closet
RA - Receiving Area
BR - Bathroom
ER - Electrical Room
CR - Conference Room

Weston Solutions, Inc.

In Association with Scientific and Environmental Associates, Inc, Environmental Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc, and Soveriegn Consulting, Inc.

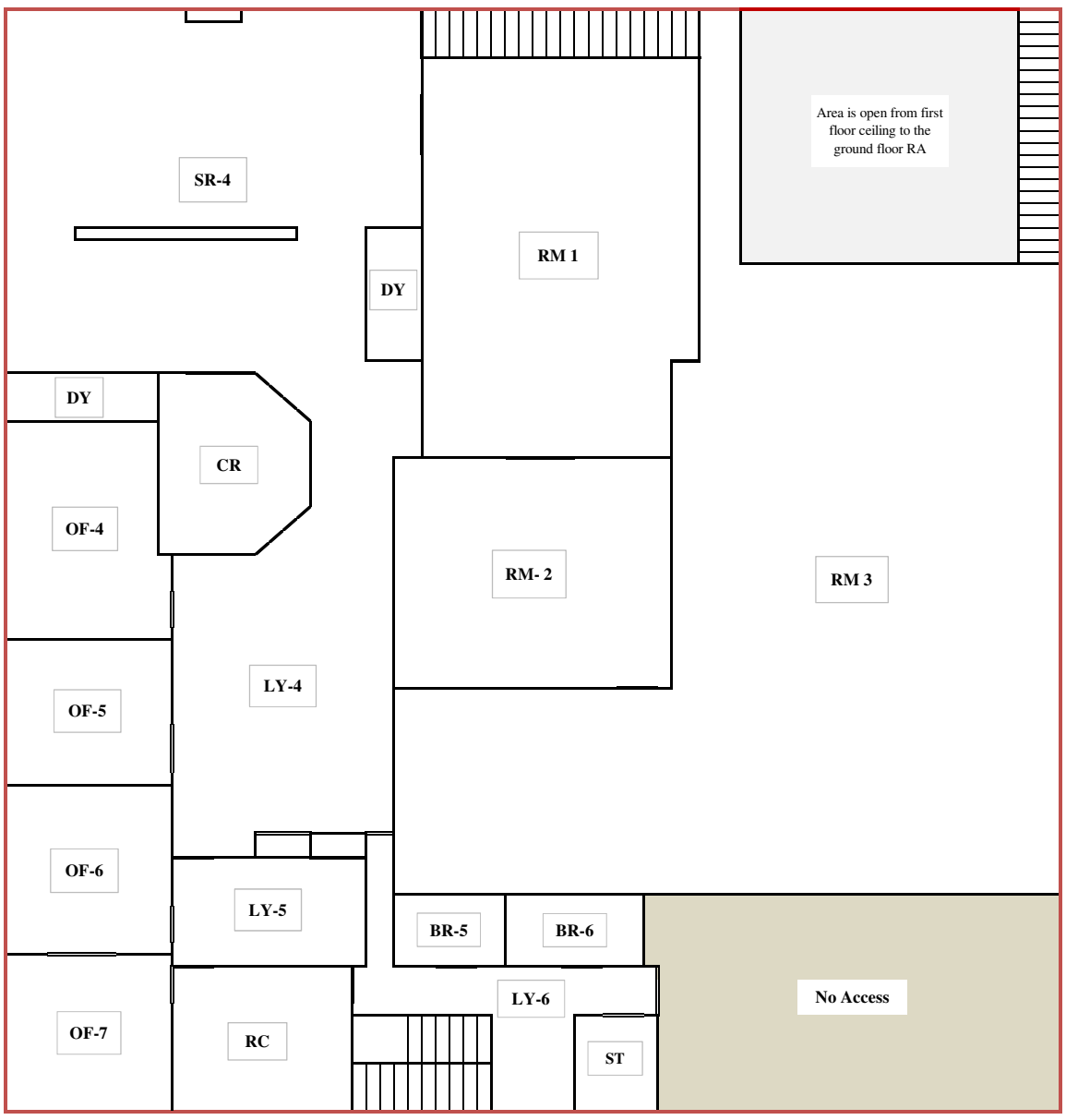
Figure 2D:
C003 Post-Remedial Radon Analytical Results Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

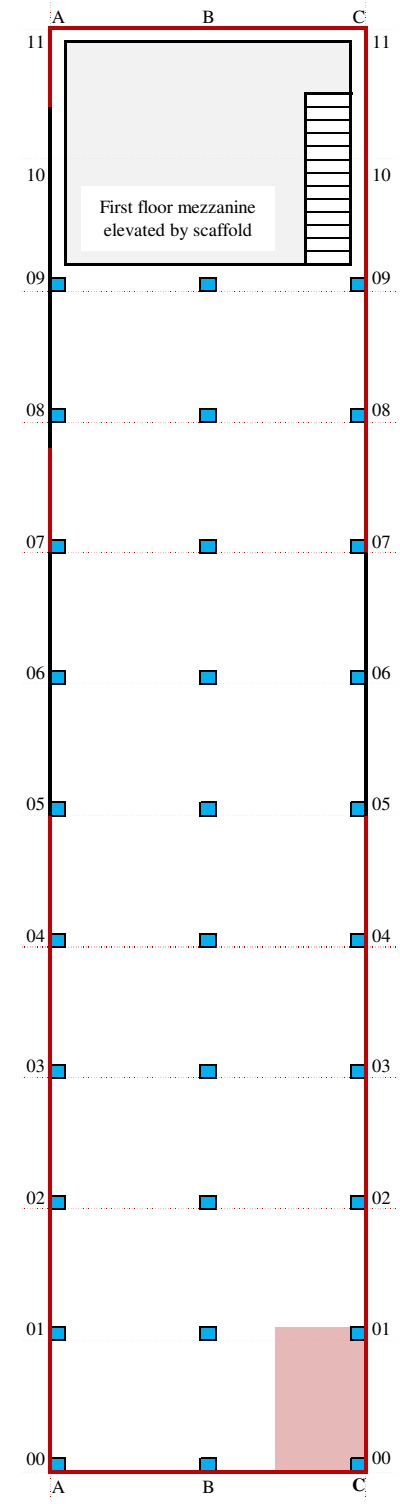
U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

Notes:
The U.S. Environmental Protection Agency's (EPA)
Site-Specific Action Level (SSAL) for radon = 4.0 picocuries per liter (pCi/L).

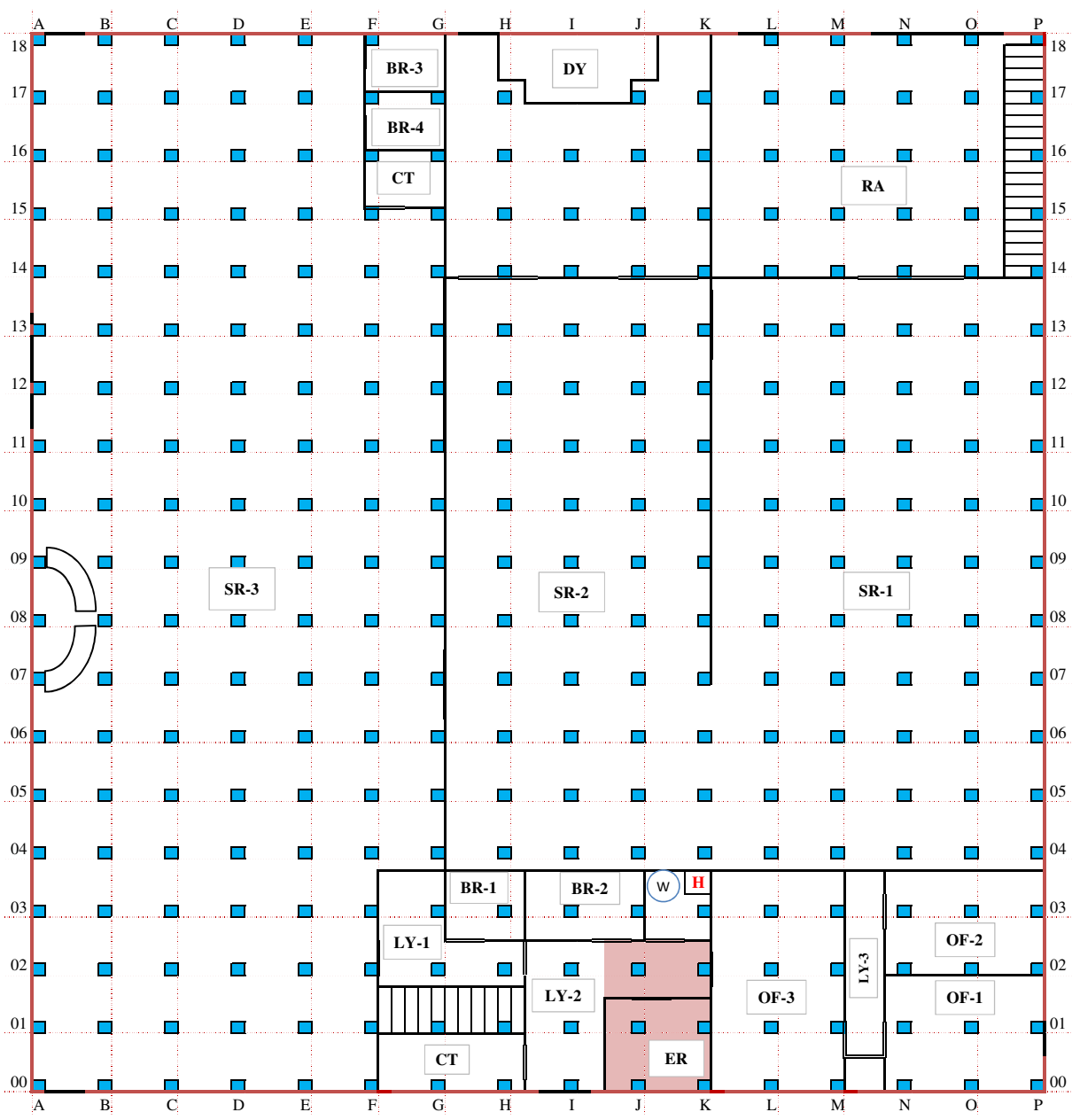
EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023



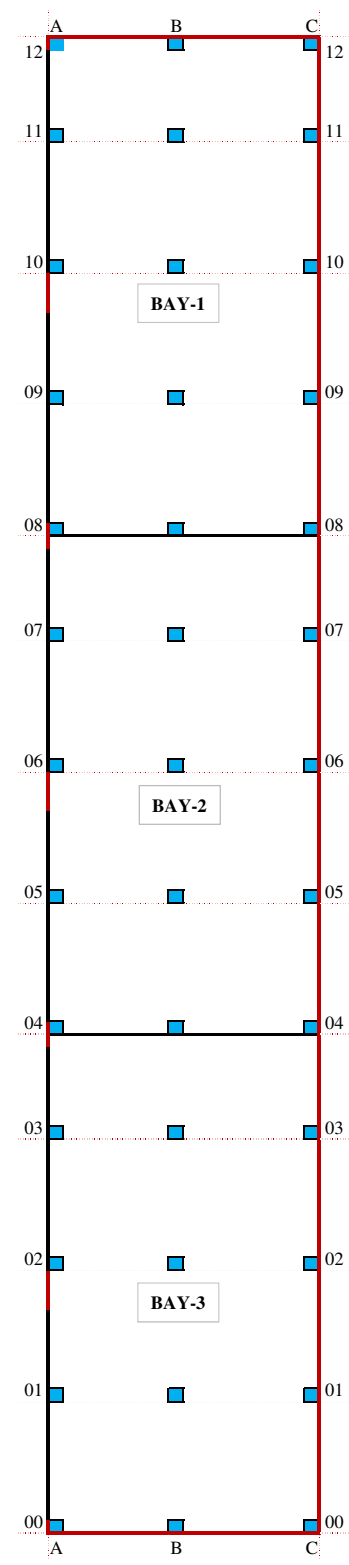
First Floor
105 Kisco Avenue, Mount Kisco (Property C003)



Warehouse-2



Ground Floor
105 Kisco Avenue, Mount Kisco (Property C003)



Warehouse-1

Legend

- Gamma Survey Location
- Exteriror Wall
- Interior Wall
- Entry door
- H - HVAC Unit
- W - Water Heater
- Stairs
- Locations with gamma values significantly higher than background gamma values.

SR - Showroom
OF - Office
RM - Room
LY - Lobby
RC - Reception
ST - Storage
DY - Display
CT - Closet
RA - Receiving Area
BR - Bathroom
ER - Electrical Room
CR - Conference Room

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Figure 3:
C003 Indoor Gamma (FPIC) Survey Map

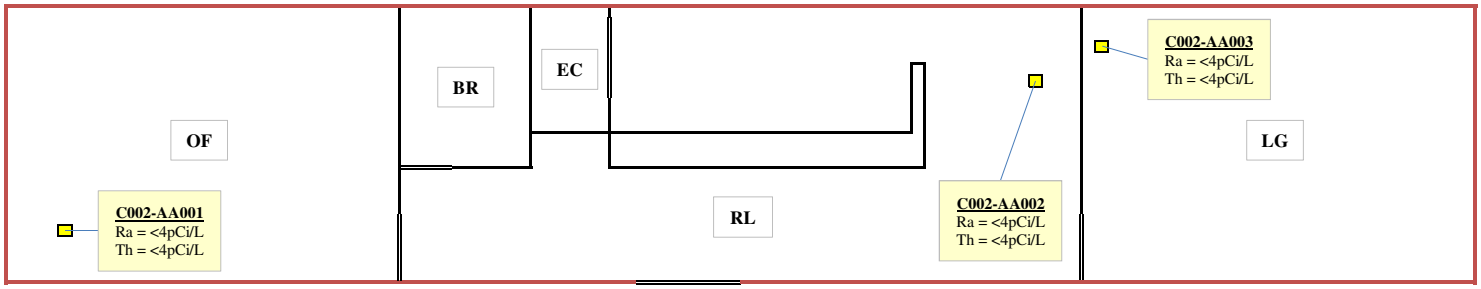
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

Notes:
Gamma survey was conducted using Fluke Pressurized Ionization Chamber (FPIC)
Background gamma values: Waist = 9 - 12 microroentgen per hour (µR/hr), Contact = 11 - 13 µR/hr
Main building ground floor gamma survey grid = 5-feet by 5-feet, Warehouse 1 & 2 gamma survey grid = 10-feet by 10-feet.

EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023

Storage Trailer



Office Trailer

103 Kisco Avenue, Mount Kisco (Property C002)

Legend

- Radon/Thoron Survey Location
- Exteriror Wall
- Interior Wall
- Entry door

OF - Office
BR - Bathroom
EC - Electrical Closet
RL - Reception/Lobby
LG - Lounge

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Figure 4A:
C002 Indoor Radon/Thoron (RAD7) Survey Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

Notes:
Radon/thoron survey was conducted using Durridge RAD 7 radon/thoron detectors.
Background radon (Ra)/thoron (Th) values = 0.0 - <4 picocuries per liter (pCi/L).

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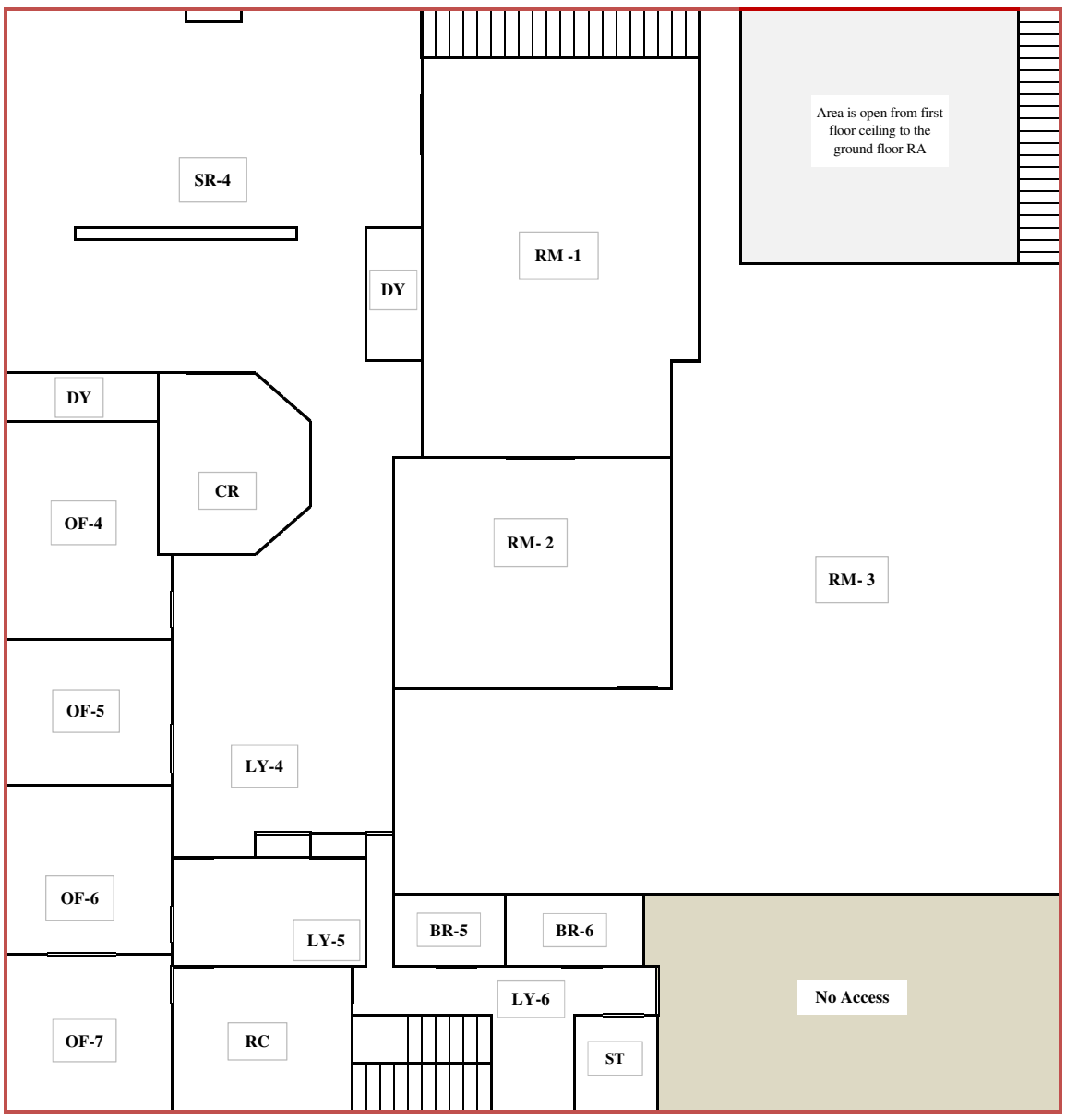
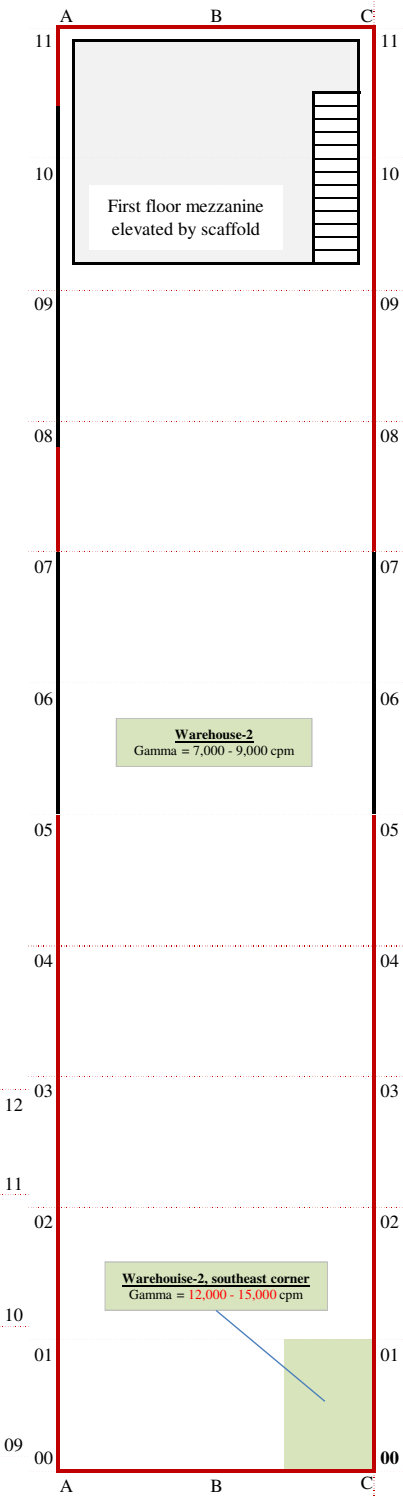
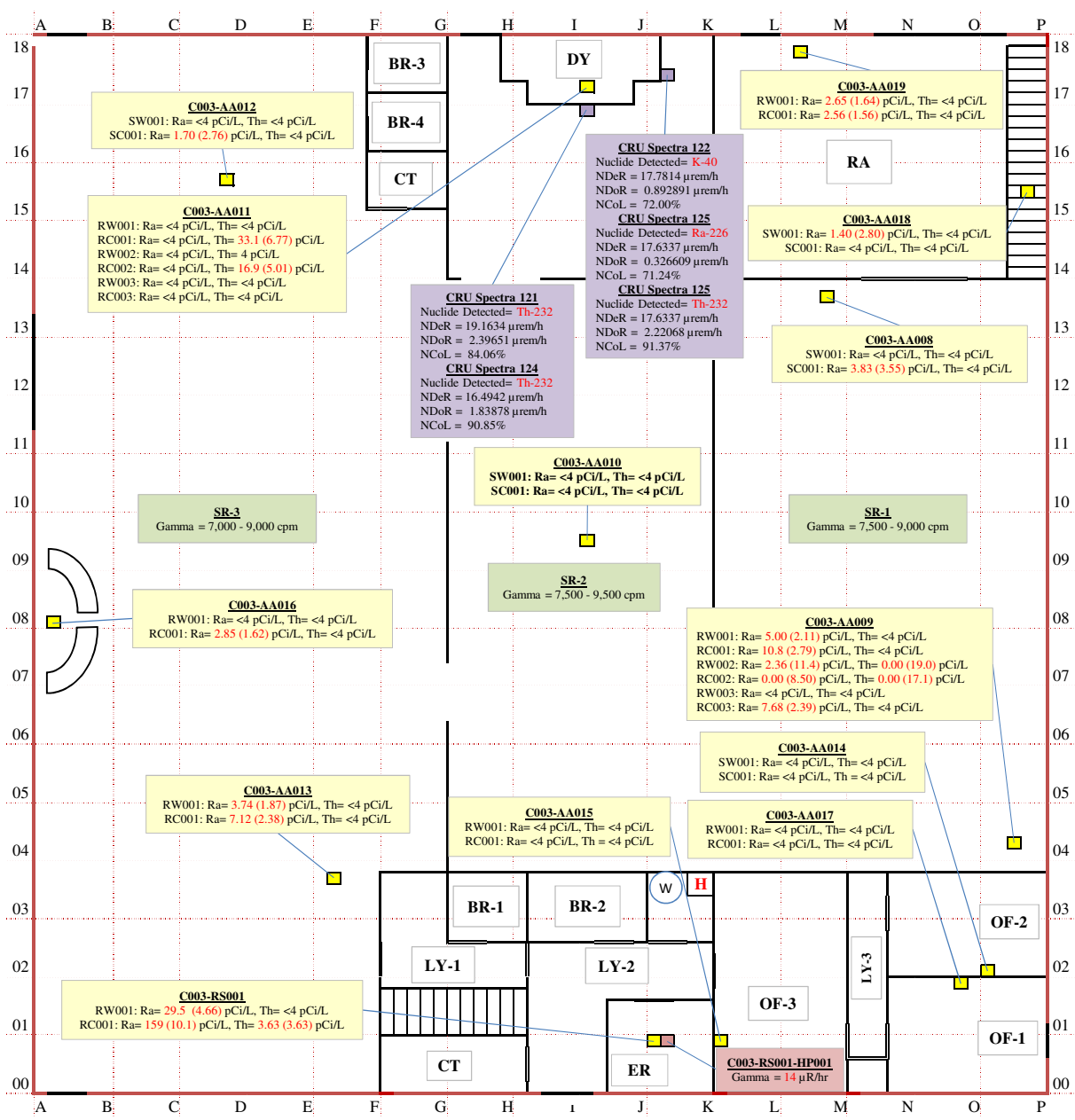
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023



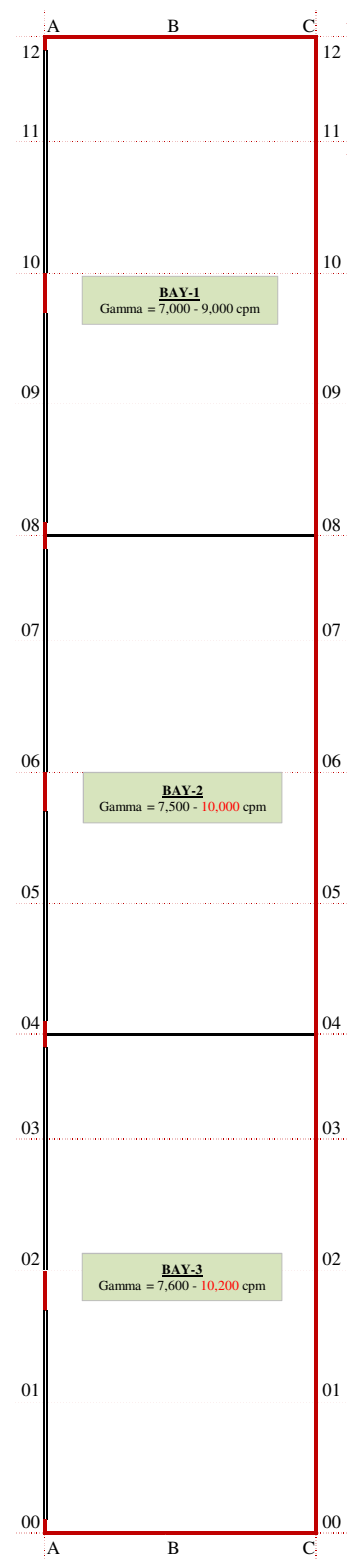
First Floor
105 Kisco Avenue Mount Kisco (Property C003)



Warehouse-2



Ground Floor
105 Kisco Avenue Mount Kisco (Property C003)



Warehouse-1

Legend

- Ra/Th Survey Location
- Exteriror Wall
- Interior Wall
- Entry door
- H - HVAC Unit
- W - Water Heater
- Stairs
- Ludlum-2241 Survey Area
- SAM-940 Survey location
- HPIC Survey location

DY	- Display	SR	- Showroom		
CT	- Closet	OF	- Office		
RA	- Receiving Area	RM	- Room		
BR	- Bathroom	LY	- Lobby		
ER	- Electrical Room	RC	- Reception		
CR	- Conference Room	ST	- Storage		

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Figure 4B:
C003 Indoor Radon/Thoron (RAD7) and Gamma (HPIC, SAM-940 & Ludlum-2241) Survey Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
Removal Support Team 3
CONTRACT # EP-S2-14-01

EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	30400.031.007.3023

Notes:

- Radon/thoron survey was conducted using Durridge RAD 7 radon/thoron detectors.
- Background radon (Ra)/thoron (Th) values = 0.0 - <4 picocuries per liter (pCi/L).
- Radon/thoron concentration = [result value + upper limit of standard deviation (in parenthesis)].
- Gamma survey was conducted using High Pressure Ion Chamber (HPIC), SAM-940 & Ludlum-2241.
- HPIC mean background gamma values = 8.90 microroentgen per hour (µR/hr).
- SAM-940 background gamma value= 0.0 micro röntgen equivalent man per hour (µrem/h).
- NDeR= Nuclide Detection Rate, NDoR= Nuclide Dose Rate, NCoL= Confidence Level.
- Ludlum-2241 background gamma values = 7,500 - 9,500 counts per minute (cpm).

Text in red indicate radionuclide detection. Values in red exceed background values collected with RAD7, Ludlum-2241, and HPIC.

SCALE

1:766

LEGEND

- SAM - 940/HPIC Location
- Ludlum - 2241 Location
- RAD7/HPIC Location

Gamma Radiation Screening (SAT) Results (Counts per Minute)

- Less Than 7,500
- 7,501 - 15,000
- 15,001 - 30,000
- 30,001 - 73,637

Note(s):

1.) µR/HR = Microroentgen per hour.
2.) pCi/L = Picocuries per liter.
3.) µREM/HR = Microroentgen equivalent man per hour.
4.) CPM = Counts per minute.
5.) For Ludlum 2241 gamma survey results:
G = Gamma survey location ID.
6.) For Rad7 Radon/Thoron survey results:
SW = Sniff at waist level.
SC = Sniff at contact.
RW = Run at waist level.
RC = Run at contact.
If run mode screening was conducted at a particular location those survey readings are depicted. If no run mode screening was conducted the sniff mode survey readings are depcited.
7.) For HPIC gamma survey results:
HP = HPIC survey location ID.
8.) For SAM-940 gamma survey results:
CRU SPECTRA = SAM-940 gamma survey location ID.
9.) Values highlighted red exceed the background survey values.

Figure 5: Outdoor Radon/Thoron and Gamma Survey Map

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

In Association With
Scientific and Environmental Associates, Inc., Environmental Compliance Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc., and Sovereign Consulting, Inc.

GIS ANALYST:	T. BENTON
EPA OSC:	D. GAUGHAN
RST SPM:	B. NWOSU
PROJECT #:	00070023
FIGURE:	5
REVISION	1
DATE MODIFIED	6/29/2016

WESTON SOLUTIONS

\\FSED2DATA1\GISDATA\RST_3\00060053\MXD\150929_HPICRAD7.MXD

SCALE

1:1,581

LEGEND

- RST 3 Sample Location
- SAT Sample Location
- Site Boundary

Notes:
1.) All results presented in picocuries per gram (pCi/g).
2.) Depth of sample collection is presented in parenthesis next to sample number.
3.) ND = Non-Detect
4.) * Represents a Radium-226 value that was analyzed via the 21-day ingrowth method.
5.) Values highlighted red indicate an exceedance of the EPA Site-Specific Action Level for the specific radionuclide.
6.) EPA Site-Specific Action Levels: Ra-226 = 2.52 pCi/g; Ra-228 = 16.2 pCi/g.

Figure 6: Soil Analytical Results Map (Radium Only)

Canadian Radium and Uranium Corp. Site
Mount Kisco, New York

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

Weston Solutions, Inc.

In Association With
Scientific and Environmental Associates, Inc., Environmental Compliance Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc., and Sovereign Consulting, Inc.

GIS ANALYST:	T. BENTON
EPA OSC:	D. GAUGHAN
RST 3 SPM:	B. NWOSU
FILENAME:	150929_SampleLocationMap.mxd
FIGURE	6
REVISION	2
DATE MODIFIED	8/22/2016

ATTACHMENT B

Table 1A: Validated Pre-Remedial Radon Analytical Results Summary Table
Table 1B: Validated Post-Remedial Radon Analytical Results Summary Table
Table 2A: C003 Indoor Gamma (FPIC) Field Survey Results Summary Table
Table 2B: C003 Indoor Gamma (FPIC) Field Survey Results Summary Table
Table 3: Indoor Radon/Thoron (RAD7) Field Survey Results Summary Table
Table 4: Gamma (Ludlum-2241) Field Survey Results Summary Table
Table 5: Outdoor Radon/Thoron (RAD7) Field Survey Results Summary Table
Table 6: Gamma (HPIC) Field Survey Results Summary Table
Table 7: Gamma (SAM-940) Field Survey Results Summary Table
Table 8A: Validated Soil Analytical Results Summary Table - Radioisotopes
Table 8B: Validated Soil Analytical Results Summary Table - TAL Metals and Mercury
Table 9: Validated SAT Soil Analytical Results Summary Table - Radioisotopes
Table 10: Wipe Analytical Results Summary Table

Table 1A
Validated Pre-Remedial Radon Analytical Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

RST 3 Sample No.	Canister Serial No.	Results (pCi/L)	Start		Stop		Sample Type	Floor	Location
			Date	Time	Date	Time			
Property C001 - Milepost 136, 103 Kisco Avenue									
C001-AA001-01	2432014	0.4	8/4/2015	8:30	8/7/2015	8:51	Field Sample	Ground	MTA substation B36, 9' East, 5' South from NW corner on PEI sampling stand
C001-AA002-01	2430438	0.4	8/4/2015	8:33	8/7/2015	8:53	Field Sample	Ground	MTA substation B36, 10.2' East, 31.5' South from NW corner on PEI sampling stand
C001-AA002-02	2430473	0.3	8/4/2015	8:34	8/7/2015	8:53	Field Duplicate	Ground	MTA substation B36, 10.7' East, 31.5' South from NW corner on PEI sampling stand
C001-AA003-01	2430461	0.4	8/4/2015	8:37	8/7/2015	8:55	Field Sample	Ground	MTA substation B36, 32.2' North, 2.5' West from SE corner on PEI sampling stand
C001-AA004-01	2430552	0.4	8/4/2015	8:40	8/7/2015	8:57	Field Sample	Ground	MTA substation B36, 3' North, 7.5' West from SE corner on PEI sampling stand
Property C002 - 103 Kisco Avenue									
C002-AA001-01	2430436	0.2	8/4/2015	9:40	8/7/2015	10:16	Field Sample	Ground	Office Trailer, 2' East, 3' North from SW corner on top of a file cabinet
C002-AA002-01	2430444	0.2	8/4/2015	9:44	8/7/2015	10:18	Field Sample	Ground	Office Trailer, 6.2' West, 2.5' North from SE corner on PEI sampling stand
C002-AA002-02	2430432	0.1	8/4/2015	9:45	8/7/2015	10:18	Field Duplicate	Ground	Office Trailer, 6.8' West, 2.5' North from SE corner on PEI sampling stand
C002-AA003-01	2430423	0.2	8/4/2015	9:50	8/7/2015	10:20	Field Sample	Ground	Office Trailer, 2.3' West, 10' North from SE corner on top of a refrigerator
C002-AA004-01	2430411	0.3	8/4/2015	10:10	8/7/2015	10:23	Field Sample	Ground	Storage Trailer, 8' South from NW corner on a shelf
C002-AA005-01	2431993	0.2	8/4/2015	10:13	8/7/2015	10:24	Field Sample	Ground	Storage Trailer, 33' South from NW corner on a table
Property C003 - 105 Kisco Avenue									
C003-AA001-01	2389955	**4.6**	8/3/2015	11:21	8/6/2015	13:35	Field Sample	Ground	Warehouse #2, 9' North from SE corner on steel shelf
C003-AA002-01	2389951	2.7	8/3/2015	11:25	8/6/2015	13:37	Field Sample	Ground	Warehouse #2, 38' South from NW corner on wood shelf
C003-AA003-01	2390000	2.6	8/3/2015	11:26	8/6/2015	13:39	Field Sample	Mezzanine	Warehouse #2, 8.7' West from NE corner on wood shelf
C003-AA004-01	2389967	0.7	8/3/2015	11:46	8/6/2015	13:42	Field Sample	Ground	Warehouse #1, Bay-1, 20.6' North, 3.8'West from SE corner on PEI sampling stand
C003-AA005-01	2389963	0.6	8/3/2015	11:50	8/6/2015	13:45	Field Sample	Ground	Warehouse #1, Bay-2, 5.4' West from NW corner on metal shelf
C003-AA006-01	2430420	1.7	8/3/2015	11:56	8/6/2015	13:47	Field Sample	Ground	Warehouse #1, Bay-3, 16.9' North from SE corner on PEI sampling stand
C003-AA006-02	2422844	1.7	8/3/2015	12:02	8/6/2015	13:47	Field Duplicate	Ground	Warehouse #1, Bay-3,17.4' North from SE corner on PEI sampling stand
C003-AA007-01	2389974	**5.2**	8/3/2015	12:05	8/6/2015	13:40	Field Sample	Ground	Warehouse #2, 3.5' North from SE corner on a metal step ladder
C003-AA008-01	2390002	**6.1**	8/3/2015	13:16	8/6/2015	13:51	Field Sample	Ground	Main building, Showroom #1, 16.6' West from NE corner on top of a shelf
C003-AA009-01	2430414	**6.6**	8/3/2015	13:20	8/6/2015	13:53	Field Sample	Ground	Main building, Showroom #1, 3.3' North from SE corner on PEI sampling stand

Notes:
pCi/L - picocuries per liter.
RST 3 - Removal Support Team 3.
No. - Number.
U.S. Environmental Protection Agency's (EPA) Site-specific Action Level (SSAL) for radon is 4.0 pCi/L.
Values in red equal or exceed the EPA SSAL for radon.
MTA - Metropolitan Transportation Authority.
PEI - Precision Environmental, Inc.

Table 1A
Validated Pre-Remedial Radon Analytical Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

RST 3 Sample No.	Canister Serial No.	Results (pCi/L)	Start		Stop		Sample Type	Floor	Location
			Date	Time	Date	Time			
Property C003 - 105 Kisco Avenue (Concluded)									
C003-AA010-01	2430406	**6.4**	8/3/2015	13:27	8/6/2015	13:55	Field Sample	Ground	Main building, Showroom #2, Middle of the room on a PEI sampling stand
C003-AA011-01	2432038	**7.0**	8/3/2015	13:30	8/6/2015	13:58	Field Sample	Ground	Main building, Showroom #2, 9.3' West from NE corner on a stone water fall
C003-AA012-01	2431995	**6.9**	8/3/2015	13:36	8/6/2015	14:00	Field Sample	Ground	Main building, Showroom #3, 10.8' West, 9.4' South from NE corner on PEI sampling stand
C003-AA013-01	2430445	**9.3**	8/3/2015	13:41	8/6/2015	14:04	Field Sample	Ground	Main building, Showroom #3, 18.3' North, 4.4' West from SE corner of a shelf
C003-AA014-01	2430405	3.7	8/3/2015	14:03	8/6/2015	14:08	Field Sample	Ground	Main building, Office #2, 1' North, 4' West from SE corner on a shelf
C003-AA015-01	2430421	3.7	8/3/2015	14:06	8/6/2015	14:09	Field Sample	Ground	Main building, Office #3, 5' North, 1.7' East from SW corner on a file cabinet
C003-AA016-01	2430477	**7.0**	8/3/2015	14:17	8/6/2015	14:31	Field Sample	Ground	Main building, Showroom #3, 45'North, 6' East from SW corner on PEI sampling stand
C003-AA016-02	2430090	**7.0**	8/3/2015	14:18	8/6/2015	14:31	Field Duplicate	Ground	Main building, Showroom #3, 45.4'North, 6' East from SW corner on PEI sampling stand
C003-AA017-01	2430435	3.2	8/3/2015	14:23	8/6/2015	14:36	Field Sample	Ground	Main building, Office #1, 5.8' West, 1' South from NE corner on a shelf
C003-AA018-01	2430426	**6.4**	8/3/2015	14:37	8/6/2015	14:48	Field Sample	Ground	Main building, Receiving area, 11.7' North, 3' West from SE corner on wood shelf
C003-AA019-01	2430453	**7.0**	8/3/2015	14:44	8/6/2015	14:50	Field Sample	Ground	Main building, Receiving area, 5.3' East, 3.7' South from NW corner on steel shelf
C003-AA020-01	2430416	**13.6**	8/3/2015	15:07	8/6/2015	15:53	Field Sample	Second	Main building, Showroom #4, 13.2' West, 11.8' South from NE corner on PEI sampling stand
C003-AA021-01	2430429	**15.6**	8/3/2015	15:13	8/6/2015	15:34	Field Sample	Second	Main building, Conference room, On top of the class table
C003-AA022-01	2430463	**15.9**	8/3/2015	15:18	8/6/2015	15:36	Field Sample	Second	Main building, Office #5, On top of a countertop middle of North side
C003-AA023-01	2430409	**13.6**	8/3/2015	15:22	8/6/2015	15:38	Field Sample	Second	Main building, Office #4, On top of wood base cabinet on NE corner
C003-AA024-01	2432019	**19.5**	8/3/2015	15:27	8/6/2015	15:39	Field Sample	Second	Main building, Lobby #4, 6' East, 1.8' North from SW corner on a metal file cabinet
C003-AA025-01	2430433	**18.1**	8/3/2015	15:33	8/6/2015	15:41	Field Sample	Second	Main building, Reception area, 3' North, 1.3' West from SE corner on countertop
C003-AA026-01	2430450	**18.0**	8/3/2015	15:37	8/6/2015	15:43	Field Sample	Second	Main building, Office #6, 6.2' West, 5.5' South from NE corner on a desk
C003-AA026-02	2430425	**17.4**	8/3/2015	15:38	8/6/2015	15:43	Field Duplicate	Second	Main building, Office #6, 6.6' West, 5.5' South from NE corner on a desk
C003-AA027-01	2430462	**10.3**	8/3/2015	15:45	8/6/2015	15:47	Field Sample	Second	Main building, Room #2, On top of a cabinet in the middle of the room
FB01-080315	2430410	0.1	8/3/2015	13:57	8/6/2015	14:05	Field Blank	Ground	Main building, Showroom #3, 18.3' North, 3.8' West from SE corner of a shelf
FB02-080315	2430448	0.1	8/3/2015	15:41	8/6/2015	15:44	Field Blank	Second	Main building, Office #6, 2.1' West, 0.9' South from NE corner on a shelf
Office Balank	2430408	0.1	8/3/2015	15:41	8/6/2015	15:44	Field Blank	Second	2nd floor PEI office

Notes:
pCi/L - picocuries per liter.
RST 3 - Removal Support Team 3.
No. - Number.
U.S. Environmental Protection Agency's (EPA) Site-specific Action Level (SSAL) for radon is 4.0 pCi/L.
Values in red equal or exceed the EPA SSAL for radon.
MTA - Metropolitan Transportation Authority.
PEI - Precision Environmental, Inc.

Table 1B
Validated Post-Remedial Radon Analytical Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
October 2015

RST 3 Sample No.	Canister Serial No.	Results (pCi/L)	Start		Stop		Sample Type	Floor	Location
			Date	Time	Date	Time			
Property C003 - 105 Kisco Avenue									
C003-AAP008-01	2430479	1.0	10/23/2015	11:08	10/26/2015	11:24	Field Sample	Ground	Main Building, Showroom #1, 16.6' West from NE corner on top of a shelf
C003-AAP009-01	2430415	0.9	10/23/2015	11:12	10/26/2015	11:26	Field Sample	Ground	Main Building, Showroom #1, 4' from North wall and 2' from South wall on PEI stand
C003-AAP010-01	2430417	0.6	10/23/2015	11:15	10/26/2015	11:29	Field Sample	Ground	Main Building, Showroom #2, Middle of the room on a PEI stand
C003-AAP011-01	2430547	1.0	10/23/2015	11:30	10/26/2015	11:31	Field Sample	Ground	Main Building, Showroom #2, 9.3' West from NE corner on a PEI stand
C003-AAP012-01	2430403	1.0	10/23/2015	11:33	10/26/2015	11:38	Field Sample	Ground	Main Building, Showroom #3, 10.8' West, 14' South from NE corner on PEI stand
C003-AAP013-01	2430464	2.0	10/23/2015	11:36	10/26/2015	11:40	Field Sample	Ground	Main Building, Showroom #3, 18.3' North, 4.4' West from SE corner of a shelf
C003-AAP014-01	2430466	1.4	10/23/2015	10:56	10/26/2015	10:58	Field Sample	Ground	Main Building, Office #2, 1' North, 4' West from SE corner on a shelf
C003-AAP015-01	2430455	1.4	10/23/2015	10:50	10/26/2015	10:55	Field Sample	Ground	Main Building, Office #3, 5' North, 1.7' East from SW corner on a file cabinet
C003-AAP016-01	2430456	1.4	10/23/2015	11:40	10/26/2015	11:42	Field Sample	Ground	Main Building, Showroom #3, 50' from North wall and 2' from East wall on shelf
C003-AAP016-02	2430454	1.2	10/23/2015	11:40	10/26/2015	11:43	Field Duplicate	Ground	Main Building, Showroom #3, 45.4'North, 6' East from SW corner on PEI stand
C003-AAP017-01	2430530	1.5	10/23/2015	10:53	10/26/2015	10:57	Field Sample	Ground	Main Building, Office #1, 5.8' West, 1' South from NE corner on a shelf
C003-AAP018-01	2430446	0.5	10/23/2015	11:02	10/26/2015	11:23	Field Sample	Ground	Main Building, Receiving Area, 11.7' North, 3' West from SE corner on wood shelf
C003-AAP019-01	2430431	0.6	10/23/2015	10:59	10/26/2015	11:22	Field Sample	Ground	Main Building, Receiving Area, 5.3' East, 3.7' South from NW corner on steel shelf
C003-AAP020-01	2430516	0.9	10/23/2015	10:09	10/26/2015	10:42	Field Sample	Second	Main Building, Showroom #4, 13.2' West, 11.8' South from NE corner on PEI stand
C003-AAP021-01	2430443	1.0	10/23/2015	10:03	10/26/2015	10:40	Field Sample	Second	Main Building, Conference Room, On top of the glass table
C003-AAP022-01	2430442	0.8	10/23/2015	9:56	10/26/2015	10:37	Field Sample	Second	Main Building, Office #5, On top of a countertop middle of North side
C003-AAP023-01	2430474	0.9	10/23/2015	9:58	10/26/2015	10:39	Field Sample	Second	Main Building, Office #4, On top of wood base cabinet on NE corner
C003-AAP024-01	2430517	0.7	10/23/2015	9:51	10/26/2015	10:35	Field Sample	Second	Main Building, Lobby #4, 6' East, 1.8' North from SW corner on a metal file cabinet
C003-AAP025-01	2430452	0.7	10/23/2015	9:36	10/26/2015	10:31	Field Sample	Second	Main Building, Reception Area, 3' North, 1.3' West from SE corner on countertop

Notes:
pCi/L - picocuries per liter.
RST 3 - Removal Support Team 3.
No. - Number.
U.S. Environmental Protection Agency's (EPA) Site-specific Action Level (SSAL) for radon is 4.0 pCi/L.
PEI - Precision Environmental, Inc.

Table 1B
Validated Post-Remedial Radon Analytical Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
October 2015

RST 3 Sample No.	Canister Serial No.	Results (pCi/L)	Start		Stop		Sample Type	Floor	Location
			Date	Time	Date	Time			
Property C003 - 105 Kisco Avenue									
C003-AAP026-01	2432022	0.6	10/23/2015	9:41	10/26/2015	10:33	Field Sample	Second	Main Building, Office #6, 6.2' West, 5.5' South from NE corner on a desk
C003-AAP026-02	2430465	0.6	10/23/2015	9:42	10/26/2015	10:33	Field Duplicate	Second	Main Building, Office #6, 6.6' West, 5.5' South from NE corner on a desk
C003-AAP027-01	2430467	0.7	10/23/2015	10:16	10/26/2015	10:44	Field Sample	Second	Main Building, Room #2, On top of a cabinet in the middle of the room
C003-AAP028-01	2430413	0.7	10/23/2015	10:24	10/26/2015	10:46	Field Sample	Second	Main Building, Architect's Office - Back Room, 9' 7" from North wall and 14' 6" from East wall
C003-AAP029-01	2430531	0.7	10/23/2015	10:39	10/26/2015	10:49	Field Sample	Second	Main Building, Room #3, 22' 4" from South wall and 14' from East wall
C003-AAP030-01	2430451	2.9	10/23/2015	10:45	10/26/2015	10:53	Field Sample	Ground	Main Building, Mechanical/Electrical Room, 2' from South wall and 4' from West wall
FB01-100915	2430525	0.1	10/23/2015	11:37	10/26/2015	11:40	Field Blank	Ground	Main Building, Showroom #3, 18.3' North, 3.8' West from SE corner of a shelf
FB02-100915	2430481	0.1	10/23/2015	9:46	10/26/2015	10:34	Field Blank	Second	Main Building, Office #6, 2.1' West, 0.9' South from NE corner on a shelf

Notes:
pCi/L - picocuries per liter.
.RST 3 - Removal Support Team 3
No. - Number.
U.S. Environmental Protection Agency's (EPA) Site-specific Action Level (SSAL) for radon is 4.0 pCi/L.
PEI - Precision Environmental, Inc.

Table 2A
C003 Indoor Gamma (FPIC) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Property C-003 - 105 Kisco Avenue, Main Building

Rows		Transects A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
18	Waist	5 - 7	8 - 10	9 - 10	9 - 11	10 - 11	9 - 11	NA	NA	NA	NA	7 - 9	9 - 10	7 - 9	8 - 9	11 - 12	7 - 9
	Contact	9 - 11	10 - 12	10 - 12	10 - 12	10 - 12	13 - 15					10 - 12	9 - 11	12 -13	8 - 10	11 - 13	11 - 13
17	Waist	10 - 11	8 - 10	8 - 10	8 - 9	13 - 15	11 - 12	13 - 15	6 - 8	NA	8 - 9	7 - 9	7 - 9	8 - 11	9 - 11	11 - 12	10 - 12
	Contact	10 - 12	8 - 10	13 - 14	10 - 12	14 - 16	10 - 12	10 - 12	6 - 7		13 - 15	9 - 10	8 - 10	11 - 13	11 - 12	9 - 11	10 - 11
16	Waist	7 - 9	10 - 12	7 - 9	10 - 12	12 - 13	6 - 8	8 - 9	10 - 12	11 - 13	9 - 11	4 - 6	5 - 7	11 - 12	7 - 8	9 - 11	6 - 7
	Contact	13 - 15	9 - 11	9 - 11	11 - 12	10- 12	12 - 14	12 - 13	8 - 11	12 - 15	12 -15	10 -12	11 - 12	9 - 11	13 - 14	11 - 12	9 - 11
15	Waist	9 - 11	10 - 12	9 - 11	9 - 10	7 - 8	8 - 9	6 - 8	9 - 11	7 - 9	8 - 9	5 - 6	9 - 10	6 - 7	9 - 10	9 - 10	8 - 9
	Contact	10 - 11	10 - 12	9 - 11	11 - 13	10 - 12	10 - 12	10 - 12	10 - 12	10 - 12	9 - 10	12 - 14	7 - 9	7 - 9	10 - 12	12 - 13	12 - 14
14	Waist	8 - 10	9 - 11	8 - 9	10 - 11	10 - 12	8 - 10	6 - 8	6 - 8	9 - 11	7 - 9	9 - 11	9 - 10	8 - 9	9 - 11	6 - 8	7 - 8
	Contact	10 - 11	12 - 13	12 - 14	15 - 16	13 - 15	10 - 11	9 - 10	8 - 10	6 - 8	10 - 12	9 - 11	9 - 11	8 - 9	9 - 11	7 - 9	9 - 10
13	Waist	8 - 10	8 - 10	8 - 11	8 - 10	12 - 13	8 - 10	10 - 11	8 - 9	9 - 11	10 - 12	9 - 10	9 - 10	6 - 7	7 - 9	9 - 10	10 - 11
	Contact	10 - 12	9 - 11	12 - 13	9 - 10	10 - 12	12 - 14	10 - 12	10 - 12	8 - 10	10 - 12	10 - 11	10 - 12	10 - 13	12 - 13	10 - 13	10 - 11
12	Waist	9 - 10	9 - 10	7 - 9	8 - 9	7 - 9	9 - 10	7 - 9	10 - 11	10 - 11	9 - 11	8 - 10	8 - 10	9 - 10	7 - 9	8 - 10	10 - 11
	Contact	9 - 10	10 - 11	10 - 11	12 - 14	10 - 11	12 - 14	9 - 10	9 - 10	10 - 11	10 - 13	9- 11	10 - 13	8 - 9	14 - 15	10 - 12	8 - 11
11	Waist	10 - 13	10 - 13	9 - 10	8 - 10	10 - 11	8 - 11	8 - 9	8 - 9	7 - 9	8 - 9	7 - 8	7 - 9	8 - 9	9 - 10	7 - 10	9 - 10
	Contact	9 - 11	8 - 11	10 - 12	12 -14	12 - 13	9 - 11	10 - 12	12 - 14	10 - 12	10 - 13	9 - 10	8 - 10	9 - 11	10 - 11	9 - 10	8 - 11
10	Waist	8 - 10	7 - 10	8 - 10	10 - 12	9 - 10	11 - 13	9 - 11	8 - 9	8 - 10	9 - 10	9 - 10	9 - 10	8 - 10	9 - 10	9 - 11	9 - 10
	Contact	9 - 11	8 - 11	8 - 11	7 - 10	10 - 12	9 - 11	10 - 12	13 - 15	13 - 15	9 - 10	9 - 10	11 - 12	10 - 11	11 - 13	10 - 12	9 - 10
09	Waist	7 - 9	9 - 10	9 - 10	8 - 10	8 - 9	10 - 11	8 - 10	7 - 9	10 - 12	8 - 10	7 - 8	8 - 11	9 - 10	9 - 10	6 - 8	10 - 12
	Contact	11 - 13	11 - 12	10 - 12	12 - 14	10 - 11	9 - 11	9 - 11	13 - 14	10 - 11	13 - 14	9 - 11	10 - 13	10 - 11	10 - 12	9 - 10	12 - 13
08	Waist	9 - 11	9 - 10	8 - 9	14 - 15	10 - 12	7 - 8	8 - 10	10 - 11	9 - 10	9 - 10	7 - 8	7 - 9	12 - 14	5 - 7	8 - 10	9 - 11
	Contact	10 - 11	9 - 10	10 - 12	14 - 15	13 - 14	10 - 12	11 - 13	9 - 11	9 - 11	12 - 14	10 - 12	9 - 10	11 - 13	7 - 8	9 - 11	10 - 11
07	Waist	8 - 10	7 - 9	10 - 11	8 - 9	7 - 8	8 - 9	7 - 9	9 - 11	9 - 11	9 - 11	8 - 9	6 - 8	9 - 10	10 - 11	9 - 11	10 - 11
	Contact	13 - 15	10 - 12	12 - 15	10 - 12	13 - 15	10 - 11	11 - 13	10 - 12	13 - 15	8 - 10	9 - 10	8 - 9	8 - 9	10 - 11	9 - 10	11 - 12
06	Waist	7 - 9	8 - 9	6 - 8	12 - 13	8 - 9	7 - 9	9 - 10	6 - 8	6 - 8	10 - 11	8 - 10	7 - 9	8 - 9	10 - 12	7 - 8	6 - 9
	Contact	9 - 10	10 - 11	13 - 15	10 - 12	10 - 12	11 - 13	12 - 13	14 - 16	7 - 8	10 - 11	10 - 12	9 - 10	10 - 12	13 - 14	8 - 9	10 - 12
05	Waist	13 - 15	10 - 12	14 - 16	10 - 12	10 - 12	11 - 13	7 - 9	10 - 11	8 - 10	7 - 9	8 - 9	7 - 9	7 - 10	12 - 13	8 - 9	11 - 12
	Contact	10 - 12	9 - 11	11 - 13	9 - 11	11 - 13	12 - 14	13 - 15	11 - 13	11 - 13	11 - 12	9 - 10	9 - 10	9 - 11	11 - 13	10 - 11	12 - 13
04	Waist	7 - 9	13 - 15	10 - 12	11 - 13	12 - 14	8 - 10	11 - 12	13 - 15	7 - 8	11 - 13	10 - 11	9 - 11	9 - 11	9 - 11	11 - 13	9 - 11
	Contact	13 - 15	10 - 12	13 - 15	11 -13	10 - 12	11 - 13	12 - 14	12 - 14	10 - 12	10 - 12	9 - 10	10 - 11	15 - 16	10 - 12	9 - 11	11 - 13
03	Waist	8 - 10	7 - 8	8 - 9	10 - 11	10 - 11	9 - 10	10 - 12	8 - 9	11-13	9 - 11	9 - 11	14 - 16	8 - 10	10 - 12	10 - 12	8 - 10
	Contact	10 - 12	15 - 16	11-12	10 - 11	11 - 13	9 - 10	13 - 15	10 - 12	11 - 13	10 - 12	8 - 10	10 -12	8 - 10	10 - 12	12 - 16	8 - 10
02	Waist	8 - 10	10-12	8 - 10	7 - 9	8 - 9	7-9	9-10	10 - 11	9 - 11	12 - 13	10 - 12	8 - 10	9 - 11	10 - 11	8 - 9	7 - 9
	Contact	14 - 16	14 - 16	14 - 16	10 - 12	8 - 9	10-12	10 - 12	9 - 11	14 - 16	14 - 16	10 - 12	11 - 13	13 - 15	12 - 13	14 - 15	7 - 9
01	Waist	9 - 11	8 - 10	10 - 12	7 - 9	9 - 10	8 - 10	12 - 13	7 - 8	9 - 11	9 - 11	9 - 11	11 - 13	10 - 12	10 - 12	7 - 9	9 - 11
	Contact	11 - 13	8 - 10	11 - 13	11 - 13	10 - 12	12 - 13	10 - 12	7 - 9	8 - 10	16 - 18	9 - 11	11 - 13	10 - 12	12 - 14	9 - 11	11 - 13
00	Waist	9 - 11	9 - 11	10 - 11	7 - 9	8 - 9	9 - 10	7-9	13 - 15	9 - 11	13 - 15	6 - 8	8 - 10	10 -12	9-10	8-10	10 - 12
	Contact	11 - 13	12 - 14	13 - 15	10 - 11	10 - 12	10 - 12	13 - 14	10 - 12	10 - 12	48 - 51	10 - 12	12 - 14	10 - 12	11-13	12-13	9 - 11
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Notes:
All measurements were collected using Fluke Pressurized Ionization Chamber (FPIC) Model 451P.
All FPIC gamma measurement are in microroentgen per hour (µR/hr).
All indoor measurements were collected within a 5-feet by 5-feet grid.
Background gamma values = Waist: 9 - 12 µR/hr, Contact: 11 - 13 µR/hr.
NA - Locations with no access.
- Concrete wall of building
- Locations with gamma readings significantly above background FPIC readings.

Table 2B
C003 Indoor Gamma (FPIC) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Warehouse-1

Rows		Transects A	Transects B	Transects C	
12	Contact	10 - 11	9 - 11	9 - 10	Bay-1
	Waist	16 - 18	12 - 13	11 - 13	
11	Contact	12 - 13	10 - 11	8 - 9	
	Waist	10 - 11	13 - 15	10 - 12	
10	Contact	10 - 12	11 - 13	10 - 12	
	Waist	16 - 18	14 - 16	15 - 17	
09	Contact	8 - 10	14 - 16	14 - 15	
	Waist	8 - 10	17 - 20	16 - 18	
08	Contact	8 - 10	11 - 12	8 - 10	
	Waist	12 - 13	12 - 14	10 - 12	
07	Contact	8 - 9	9 - 10	8 - 9	Bay-2
	Waist	10 - 11	11 - 13	10 - 12	
06	Contact	10 - 11	7 - 8	9 - 10	
	Waist	10 - 11	10 - 12	12 - 14	
05	Contact	7 - 8	7 - 8	10 - 11	
	Waist	11- 12	7 - 8	13 - 15	
04	Contact	8 - 10	7 - 9	6 - 7	
	Waist	15 - 17	8 - 9	13 - 15	
03	Contact	9 - 10	9 - 10	10 - 12	Bay-3
	Waist	12 - 14	11 - 13	14 - 16	
02	Contact	8 - 9	8 - 9	8 - 9	
	Waist	12 - 14	11 -12	13 - 14	
01	Contact	12 - 13	9 - 11	8 - 10	
	Waist	11 - 12	13 - 15	12 - 14	
00	Contact	11 - 12	8 - 10	7 - 9	
	Waist	13 - 14	10 - 11	10 - 11	
		A	B	C	

Warehouse-2

Rows		Transects A	Transects B	Transects C
11	Contact	NA	NA	NA
	Waist			
10	Contact	NA	NA	NA
	Waist			
09	Contact	NA	NA	NA
	Waist			
08	Contact	9 - 11	9 - 10	4 - 6
	Waist	13 - 15	13 - 14	10 - 12
07	Contact	6 - 8	8 - 9	11 - 12
	Waist	11 - 12	15 - 17	15 - 17
06	Contact	8 - 9	7 - 8	10 -12
	Waist	8 - 9	10 -13	13 - 15
05	Contact	10 - 11	5 - 6	12 - 13
	Waist	13 - 15	10 - 12	8 - 10
04	Contact	6 - 8	9 - 10	6 - 7
	Waist	6 - 8	10 - 11	9 - 10
03	Contact	8 - 10	6 - 8	5 - 7
	Waist	13 - 15	7 - 9	9 - 10
02	Contact	5 - 8	NA	9 - 11
	Waist	8 - 10		10 -12
01	Contact	7 - 8	NA	13 - 15
	Waist	8 - 10		14 -16
00	Contact	9 - 11	9 - 10	9 - 12
	Waist	9 - 11	9 - 10	14 - 16
		A	B	C

Property C003 - 105 Kisco Avenue

Notes:
All measurements were collected using Fluke Pressurized Ionization Chamber (FPIC) Model 451P.
All FPIC gamma measurement are in microroentgen per hour (µR/hr).
All indoor measurements were collected within a 10-feet by 10-feet grid.
Background gamma values = Waist: 9 - 12 µR/hr, Contact: 11 - 13 µR/hr.
NA - Locations with no access.
- Concrete wall of building
- Locations with gamma readings significantly above background FPIC readings.

Table 3
Indoor Radon/Thoron (RAD7) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location No.	Location Description	Survey Test No.	Date	Time	Survey Result (pCi/L)			
					Radon		Thoron	
					Result	Std. Dev.	Result	Std. Dev.
Property C002 - 103 Kisco Avenue								
C002-AA001	Radon Canister location C002-AA001	C002-AA001-SW001	8/6/2015	11:13	0.00	1.88	0.00	3.77
		C002-AA001-SC001			0.43	2.07	0.00	3.44
C002-AA002	Radon Canister location C002-AA002	C002-AA002-SW001	8/6/2015	11:25	0.00	1.87	0.00	3.76
		C002-AA002-SC001			0.00	1.70	0.00	3.41
C002-AA003	Radon Canister location C002-AA003	C002-AA003-SW001	8/6/2015	11:37	0.00	1.88	0.00	3.77
		C002-AA003-SC001			0.00	1.71	0.00	3.43
C002-AA004	Radon Canister location C002-AA004	C002-AA004-SW001	8/6/2015	11:52	0.00	1.86	0.00	3.74
		C002-AA004-SC001			0.42	2.05	0.00	3.41
Property C003 - 105 Kisco Avenue								
C003-AA008	Radon Canister location C003-AA008	C003-AA008-SW001	8/4/2015	10:48	0.47	2.26	0.00	3.75
		C003-AA008-SC001			**3.83**	**3.55**	0.00	3.42
C003-AA009	Radon Canister location C003-AA009	C003-AA009-SW001	8/3/2015	15:00	**1.87**	**3.02**	**1.88**	**5.13**
		C003-AA009-SC001			**5.54**	**4.04**	0.00	3.42
		C003-AA009-RW001	8/3/2015	15:55	**5.00**	**2.11**	0.00	1.26
		C003-AA009-RC001			**10.8**	**2.79**	0.29	1.56
		C003-AA009-SW002	8/4/2015	9:24	0.00	1.87	**0.94**	**4.53**
		C003-AA009-SC002			0.00	1.70	0.00	3.42
		C003-AA009-RW002	8/4/2015	9:31	**2.36**	**11.4**	**0.00**	**19.0**
		C003-AA009-RC002			**0.00**	**8.50**	**0.00**	**17.1**
		C003-AA009-RW003	8/4/2015	10:11	1.09	1.19	0.31	1.51
		C003-AA009-RC003			**7.68**	**2.39**	0.86	1.71
C003-AA010	Radon Canister location C003-AA010	C003-AA010-SW001	8/4/2015	12:02	0.00	1.87	0.00	3.75
		C003-AA010-SC001			0.85	2.32	0.00	3.41
C003-AA011	Radon Canister location C003-AA011	C003-AA011-SW001	8/4/2015	11:08	0.00	1.87	**0.94**	**4.53**
		C003-AA011-SC001			0.85	2.33	**22.3**	**10.6**
		C003-AA011-RW001	8/4/2015	11:41	0.00	0.62	0.31	1.51
		C003-AA011-RC001			1.29	1.19	**33.1**	**6.77**
		C003-AA011-RW002	8/4/2015	14:40	0.31	0.85	0.94	1.88
		C003-AA011-RC002			1.28	1.31	**16.9**	**5.01**
		C003-AA011-RW003	8/5/2015	10:28	0.31	0.85	0.00	1.25
		C003-AA011-RC003			0.57	0.98	1.14	1.84
C003-AA012	Radon Canister location C003-AA012	C003-AA012-SW001	8/4/2015	14:02	0.00	1.87	0.00	3.75
		C003-AA012-SC001			**1.70**	**2.76**	0.00	3.42
C003-AA013	Radon Canister location C003-AA013	C003-AA013-SW001	8/5/2015	11:58	0.93	2.55	0.00	3.75
		C003-AA013-SC001			**1.70**	**2.76**	**0.86**	**4.13**
		C003-AA013-RW001	8/5/2015	13:58	**3.74**	**1.87**	0.31	1.51
		C003-AA013-RC001			**7.12**	**2.38**	0.00	1.14
C003-AA014	Radon Canister location C003-AA014	C003-AA014-SW001	8/4/2015	14:57	0.47	2.25	0.00	3.74
		C003-AA014-SC001			0.42	2.05	0.00	3.41
C003-AA015	Radon Canister location C003-AA015	C003-AA015-SW001	8/4/2015	15:12	0.00	1.88	0.00	3.77
		C003-AA015-SC001			0.86	2.34	**0.86**	**4.15**
		C003-AA015-RW001	8/4/2015	15:55	0.31	0.85	0.31	1.51
		C003-AA015-RC001			0.43	1.14	0.29	1.38
C003-AA016	Radon Canister location C003-AA016	C003-AA016-SW001	8/5/2015	11:04	**2.33**	**3.21**	0.00	3.74
		C003-AA016-SC001			**2.55**	**3.10**	0.00	3.41
		C003-AA016-RW001	8/5/2015	11:40	1.25	1.25	0.00	1.25
		C003-AA016-RC001			**2.85**	**1.62**	1.14	1.85
C003-AA017	Radon Canister location C003-AA017	C003-AA017-SW001	8/5/2015	14:19	**2.34**	**3.22**	**0.94**	**4.53**
		C003-AA017-SC001			**4.26**	**3.68**	**0.86**	**4.13**
		C003-AA017-RW001	8/5/2015	14:51	0.31	0.85	0.00	1.25
		C003-AA017-RC001			0.00	0.57	0.29	1.38
C003-AA018	Radon Canister location C003-AA018	C003-AA018-SW001	8/6/2015	9:33	**1.40**	**2.80**	0.00	3.75
		C003-AA018-SC001			0.43	2.06	0.00	3.42

Notes:
Survey was conducted using Durridge RAD 7 radon/thoron detectors.
pCi/L - picocuries per liter.
No. - Number.
Std. Dev. - Standard Deviation.
Total radon/thoron concentration is the sum of the result value and the upper limit of the Std. Dev.
The U.S. Environmental Protection Agency's Site-Specific Action Level (EPA SSAL) for radon/thoron = 4.0 pCi/L.
Values in red, including the sum of result value and Std. Dev. equal or exceed the EPA SSAL.
Sniff Survey - 10-minute duration, Run Survey - 30-minute duration.
SW - Sniff at Waist Level, SC - Sniff at Contact.
RW - Run at Waist Level, RC - Run at Contact.
Due to statistical uncertainty based on test duration, run test results are more accurate than sniff test results; however, sniff test results are reported on map at locations where run tests were not conducted.

Table 3
Indoor Radon/Thoron (RAD7) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location No.	Location Description	Survey Test No.	Date	Time	Survey Result (pCi/L)			
					Radon		Thoron	
					Result	Std. Dev.	Result	Std. Dev.
Property C003 - 105 Kisco Avenue (Concluded)								
C003-AA019	Radon Canister location C003-AA019	C003-AA019-SW001	8/6/2015	9:48	**5.63**	**4.33**	0.00	3.77
		C003-AA019-SC001			**2.57**	**3.12**	0.00	3.44
		C003-AA019-RW001	8/6/2015	10:22	**2.65**	**1.64**	0.31	1.51
		C003-AA019-RC001			**2.56**	**1.56**	0.57	1.56
C003-RS001	Electrical Room	C003-RS001-SW001	8/5/2015	15:07	**68.6**	**12.4**	**0.95**	**4.59**
		C003-RS001-SC001			**1,090**	**48.5**	**2.08**	**5.68**
		C003-RS001-RW001	8/5/2015	15:40	**29.5**	**4.66**	0.63	1.89
		C003-RS001-RC001			**159**	**10.1**	**3.63**	**3.63**
Property C004 - 145-159 Kisco Avenue								
C004-SS001	Background	C004-SS001-RW001	8/3/2015	14:07	0.00	0.62	0.00	1.25
		C004-SS001-RC001			0.28	0.77	0.57	1.56
		C004-SS001-RW002	8/4/2015	8:42	0.62	1.01	0.00	1.25
		C004-SS001-RC002			1.28	1.18	0.29	1.38
		C004-SS001-RW003	8/5/2015	8:35	0.00	0.62	0.63	1.71
		C004-SS001-RC003			0.71	1.03	0.85	1.71
		C004-SS001-RW004	8/6/2015	8:45	0.93	1.14	0.00	1.25
		C004-SS001-RC004			1.00	1.09	1.43	1.97

Notes:
Survey was conducted using Durridge RAD 7 radon/thoron detectors.
pCi/L - picocuries per liter.
No. - Number.
Std. Dev. - Standard Deviation.
Total radon/thoron concentration is the sum of the result value and the upper limit of the Std. Dev.
The U.S. Environmental Protection Agency's Site-Specific Action Level (EPA SSAL) for radon/thoron = 4.0 pCi/L.
Values in red, including the sum of result value and Std. Dev. equal or exceed the EPA SSAL.
Sniff Survey - 10-minute duration, Run Survey - 30-minute duration.
SW - Sniff at Waist Level, SC - Sniff at Contact.
RW - Run at Waist Level, RC - Run at Contact.

Due to statistical uncertainty based on test duration, run test results are more accurate than sniff test results; however, sniff test results are reported on map at locations where run tests were not conducted.

Table 4
Gamma (Ludlum-2241) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location	Date	Survey Location	Location Description	Result (cpm)
Property C001 - Milepost 136, 103 Kisco Avenue				
Indoor	8/4/2015	General area	Inside MTA Building B36	4,600 - 10,000
Outdoor	8/18/2015	G-1	Soil sampling location C001-SS001	20,000 - 22,000
	8/18/2015	G-2	Soil sampling location C001-SS002	7,700 - 8,000
	8/18/2015	G-3	Soil sampling location C001-SS003	7,200 - 8,000
Property C002 - 103 Kisco Avenue				
Outdoor	8/5/2015	G-4	Soil sampling location C002-SS001	8,000 - 12,000
	8/5/2015	G-5	Soil sampling location C002-SS002	8,000 - 10,000
	8/5/2015	G-6	Soil sampling location C002-SS003	8,000 - 10,000
	8/5/2015	G-7	Soil sampling location C002-TRENCH	80,000 - 120,000
Property C003 - 105 Kisco Avenue				
Indoor	8/3/2015	General area	Inside Showroom-1	7,000 - 9,000
	8/3/2015	General area	Inside Showroom-2	7,500 - 9,500
	8/3/2015	General area	Inside Showroom-3	7,500 - 9,000
	8/3/2015	General area	Inside Warehouse-1, Bay-1	7,000 - 9,000
	8/3/2015	General area	Inside Warehouse-1, Bay-2	7,500 - 10,000
	8/3/2015	General area	Inside Warehouse-1, Bay-3	7,600 - 10,200
	8/3/2015	General area	Inside Warehouse-2	7,000 - 9,200
	8/3/2015	Southeast corner	Inside Warehouse-2	12,000 - 15,000
Outdoor	8/5/2015	G-8	Soil sampling location C003-SS001	140,000 - 180,000
	8/5/2015	G-9	Soil sampling location C003-SS002	25,000 - 102,000
	8/5/2015	G-10	Soil sampling location C003-SS003	24,700 - 64,600
Property C004 - 145-159 Kisco Avenue				
Outdoor	8/3/2015	G-11	Background soil sampling location C004-SS001	8,300 - 9,100
	8/4/2015			7,500 - 9,500
	8/5/2015			8,600 - 9,000

Notes:
Values in red exceed background gamma values.
cpm - counts per minute.

Table 5
Outdoor Radon/Thoron (RAD7) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location No.	Location Description	Survey Test No.	Date	Time	Survey Result (pCi/L)			
					Radon		Thoron	
					Result	Std. Dev.	Result	Std. Dev.
Property C001 - Milepost 136, 103 Kisco Avenue								
C001-SS001	Soil sampling location C001-SS001	C001-SS001-SW001	8/7/2015	10:18	0.00	1.86	0.00	3.74
		C001-SS001-SC001	8/7/2015	10:18	0.00	1.70	0.00	3.42
Property C002 - 103 Kisco Avenue								
C002-SS001	Soil sampling location C002-SS001	C002-SS001-SW001	8/6/2015	10:52	0.00	1.87	0.00	3.75
		C002-SS001-SC001	8/6/2015	10:52	0.00	1.70	0.00	3.42
C002-SS002	Soil sampling location C002-SS002	C002-SS002-SW001	8/6/2015	13:29		2.26	0.00	3.75
		C002-SS002-SC001	8/6/2015	13:29	0.00	1.70	**1.71**	**4.68**
		C002-SS002-RW001	8/6/2015	14:03	0.00	0.62	0.94	1.88
		C002-SS002-RC001	8/6/2015	14:03	1.42	1.23	1.42	1.97
C002-SS003	Soil sampling location C002-SS003	C002-SS003-SW001	8/6/2015	15:39	0.00	1.87	0.00	3.75
		C002-SS003-SC001	8/6/2015	15:39	0.00	1.70	0.00	3.41
C002-TRENCH	Excavated/bagged soils associated with C002-TRENCH	C002-RS001-SW001	8/7/2015	9:26	0.47	2.25	0.00	3.74
		C002-RS001-SC001	8/7/2015	9:26	0.42	2.05	**0.85**	**4.12**
		C002-RS001-RW001	8/7/2015	9:59	0.16	0.75	0.00	1.25
		C002-RS001-RC001	8/7/2015	9:59	0.14	0.68	0.28	1.37
Property C003 - 105 Kisco Avenue								
C003-SS001	Soil sampling location C003-SS001	C003-SS001-SW001	8/6/2015	14:23	0.47	2.26	0.00	3.75
		C003-SS001-SC001	8/6/2015	14:23	0.85	2.32	0.00	3.41
C003-SS002	Soil sampling location C003-SS002	C003-SS002-SW001	8/6/2015	14:39	0.47	2.27	**0.94**	**4.55**
		C003-SS002-SC001	8/6/2015	14:39	0.43	2.06	0.00	3.43
		C003-SS002-RW001	8/6/2015	15:19	0.16	0.75	0.00	1.25
		C003-SS002-RC001	8/6/2015	15:19	0.14	0.77	0.28	1.37
C003-SS003	Soil sampling location C003-SS003	C003-SS003-SW001	8/6/2015	16:00	0.00	1.86	0.00	3.74
		C003-SS003-SC001	8/6/2015	16:00	0.00	1.70	**0.86**	**4.13**
		C003-SS003-RW001	8/6/2015	16:33	0.16	0.75	0.00	1.25
		C003-SS003-RC001	8/6/2015	16:33	0.00	0.57	0.00	1.14
Property C004 - 145-159 Kisco Avenue								
C004-SS001	Background soil sampling location C004-SS001	C004-SS001-RW001	8/3/2015	14:07	0.00	0.62	0.00	1.25
		C004-SS001-RC001	8/3/2015	14:07	0.28	0.77	0.57	1.56
		C004-SS001-RW002	8/4/2015	8:42	0.62	1.01	0.00	1.25
		C004-SS001-RC002	8/4/2015	8:42	1.28	1.18	0.29	1.38
		C004-SS001-RW003	8/5/2015	8:35	0.00	0.62	0.63	1.71
		C004-SS001-RC003	8/5/2015	8:35	0.71	1.03	0.85	1.71
		C004-SS001-RW004	8/6/2015	8:45	0.93	1.14	0.00	1.25
		C004-SS001-RC004	8/6/2015	8:45	1.00	1.09	1.43	1.97
		C004-SS001-RW005	8/7/2015	8:32	0.00	0.62	0.00	1.25
		C004-SS001-RC005	8/7/2015	8:32	0.43	0.98	1.43	1.97

Notes:
Survey was conducted using Durridge RAD 7 radon/thoron detectors.
pCi/L - picocuries per liter.
No. - Number
Std. Dev. - Standard Deviation.
Total radon/thoron concentration is the sum of the result value and the upper limit of the Std. Dev.
The U.S. Environmental Protection Agency's Site-Specific Action Level (EPA SSAL) for radon/thoron = 4.0 pCi/L.
Values in red, including the sum of result value and Std. Dev. equal or exceed the EPA SSAL.
Sniff Survey - 10-minute duration, Run Survey - 30-minute duration.
SW - Sniff at Waist Level, SC - Sniff at Contact.
RW - Run at Waist Level, RC - Run at Contact.
Due to statistical uncertainty based on test duration, run test results are more accurate than sniff test results; however, sniff test results are reported on map at locations where run tests were not conducted.

Table 6
Gamma (HPIC) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location	Location No.	Location Description	Survey No.	Date	Time	Results (µR/hr)	Results Average (µR/hr)
Outdoor	**Property C001 - Milepost 136, 103 Kisco Avenue**						
	C001-SS001	Soil sampling location C001-SS001	C001-SS001-HP001	8/7/2015	10:14	14.60	**14.60**
					10:15	14.70	
					10:16	14.40	
					10:17	14.30	
					10:18	14.80	
	Property C002 - 103 Kisco Avenue						
	C002-SS001	Soil sampling location C002-SS001	C002-SS001-HP001	8/6/2015	10:45	8.40	8.40
					10:46	8.20	
					10:47	8.70	
					10:48	8.60	
					10:49	8.30	
	C002-SS002	Soil sampling location C002-SS002	C002-SS002-HP001	8/6/2015	13:20	12.60	**12.60**
					13:21	12.70	
					13:22	12.90	
					13:23	12.90	
					13:24	12.60	
	C002-SS003	Soil sampling location C002-SS003	C002-SS003-HP001	8/6/2015	15:29	8.40	8.40
					15:30	8.90	
					15:31	9.20	
					15:32	9.10	
					15:33	9.10	
	C002-TRENCH	Soil sampling location C002-TRENCH	C002-TRENCH-HP001	8/7/2015	9:24	23.50	**23.50**
					9:25	23.50	
					9:26	24.60	
					9:27	24.10	
					9:28	24.10	
	Property C003 - 105 Kisco Avenue						
	C003-SS001	Soil sampling location C003-SS001	C003-SS001-HP001	8/6/2015	14:17	24.80	**24.80**
					14:18	24.80	
					14:19	24.80	
					14:20	24.70	
					14:21	24.60	
	C003-SS002	Soil sampling location C003-SS002	C003-SS002-HP001	8/6/2015	14:33	36.00	**36.00**
					14:34	36.60	
					14:35	36.90	
					14:36	36.90	
					14:37	36.30	
	C003-SS003	Soil sampling location C003-SS003	C003-SS003-HP001	8/6/2015	15:52	21.60	**21.60**
					15:53	21.70	
					15:54	21.40	
					15:55	21.40	
					15:56	20.80	
Indoor	C003-RS001	Electrical Room in Property C003	C003-RS001-HP001	8/6/2015	9:13	14.00	**14.00**
					9:14	13.90	
					9:15	13.80	
					9:16	13.90	
					9:17	13.60	

Notes:
Survey was conducted using High Pressure Ion Chamber (HPIC).
µR/hr - microroentgen per hour.
No. - Number.
Values in red exceed the mean background gamma value (8.90 µR/hr).
Sampling No. with SS = HPIC survey location associated with a soil sampling location.
Sampling No. with RS = HPIC survey location associated with a RAD7 survey location.
Sampling No. with HP = HPIC survey location.
Sampling No. with TRENCH = HPIC survey location associated with bagged soils from prior on-site trench excavation.

Table 6
Gamma (HPIC) Field Survey Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location	Location No.	Location Description	Survey No.	Date	Time	Results (µR/hr)	Results Average (µR/hr)
	Property C004 - 145-159 Kisco Avenue						
Outdoor	C004-SS001	Background soil sampling location C004-SS001	C004-SS001-HP001	8/5/2015	9:28	8.90	8.90
					9:29	8.70	
					9:30	8.60	
					9:31	9.10	
					9:32	8.70	
			C004-SS001-HP002	8/6/2015	8:14	9.00	
					8:15	8.80	
					8:16	9.20	
					8:17	9.00	
					8:18	9.30	
			C004-SS001-HP003	8/7/2015	8:15	8.80	
					8:16	8.50	
					8:17	8.50	
					8:18	8.50	
					8:19	8.60	

Notes:
Survey was conducted using High Pressure Ion Chamber (HPIC).
µR/hr - microroentgen per hour.
No. - Number.
Values in red exceed the mean background gamma value (8.90 µR/hr).
Sampling No. with SS = HPIC survey location associated with a soil sampling location.
Sampling No. with RS = HPIC survey location associated with a RAD7 survey location.
Sampling No. with HP = HPIC survey location.

Table 7
Outdoor Gamma (SAM-940) Survey Results Summary
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Location	Location Description	Survey Point ID	Date	Scan Time (Seconds)	Nuclide Analytical Information			
					Nuclide Detection		Nuclide Result	
					Nuclide Detected	Nuclide Detection Rate (µrem/h)	Nuclide Dose Rate (µrem/h)	Confidence Level
Outdoor	Soil sample location C002-TRENCH	CRU Spectra 110	8/5/2015	300	**Ra-226**	51.7175	7.59592	79.48%
	Soil sample location C002-SS001	CRU Spectra 111		300	ND	0	NA	NA
	Soil sample in jar from C002-SS001	CRU Spectra 112		300	ND	7.02351	NA	NA
	Soil sample in jar from C002-SS002	CRU Spectra 113		300	ND	6.50492	NA	NA
	Soil sample in jar from C002-SS003	CRU Spectra 114		300	ND	8.02686	NA	NA
	Soil sample in jar from C003-SS001	CRU Spectra 115		300	ND	10.0579	NA	NA
	Soil sample in jar from C003-SS002	CRU Spectra 116		300	**Ra-226**	15.1885	2.30806	79.67%
	Soil sample in jar from C003-SS003	CRU Spectra 117		300	ND	9.08415	NA	NA
	Soil sample in jar from C002-TRENCH	CRU Spectra 118		300	ND	11.1415	NA	NA
	40-feet south from beginning of perimeter fence post separating Properties C001 and C002	CRU Spectra 120	8/6/2015	300	**K-40**	18.0475	0.48991	69.34%
					Ra-226	18.0475	1.21701	70.88%
Indoor	South of waterfall display in main building of Property C003	CRU Spectra 121	8/6/2015	300	**Th-232**	19.1634	2.39651	84.06%
	East of waterfall display in main building of Property C003	CRU Spectra 122		300	**K-40**	17.7814	0.892891	72.00%
	South of waterfall display in main building of Property C003	CRU Spectra 124	8/7/2015	1800	**Th-232**	16.4942	1.83878	90.85%
	East of waterfall display in main building of Property C003	CRU Spectra 125	8/7/2015	1800	**Ra-226**	17.6337	0.326609	71.24%
					Th-232	17.6337	2.22068	91.37%
Background	Background soil sample location C004-SS001	CRU Spectra 108	8/5/2015	60	ND	0	NA	NA
	Background calibration: Cs-137 Check Source	CRU Spectra 109		300	Cs-137	203.86	145.799	98.98%
	Background soil sample location C004-SS001	CRU Spectra 119	8/6/2015	60	ND	0	NA	NA
		CRU Spectra 123	8/7/2015	60	ND	0	NA	NA

Notes:
µrem/h - micro röntgen equivalent man per hour.
Text in red indicate nuclide detection.
ND - Non detected.
NA - Not applicable.

Table 8A
Validated Soil Analytical Results Summary Table - Radioisotopes
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

	Location No.	C001-SS001						C001-SS002			C001-SS003			C002-SS001			C002-SS002			C002-SS003			C002-TRENCH		
	RST 3 Sample No.	C001-SS001-0012-01			C001-SS001-0012-02			C001-SS002-0012-01			C001-SS003-0012-01			C002-SS001-2448-01			C002-SS002-2448-01			C002-SS003-2448-01			C002-TRENCH-0036-01		
	Sample Depth (inches)	0 - 12			0 - 12			0 - 12			0 - 12			24 - 48			24 - 48			24 - 48			0 - 36		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																								
Actinium-228 (Ac-228)	128,000	0.74	J	0.25	1.21	J	0.27	0.49	J	0.19	0.38	J	0.18	1.23	J	0.28	1.15	J	0.32	0.62	J	0.29	0.76	J	0.32
Bismuth-212 (Bi-212)	6,440,000	ND			ND			ND			ND			ND			ND			ND			ND		
Bismuth-214 (Bi-214)	1,310,000	2.33	R	0.36	2.49	R	0.36	0.88	R	0.17	0.76	R	0.17	1.92	R	0.35	1.5	R	0.29	9.04	R	1.1	10.4	R	1.23
Cesium-137 (Cs-137)	11.2	ND			ND			ND			ND			ND			ND			ND			ND		
Lead-210 (Pb-210)	418	4.17		1.71	3.6		1.81	ND			ND			ND			ND			8.64		3.3	11.6		4
Lead-212 (Pb-212)	657,000	0.57	R	0.15	1.26	R	0.22	0.48	R	0.13	0.68	R	0.16	1.04	J	0.23	0.8	J	0.2	0.57	J	0.24	0.73	J	0.22
Lead-214 (Pb-214)	7,330,000	2.37	R	0.35	2.96	R	0.38	0.92	R	0.17	0.81	R	0.22	2.03	R	0.31	1.74	R	0.31	9.6	R	1.16	10.8	R	1.26
Potassium-40 (K-40)	26.7	12.6		2.11	10.3		1.71	7.34		1.36	9.53		1.91	12.3		2.17	14.3		2.59	14.2		2.46	10.8		2.14
Radium-224 (Ra-224)	778,000	ND			ND			ND			ND			ND			ND			ND			ND		
Radium-226* (Ra-226)	2.52	**3.43**	J	0.47	**3.64**	J	0.46	1.07	J	0.19	0.92	J	0.19	1.86	J	0.36	1.45	J	0.25	**9.84**	J	1.2	**10.4**	J	1.21
Radium-228 (Ra-228)	16.2	0.74	J	0.25	1.21	J	0.27	0.49	J	0.19	0.38	J	0.18	1.23	J	0.28	1.15	J	0.32	0.62	J	0.29	0.76	J	0.32
Thallium-208 (Tl-208)	3,400,000	0.21	R	0.08	0.39	R	0.08	0.18	R	0.06	0.15	R	0.07	0.44		0.11	0.28		0.09	0.22		0.12	0.35		0.12
Thorium-228 (Th-228)	13,300	0.74	J	0.16	1.01	J	0.2	0.55	J	0.15	0.75	J	0.18	1.04	J	0.2	0.99	J	0.21	0.75	J	0.18	0.62	J	0.16
Thorium-230 (Th-230)	2,060	2.08	J	0.31	2.53	J	0.35	0.73	J	0.17	0.7	J	0.17	0.79	J	0.17	1.63	J	0.28	20.4	J	1.91	14.8	J	1.43
Thorium-232 Th-232)	5.11	0.85	J	0.18	0.89	J	0.18	0.62	J	0.16	0.69	J	0.16	1.14	J	0.21	0.66	J	0.16	0.61	J	0.16	0.79	J	0.18
Thorium-234 Th-234)	47,500	ND			ND			ND			ND			ND			ND			ND			ND		
Uranium-233/234 (U-233/234)	3,260	0.47	J	0.13	0.45	J	0.13	0.47	J	0.14	0.4	J	0.12	0.71		0.17	0.43		0.14	0.99		0.22	3.26		0.44
Uranium-235/236 (U-235/236)	37.7	ND			0.04	J	0.04	0.06	J	0.05	0.04	J	0.04	ND			ND			0.06		0.05	0.31		0.12
Uranium-235 (U-235)	37.7	ND			ND			ND			ND			ND			ND			ND			ND		
Uranium-238 (U-238)	158	0.5	J	0.13	0.57	J	0.14	0.51	J	0.14	0.37	J	0.12	0.6		0.16	0.43		0.14	0.99		0.21	1.83		0.3

	Location No.	C003-SS001						C003-SS002			C003-SS003			C004-SS001			Rinsate Blank					
	RST 3 Sample No.	C003-SS001-2448-01			C003-SS001-2448-02			C003-SS002-0024-01			C003-SS003-2448-01			C004-SS001-1824-01			RB-080515			RB-081815		
	Sample Depth (inches)	24 - 48			24 - 48			0 - 24			24 - 48			18 - 24			NA			NA		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Aqueous			Aqueous		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (µg/L)	Qualifier	Total Uncertainty	Value (µg/L)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																					
Actinium-228 (Ac-228)	128,000	0.97	J	0.34	0.6	J	0.37	ND			0.99	J	0.32	1.19	J	0.29	ND			ND		
Bismuth-212 (Bi-212)	6,440,000	ND			ND			15.4		3.85	2.51		1.23	ND			ND			ND		
Bismuth-214 (Bi-214)	1,310,000	9.78	R	1.15	11.2	R	1.34	120	R	12.6	13.2	R	1.48	1.31	R	0.25	ND			ND		
Cesium-137 (Cs-137)	11.2	ND			ND			ND			ND			0.23	J	0.09	ND			ND		
Lead-210 (Pb-210)	418	7.7		3.07	6.32		3.49	99.7		17.7	13.5		4.55	ND			ND			ND		
Lead-212 (Pb-212)	657,000	0.83	J	0.22	0.53	J	0.21	ND			0.95	J	0.32	0.9	J	0.23	ND			ND		
Lead-214 (Pb-214)	7,330,000	9.63	R	1.12	12.1	R	1.42	129	R	13.5	15.3	R	1.68	1.31	R	0.26	ND			ND		
Potassium-40 (K-40)	26.7	14.1		2.33	13.5		2.77	18.1		5.86	14.6		2.44	12.4		2.2	ND			ND		
Radium-224 (Ra-224)	778,000	ND			ND			ND			ND			ND			NA			NA		
Radium-226* (Ra-226)	2.52	**10.3**	J	1.19	**11.3**	J	1.33	**129**	J	13.6	**15.1**	J	1.75	1.59	J	0.292	NA			NA		
Radium-228 (Ra-228)	16.2	0.97	J	0.34	0.6	J	0.37	1.24	J	1.17	0.99	J	0.32	1.19	J	0.29	NA			NA		
Thallium-208 (Tl-208)	3,400,000	0.35		0.14	0.47		0.17	ND			0.35		0.13	0.2		0.09	ND			ND		
Thorium-228 (Th-228)	13,300	0.82	J	0.18	0.73	J	0.17	1	J	0.2	0.77	J	0.18	0.64	J	0.16	0.19	J	0.15	0.14	J	0.12
Thorium-230 (Th-230)	2,060	5.23	J	0.6	5.29	J	0.61	42	J	3.71	8.96	J	0.94	0.77	J	0.17	0.15		0.11	0.1	J	0.09
Thorium-232 Th-232)	5.11	0.7	J	0.16	0.67	J	0.16	0.95	J	0.19	0.73	J	0.17	0.85	J	0.18	ND			ND		
Thorium-234 Th-234)	47,500	ND			ND			ND			ND			ND			ND			ND		
Uranium-233/234 (U-233/234)	3,260	0.56		0.15	0.44		0.13	1.62		0.28	0.58		0.16	0.57		0.16	ND			ND		
Uranium-235/236 (U-235/236)	37.7	ND			ND			ND			ND			0.03	J	0.04	ND			ND		
Uranium-235 (U-235)	37.7	ND			ND			ND			ND			ND			ND			ND		
Uranium-238 (U-238)	158	0.46		0.14	0.49		0.14	1.55		0.27	0.51		0.14	0.5		0.14	ND			ND		
Radium-226** (Ra-226)	NS	NA			NA			NA			NA			NA			0.06	J	0.07	0.05	J	0.05
Radium-228*** (Ra-228)	NS																ND			ND		

Notes:

RST 3 - Removal Support Team 3.

No. - Number; NA - Not analyzed; ND - Not detected; NS - Not specified.

J - An unusually uncertain or estimated result.

R - A rejected result.

pCi/g - picocuries per gram; µg/L - micrograms per liter.

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in pCi/g.

Background sampling location.

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

Radium-226* (21-day ingrowth) gamma spectroscopy via EPA GA-01-R (soil only).

Radium-226** Gas Flow Proportional Counter (GFPC) via EPA SW-846 Method 9315 (aqueous only).

Radium-228*** GFPC via EPA SW-846 Method 9320 (aqueous only).

Table 8B
Validated Soil Analytical Results Summary Table - TAL Metals and Mercury
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

	Location No.	C001-SS001				C001-SS002		C001-SS003		C002-SS001		C002-SS002		C002-SS003		C002-TRENCH	
	RST 3 Sample No.	C001-SS001-0012-01		C001-SS001-0012-02		C001-SS002-0012-01		C001-SS003-0012-01		C002-SS001-2448-01		C002-SS002-2448-01		C002-SS003-2448-01		C002-TRENCH-0036-01	
	Sample Depth (inches)	0-12		0-12		0-12		0-12		24-48		24-48		24-48		0-36	
	Sample Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
	Sample Result	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier
TAL Metal	**[1]EPA RML**																
Aluminum	230,000	7,200		6,800		11,000		9,800		12,000		10,000		8,600		16,000	
Antimony	94	ND		ND		ND		ND		ND		ND		ND		ND	
Arsenic	68	ND		ND		ND		ND		ND		ND		ND		12	
Barium	46,000	77	J	72		42	J	51		87		130		1,700		370	
Beryllium	470	ND		ND		ND		ND		ND		ND		ND		ND	
Cadmium	210	ND		ND		ND		ND		ND		ND		ND		ND	
Calcium	NS	21,000		18,000		11,000		5,400		13,000		5,000		9,000		11,000	
Chromium	NS	21		17		11		18		24		29		59		90	
Cobalt	70	7.3	J	6.3	J	13	J	8.9	J	9.1	J	8.9	J	10	J	16	J
Copper	9,400	35	J	ND		46		32		24	J	27		45		71	
Iron	160,000	18,000		13,000		22,000		20,000		19,000		19,000		31,000		29,000	
Lead	400	100	J	160		22		23		56		46		**510**		220	
Magnesium	NS	11,000		7,400		6,900		5,200		8,600		5,300		7,600		12,000	
Manganese	5,500	220	J	130	J	270		310		410		310		290		410	
Nickel	4,600	18	J	16	J	13	J	16	J	19	J	19	J	42	J	62	
Potassium	NS	1,700	J	2,700	J	ND		1,200	J	1,800	J	2,700	J	3,300	J	6,000	
Selenium	1,200	ND		ND		ND		ND		ND		ND		ND		ND	
Silver	1,200	ND		ND		ND		ND		ND		0.82	J	ND		ND	
Sodium	NS	1,200		830	J	1,700		700	J	500	J	230	J	330	J	740	J
Thallium	2.3	ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	1,200	29	J	13	J	42	J	35	J	33	J	37	J	29	J	63	
Zinc	70,000	120	J	100		50	J	66		94		76		830		180	
Mercury	28	0.12		0.13		0.15		0.029	J	0.070		0.061		0.028	J	0.12	

	Location No.	C003-SS001				C003-SS002		C003-SS003		C004-SS001		Rinsate Blank			
	RST 3 Sample No.	C003-SS001-2448-01		C003-SS001-2448-02		C003-SS002-0024-01		C003-SS003-2448-01		C004-SS001-1824-01		RB-080515		RB-081815	
	Sample Depth (inches)	24-48		24-48		0-24		24-48		18-24		NA		NA	
	Sample Matrix	Soil		Soil		Soil		Soil		Soil		Aqueous		Aqueous	
	Sample Result	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (mg/kg)	Qualifier	Value (µg/L)	Qualifier	Value (µg/L)	Qualifier
TAL Metal	**[1]EPA RML**														
Aluminum	230,000	8,900		11,000		7,600		9,200		13,000		ND		ND	
Antimony	94	ND		ND		ND		ND		ND		ND		4.4	J
Arsenic	68	20		19		ND		ND		ND		ND		2.4	J
Barium	46,000	89		99		170		130		130		ND		ND	
Beryllium	470	ND		ND		ND		ND		ND		ND		ND	
Cadmium	210	ND		ND		ND		ND		ND		ND		ND	
Calcium	NS	49,000		36,000		6,200		26,000		1,900	J	90	J	ND	
Chromium	NS	43		38		20		24		31		ND		ND	
Cobalt	70	7.6	J	8.1	J	9.1	J	9.5	J	7.7	J	ND		ND	
Copper	9,400	60		77		85		97		27	J	ND		ND	
Iron	160,000	25,000		19,000		20,000		20,000		16,000		ND		19	J
Lead	400	130		140		220		180		120		ND		ND	
Magnesium	NS	12,000		7,500		4,300		14,000		3,600		ND		ND	
Manganese	5,500	290	J	270		190		290		250		ND		ND	
Nickel	4,600	19	J	18	J	23	J	21	J	19	J	ND		ND	
Potassium	NS	1,600	J	2,300	J	2,100	J	2,300	J	940	J	ND		ND	
Selenium	1,200	ND		ND		ND		ND		ND		ND		ND	
Silver	1,200	ND		0.65	J	ND		ND		ND		ND		ND	
Sodium	NS	200	J	300	J	2,400		1,800		280	J	ND		ND	
Thallium	2.3	ND		ND		ND		ND		ND		ND		ND	
Vanadium	1,200	31	J	38	J	ND	J	ND		ND		ND		ND	
Zinc	70,000	190	J	170		160		140		130		13	J	13	J
Mercury	28	0.21		0.20		0.13		0.18		0.11		ND		ND	

Notes:

TAL - Target Analyte List.

RST 3 - Removal Support Team 3.

No. - Number; NS - Not Specified; ND - Not detected.

Background sampling location.

J - The concentration is an approximate value.

mg/kg - milligram per kilogram, µg/L - microgram per liter.

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RML) for Residential Soil corresponds to either a 10^{-4} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).

Value in red exceeds the EPA RML for the analyte.

EPA RML values are presented in mg/kg.

Table 9
Validated SAT Soil Analytical Results Summary Table - Radioisotopes
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
November 2013

	Location No.	S01			S02			S03			S04			S09			S05			S06			S07			S08		
	SAT Sample No.	S01 (24-36)			S02 (0-12)			S03 (0-12)			S04 (36-48)			S09 (36-48)*			S05 (0-12)			S06 (0-12)			S07 (12-24)			S08 (24-36)		
	Sample Depth (inches)	24 - 36			0 - 12			0 - 12			36 - 48			36 - 48			0 - 12			0 - 12			12 - 24			24 - 36		
	Sample Matrix	Soil			Soil			Soil			Soil			Soil			Soil			Soil			Soil			Soil		
	Sample Result	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty	Value (pCi/g)	Qualifier	Total Uncertainty
Radioisotope	**[1]EPA SSAL**																											
Actinium-228 (Ac-228)	128,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Bismuth-212 (Bi-212)	6,440,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Bismuth-214 (Bi-214)	1,310,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Cesium-137 (Cs-137)	11.2	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Lead-210 (Pb-210)	418	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Lead-212 (Pb-212)	657,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Lead-214 (Pb-214)	7,330,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Potassium-40 (K-40)	26.7	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Radium-224 (Ra-224)	778,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Radium-226** (Ra-226)	2.52	**22.0**		2.4	**135**		14.1	**129**		13.5	**14.0**		1.59	**15.4**		1.72	**109**		11.5	**109**		11.5	0.894		0.235	**3.44**		0.487
Radium-228 (Ra-228)	16.2	1.05		0.389	ND			ND			0.975		0.369	1.25		0.35	1.79		0.963	ND			0.843		0.239	1.35		0.342
Thallium-208 (Tl-208)	3,400,000	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Thorium-228 (Th-228)	13,300	0.626		0.125	1.07		0.165	0.884		0.148	0.850		0.21	0.808		0.197	0.589		0.168	0.794		0.207	0.43		0.145	0.567		0.175
Thorium-230 (Th-230)	2,060	0.999		0.163	64.6		5.53	58.1		4.99	4.63		0.605	5.82		0.691	1.81		0.311	83.3		7.27	0.407		0.14	0.575		0.175
Thorium-232 Th-232)	5.11	0.557		0.115	0.842		0.14	0.766		0.134	0.879		0.216	0.624		0.171	0.605		0.165	0.739		0.194	0.508		0.153	0.547		0.169
Thorium-234 Th-234)	47,500	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Uranium-233/234 (U-233/234)	3,260	0.428		0.132	0.781		0.168	0.769		0.0501	0.383		0.138	0.356		0.131	0.606		0.181	0.702		0.179	0.374		0.133	0.299		0.0401
Uranium-235/236 (U-235/236)	37.7	ND			0.0741		0.0546	0.0704		0.0501	ND			ND			ND			ND			ND			ND		
Uranium-235 (U-235)	37.7	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Uranium-238 (U-238)	158	0.380		0.123	0.849		0.177	0.749		0.159	0.327		0.129	0.516		0.159	0.429		0.151	0.773		0.187	0.462		0.15	0.417		0.143

Notes:

No. - Number; NA - Not Applicable; ND - Not detected.

pCi/g = picocuries per gram.

Background sampling location.

Analytical data is based on November 2013 site assessement conducted by Weston Solutions, Inc., Site Assessment Team (SAT).

S09 (36-48)* is a duplicate of S04 (36-48).

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL) values are presented in pCi/g.

Values in red equal or exceed the EPA SSAL for the respective radioisotope.

**Radium-226 (Non-ingrowth) gamma spectroscopy via EPA GA-01-R.

Table 10
Wipe Analytical Results Summary Table
Canadian Radium and Uranium Corp. Site
Mount Kisco, New York
August 2015

Sample No.	Sample Matrix	Survey Date	Sample Time	MDC (dpm)				Location
				Background Count		Sample Count		
				Alpha	Beta	Alpha	Beta	
Property C001 - Milepost 136, 103 Kisco Avenue								
C001-W-01	Wipe	8/18/2015	9:30	0	0	0	31	Background - blank sample
C001-W-02	Wipe	8/18/2015	9:40	0	0	0	34	North access doorway
C001-W-03	Wipe	8/18/2015	9:45	0	0	0	33	West access doorway
Property C002 - 103 Kisco Avenue								
C002-W-01	Wipe	8/18/2015	12:50	0	0	0	34	Office trailer main access doorway
Property C003 - 105 Kisco Avenue								
C003-W-01	Wipe	8/18/2015	13:13	0	0	0	32	Receiving Area - northwest access doorway near bay door
C003-W-02	Wipe	8/18/2015	13:15	0	0	0	37	Showroom 3 - west access doorway
C003-W-03	Wipe	8/18/2015	13:18	0	0	0	39	Showroom 3 - southwest access doorway
C003-W-04	Wipe	8/18/2015	13:21	0	0	0	35	Office 1 - southeast access doorway

Notes:
No. - Identity Number.
MDC - Minimum Detectable Activity.
dpm - disintegrations per minute.

ATTACHMENT C

Chain of Custody Records and FedEx Airbills

USEPA

CHAIN OF CUSTODY RECORD

No: 2-080515-230111-0001

DateShipped: 8/5/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5810

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C002-SS001-2448-01	8/5/2015	10:50	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS002-2448-01	8/5/2015	11:40	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS003-2448-01	8/5/2015	12:10	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	4	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15			

USEPA

CHAIN OF CUSTODY RECORD

No: 2-080515-230111-0001

DateShipped: 8/5/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5810

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-02	8/5/2015	14:12	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS002-0024-01	8/5/2015	14:55	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	[signature] Weston Solutions	8/7/15			

USEPA

CHAIN OF CUSTODY RECORD

No: 2-080515-230111-0001

DateShipped: 8/5/2015

Case #: 334

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

CarrierName: FedEx

Contact Name: Bernard Nwosu

Lab Contact: Mike Franks

AirbillNo: 8037-9662-5810

Contact Phone: 908-565-2980

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	C003-SS003-2448-01	8/5/2015	15:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C004-SS001-1824-01	8/7/2015	08:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15			

USEPA

DateShipped: 8/18/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5864

CHAIN OF CUSTODY RECORD

Case #: 334A

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081815-162509-0004

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/18/15			

USEPA

DateShipped: 8/18/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5864

CHAIN OF CUSTODY RECORD

Case #: 334A

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081815-162509-0004

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-081815	8/18/2015	11:45	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	RB-081815	8/18/2015	11:45	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/18/15			

FedEx Express **NEW** Package US Airbill

FedEx Tracking Number 8037 9662 5810

Form ID No. 0200 **Sender's Copy**

1 From *Please print and press hard.*

Date 8/7/2015 Sender's FedEx Account Number 402356103

Sender's Name Bernard Nwosu Phone ( )

Company Weston Solutions, Inc.

Address Suite 201, 1090 King Georges Post Rd Dept./Floor/Suite/Room

City Edison State NJ ZIP 08837

2 Your Internal Billing Reference 30400.021.006.2053
First 24 characters will appear on invoice.

3 To Recipient's Name Mike Franks Phone 314 298 8566

Company Test America

Address 13715 Rider Trail North Dept./Floor/Suite/Room
We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address
Use this line for the HOLD location address or for continuation of your shipping address.

City St. Louis State MO ZIP 63045

HOLD Weekday FedEx location address REQUIRED NOT available for FedEx First Overnight. ☐

HOLD Saturday FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. ☐

4 Express Package Service • To most locations.
NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging • Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other

6 Special Handling and Delivery Signature Options

☑ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☑ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?
One box must be checked.

☑ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☑ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Credit Card No. 402356103 Exp. Date

Total Packages 2 Total Weight ____ lbs. Total Declared Value† $ ____ .00

†Our liability is limited to US$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.

644

Rev. Date 1/12 • Part #167003 • ©2012 FedEx • PRINTED IN U.S.A. SRF

Easy new Peel-and-Stick airbill. No pouch needed.
Apply airbill directly to your package. See directions on back.

FedEx Express **NEW** Package US Airbill

FedEx Tracking Number 8037 9662 5864

Form ID No. 0200 **Sender's Copy**

1 From *Please print and press hard.*

Date 8/18/2015 Sender's FedEx Account Number 402356103

Sender's Name Bernard Nwosu Phone (908) 565 2980

Company Weston Solutions, Inc.

Address Suite 201, 1090 King Georges Post Road Dept./Floor/Suite/Room

City Edison State NJ ZIP 08837

2 Your Internal Billing Reference 30400.021.006.2053
First 24 characters will appear on invoice.

3 To Recipient's Name Mike Franks Phone (314) 298 8566

Company Test America

Address 13715 Rider Trail North Dept./Floor/Suite/Room
We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address
Use this line for the HOLD location address or for continuation of your shipping address.

City St. Louis State MO ZIP 63045

HOLD Weekday FedEx location address REQUIRED NOT available for FedEx First Overnight. ☐

HOLD Saturday FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. ☐

4 Express Package Service • To most locations.
NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging • Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☑ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?
One box must be checked.

☑ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☑ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Credit Card No. 402356103 Exp. Date

Total Packages 1 Total Weight ____ lbs. Total Declared Value† $ ____ .00

†Our liability is limited to US$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.

644

Easy new Peel-and-Stick airbill. No pouch needed.
Apply airbill directly to your package. See directions on back.

USEPA

DateShipped: 8/18/2015
CarrierName: Hand-Delivered
AirbillNo: NA

CHAIN OF CUSTODY RECORD

Canadian Radium & Uranium Corp/NY
Contact Name: Eric Daly
Contact Phone: 908-420-1707

No: 2-081815-170145-0005

Lab: EPA
Lab Contact:
Lab Phone:

Lab #	Sample #	Sample Type	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC
	C001-W-01	Field Blank	Ludlum 3030 Analysis	Wipe	8/18/2015	09:30	1	Swipe	None	N
	C001-W-02	Field Sample	Ludlum 3030 Analysis	Wipe	8/18/2015	09:40	1	Swipe	None	N
	C001-W-03	Field Sample	Ludlum 3030 Analysis	Wipe	8/18/2015	09:45	1	Swipe	None	N
	C002-W-01	Field Sample	Ludlum 3030 Analysis	Wipe	8/18/2015	12:50	1	Swipe	None	N
	C003-W-01	Field Sample	Ludlum 3030 Analysis	Wipe	8/18/2015	13:13	1	Swipe	None	N
	C003-W-02	Field Sample	Ludlum 3030 Analysis	Wip	8/18/2015	13:15	1	Swipe	None	N
	C003-W-03	Field Sample	Ludlum 3030 Analysis	Wipe	8/18/2015	13:18	1	Swipe	None	N
	C003-W-04	Field Sample	Ludlum 3030 Analysis	Wipe	8/18/2015	13:21	1	Swipe	None	N

Special Instructions:	**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

ATTACHMENT D

Photographic Documentation of Site Activities

Attachment D
Photographic Documentation of Site Activities
Canadian Radium and Uranium Corp. Site

Photo 1: View of the background location along the right of way (ROW) area near a strip mall identified as Property C004. The red flag indicates soil sampling location C004-SS001 where background readings were obtained for all the radiological field survey instruments utilized during the Removal Assessment.

Photo 2: A view of one U.S. Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) collecting background readings with a SAM 940 radioisotope identification system.

Photo 3: A view of Weston Solutions, Inc., Removal Support Team 3 (RST 3) members collecting gamma readings inside the main building of Property C003 with a Ludlum-2241 and sodium iodide scintillator attachment and conducting radon/thoron tests with two RAD7 electronic radon/thoron detectors.

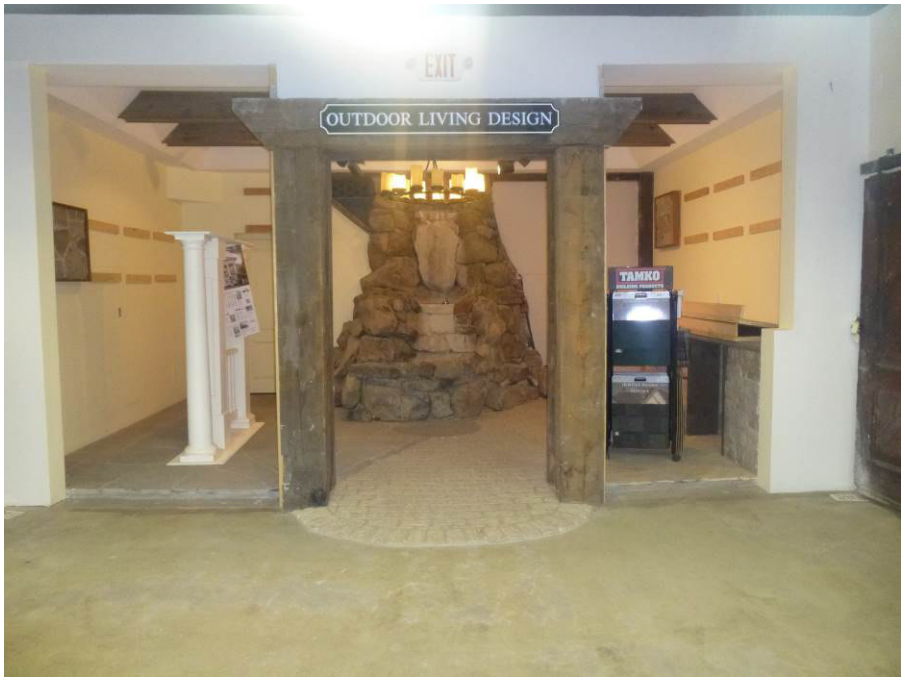

Photo 4: A view of the showroom inside the main building of Property C003. Note the waterfall display which indicated elevated thoron levels and the presence of radionuclides.

Photo 5: A view of the showroom inside the main building of Property C003 during the post-mitigation radon sampling event conducted by RST 3 subcontractor. Note that the waterfall display had been removed from the showroom.

Photo 6: A view of Warehouse-2 located on Property C003. Fluke Pressurized Ionization Chamber (FPIC) gamma survey indicated above-background gamma values at the southeast corner of the warehouse space.

Photo 7: A view of Warehouse-1 with three bays located on Property C003. All the radiological survey and radon sampling results indicated normal conditions.

Photo 8: A view of soil sampling location C003-SS002 located on Property C003. Note that a Ground Penetrating Radar (GPR) was utilized to clear each on-site soil sampling location for subsurface utilities prior to sampling with Geoprope®.

Photo 9: A Geoprobe® was utilized to facilitate soil sample collection by extracting soil cores from depths 0 to 4 feet below ground surface (bgs) at each soil sampling location.

Photo 10: A view of the one office trailer located on Property C002. Note that because the trailer is elevated 2 feet above the ground, the EPA OSC determined that it was not necessary to conduct FPIC gamma survey inside the office trailer.

Photo 11: A view of the reception area inside the one office trailer on Property C002. Radon analytical results indicated normal levels inside the office trailer.

Photo 12: A view of the one storage trailer located on Property C002. Radon analytical results indicated normal levels inside the storage trailer.

Photo 13: A view of the yard in Property C002. The property is currently being utilized as a landscaping supply and material storage facility.

Photo 14: A view of EPA OSCs and EPA's Radiation Health Physicist conducting radiological survey of five cubic yard bags which were staged along the northeast fence of Property C002. Screening data indicated that all five bags contained radioactive materials. Soil sample C002-TRENCH-0036-01 was collected from the bag which exhibited the highest gamma readings.

Photo 15: A view of RST 3 personnel using a steam cleaner to decontaminate a Geoprobe® cutting shoe. Decontamination of non-disposable sampling equipment was performed before and after the sampling event and between soil sampling locations, and it consisted of a soap (Alconox®) solution scrub, tap water rinse, steam-clean with deionized (DI) water, air dry, and screening with Ludlum-2241 for residual radiological contamination.

Photo 16: A view of RST 3 personnel using Ludlum-2241 to screen soil cores for gamma radiation levels. Each soil core was screened at every 6-inch interval. Soil samples were selected from the interval exhibiting the highest level of gamma radiation and/or where a fill layer was observed and/or at the discretion of the EPA OSC.

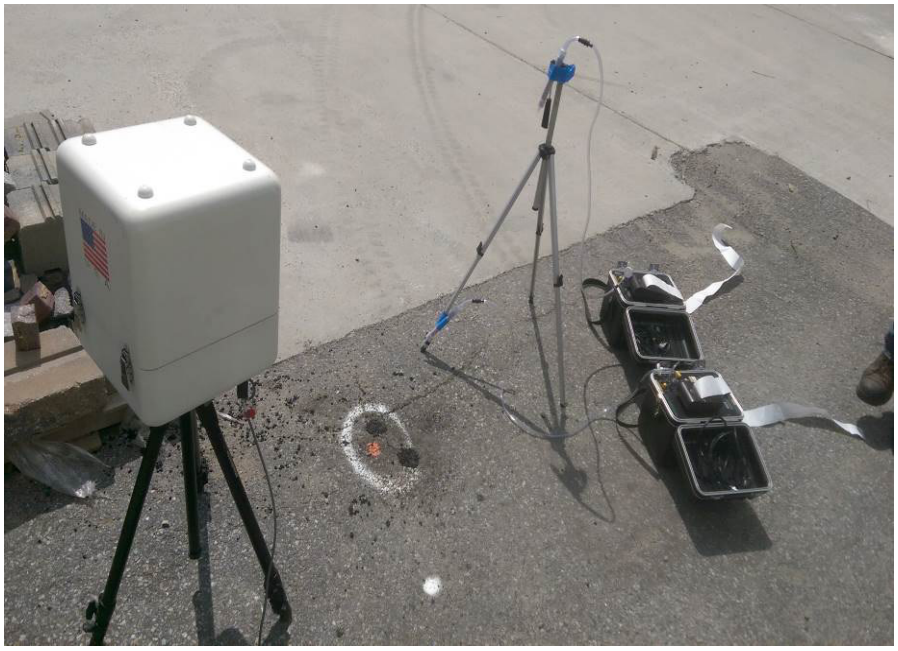

Photo 17: A view of radiological survey instruments (to the left is High Pressure Ion Chamber (HPIC) and to the right are RAD7 units) being used to collect field data in order to determine locations suspected to contain radioisotopes and metals/metalloids. Locations exhibiting significantly high radioactivity measurements were selected for soil sampling.

Photo 18: A view of Metropolitan Transit Authority (MTA) [Property C001] subcontractors using a yard stick to measure the depth of a soil boring advanced with a single stainless steel hand auger. Due to access agreement issues, RST 3 was not permitted to conduct soil sampling at this property. EPA reached an agreement with MTA to utilize their own subcontractor for the soil sampling event.

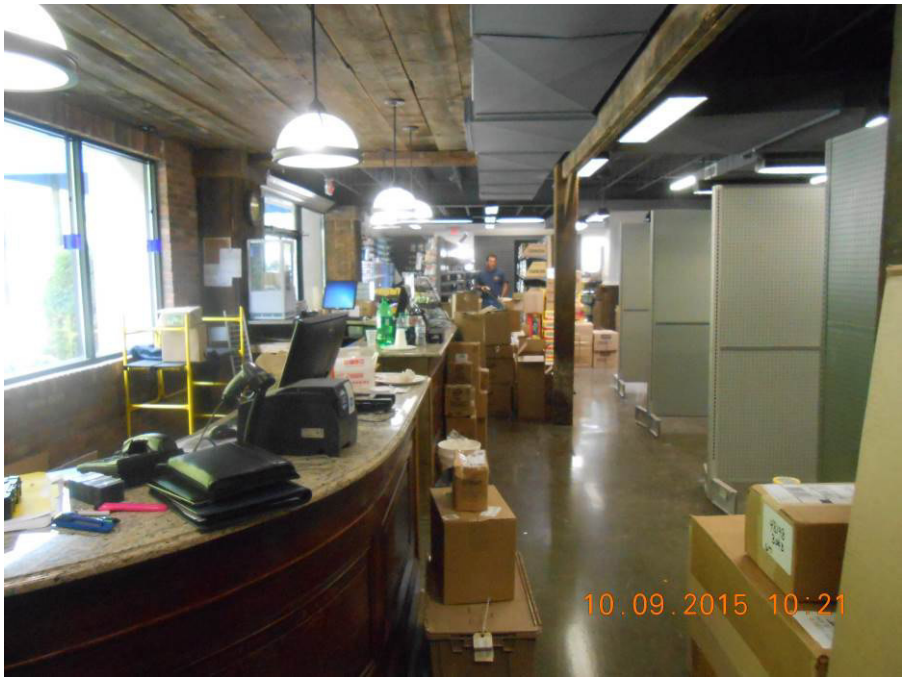

Photo 19: A view of the main building on Property C003 during the post-mitigation radon sampling event. The show was being used as a hardware store.

Photo 20: A view of the radon-mitigation system installed in the main building at Property C003 by the property owner. Post-mitigation validated analytical results indicated that radon concentrations were below the EPA SSAL of 4.0 picocuries per liter (pCi/L) throughout the living spaces in the main building of Property C003.

Attachment E:

Data Validation Memo - Radon Analytical Results

Weston Solutions, Inc.
Suite 201
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Edison, New Jersey 08837-3703
732-585-4400 • Fax: 732-225-7037
www.westonsolutions.com

The Trusted Integrator for Sustainable Solutions

REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

RST 3-02-F-0041

TRANSMITTAL MEMO

To:	Mr. Eric Daly, On-Scene Coordinator Response and Prevention Branch U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer RST 3, Region II
Subject:	Canadian Uranium and Radium Site Data Validation Assessment
Date:	October 26, 2015

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameter:

  Radon Testing 44 Samples

- Matrices and Number of Samples

  Indoor Air 41 Samples
  Field/Office Blanks 3 Samples

- Sampling Dates: August 3 through 7, 2015

The final data assessment narrative and original analytical data package are attached.

cc:	RST 3 SPM:	Bernard Nwosu
	RST 3 SITE FILE TDD #:	TO-0006-0053
	RST 3 ANALYTICAL TDD #:	TO-0006-0070
	TASK#:	2070

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **October 26, 2015**

TO: **Eric Daly , On-Scene Coordinator**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
RST 3 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 EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Field Blanks
Office Blanks
Laboratory Blanks
Field Duplicates
Data Completeness

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Radon Testing
Acceptable as Submitted	X
Acceptable with Comments	
Unacceptable, Action Pending	
Unacceptable	

Data Reviewed by: Smita Sumbaly Date: 10/26/15

Approved By: Date: 10/26/15

Area Code/Phone No.: (732) 585-4410

NARRATIVE

PCS No. 2070

SITE NAME: **Canadian Uranium and Radium Site**
Mount Kisco
Westchester County
New York

Laboratory Name: Precision Environmental, Inc., 36-15A 23rd Street, Long Island City, NY 11106 (deploy and retrieve canisters) and Radon Testing Corporation of America (RTCA), 2 Hayes Street, Elmsford, NY 10523 (Radon Testing).

INTRODUCTION:

The laboratory's portion of this case consisted of 44 air samples, including two field blanks, one office blank, and five field duplicates, for Radon testing. All the samples were collected on August 3 through 7, 2015.

The laboratory reported No problem(s) with the receipt of these samples:

The laboratory reported No problems with the analyses of Radon Testing.

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.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Inorganic Data Review Narrative

RFP# 334 TASK # 2070	Site: Canadian Uranium and Radium Site	Matrix Air: 44
Sampling Team: Precision Environmental Inc. Laboratory: Radon Testing Corporation of America		
Reviewer: Smita Sumbaly		

Data Case Description:

On August 3 and 4, 2015, U.S. EPA, Region II, RST 3- subcontracted sampling personnel collected 44 radon samples, including two field blanks, one office blank, and five field duplicates, from the Canadian Uranium and Radium Site located in Mount Kisco, Westchester County, New York. RST 3 subcontracted the services of a Precision Environmental, Inc., radon certified technician to deploy and remove canisters and submit it to the Radon Testing Corporation of America (RTCA) to perform the radon testing. Charcoal Canisters were deployed by NY radon certified technicians on August 3 and 4, 2015 and retrieved on August 6 and 7, 2015. After retrieving the samples, Precision Environmental, Inc., technician shipped the samples to RTCA, located at 2 Hayes Street, Elmsford, New York, to analyze the samples for radon testing.

All the 44 air samples, including five field duplicates, one office blank, and two field blanks, were collected for radon testing utilizing activated charcoal canisters (ACC) for at least 72 hours period of time. The radon testing samples were collected from the NY Stone & Building Supply/Warehouse #1, Warehouse #2, Main Building (Ground and 2nd floor), MTA substation; and Hickory Homes & Property, Inc.. The co-located ACC's were placed side-by-side, 4 inches apart.

All radon testing were performed in accordance with the ANSI/AARST MAMF 2012 "Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings". The placement of the ACC's was conducted in accordance with Weston's instructions to Precision Environmental, Inc.

Client identification (ID) and laboratory ID numbers are as follows:

Field Sample ID/Location	Canisters ID Number	Canister Type	Analysis	Canisters Deployed	Canisters Retrieved
NY Stone & Building Supply - Warehouse #1, Warehouse #2, and Main Building					
C003-AA001-01	2389955	Charcoal Canister	Radon Testing	8/3/2015	8/6/2015
C003-AA002-01	2389951		Radon Testing	8/3/2015	8/6/2015
C003-AA003-01	2390000		Radon Testing	8/3/2015	8/6/2015
C003-AA004-01	2389967		Radon Testing	8/3/2015	8/6/2015
C003-AA005-01	2389963		Radon Testing	8/3/2015	8/6/2015
C003-AA006-01	2430420		Radon Testing	8/3/2015	8/6/2015
C003-AA006-02[1]	2422844		Radon Testing	8/3/2015	8/6/2015

Field Sample ID/Location	Canisters ID Number	Canister Type	Analysis	Canisters Deployed	Canisters Retrieved
C003-AA007-01	2389974	Charcoal Canister	Radon Testing	8/3/2015	8/6/2015
C003-AA008-01	2390002		Radon Testing	8/3/2015	8/6/2015
C003-AA009-01	2430414		Radon Testing	8/3/2015	8/6/2015
C003-AA010-01	2430406		Radon Testing	8/3/2015	8/6/2015
C003-AA011-01	2432038		Radon Testing	8/3/2015	8/6/2015
C003-AA012-01	2431995		Radon Testing	8/3/2015	8/6/2015
C003-AA013-01	2430445		Radon Testing	8/3/2015	8/6/2015
FB01080315	2430410		Radon Testing	8/3/2015	8/6/2015
C003-AA014-01	2430405		Radon Testing	8/3/2015	8/6/2015
C003-AA015-01	2430421		Radon Testing	8/3/2015	8/6/2015
C003-AA016-01	2430477		Radon Testing	8/3/2015	8/6/2015
C003-AA016-02[2]	2430090		Radon Testing	8/3/2015	8/6/2015
C003-AA017-01	2430435		Radon Testing	8/3/2015	8/6/2015
C003-AA018-01	2430426		Radon Testing	8/3/2015	8/6/2015
C003-AA019-01	2430453		Radon Testing	8/3/2015	8/6/2015
C003-AA020-01	2430416		Radon Testing	8/3/2015	8/6/2015
C003-AA021-01	2430429		Radon Testing	8/3/2015	8/6/2015
C003-AA022-01	2430463		Radon Testing	8/3/2015	8/6/2015
C003-AA023-01	2430409		Radon Testing	8/3/2015	8/6/2015
C003-AA024-01	2432019		Radon Testing	8/3/2015	8/6/2015
C003-AA025-01	2430433		Radon Testing	8/3/2015	8/6/2015
C003-AA026-01	2430450		Radon Testing	8/3/2015	8/6/2015
C003-AA026-02[3]	2430425		Radon Testing	8/3/2015	8/6/2015
FB02080315	2430448		Radon Testing	8/3/2015	8/6/2015
C003-AA027-01	2430462		Radon Testing	8/3/2015	8/6/2015
MTA Substation					
C001-AA001-01	2432014	Charcoal Canister	Radon Testing	8/4/2015	8/7/2015
C001-AA002-01	2430438		Radon Testing	8/4/2015	8/7/2015
C001-AA002-02[4]	2430473		Radon Testing	8/4/2015	8/7/2015
C001-AA003-01	2430461		Radon Testing	8/4/2015	8/7/2015
C001-AA004-01	2430552		Radon Testing	8/4/2015	8/7/2015
Hickory Homes & Property, Inc.					
C002-AA001-01	2430436	Charcoal Canister	Radon Testing	8/4/2015	8/7/2015
C002-AA002-01	2430444		Radon Testing	8/4/2015	8/7/2015
C002-AA002-02[5]	2430432		Radon Testing	8/4/2015	8/7/2015
C002-AA003-01	2430423		Radon Testing	8/4/2015	8/7/2015
C002-AA004-01	2430411		Radon Testing	8/4/2015	8/7/2015
C002-AA005-01	2431993		Radon Testing	8/4/2015	8/7/2015
Office Blank	2430408		Radon Testing	8/4/2015	8/7/2015

[1] A duplicate of sample C003-AA006-01
[2] A duplicate of sample C003-AA016-01
[3] A duplicate of sample C003-AA026-01
[4] A duplicate of sample C001-AA002-01
[5] A duplicate of sample C002-AA002-01

A.2.3.3 Technical Review:

All samples were reviewed for the following quality control (QC) parameters. All QC results were evaluated, but only non-compliant QC observations, if any, are discussed in detail in this report.

- Field Duplicate
- Field Blank

Field Duplicate:

Sample Number	Sample Result (D1)	Field Duplicate sample Number	Field duplicate Result (D2)	Average (M)	RPD
C003-AA006-01	1.7 pCi/L	C003-AA006-02	1.7 pCi/L	1.7 pCi/L	0.0 %
C003-AA016-01	7.0 pCi/L	C003-AA016-02	7.0 pCi/L	7.0 pCi/L	0.0 %
C003-AA026-01	18.0 pCi/L	C003-AA026-02	17.4 pCi/L	17.7 pCi/L	3.4 %
C001-AA002-01	0.4 pCi/L	C001-AA002-02	0.3 pCi/L	0.35 pCi/L	28.6%
C002-AA002-01	0.2 pCi/L	C002-AA002-02	0.1 pCi/L	0.15 pCi/L	66.7%

According to Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings, duplicate samples were deployed at a rate of one per unit of the measurement location. Duplicate pairs of measurements greater than or equal to 4 pCi/L should produce a Relative Percent Difference (RPD) greater than 36% no more than 1% of time. In the above field duplicate pairs for C002-AA002-01 and C002-AA002-02, the sample and duplicate measurements are less than the 4 pCi/L. Therefore, no action was required.

Also, if one duplicate is equal to or greater than 4.0 pCi/L and the other below, the higher result may not be twice or more than the other. In above field duplicate pairs C002-AA002-01 and C002-AA002-02, both sample and duplicate results are below the 4.0 pCi/L but higher results are twice than other. Since maximum radon gas level is well below the 4.0 pCi/L, the precision of the duplicate measurement is acceptable.

RPD = [(D1-D2)/(D1 + D2/2)] X 100%

Field Blank/Office Blank

Field Sample ID/Location	Canisters ID Number	Blank Concentration	QC Limit
FB01080315 (Field Blank)	2430410	0.1 pCi/L	<4.0 pCi/L
FB02080315 (Field Blank)	2430448	0.1 pCi/L	
Office Blank	2430408	0.1 pCi/L	

All field/office blank measurements are well below 4.0 pCi/L so no qualification was required.

Out of the 44 samples, 23 samples were reported below 4.0 pCi/L and 21 samples were reported between 4.6 pCi/L and 19.5 pCi/L; which was above the EPA recommended action guideline level of 4.0 pCi/L. The national average indoor radon gas level is approximately 1.3 pCi/L.

Contract Problems/Non-Compliance:

RTCA laboratory incorrectly entered sample number C001-AA002-01in their report which was supposed to be C002-AA002-01. Data reviewer contacted the laboratory, obtained the corrected pages and replaced in the data package.

Reviewer's Signature: Smita Sumbaly **Date:** / /2015

Verified By: **Date:** 10/26/15

Analytical Data Summary Table - Radon Testing
Canadian Uranium and Radium Site, Mount Kisco, New York
Sampling Dates: August 3 through 7, 2015

Field Sample ID/Location	Canisters ID Number	Canister Type	Analysis	Radon Level
NY Stone & Building Supply - Warehouse #1, Warehouse#2, and Main Building				
C003-AA001-01	2389955	Charcoal Canister	Radon Testing	**4.6 pCi/L**
C003-AA002-01	2389951	Charcoal Canister	Radon Testing	2.7 pCi/L
C003-AA003-01	2390000	Charcoal Canister	Radon Testing	2.6 pCi/L
C003-AA004-01	2389967	Charcoal Canister	Radon Testing	0.7 pCi/L
C003-AA005-01	2389963	Charcoal Canister	Radon Testing	0.6 pCi/L
C003-AA006-01	2430420	Charcoal Canister	Radon Testing	1.7 pCi/L
C003-AA006-02[1]	2422844	Charcoal Canister	Radon Testing	1.7 pCi/L
C003-AA007-01	2389974	Charcoal Canister	Radon Testing	**5.2 pCi/L**
C003-AA008-01	2390002	Charcoal Canister	Radon Testing	**6.1 pCi/L**
C003-AA009-01	2430414	Charcoal Canister	Radon Testing	**6.6 pCi/L**
C003-AA010-01	2430406	Charcoal Canister	Radon Testing	**6.4 pCi/L**
C003-AA011-01	2432038	Charcoal Canister	Radon Testing	**7.0 pCi/L**
C003-AA012-01	2431995	Charcoal Canister	Radon Testing	**6.9 pCi/L**
C003-AA013-01	2430445	Charcoal Canister	Radon Testing	**9.3 pCi/L**
FB01080315	2430410	Charcoal Canister	Radon Testing	0.1 pCi/L
C003-AA014-01	2430405	Charcoal Canister	Radon Testing	3.7 pCi/L
C003-AA015-01	2430421	Charcoal Canister	Radon Testing	3.7 pCi/L
C003-AA016-01	2430477	Charcoal Canister	Radon Testing	**7.0 pCi/L**
C003-AA016-02[2]	2430090	Charcoal Canister	Radon Testing	**7.0 pCi/L**
C003-AA017-01	2430435	Charcoal Canister	Radon Testing	3.2 pCi/L
C003-AA018-01	2430426	Charcoal Canister	Radon Testing	**6.4 pCi/L**
C003-AA019-01	2430453	Charcoal Canister	Radon Testing	**7.0 pCi/L**
C003-AA020-01	2430416	Charcoal Canister	Radon Testing	**13.6 pCi/L**
C003-AA021-01	2430429	Charcoal Canister	Radon Testing	**15.6 pCi/L**
C003-AA022-01	2430463	Charcoal Canister	Radon Testing	**15.9 pCi/L**
C003-AA023-01	2430409	Charcoal Canister	Radon Testing	**13.6 pCi/L**
C003-AA024-01	2432019	Charcoal Canister	Radon Testing	**19.5 pCi/L**
C003-AA025-01	2430433	Charcoal Canister	Radon Testing	**18.1 pCi/L**
C003-AA026-01	2430450	Charcoal Canister	Radon Testing	**18.0 pCi/L**
C003-AA026-02[3]	2430425	Charcoal Canister	Radon Testing	**17.4 pCi/L**
FB02080315	2430448	Charcoal Canister	Radon Testing	0.1 pCi/L
C003-AA027-01	2430462	Charcoal Canister	Radon Testing	**10.3 pCi/L**
MTA Substation				
C001-AA001-01	2432014	Charcoal Canister	Radon Testing	0.4 pCi/L
C001-AA002-01	2430438	Charcoal Canister	Radon Testing	0.4 pCi/L
C001-AA002-02[4]	2430473	Charcoal Canister	Radon Testing	0.3 pCi/L
C001-AA003-01	2430461	Charcoal Canister	Radon Testing	0.4 pCi/L
C001-AA004-01	2430552	Charcoal Canister	Radon Testing	0.4 pCi/L
Hickory Homes & Property, Inc.				
C002-AA001-01	2430436	Charcoal Canister	Radon Testing	0.2 pCi/L
C002-AA002-01	2430444	Charcoal Canister	Radon Testing	0.2 pCi/L
C002-AA002-02[5]	2430432	Charcoal Canister	Radon Testing	0.1 pCi/L
C002-AA003-01	2430423	Charcoal Canister	Radon Testing	0.2 pCi/L
C002-AA004-01	2430411	Charcoal Canister	Radon Testing	0.3 pCi/L
C002-AA005-01	2431993	Charcoal Canister	Radon Testing	0.2 pCi/L
Office Blank	2430408	Charcoal Canister	Radon Testing	0.1 pCi/L

[1] A duplicate of sample C003-AA006-01
[2] A duplicate of sample C003-AA016-01
[3] A duplicate of sample C003-AA026-01
[4] A duplicate of sample C001-AA002-01
[5] A duplicate of sample C002-AA002-01

pCi/L - picoCuries per liter of air

Bolded values exceed the Action Level of 4.0 pCi/L.

RFP# 334 - NY Stone & Building Supply:

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C003-AA001-01	2389955	NY Stone & Building Supply / Warehouse #2	Ground	Inside warehouse #2	9' North from SE corner on steel shelf	8/3/15	11:21	8/6/15	13:35	2 garage doors open / still open	AA	AA	4.6
C003-AA002-01	2389951	NY Stone & Building Supply / Warehouse #2	Ground	Inside warehouse #2	38' South from NW corner on wood shelf	8/3/15	11:25	8/6/15	13:37	2 garage doors open / still open	AA	AA	2.7
C003-AA003-01	2390000	NY Stone & Building Supply / Warehouse #2	Mezzanine	Inside warehouse #2	8.7' West from NE corner on wood shelf	8/3/15	11:26	8/6/15	13:39	2 garage doors open / still open	AA	AA	2.6
C003-AA004-01	2389967	NY Stone & Building Supply / Warehouse #1	Ground	Bay #1	20.6' North, 3.8'West from SE corner on PEI stand	8/3/15	11:46	8/6/15	13:42	Garage door open / still open	AA	AA	0.7
C003-AA005-01	2389963	NY Stone & Building Supply / Warehouse #1	Ground	Bay #2	5.4' West from NW corner on metal shelf	8/3/15	11:50	8/6/15	13:45	Garage door open / still open	AA	AA	0.6
C003-AA006-01	2430420	NY Stone & Building Supply / Warehouse #1	Ground	Bay #3	16.9' North from SE corner on PEI stand	8/3/15	11:56	8/6/15	13:47	Garage door open / still open	AA	AA	1.7
C003-AA006-02	2422844	NY Stone & Building Supply / Warehouse #1	Ground	Bay #3	17.4' North from SE corner on PEI stand	8/3/15	12:02	8/6/15	13:47	Garage door open **Co-located (Duplicate)** / still open	AA	AA	1.7
C003-AA007-01	2389974	NY Stone & Building Supply / Warehouse #2	Ground	Inside warehouse #2	3.5' North from SE corner on a metal step ladder	8/3/15	12:05	8/6/15	13:40	2 garage doors open / still open	AA	AA	5.2
C003-AA008-01	2390002	NY Stone & Building Supply / Main building	Ground	Showroom #1	16.6' West from NE corner on top of a shelf	8/3/15	13:16	8/6/15	13:51		AA	AA	6.1

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C003-AA009-01	2430414	NY Stone & Building Supply / Main building	Ground	Showroom #1	3.3' North from SE corner on PEI stand	8/3/15	13:20	8/6/15	13:53		AA	AA	6.6
C003-AA010-01	2430406	NY Stone & Building Supply / Main building	Ground	Showroom #2	Middle of the room on a PEI stand	8/3/15	13:27	8/6/15	13:55		AA	AA	6.4
C003-AA011-01	2432038	NY Stone & Building Supply / Main building	Ground	Showroom #2	9.3' West from NE corner on a stone water fall	8/3/15	13:30	8/6/15	13:58		AA	AA	7.0
C003-AA012-01	2431995	NY Stone & Building Supply / Main building	Ground	Showroom #3	10.8' West, 9.4' South from NE corner on PEI stand	8/3/15	13:36	8/6/15	14:00		AA	AA	6.9
C003-AA013-01	2430445	NY Stone & Building Supply / Main building	Ground	Showroom #3	18.3' North, 4.4' West from SE corner of a shelf	8/3/15	13:41	8/6/15	14:04		AA	AA	9.3
FB01080315	2430410	NY Stone & Building Supply / Main building	Ground	Showroom #3	18.3' North, 3.8' West from SE corner of a shelf	8/3/15	13:57	8/6/15	14:05	Unexposed filed blank	AA	AA	0.1
C003-AA014-01	2430405	NY Stone & Building Supply / Main building	Ground	Office #2	1' North, 4' West from SE corner on a shelf	8/3/15	14:03	8/6/15	14:08		AA	AA	3.7
C003-AA015-01	2430421	NY Stone & Building Supply / Main building	Ground	Office #3	5' North, 1.7' East from SW corner on a file cabinet	8/3/15	14:06	8/6/15	14:09		AA	AA	3.7
C003-AA016-01	2430477	NY Stone & Building Supply / Main building	Ground	Showroom #3	45'North, 6' East from SW corner on PEI stand	8/3/15	14:17	8/6/15	14:31		AA	AA	7.0

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C003-AA016-02	2430090	NY Stone & Building Supply / Main building	Ground	Showroom #3	45.4'North, 6' East from SW corner on PEI stand	8/3/15	14:18	8/6/15	14:31	**Co-located (Duplicate)**	AA	AA	7.0
C003-AA017-01	2430435	NY Stone & Building Supply / Main building	Ground	Office #1	5.8' West, 1' South from NE corner on a shelf	8/3/15	14:23	8/6/15	14:36	Exterior door open / still open	AA	AA	3.2
C003-AA018-01	2430426	NY Stone & Building Supply / Main building	Ground	Receiving area	11.7' North, 3' West from SE corner on wood shelf	8/3/15	14:37	8/6/15	14:48	Garage door open / still open	AA	AA	6.4
C003-AA019-01	2430453	NY Stone & Building Supply / Main building	Ground	Receiving area	5.3' East, 3.7' South from NW corner on steel shelf	8/3/15	14:44	8/6/15	14:50	Garage door open / still open	AA	AA	7.0
C003-AA020-01	2430416	NY Stone & Building Supply / Main building	2nd floor	Showroom #4	13.2' West, 11.8' South from NE corner on PEI stand	8/3/15	15:07	8/6/15	15:33		AA	AA	13.6
C003-AA021-01	2430429	NY Stone & Building Supply / Main building	2nd floor	Conference room	On top of the class table	8/3/15	15:13	8/6/15	15:34		AA	AA	15.6
C003-AA022-01	2430463	NY Stone & Building Supply / Main building	2nd floor	Office #5	On top of a countertop middle of North side	8/3/15	15:18	8/6/15	15:36		AA	AA	15.9
C003-AA023-01	2430409	NY Stone & Building Supply / Main building	2nd floor	Office #4	On top of wood base cabinet on NE corner	8/3/15	15:22	8/6/15	15:38		AA	AA	13.6
C003-AA024-01	2432019	NY Stone & Building Supply / Main building	2nd floor	Lobby #4	6' East, 1.8' North from SW corner on a metal file cabinet	8/3/15	15:27	8/6/15	15:39		AA	AA	19.5

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C003-AA025-01	2430433	NY Stone & Building Supply / Main building	2nd floor	Reception area	3' North, 1.3' West from SE corner on countertop	8/3/15	15:33	8/6/15	15:41		AA	AA	18.1
C003-AA026-01	2430450	NY Stone & Building Supply / Main building	2nd floor	Office #6	6.2' West, 5.5' South from NE corner on a desk	8/3/15	15:37	8/6/15	15:43		AA	AA	18.0
C003-AA026-02	2430425	NY Stone & Building Supply / Main building	2nd floor	Office #6	6.6' West, 5.5' South from NE corner on a desk	8/3/15	15:38	8/6/15	15:43	Co-located (Duplicate)	AA	AA	17.4
FB02080315	2430448	NY Stone & Building Supply / Main building	2nd floor	Office #6	2.1' West, 0.9' South from NE corner on a shelf	8/3/15	15:41	8/6/15	15:44	Unexposed field blank	AA	AA	0.1
C003-AA027-01	2430462	NY Stone & Building Supply / Main building	2nd floor	Room #2	On top of a cabinet in the middle of the room	8/3/15	15:45	8/6/15	15:47		AA	AA	10.3
C001-AA001-01	2432014	MTA substation B36	Ground	Inside substation B36	9' East, 5' South from NW corner on PEI stand	8/4/15	8:30	8/7/15	8:51		AA	AA	0.4
C001-AA002-01	2430438	MTA substation B36	Ground	Inside substation B36	10.2' East, 31.5' South from NW corner on PEI stand	8/4/15	8:33	8/7/15	8:53		AA	AA	0.4
C001-AA002-02	2430473	MTA substation B36	Ground	Inside substation B36	10.7' East, 31.5' South from NW corner on PEI stand	8/4/15	8:34	8/7/15	8:53	Co-located (Duplicate)	AA	AA	0.3
C001-AA003-01	2430461	MTA substation B36	Ground	Inside substation B36	32.2' North, 2.5' West from SE corner on PEI stand	8/4/15	8:37	8/7/15	8:55		AA	AA	0.4

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C001-AA004-01	2430552	MTA substation B36	Ground	Inside substation B36	3' North, 7.5' West from SE corner on PEI stand	8/4/15	8:40	8/7/15	8:57		AA	AA	0.4
C002-AA001-01	2430436	HH & P Office Trailer	Ground	Office	2' East, 3' North from SW corner on top of a file cabinet	8/4/15	9:40	8/7/15	10:16		AA	AA	0.2
C002-AA002-01	2430444	HH & P Office Trailer	Ground	Reception area	6.2' West, 2.5' North from SE corner on PEI stand	8/4/15	9:44	8/7/15	10:18		AA	AA	0.2
C002-AA002-02	2430432	HH & P Office Trailer	Ground	Reception area	6.8' West, 2.5' North from SE corner on PEI stand	8/4/15	9:45	8/7/15	10:18	Co-located (Duplicate)	AA	AA	0.1
C002-AA003-01	2430423	HH & P Office Trailer	Ground	Lounge	2.3' West, 10' North from SE corner on top of a refrigerator	8/4/15	9:50	8/7/15	10:20	A/C unit was turned on / AC unit off	AA	AA	0.2
C002-AA004-01	2430411	HH & P Storage Trailer	Ground	Storage trailer	8' South from NW corner on a shelf	8/4/15	10:10	8/7/15	10:23	Door was opened / Door still opened	AA	AA	0.3
C002-AA005-01	2431993	HH & P Storage Trailer	Ground	Storage trailer	33' South from NW corner on a table	8/4/15	10:13	8/7/15	10:24	Door was opened / Door still opened	AA	AA	0.2
	2430408	Precision Environmental office	2nd floor	Andrea's office	On top of a file cabinet					Office Blank	AA	AA	0.1

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RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

Canister ID# :	2430090	Test Start :	08/03/2015 @ 14:18
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:31
Location :	Ground-Showrm#3	Received:	08/07/2015 @ 12:00
Radon Level :	7.0 pCi/L	Analyzed:	08/07/2015 @ 14:56
C003-AA016-02			

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430416	Test Start :	08/03/2015 @ 15:07
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:53
Location :	2nd Fl-Showrm #4	Received:	08/07/2015 @ 12:00
Radon Level :	13.6 pCi/L	Analyzed:	08/07/2015 @ 15:31
C003-AA020-01			

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2430421	Test Start :	08/03/2015 @ 14:06
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:09
Location :	Ground-Off#3	Received:	08/07/2015 @ 12:00
Radon Level :	3.7 pCi/L	Analyzed:	08/07/2015 @ 15:13
C003-AA015-01			

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430426	Test Start :	08/03/2015 @ 14:37
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:48
Location :	Ground-Receiving Area	Received:	08/07/2015 @ 12:00
Radon Level :	6.4 pCi/L	Analyzed:	08/07/2015 @ 14:56
C003-AA018-01			

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430429	Test Start :	08/03/2015 @ 15:13
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:34
Location :	2nd Fl-Con Rm	Received:	08/07/2015 @ 12:00
Radon Level :	15.6 pCi/L	Analyzed:	08/07/2015 @ 14:35

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Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

C003-AA021-01

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2430435	Test Start :	08/03/2015 @ 14:23
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:36
Location :	Ground-Off#1	Received:	08/07/2015 @ 12:00
Radon Level :	3.2 pCi/L	Analyzed:	08/07/2015 @ 14:56

C003-AA017-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430453	Test Start :	08/03/2015 @ 14:44
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:50
Location :	Ground-Receiving Area	Received:	08/07/2015 @ 12:00
Radon Level :	7.0 pCi/L	Analyzed:	08/07/2015 @ 14:56

C003-AA019-01

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430477	Test Start :	08/03/2015 @ 14:17
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:31
Location :	Ground-Showrm#3	Received:	08/07/2015 @ 12:00
Radon Level :	7.0 pCi/L	Analyzed:	08/07/2015 @ 15:13

C003-AA016-01

Error for Measurement is: ± 0.3 pCi/L

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Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

The results indicate that at least one testing device registered at or above the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends mitigation if the average of two short-term tests taken in the lowest level of the building suitable for occupancy show radon levels that are equal to or greater than 4.0 pCi/L.

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PLEDGE OF ASSURED QUALITY

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RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

Canister ID# :	2430409	Test Start :	08/03/2015 @ 15:22
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:38
Location :	2nd Fl-Off #4	Received:	08/07/2015 @ 12:00
Radon Level :	13.6 pCi/L	Analyzed:	08/07/2015 @ 15:13
C003-AA023-01			

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2430425	Test Start :	08/03/2015 @ 15:38
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:43
Location :	Second Floor-Office #6	Received:	08/07/2015 @ 12:00
Radon Level :	17.4 pCi/L	Analyzed:	08/07/2015 @ 15:13
C003-AA026-02			

Error for Measurement is: ± 0.5 pCi/L

Canister ID# :	2430433	Test Start :	08/03/2015 @ 15:33
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:41
Location :	2nd Fl-Recept Area	Received:	08/07/2015 @ 12:00
Radon Level :	18.1 pCi/L	Analyzed:	08/07/2015 @ 15:31
C003-AA025-01			

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2430448	Test Start :	08/03/2015 @ 15:41
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:44
Location :	Second Floor-Office #6 BL	Received:	08/07/2015 @ 12:00
Radon Level :	0.1 pCi/L	Analyzed:	08/07/2015 @ 15:13
FB02080315			

Error for Measurement is: ± 0.9 pCi/L

Canister ID# :	2430450	Test Start :	08/03/2015 @ 15:37
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:43
Location :	Second Floor-Office #6	Received:	08/07/2015 @ 12:00
Radon Level :	18.0 pCi/L	Analyzed:	08/07/2015 @ 15:13

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Site Radon Inspection Report

Date : 08/07/2015

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PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

C003-AA026-01

Error for Measurement is: ± 0.5 pCi/L

Canister ID# :	2430462	Test Start :	08/03/2015 @ 15:45
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:47
Location :	Second Floor-Rm #2	Received:	08/07/2015 @ 12:00
Radon Level :	10.3 pCi/L	Analyzed:	08/07/2015 @ 15:13

C003-AA027-01

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2430463	Test Start :	08/03/2015 @ 15:18
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:36
Location :	2nd Fl-Off #5	Received:	08/07/2015 @ 12:00
Radon Level :	15.9 pCi/L	Analyzed:	08/07/2015 @ 14:56

C003-AA022-01

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2432019	Test Start :	08/03/2015 @ 15:27
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:39
Location :	Second Floor-Lobby#4	Received:	08/07/2015 @ 12:00
Radon Level :	19.5 pCi/L	Analyzed:	08/07/2015 @ 15:13

C003-AA024-01

Error for Measurement is: ± 0.5 pCi/L

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Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

The results indicate that at least one testing device registered at or above the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends mitigation if the average of two short-term tests taken in the lowest level of the building suitable for occupancy show radon levels that are equal to or greater than 4.0 pCi/L.

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PLEDGE OF ASSURED QUALITY

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RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

Canister ID# :	2389951	Test Start :	08/03/2015 @ 11:25
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:37
Location :	Ground-Warehouse 2	Received:	08/07/2015 @ 12:00
Radon Level :	2.7 pCi/L	Analyzed:	08/07/2015 @ 15:13
C003-AA002-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2389955	Test Start :	08/03/2015 @ 11:21
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:35
Location :	Ground-Warehouse 2	Received:	08/07/2015 @ 12:00
Radon Level :	4.6 pCi/L	Analyzed:	08/07/2015 @ 15:13
C003-AA001-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2389963	Test Start :	08/03/2015 @ 11:50
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:45
Location :	Ground-Warehouse1/Bay2	Received:	08/07/2015 @ 12:00
Radon Level :	0.6 pCi/L	Analyzed:	08/07/2015 @ 14:35
C003-AA005-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2389967	Test Start :	08/03/2015 @ 11:46
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:42
Location :	Ground-Warehouse1/Bay1	Received:	08/07/2015 @ 12:00
Radon Level :	0.7 pCi/L	Analyzed:	08/07/2015 @ 14:35
C003-AA004-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2389974	Test Start :	08/03/2015 @ 12:05
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:40
Location :	Ground-Warehouse 2	Received:	08/07/2015 @ 12:00
Radon Level :	5.2 pCi/L	Analyzed:	08/07/2015 @ 14:56

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Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

C003-AA007-01

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2390000	Test Start :	08/03/2015 @ 11:26
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:39
Location :	Ground-Warehouse 2	Received:	08/07/2015 @ 12:00
Radon Level :	2.6 pCi/L	Analyzed:	08/07/2015 @ 15:13

C003-AA003-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2422844	Test Start :	08/03/2015 @ 12:02
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:47
Location :	Ground-Warehouse1/Bay3	Received:	08/07/2015 @ 12:00
Radon Level :	1.7 pCi/L	Analyzed:	08/07/2015 @ 14:56

C003-AA006-02

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430420	Test Start :	08/03/2015 @ 11:56
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:47
Location :	Ground-Warehouse#1/Bay #3	Received:	08/07/2015 @ 12:00
Radon Level :	1.7 pCi/L	Analyzed:	08/07/2015 @ 15:13

C003-AA006-01

Error for Measurement is: ± 0.2 pCi/L

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Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

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National Radon Safety Board NRSB Certified Radon Professionals

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NJ MES 11089

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PC1508070129

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

Canister ID# :	2390002	Test Start :	08/03/2015 @ 13:16
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:51
Location :	Ground-Main Build/Showrm1	Received:	08/07/2015 @ 12:00
Radon Level :	6.1 pCi/L	Analyzed:	08/07/2015 @ 14:56
C003-AA008-01			

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430405	Test Start :	08/03/2015 @ 14:03
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:08
Location :	Ground-Main Build/Off2	Received:	08/07/2015 @ 12:00
Radon Level :	3.7 pCi/L	Analyzed:	08/07/2015 @ 14:56
C003-AA014-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430406	Test Start :	08/03/2015 @ 13:27
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:55
Location :	Ground-Main Build/Showrm2	Received:	08/07/2015 @ 12:00
Radon Level :	6.4 pCi/L	Analyzed:	08/07/2015 @ 15:31
C003-AA010-01			

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430410	Test Start :	08/03/2015 @ 13:57
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:05
Location :	Ground-Main Build/Showrm3 Bl	Received:	08/07/2015 @ 12:00
Radon Level :	0.1 pCi/L	Analyzed:	08/07/2015 @ 15:13
FB01080315			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430414	Test Start :	08/03/2015 @ 13:20
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:53
Location :	Ground-Main Build/Showrm1	Received:	08/07/2015 @ 12:00
Radon Level :	6.6 pCi/L	Analyzed:	08/07/2015 @ 15:31

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RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

C003-AA009-01

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430445	Test Start :	08/03/2015 @ 13:41
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:04
Location :	Ground-Main Build/Showrm3	Received:	08/07/2015 @ 12:00
Radon Level :	9.3 pCi/L	Analyzed:	08/07/2015 @ 14:35

C003-AA013-01

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2431995	Test Start :	08/03/2015 @ 13:36
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 14:00
Location :	Ground-Main Build/Showrm3	Received:	08/07/2015 @ 12:00
Radon Level :	6.9 pCi/L	Analyzed:	08/07/2015 @ 14:56

C003-AA012-01

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2432038	Test Start :	08/03/2015 @ 13:30
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 13:58
Location :	Ground-Main Build/Showrm2	Received:	08/07/2015 @ 12:00
Radon Level :	7.0 pCi/L	Analyzed:	08/07/2015 @ 14:56

C003-AA011-01

Error for Measurement is: ± 0.4 pCi/L

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RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

The results indicate that at least one testing device registered at or above the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends mitigation if the average of two short-term tests taken in the lowest level of the building suitable for occupancy show radon levels that are equal to or greater than 4.0 pCi/L.

For information on how to reduce radon levels in your home, please review the EPA booklet: Consumer's Guide to Radon Reduction (www.epa.gov/radon/pdfs/consguid.pdf) and contact your state health department. The EPA maintains a radon information website, including copies of its publications, at www.epa.gov/iaq/radon.

For New Jersey clients: Please see the attached guidance document entitled Radon Testing and Mitigation: The Basics for further information.

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PC1508070125

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: Hickory Homes & Properties, Inc (HH&P)
Test Location: 103 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

Canister ID# :	2430411	Test Start :	08/04/2015 @ 10:10
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 10:23
Location :	Ground-HH&P Storage	Received:	08/07/2015 @ 12:00
Radon Level :	0.3 pCi/L	Analyzed:	08/07/2015 @ 14:56
C002-AA004-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430423	Test Start :	08/04/2015 @ 09:50
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 10:20
Location :	Ground-HH&P Office/Lounge	Received:	08/07/2015 @ 12:00
Radon Level :	0.2 pCi/L	Analyzed:	08/07/2015 @ 15:13
C002-AA003-01			

Error for Measurement is: ± 0.1 pCi/L

Canister ID# :	2430432	Test Start :	08/04/2015 @ 09:45
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 10:18
Location :	Ground-HH&P Off/Reception	Received:	08/07/2015 @ 12:00
Radon Level :	0.1 pCi/L	Analyzed:	08/07/2015 @ 14:56
C002-AA002-02			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430436	Test Start :	08/04/2015 @ 09:40
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 10:16
Location :	Ground-HH&P Office	Received:	08/07/2015 @ 12:00
Radon Level :	0.2 pCi/L	Analyzed:	08/07/2015 @ 14:56
C002-AA001-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430444	Test Start :	08/04/2015 @ 09:44
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 10:18
Location :	Ground-HH&P Off/Reception	Received:	08/07/2015 @ 12:00
Radon Level :	0.2 pCi/L	Analyzed:	08/07/2015 @ 15:30

National Radon Safety Board NRSB Certified Radon Professionals

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RTCA RADON TESTING CORPORATION OF AMERICA

PC1508070125

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: Hickory Homes & Properties, Inc (HH&P)
Test Location: 103 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results
C001-AA002-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2431993	Test Start :	08/04/2015 @ 10:13
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 10:24
Location :	Ground-Storage Trailer	Received:	08/07/2015 @ 12:00
Radon Level :	0.2 pCi/L	Analyzed:	08/07/2015 @ 14:56

C002-AA005-01

Error for Measurement is: ± 0.2 pCi/L

The reported results indicate that radon levels in the building tested are below the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends retesting if your living patterns change and you begin occupying a lower level of the building, such as a basement or if major remodeling is done.

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PC1508070126

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: MTA Substation B36 Milepost-136
Test Location: 103 Kisco Ave
Mt Kisco, NY 10549-

Individual Canister Results

Canister ID# :	2430438	Test Start :	08/04/2015 @ 08:33
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 08:53
Location :	Ground-MTA/B36	Received:	08/07/2015 @ 12:00
Radon Level :	0.4 pCi/L	Analyzed:	08/07/2015 @ 14:56
C001-AA002-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430461	Test Start :	08/04/2015 @ 08:37
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 08:55
Location :	Ground-32.2 North	Received:	08/07/2015 @ 12:00
Radon Level :	0.4 pCi/L	Analyzed:	08/07/2015 @ 15:13
C001-AA003-01			

Error for Measurement is: ± 0.1 pCi/L

Canister ID# :	2430473	Test Start :	08/04/2015 @ 08:34
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 08:53
Location :	Ground-MTA/B36	Received:	08/07/2015 @ 12:00
Radon Level :	0.3 pCi/L	Analyzed:	08/07/2015 @ 15:13
C001-AA002-02			

Error for Measurement is: ± 0.1 pCi/L

Canister ID# :	2430552	Test Start :	08/04/2015 @ 08:40
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 08:57
Location :	Ground-MTA/B36	Received:	08/07/2015 @ 12:00
Radon Level :	0.4 pCi/L	Analyzed:	08/07/2015 @ 15:31
C001-AA004-01			

Error for Measurement is: ± 0.1 pCi/L

Canister ID# :	2432014	Test Start :	08/04/2015 @ 08:30
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/07/2015 @ 08:51
Location :	Ground-MTA/B36	Received:	08/07/2015 @ 12:00
Radon Level :	0.4 pCi/L	Analyzed:	08/07/2015 @ 15:31

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RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: MTA Substation B36 Milepost-136
Test Location: 103 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results
C001-AA001-01

Error for Measurement is: ± 0.2 pCi/L

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RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/07/2015

Mr. Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 103-105 Kisco Ave
Mt Kisco, NY 10549-
Individual Canister Results

Canister ID# :	2430408	Test Start :	08/03/2015 @ 15:41
Canister Type :	Charcoal Canister 3 inch	Test Stop :	08/06/2015 @ 15:44
Location :	2nd Fl-ANdreas Off/BL	Received:	08/07/2015 @ 12:00
Radon Level :	0.1 pCi/L	Analyzed:	08/07/2015 @ 15:31

Error for Measurement is: ± 0.2 pCi/L

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REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

RST 3-02-F-0052

TRANSMITTAL MEMO

To:	Mr. Eric Daly, On-Scene Coordinator Response and Prevention Branch U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer RST 3, Region II
Subject:	Canadian Uranium and Radium Site Data Validation Assessment
Date:	November 12, 2015

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameter:

  Radon Testing 27 Samples

- Matrices and Number of Samples

  Indoor Air 25 Samples
  Field Blanks 2 Samples

- Sampling Dates: October 23 through 26, 2015

The final data assessment narrative and original analytical data package are attached.

cc:	RST 3 SPM:	Bernard Nwosu
	RST 3 SITE FILE TDD #:	TO-0006-0053
	RST 3 ANALYTICAL TDD #:	TO-0006-0070
	TASK#:	2070

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **November 12, 2015**

TO: **Eric Daly , On-Scene Coordinator**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
RST 3 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 EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Field Blanks
Laboratory Blanks
Field Duplicates
Data Completeness

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Radon Testing
Acceptable as Submitted	X
Acceptable with Comments	
Unacceptable, Action Pending	
Unacceptable	

Data Reviewed by: Smita Sumbaly Date: 11/12/15

Approved By: Date: 11/12/15

Area Code/Phone No.: (732) 585-4410

NARRATIVE

PCS No. 2070

SITE NAME: **Canadian Uranium and Radium Site**
Mount Kisco
Westchester County
New York

Laboratory Name: Precision Environmental, Inc., 36-15A 23rd Street, Long Island City, NY 11106 (deploy and retrieve canisters) and Radon Testing Corporation of America (RTCA), 2 Hayes Street, Elmsford, NY 10523 (Radon Testing).

INTRODUCTION:

The laboratory's portion of this case consisted of 27 air samples, including two field blanks and two field duplicates, for Radon testing. All the samples were collected on October 23 through 26, 2015.

The laboratory reported No problem(s) with the receipt of these samples:

The laboratory reported No problems with the analyses of Radon Testing.

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.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Inorganic Data Review Narrative

RFP# 334 TASK # 2070	Site: Canadian Uranium and Radium Site	Matrix Air: 27
Sampling Team: Precision Environmental Inc. Laboratory: Radon Testing Corporation of America		
Reviewer: Smita Sumbaly		

Data Case Description:

On October 23, 2015, U.S. EPA, Region II, RST 3- subcontracted sampling personnel collected 27 radon samples, including two field blanks and two field duplicates, from the Canadian Uranium and Radium Site located in Mount Kisco, Westchester County, New York. RST 3 subcontracted the services of a Precision Environmental, Inc. radon certified technician to deploy and remove canisters and submit it to the Radon Testing Corporation of America (RTCA) to perform the radon testing. Charcoal Canisters were deployed by NY radon certified technicians on October 23, 2015 and retrieved on October 26, 2015. After retrieving the samples, the Precision Environmental, Inc. technician shipped the samples to RTCA, located at 2 Hayes Street, Elmsford, New York, to analyze the samples for radon testing.

All the 27 air samples, including two field duplicates and two field blanks, were collected for radon testing utilizing activated charcoal canisters (ACC) for at least 72 hours period of time. The radon testing samples were collected from the NY Stone & Building Supply/Main Building (Ground and 2nd floor). The co-located ACC's were placed side-by-side, 4 inches apart.

All radon testing were performed in accordance with the ANSI/AARST MAMF 2012 "Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings". The placement of the ACC's was conducted in accordance with Weston's instructions to Precision Environmental, Inc.

Client identification (ID) and laboratory ID numbers are as follows:

Field Sample ID/Location	Canisters ID Number	Canister Type	Analysis	Canisters Deployed	Canisters Retrieved
NY Stone & Building Supply - Main Building					
C003-AAP008-01	2430479	Charcoal Canister	Radon Testing	10/23/2015	10/26/2015
C003-AAP009-01	2430415		Radon Testing	10/23/2015	10/26/2015
C003-AAP010-01	2430417		Radon Testing	10/23/2015	10/26/2015
C003-AAP011-01	2430547		Radon Testing	10/23/2015	10/26/2015
C003-AAP012-01	2430403		Radon Testing	10/23/2015	10/26/2015
C003-AAP013-01	2430464		Radon Testing	10/23/2015	10/26/2015
FB01-100915	2430525		Radon Testing	10/23/2015	10/26/2015

Field Sample ID/Location	Canisters ID Number	Canister Type	Analysis	Canisters Deployed	Canisters Retrieved
NY Stone & Building Supply - Main Building - Concluded					
C003-AAP014-01	2430466	Charcoal Canister	Radon Testing	10/23/2015	10/26/2015
C003-AAP015-01	2430455		Radon Testing	10/23/2015	10/26/2015
C003-AAP016-01	2430456		Radon Testing	10/23/2015	10/26/2015
C003-AAP016-02[1]	2430454		Radon Testing	10/23/2015	10/26/2015
C003-AAP017-01	2430530		Radon Testing	10/23/2015	10/26/2015
C003-AAP018-01	2430446		Radon Testing	10/23/2015	10/26/2015
C003-AAP019-01	2430431		Radon Testing	10/23/2015	10/26/2015
C003-AAP020-01	2430516		Radon Testing	10/23/2015	10/26/2015
C003-AAP021-01	2430443		Radon Testing	10/23/2015	10/26/2015
C003-AAP022-01	2430442		Radon Testing	10/23/2015	10/26/2015
C003-AAP023-01	2430474		Radon Testing	10/23/2015	10/26/2015
C003-AAP024-01	2430517		Radon Testing	10/23/2015	10/26/2015
C003-AAP025-01	2430452		Radon Testing	10/23/2015	10/26/2015
C003-AAP026-01	2432022		Radon Testing	10/23/2015	10/26/2015
C003-AAP026-02[2]	2430465		Radon Testing	10/23/2015	10/26/2015
FB02-100915	2430481		Radon Testing	10/23/2015	10/26/2015
C003-AAP027-01	2430467		Radon Testing	10/23/2015	10/26/2015
C003-AAP028-01	2430413		Radon Testing	10/23/2015	10/26/2015
C003-AAP029-01	2430531		Radon Testing	10/23/2015	10/26/2015
C003-AAP030-01	2430451		Radon Testing	10/23/2015	10/26/2015

[1] A duplicate of sample C003-AAP016-01
[2] A duplicate of sample C003-AAP026-01

A.2.3.3 Technical Review:

All samples were reviewed for the following quality control (QC) parameters. All QC results were evaluated, but only non-compliant QC observations, if any, are discussed in detail in this report.

- Field Duplicate
- Field Blank

Field Duplicate:

Sample Number	Sample Result (D1)	Field Duplicate sample Number	Field duplicate Result (D2)	Average (M)	RPD
C003-AAP016-01	1.4 pCi/L	C003-AAP016-02	1.2 pCi/L	1.3 pCi/L	15.4 %
C003-AAP026-01	0.6 pCi/L	C003-AAP026-02	0.6 pCi/L	0.6 pCi/L	0.0 %

According to Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings, duplicate samples were deployed at a rate of one per unit of the measurement location. Duplicate pairs of measurements greater than or equal to 4.0 pCi/L should produce a

Relative Percent Difference (RPD) greater than 36% no more than 1% of time. In the above field duplicate pairs for C003-AAP016-01 and C003-AAP016-02 and C003-AAP026-01 and C003-AAP026-02, the sample and duplicate measurements are less than the 4.0 pCi/L. Therefore, no action was required.

RPD = [(D1-D2)/(D1 + D2/2)] X 100%

Field Blank

Field Sample ID/Location	Canisters ID Number	Blank Concentration	QC Limit
FB01-100915 (Field Blank)	2430525	0.1 pCi/L	<4.0 pCi/L
FB02-100915 (Field Blank)	2430481	0.1 pCi/L	

All field/office blank measurements are well below 4.0 pCi/L so no qualification was required.

All of the 27 samples were reported below 4.0 pCi/L. The national average indoor radon gas level is approximately 1.3 pCi/L.

Contract Problems/Non-Compliance:

RTCA laboratory incorrectly entered sample number C003-AAP026-01 in their report which was supposed to be C003-AAP026-02 (Canister ID#: 2430465). Data reviewer manually corrected the sample ID number and initiated.

Reviewer's Signature: Smita Sumbaly **Date:** / /2015

Verified By: **Date:** 11/12/15

Analytical Data Summary Table - Radon Testing
Canadian Uranium and Radium Site, Mount Kisco, New York
Sampling Dates: October 23 through 26, 2015

Field Sample ID/Location	Canisters ID Number	Canister Type	Analysis	Radon Level
NY Stone & Building Supply - Main Building				
C003-AAP008-01	2430479	Charcoal Canister	Radon Testing	1.0 pCi/L
C003-AAP009-01	2430415	Charcoal Canister	Radon Testing	0.9 pCi/L
C003-AAP010-01	2430417	Charcoal Canister	Radon Testing	0.6 pCi/L
C003-AAP011-01	2430547	Charcoal Canister	Radon Testing	1.0 pCi/L
C003-AAP012-01	2430403	Charcoal Canister	Radon Testing	1.0 pCi/L
C003-AAP013-01	2430464	Charcoal Canister	Radon Testing	2.0 pCi/L
FB01-100915	2430525	Charcoal Canister	Radon Testing	0.1 pCi/L
C003-AAP014-01	2430466	Charcoal Canister	Radon Testing	1.4 pCi/L
C003-AAP015-01	2430455	Charcoal Canister	Radon Testing	1.4 pCi/L
C003-AAP016-01	2430456	Charcoal Canister	Radon Testing	1.4 pCi/L
C003-AAP016-02[1]	2430454	Charcoal Canister	Radon Testing	1.2 pCi/L
C003-AAP017-01	2430530	Charcoal Canister	Radon Testing	1.5 pCi/L
C003-AAP018-01	2430446	Charcoal Canister	Radon Testing	0.5 pCi/L
C003-AAP019-01	2430431	Charcoal Canister	Radon Testing	0.6 pCi/L
C003-AAP020-01	2430516	Charcoal Canister	Radon Testing	0.9 pCi/L
C003-AAP021-01	2430443	Charcoal Canister	Radon Testing	1.0 pCi/L
C003-AAP022-01	2430442	Charcoal Canister	Radon Testing	0.8 pCi/L
C003-AAP023-01	2430474	Charcoal Canister	Radon Testing	0.9 pCi/L
C003-AAP024-01	2430517	Charcoal Canister	Radon Testing	0.7 pCi/L
C003-AAP025-01	2430452	Charcoal Canister	Radon Testing	0.7 pCi/L
C003-AAP026-01	2432022	Charcoal Canister	Radon Testing	0.6 pCi/L
C003-AAP026-02[2]	2430465	Charcoal Canister	Radon Testing	0.6 pCi/L
FB02-100915	2430481	Charcoal Canister	Radon Testing	0.1 pCi/L
C003-AAP027-01	2430467	Charcoal Canister	Radon Testing	0.7 pCi/L
C003-AAP028-01	2430413	Charcoal Canister	Radon Testing	0.7 pCi/L
C003-AAP029-01	2430531	Charcoal Canister	Radon Testing	0.7 pCi/L
C003-AAP030-01	2430451	Charcoal Canister	Radon Testing	2.9 pCi/L

[1] A duplicate of sample C003-AAP016-01
[2] A duplicate of sample C003-AAP026-01

pCi/L - picoCuries per liter of air

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C003-AAP008-01	2430479	NY Stone & Building Supply / Main building	Ground	Showroom #1	16.6' West from NE corner on top of a shelf	10/23/2015	11:08	10/26/2015	11:24		AA	KC	1.0
C003-AAP009-01	2430415	NY Stone & Building Supply / Main building	Ground	Showroom #1	4' from North wall & 2' from South wall on PEI stand	10/23/2015	11:12	10/26/2015	11:26		AA	KC	0.9
C003-AAP010-01	2430417	NY Stone & Building Supply / Main building	Ground	Showroom #2	Middle of the room on a PEI stand	10/23/2015	11:15	10/26/2015	11:29		AA	KC	0.6
C003-AAP011-01	2430547	NY Stone & Building Supply / Main building	Ground	Showroom #2	9.3' West from NE corner on a stone water fall	10/23/2015	11:30	10/26/2015	11:31		AA	KC	1.0
C003-AAP012-01	2430403	NY Stone & Building Supply / Main building	Ground	Showroom #3	10.8' West, 14' South from NE corner on PEI stand	10/23/2015	11:33	10/26/2015	11:38		AA	KC	1.0
C003-AAP013-01	2430464	NY Stone & Building Supply / Main building	Ground	Showroom #3	18.3' North, 4.4' West from SE corner of a shelf	10/23/2015	11:36	10/26/2015	11:40	/Moved 3'	AA	KC	2.0
FB01-100915	2430525	NY Stone & Building Supply / Main building	Ground	Showroom #3	18.3' North, 3.8' West from SE corner of a shelf	10/23/2015	11:37	10/26/2015	11:40	Unexposed field blank/ Moved 3'	AA	KC	0.1
C003-AAP014-01	2430466	NY Stone & Building Supply / Main building	Ground	Office #2	1' North, 4' West from SE corner on a shelf	10/23/2015	10:56	10/26/2015	10:58		AA	KC	1.4
C003-AAP015-01	2430455	NY Stone & Building Supply / Main building	Ground	Office #3	5' North, 1.7' East from SW corner on a file cabinet	10/23/2015	10:50	10/26/2015	10:55		AA	KC	1.4
C003-AAP016-01	2430456	NY Stone & Building Supply / Main building	Ground	Showroom #3	50' from North wall & 2' from East wall on shelf	10/23/2015	11:40	10/26/2015	11:42		AA	KC	1.4
C003-AAP016-02	2430454	NY Stone & Building Supply / Main building	Ground	Showroom #3	45.4'North, 6' East from SW corner on PEI stand	10/23/2015	11:40	10/26/2015	11:43	Co-located (Duplicate)	AA	KC	1.2
C003-AAP017-01	2430530	NY Stone & Building Supply / Main building	Ground	Office #1	5.8' West, 1' South from NE corner on a shelf	10/23/2015	10:53	10/26/2015	10:57		AA	KC	1.5
C003-AAP018-01	2430446	NY Stone & Building Supply / Main building	Ground	Receiving area	11.7' North, 3' West from SE corner on wood shelf	10/23/2015	11:02	10/26/2015	11:23		AA	KC	0.5
C003-AAP019-01	2430431	NY Stone & Building Supply / Main building	Ground	Receiving area	5.3' East, 3.7' South from NW corner on steel shelf	10/23/2015	10:59	10/26/2015	11:22		AA	KC	0.6
C003-AAP020-01	2430516	NY Stone & Building Supply / Main building	2nd floor	Showroom #4	13.2' West, 11.8' South from NE corner on PEI stand	10/23/2015	10:09	10/26/2015	10:42	1 window on west side was open /windows closed	AA	KC	0.9
C003-AAP021-01	2430443	NY Stone & Building Supply / Main building	2nd floor	Conference room	On top of the glass table	10/23/2015	10:03	10/26/2015	10:40		AA	KC	1.0
C003-AAP022-01	2430442	NY Stone & Building Supply / Main building	2nd floor	Office #5	On top of a countertop middle of North side	10/23/2015	9:56	10/26/2015	10:37	Window open / window closed	AA	KC	0.8
C003-AAP023-01	2430474	NY Stone & Building Supply / Main building	2nd floor	Office #4	On top of wood base cabinet on NE corner	10/23/2015	9:58	10/26/2015	10:39	Heat is turn on (Open registers)/NW	AA	KC	0.9
C003-AAP024-01	2430517	NY Stone & Building Supply / Main building	2nd floor	Lobby #4	6' East, 1.8' North from SW corner on a metal file cabinet	10/23/2015	9:51	10/26/2015	10:35		AA	KC	0.7

RST 3 Sample ID	Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up	Lab Results (pCi/L)
C003-AAP025-01	2430452	NY Stone & Building Supply / Main building	2nd floor	Reception area	3' North, 1.3' West from SE corner on countertop	10/23/2015	9:36	10/26/2015	10:31		AA	KC	0.7
C003-AAP026-01	2432022	NY Stone & Building Supply / Main building	2nd floor	Office #6	6.2' West, 5.5' South from NE corner on a desk	10/23/2015	9:41	10/26/2015	10:33		AA	KC	0.6
C003-AAP026-02	2430465	NY Stone & Building Supply / Main building	2nd floor	Office #6	6.6' West, 5.5' South from NE corner on a desk	10/23/2015	9:42	10/26/2015	10:33	Co-located (Duplicate)	AA	KC	0.6
FB02-100915	2430481	NY Stone & Building Supply / Main building	2nd floor	Office #6	2.1' West, 0.9' South from NE corner on a shelf	10/23/2015	9:46	10/26/2015	10:34	Unexposed field blank	AA	KC	0.1
C003-AAP027-01	2430467	NY Stone & Building Supply / Main building	2nd floor	Room #2	On top of a cabinet in the middle of the room	10/23/2015	10:16	10/26/2015	10:44		AA	KC	0.7
C003-AAP028-01	2430413	NY Stone & Building Supply / Main building	2nd floor	Architect's office – Back room	9' 7" from North wall & 14' 6" from East wall	10/23/2015	10:24	10/26/2015	10:46		AA	KC	0.7
C003-AAP029-01	2430531	NY Stone & Building Supply / Main building	2nd floor	Room #3	22' 4" from South wall & 14' from East wall	10/23/2015	10:39	10/26/2015	10:49		AA	KC	0.7
C003-AAP030-01	2430451	NY Stone & Building Supply / Main building	1st floor	Mechanical / Electrical room	2' from South wall & 4' from West wall	10/23/2015	10:45	10/26/2015	10:53		AA	KC	2.9

PC1510270055

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Park Drive
Mount Kisco, NY 10549-
Individual Canister Results

Canister ID# :	2430403	Test Start :	10/23/2015 @ 11:33
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:38
Location :	Ground Fl-Showrm #3	Received:	10/27/2015 @ 13:22
Radon Level :	1.0 pCi/L	Analyzed:	10/27/2015 @ 15:50
C003-AAP012-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430413	Test Start :	10/23/2015 @ 10:24
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:46
Location :	Second Floor-Arch Off -Arch Off	Received:	10/27/2015 @ 13:22
Radon Level :	0.7 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP028-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430415	Test Start :	10/23/2015 @ 11:12
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:26
Location :	Ground Fl-Showrm #1	Received:	10/27/2015 @ 13:22
Radon Level :	0.9 pCi/L	Analyzed:	10/27/2015 @ 15:49
C003-AAP009-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430417	Test Start :	10/23/2015 @ 11:15
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:29
Location :	Ground Fl-Showrm #2	Received:	10/27/2015 @ 13:22
Radon Level :	0.6 pCi/L	Analyzed:	10/27/2015 @ 15:49
C003-AAP010-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430431	Test Start :	10/23/2015 @ 10:59
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:22
Location :	Ground Fl-Recieving Area	Received:	10/27/2015 @ 13:22
Radon Level :	0.6 pCi/L	Analyzed:	10/27/2015 @ 15:50

National Radon Safety Board NRSB Certified Radon Professionals

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PC1510270055

Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Park Drive
Mount Kisco, NY 10549-

Individual Canister Results

C003-AAP019-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430442	Test Start :	10/23/2015 @ 09:56
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:37
Location :	Second Floor-Office #5	Received:	10/27/2015 @ 13:22
Radon Level :	0.8 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP022-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430443	Test Start :	10/23/2015 @ 10:03
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:40
Location :	Second Floor-Con Rm	Received:	10/27/2015 @ 13:22
Radon Level :	1.0 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP021-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430446	Test Start :	10/23/2015 @ 11:02
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:23
Location :	Ground Fl-Recieving Area	Received:	10/27/2015 @ 13:22
Radon Level :	0.5 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP018-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430451	Test Start :	10/23/2015 @ 10:45
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:53
Location :	First Floor-Elec/ Mech Rm	Received:	10/27/2015 @ 13:22
Radon Level :	2.9 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP030-01

Error for Measurement is: ± 0.2 pCi/L

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Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Avenue
Mount Kisco, NY 10549-

Individual Canister Results

Canister ID# :	2430452	Test Start :	10/23/2015 @ 09:36
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:31
Location :	Second Floor-Recept Area	Received:	10/27/2015 @ 13:22
Radon Level :	0.7 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP025-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430454	Test Start :	10/23/2015 @ 11:40
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:43
Location :	Ground Fl-Showrm #3	Received:	10/27/2015 @ 13:22
Radon Level :	1.2 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP016-02			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430455	Test Start :	10/23/2015 @ 10:50
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:55
Location :	Ground Fl-Office #3	Received:	10/27/2015 @ 13:22
Radon Level :	1.4 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP015-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430456	Test Start :	10/23/2015 @ 11:40
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:42
Location :	Ground Fl-Showrm #3	Received:	10/27/2015 @ 13:22
Radon Level :	1.4 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP016-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430464	Test Start :	10/23/2015 @ 11:36
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:40
Location :	Ground Fl-Showrm #3	Received:	10/27/2015 @ 13:22
Radon Level :	2.0 pCi/L	Analyzed:	10/27/2015 @ 15:49

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Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Park Drive
Mount Kisco, NY 10549-

Individual Canister Results

C003-AAP013-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430465	Test Start :	10/23/2015 @ 09:42
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:33
Location :	Second Floor-Office #6	Received:	10/27/2015 @ 13:22
Radon Level :	0.6 pCi/L	Analyzed:	10/27/2015 @ 16:06

C003-AAP026-~~01~~ 02

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430466	Test Start :	10/23/2015 @ 10:56
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:58
Location :	Ground Fl-Office #2	Received:	10/27/2015 @ 13:22
Radon Level :	1.4 pCi/L	Analyzed:	10/27/2015 @ 16:06

C003-AAP014-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430467	Test Start :	10/23/2015 @ 10:16
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:44
Location :	Second Floor-Rm #2	Received:	10/27/2015 @ 13:22
Radon Level :	0.7 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP027-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430474	Test Start :	10/23/2015 @ 09:58
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:39
Location :	Second Floor-Off #4	Received:	10/27/2015 @ 13:22
Radon Level :	0.9 pCi/L	Analyzed:	10/27/2015 @ 16:06

C003-AAP023-01

Error for Measurement is: ± 0.2 pCi/L

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Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Park Drive
Mount Kisco, NY 10549-

Individual Canister Results

Canister ID# :	2430479	Test Start :	10/23/2015 @ 11:08
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:24
Location :	Ground Fl-Showrm #1	Received:	10/27/2015 @ 13:22
Radon Level :	1.0 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP008-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430481	Test Start :	10/23/2015 @ 09:46
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:34
Location :	Second Floor-Office #6 BL	Received:	10/27/2015 @ 13:22
Radon Level :	0.1 pCi/L	Analyzed:	10/27/2015 @ 15:50
FB02-100915			

Error for Measurement is: ± 0.3 pCi/L

Canister ID# :	2430516	Test Start :	10/23/2015 @ 10:09
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:42
Location :	Second Floor-Showrm #4	Received:	10/27/2015 @ 13:22
Radon Level :	0.9 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP020-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430517	Test Start :	10/23/2015 @ 09:51
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:35
Location :	Second Floor-Lobby #4	Received:	10/27/2015 @ 13:22
Radon Level :	0.7 pCi/L	Analyzed:	10/27/2015 @ 16:06
C003-AAP024-01			

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430525	Test Start :	10/23/2015 @ 11:37
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:40
Location :	Ground Fl-Showrm #3 BL	Received:	10/27/2015 @ 13:22
Radon Level :	0.1 pCi/L	Analyzed:	10/27/2015 @ 15:50

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
FL DOH RB1609
IL RNL2000201

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Park Drive
Mount Kisco, NY 10549-

Individual Canister Results

FB01-100915

Error for Measurement is: ± 0.1 pCi/L

Canister ID# :	2430530	Test Start :	10/23/2015 @ 10:53
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:57
Location :	Ground Fl-Office #1	Received:	10/27/2015 @ 13:22
Radon Level :	1.5 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP017-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430531	Test Start :	10/23/2015 @ 10:39
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:49
Location :	Second Floor-Rm #3	Received:	10/27/2015 @ 13:22
Radon Level :	0.7 pCi/L	Analyzed:	10/27/2015 @ 16:06

C003-AAP029-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2430547	Test Start :	10/23/2015 @ 11:30
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 11:31
Location :	Ground Fl-Showrm #2	Received:	10/27/2015 @ 13:22
Radon Level :	1.0 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP011-01

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2432022	Test Start :	10/23/2015 @ 09:41
Canister Type :	Charcoal Canister 3 inch	Test Stop :	10/26/2015 @ 10:33
Location :	Second Floor-Office #6	Received:	10/27/2015 @ 13:22
Radon Level :	0.6 pCi/L	Analyzed:	10/27/2015 @ 15:50

C003-AAP026-01

Error for Measurement is: ± 0.2 pCi/L

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
FL DOH RB1609
IL RNL2000201

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

PC1510270055

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 10/27/2015

Andreas Andreou
PRECISION ENVIRONMENTAL
36-15 A 23rd Street
Long Island City, NY 11106-

Client: NY Stone & Building Supply
Test Location: 105 Kisco Park Drive
Mount Kisco, NY 10549-
Individual Canister Results

The reported results indicate that radon levels in the building tested are below the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends retesting if your living patterns change and you begin occupying a lower level of the building, such as a basement or if major remodeling is done.

General radon information may be obtained by consulting the EPA booklet: A Citizen's Guide to Radon (www.epa.gov/radon/pubs/citguide.html). To request a copy or for further information, please contact your state health department. The EPA maintains a radon information website, including copies of its publications, at www.epa.gov/iaq/radon.

For New Jersey clients: Please see the attached guidance document entitled Radon Testing and Mitigation: The Basics for further information.

For New York clients: If the radon level of one or more testing devices is equal to or exceeds 20 pCi/L please contact the New York State Department of Health, Bureau of Environmental Radiation Protection, for technical advice and assistance at 518-402-7556 or toll free 1-800-458-1158.

PLEDGE OF ASSURED QUALITY

All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of radon in air (EPA 402-R-92-004). The analytical results relate only to the samples tested, in the condition received by the lab, and that calculations were based upon the information supplied by client. RTCA and its personnel do not assume responsibility or liability, collectively and individually, for analysis results when detectors have been improperly handled or placed by the consumer, nor does RTCA and its personnel accept responsibility for any financial or health consequences of subsequent action or lack of action, taken by the customer or it's consultants based on RTCA-provided results.

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
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NJ MEB 90036
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IL RNL2000201

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2 Hayes Street, Elmsford, NY 10523
www.rtca.com

PRECISION ENVIRONMENTAL INC.
36-15A 23rd Street, LIC, NY 11106
Tel: 718.383.2626, Fax: 718.383.7780

RADON DATA AND CHAIN OF CUSTODY

TURNAROUND TIME
RUSH Standard

CLIENT INFORMATION

NAME: **Weston Solutions Inc.**

CONTACT: **Mr. Bernard Nwosu**

CONTACT TELEPHONE: **(908) 565-2980**

BUILDING ADDRESS: **NY Stone & Building Supply**
105 Kisco Avenue, Mount Kisco, NY 10549

PROJECT INFORMATION

PROJECT NAME: **Radon Testing & Analysis**

PEI PROJECT No.: **2197-15-0003**

PROJECT MANAGER: **Andreas C. Andreou**

Radon Measurement Specialist Name: **Andreas C. Andreou (AA)**
Kam Cichowski (KC)

Radon Measurement Specialist LIC. #: **102798 RT (AA)**
108186 RT (KC)

SAMPLE DATA

Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up
2430479	NY Stone & Building Supply / Main building	Ground	Showroom #1	16.6' West from NE corner on top of a shelf	10/23/15	11:08	10/26/15	11:24		AA	KC
2430415	NY Stone & Building Supply / Main building	Ground	Showroom #1	4' from North wall & 2' from South wall on PEI stand	10/23/15	11:12	10/26/15	11:26		AA	KC
2430417	NY Stone & Building Supply / Main building	Ground	Showroom #2	Middle of the room on a PEI stand	10/23/15	11:15	10/26/15	11:29		AA	KC
2430547	NY Stone & Building Supply / Main building	Ground	Showroom #2	9.3' West from NE corner on a stone water fall	10/23/15	11:30	10/26/15	11:31		AA	KC
2430403	NY Stone & Building Supply / Main building	Ground	Showroom #3	10.8' West, 14' South from NE corner on PEI stand	10/23/15	11:33	10/26/15	11:38		AA	KC
2430464	NY Stone & Building Supply / Main building	Ground	Showroom #3	18.3' North, 4.4' West from SE corner of a shelf	10/23/15	11:36	10/26/15	11:40	moved 3'	AA	KC
2430525	NY Stone & Building Supply / Main building	Ground	Showroom #3	18.3' North, 3.8' West from SE corner of a shelf	10/23/15	11:37	10/26/15	11:40	Unexposed field blank	AA	KC
2430466	NY Stone & Building Supply / Main building	Ground	Office #2	1' North, 4' West from SE corner on a shelf	10/23/15	10:56	10/26/15	10:58		AA	KC

CHAIN OF CUSTODY

Relinquished by:	Received by:	Date	Time	Delivery Method
I [signature]		10/26/15	12:15pm	☒ By Hand; ☐ Picked up; ☐ Shipped via_____
II				☐ By Hand; ☐ Picked up; ☐ Shipped via_____
III				☐ By Hand; ☐ Picked up; ☐ Shipped via_____

INSTRUCTIONS TO THE LABORATORY:

Report Results to:	☐ MICHAEL P.	☒ ANDREAS A.	☐ Office:	☐ _____
Via Phone:	☐ 917.295.2600	☐ 917.642.2375	☐ 718.383.2626	☐ _____
Via Fax::	☐ 914.788.5440	☐ 201.689.1118	☐ 718.383.7780	☐ _____
Via e-mail:	☒ info@precision-enviro.com		☒ _andreas@precision-enviro.com	

PRECISION ENVIRONMENTAL INC.
36-15A 23rd Street, LIC, NY 11106
Tel: 718.383.2626, Fax: 718.383.7780

RADON DATA AND CHAIN OF CUSTODY

TURNAROUND TIME
RUSH Standard

CLIENT INFORMATION

NAME: **Weston Solutions Inc.**

CONTACT: **Mr. Bernard Nwosu**

CONTACT TELEPHONE: **(908) 565-2980**

BUILDING ADDRESS: **NY Stone & Building Supply**
105 Kisco Avenue, Mount Kisco, NY 10549

PROJECT INFORMATION

PROJECT NAME: **Radon Testing & Analysis**

PEI PROJECT No.: **2197-15-0003**

PROJECT MANAGER: **Andreas C. Andreou**

Radon Measurement Specialist Name: **Andreas C. Andreou (AA)**
Kam Cichowski (KC)

Radon Measurement Specialist LIC. #: **102798 RT (AA)**
108186 RT (KC)

SAMPLE DATA

Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up
2430455	NY Stone & Building Supply / Main building	Ground	Office #3	5' North, 1.7' East from SW corner on a file cabinet	10/23/15	10:50	10/26/15	10:55		AA	KC
2430456	NY Stone & Building Supply / Main building	Ground	Showroom #3	50' from North wall & 2' from East wall on shelf	10/23/15	11:40	10/26/15	11:42		AA	KC
2430454	NY Stone & Building Supply / Main building	Ground	Showroom #3	45.4'North, 6' East from SW corner on PEI stand	10/23/15	11:40	10/26/15	11:43	Co-located (Duplicate)	AA	KC
2430530	NY Stone & Building Supply / Main building	Ground	Office #1	5.8' West, 1' South from NE corner on a shelf	10/23/15	10:53	10/26/15	10:57		AA	KC
2430446	NY Stone & Building Supply / Main building	Ground	Receiving area	11.7' North, 3' West from SE corner on wood shelf	10/23/15	11:02	10/26/15	11:23		AA	KC
2430431	NY Stone & Building Supply / Main building	Ground	Receiving area	5.3' East, 3.7' South from NW corner on steel shelf	10/23/15	10:59	10/26/15	11:22		AA	KC
2430516	NY Stone & Building Supply / Main building	2nd floor	Showroom #4	13.2' West, 11.8' South from NE corner on PEI stand	10/23/15	10:09	10/26/15	10:42	1 window on west side was open /	AA	KC
2430443	NY Stone & Building Supply / Main building	2nd floor	Conference room	On top of the class table	10/23/15	10:03	10/26/15	10:40		AA	KC

CHAIN OF CUSTODY

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I [signature]		10/26/15	12:15 pm	☒ By Hand; ☐ Picked up; ☐ Shipped via _____
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Via Fax::	☐ 914.788.5440	☐ 201.689.1118	☐ 718.383.7780	☐ _____
Via e-mail:	☒ info@precision-enviro.com		☒ andreas@precision-enviro.com	

PRECISION ENVIRONMENTAL INC.
36-15A 23rd Street, LIC, NY 11106
Tel: 718.383.2626, Fax: 718.383.7780

RADON DATA AND CHAIN OF CUSTODY

TURNAROUND TIME
☐ RUSH Standard

CLIENT INFORMATION

NAME: **Weston Solutions Inc.**

CONTACT: **Mr. Bernard Nwosu**

CONTACT TELEPHONE: **(908) 565-2980**

BUILDING ADDRESS: **NY Stone & Building Supply**
105 Kisco Avenue, Mount Kisco, NY 10549

PROJECT INFORMATION

PROJECT NAME: **Radon Testing & Analysis**

PEI PROJECT No.: **2197-15-0003**

PROJECT MANAGER: **Andreas C. Andreou**

Radon Measurement Specialist Name: **Andreas C. Andreou (AA)**
Kam Cichowski (KC)

Radon Measurement Specialist LIC. #: **102798 RT (AA)**
108186 RT (KC)

SAMPLE DATA

Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up
2430442	NY Stone & Building Supply / Main building	2nd floor	Office #5	On top of a countertop middle of North side	10/23/15	9:56	10/26/15	10:37	Window open / Window Closed	AA	KC
2430474	NY Stone & Building Supply / Main building	2nd floor	Office #4	On top of wood base cabinet on NE corner	10/23/15	9:58	10/26/15	10:39	Heat is turn on (Open registers)/ Windows open.	AA	KC
2430517	NY Stone & Building Supply / Main building	2nd floor	Lobby #4	6' East, 1.8' North from SW corner on a metal file cabinet	10/23/15	9:51	10/26/15	10:35		AA	KC
2430452	NY Stone & Building Supply / Main building	2nd floor	Reception area	3' North, 1.3' West from SE corner on countertop	10/23/15	9:36	10/26/15	10:31		AA	KC
2432022	NY Stone & Building Supply / Main building	2nd floor	Office #6	6.2' West, 5.5' South from NE corner on a desk	10/23/15	9:41	10/26/15	10:33		AA	KC
2430465	NY Stone & Building Supply / Main building	2nd floor	Office #6	6.6' West, 5.5' South from NE corner on a desk	10/23/15	9:42	10/26/15	10:33	Co-located (Duplicate)	AA	KC
2430481	NY Stone & Building Supply / Main building	2nd floor	Office #6	2.1' West, 0.9' South from NE corner on a shelf	10/23/15	9:46	10/26/15	10:34	Unexposed field blank	AA	KC
2430467	NY Stone & Building Supply / Main building	2nd floor	Room #2	On top of a cabinet in the middle of the room	10/23/15	10:16	10/26/15	10:44		AA	KC

CHAIN OF CUSTODY

Relinquished by:	Received by:	Date	Time	Delivery Method
I [signature]		10/26/15	12:15pm	☒ By Hand; ☐ Picked up; ☐ Shipped via_____
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INSTRUCTIONS TO THE LABORATORY:

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Via Fax::	☐ 914.788.5440	☐ 201.689.1118	☐ 718.383.7780	☐ _____
Via e-mail:	☒ info@precision-enviro.com		☒ andreas@precision-enviro.com	

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RADON DATA AND CHAIN OF CUSTODY

TURNAROUND TIME
☐ RUSH ☐ Standard

CLIENT INFORMATION

NAME: **Weston Solutions Inc.**

CONTACT: **Mr. Bernard Nwosu**

CONTACT TELEPHONE: **(908) 565-2980**

BUILDING ADDRESS: **NY Stone & Building Supply**
105 Kisco Avenue, Mount Kisco, NY 10549

PROJECT INFORMATION

PROJECT NAME: **Radon Testing & Analysis**

PEI PROJECT No.: **2197-15-0003**

PROJECT MANAGER: **Andreas C. Andreou**

Radon Measurement Specialist Name: **Andreas C. Andreou (AA)**
Kam Cichowski (KC)

Radon Measurement Specialist LIC. #: **102798 RT (AA)**
108186 RT (KC)

SAMPLE DATA

Serial Number	Building Name	Floor	Room Name	Placement Location	Start Date	Start Time	Stop Date	Stop Time	Comments (Place/PU)	Tech. Place	Tech. Pick-up
2430413	NY Stone & Building Supply / Main building	2nd floor	Architect's office – Back room	9' 7" from North wall & 14' 6" from East wall	10/23/15	10:24	10/26/15	10:46		AA	KC
2430531	NY Stone & Building Supply / Main building	2nd floor	Room #3	22' 4" from South wall & 14' from East wall	10/23/15	10:39	10/26/15	10:49		AA	KC
2430451	NY Stone & Building Supply / Main building	1st floor	Mechanical / Electrical room	2' from South wall & 4' from West wall	10/23/15	10:45	10/26/15	10:53		AA	KC

CHAIN OF CUSTODY

Relinquished by:	Received by:	Date	Time	Delivery Method
I [signature]		10/26/15	12:15pm	☒ By Hand; ☐ Picked up; ☐ Shipped via_____
II				☐ By Hand; ☐ Picked up; ☐ Shipped via_____
III				☐ By Hand; ☐ Picked up; ☐ Shipped via_____

INSTRUCTIONS TO THE LABORATORY:

Report Results to:	☐ MICHAEL P.	☒ ANDREAS A.	☐ Office:	☐ _____
Via Phone:	☐ 917.295.2600	☐ 917.642.2375	☐ 718.383.2626	☐ _____
Via Fax::	☐ 914.788.5440	☐ 201.689.1118	☐ 718.383.7780	☐ _____
Via e-mail:	☒ info@precision-enviro.com		☒ _andreas@precision-enviro.com	

National Radon Proficiency Program

Andreas C. Andreou

Residential Measurement Provider

ID Number: 102798 RT Expiration: 10/31/2015

To confirm validity of this certification call (800) 269-4174. Verification of adherence to state and local regulations is advised. See reverse for specific certification designations.

Andreas C. Andreou 102798 RT

This individual is certified for the use of passive measurement devices to be analyzed by NEHA certified Analytical Laboratories

The radon office for the state in which this person resides may be contacted for information on radon and local requirements. For additional information contact NRPP at 800/269-4174, or visit the NRPP web-site at nrpp.info

State Radon Program Contact Number: 518-402-7556

National Radon Proficiency Program

Kam Cichowski

Residential Measurement Provider

ID Number: 108186 RT Expiration 07/31/2017

To confirm validity of this certification call (800) 269-4174. Verification of adherence to state and local regulations is advised. See reverse for specific certification designations.

Kam Cichowski 108186 RT

This individual is certified for the use of passive measurement devices to be analyzed by NRPP certified Analytical Laboratories and also certified to provide Analytical Services using the following device(s):

The radon office for the state in which this person resides may be contacted for information on radon and local requirements. For additional information contact NRPP at (800) 269-4174, or visit the NRPP web-site at nrpp.info

State Radon Program Contact Number: (518) 402-8789

Attachment F:

Data Validation Memo - Soil Analytical Results (Radioisotopes)

DATE: January 16, 2016

SUBJECT: Radiochemical Data Validation for Canadian Radium Site, Mount Kisco, WestC hester County, New York. TestAmerica data packages :

SDG_NUMBER
160-13266-1
160-13266-2
160-13266-3
160-13435-1
160-13435-2

FROM: Rick Haaker; CHP, CIH, Chemist

RF Haaker

TO: Eric Daly USEPA On-Scene Coordinator

Bernard Nwosu, Weston Solutions RST 3 Site Project Manager

DCN: RST3-02-F-0062

Associated TDD: TO-0006-0053

1. Overview

This report addresses the above referenced five data packages that were analyzed by TestAmerica Laboratories, of St. Louis, MO. The analytes (isotopes) and methods are provided in the following table.

Table of Isotopes and Analytical Methods.

Test America Method	Similar Standard Method	Description	Isotope
9315	SW-846 Method 9315	Separation and Gas Flow Proportional Counting (Alpha)	Radium-226
9320	SW-846 Method 9320	Separation and Gas Flow Proportional Counting (Beta)	Radium-228
A-01-R	DOE Method A01-R	Chemical Separation and Alpha Spectroscopy	Thorium-228
A-01-R	DOE Method A01-R	Chemical Separation and Alpha Spectroscopy	Thorium-230
A-01-R	DOE Method A01-R	Chemical Separation and Alpha Spectroscopy	Thorium-232
A-01-R	DOE Method A01-R	Chemical Separation and Alpha Spectroscopy	Uranium-233/234
A-01-R	DOE Method A01-R	Chemical Separation and Alpha Spectroscopy	Uranium-235/236
A-01-R	DOE Method A01-R	Chemical Separation and Alpha Spectroscopy	Uranium-238
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Ac-228

Test America Method	Similar Standard Method	Description	Isotope
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Americium-241
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Bi-212
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Bi-214
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Cesium-137
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Cobalt-60
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	K-40
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Pb-210
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Pb-212
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Pb-214
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Radium-226
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Radium-228
GA-01-R	EPA GA_01_R	Gamma Spectroscopy	Tl-208

2. INTRODUCTION

Two (2) water sample and eighteen (18) soil samples were collected during the time period August 11 and August 19, 2015. The following table provides a list of these field samples. The data were delivered in three packages. Each package included a summary report, chain of custody, case narrative, and raw data. An electronic data deliverables (EDD) was provided, which contained some, but not all, raw data and results in a readily accessible format.

The radio-analytical data were validated to Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) *Chapter 8 - Radiochemical Data Verification and Validation*[1]and the requirements of the quality assurance project plan (QAPP).[2] The depth of the validation was necessarily limited because Derived Concentration Guidelines (DCGL), and some specific data performance requirements have not been designated.

DATA VALIDATION PRECAUTIONS AND LIMITATIONS

It should be noted that this technical report describes method validation and is not intended to provide guidance for validation of overall program/project objectives and requirements. Project validation is generally performed by project management personnel and involves a comprehensive review of all aspects (and objectives) of a sampling and analysis project.

Table of Sample IDs and Analytical Methods. .

CLIENT_SAMPLE_DESCRIPTION	LAB_SAMPLE_ID	MATRIX	ANALYSIS_METHOD
C001-SS001-0012-01	160-13435-1	SO	A-01-R
C001-SS001-0012-01	160-13435-1	SO	GA-01-R
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R
C001-SS001-0012-02	160-13435-2	SO	A-01-R
C001-SS001-0012-02	160-13435-2	SO	GA-01-R
C001-SS002-0012-01	160-13435-3	SO	A-01-R

[1] Multi-Agency Radiological Laboratory Analytical Protocols Manual, Volume I, NUREG-1576, EPA 402-B-04-001A, NTIS PB2004-105421, July 2004.

[2] SITE-SPECIFIC UFP QUALITY ASSURANCE PROJECT PLAN CANADIAN RADIUM AND URANIUM CORPORATION SITE, MOUNT KISCO, WESTCHESTER COUNTY, NEW YORK, DC No.: RST3-02-D-0010, TDD No.: TO-0006-0053. July 2015.

CLIENT_SAMPLE_DESCRIPTION	LAB_SAMPLE_ID	MATRIX	ANALYSIS_METHOD
C001-SS002-0012-01	160-13435-3	SO	GA-01-R
C001-SS003-0012-01	160-13435-4	SO	A-01-R
C001-SS003-0012-01	160-13435-4	SO	GA-01-R
C002-SS001-2448-01	160-13266-1	SO	A-01-R
C002-SS001-2448-01	160-13266-1	SO	GA-01-R
C002-SS002-2448-01	160-13266-2	SO	A-01-R
C002-SS002-2448-01	160-13266-2	SO	GA-01-R
C002-SS003-2448-01	160-13266-3	SO	A-01-R
C002-SS003-2448-01	160-13266-3	SO	GA-01-R
C002-TRENCH-0036-01	160-13266-9	SO	A-01-R
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R
C003-SS001-2448-01	160-13266-4	SO	A-01-R
C003-SS001-2448-01	160-13266-4	SO	GA-01-R
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R
C003-SS001-2448-02	160-13266-5	SO	A-01-R
C003-SS001-2448-02	160-13266-5	SO	GA-01-R
C003-SS002-0024-01	160-13266-6	SO	A-01-R
C003-SS002-0024-01	160-13266-6	SO	GA-01-R
C003-SS003-2448-01	160-13266-8	SO	A-01-R
C003-SS003-2448-01	160-13266-8	SO	GA-01-R
C004-SS001-1824-01	160-13266-10	SO	A-01-R
C004-SS001-1824-01	160-13266-10	SO	GA-01-R
LABQC	LCS 160-204925/2-A	LI	9315
LABQC	LCS 160-204941/2-A	LI	9320
LABQC	LCS 160-204945/2-A	LI	A-01-R
LABQC	LCS 160-204950/2-A	LI	A-01-R

CLIENT_SAMPLE_DESCRIPTION	LAB_SAMPLE_ID	MATRIX	ANALYSIS_METHOD
LABQC	LCS 160-205166/2-A	SO	A-01-R
LABQC	LCS 160-205183/2-A	SO	A-01-R
LABQC	LCS 160-205192/2-A	LI	GA-01-R
LABQC	LCS 160-205239/2-A	SO	GA-01-R
LABQC	LCS 160-206670/2-A	LI	A-01-R
LABQC	LCS 160-206674/2-A	LI	A-01-R
LABQC	LCS 160-206678/2-A	LI	9315
LABQC	LCS 160-206681/2-A	LI	9320
LABQC	LCS 160-206697/2-A	LI	GA-01-R
LABQC	LCS 160-206728/2-A	SO	A-01-R
LABQC	LCS 160-206737/2-A	SO	A-01-R
LABQC	LCS 160-206991/2-A	SO	GA-01-R
LABQC	LCS 160-206992/2-A	SO	GA-01-R
LABQC	LCS 160-206998/2-A	SO	GA-01-R
RB-080515	160-13266-7	LI	9315
RB-080515	160-13266-7	LI	9320
RB-080515	160-13266-7	LI	A-01-R
RB-080515	160-13266-7	LI	GA-01-R
RB-080515	160-13266-7 DU	LI	A-01-R
RB-080515	160-13266-7 DU	LI	GA-01-R
RB-081815	160-13435-5	LI	9315
RB-081815	160-13435-5	LI	9320
RB-081815	160-13435-5	LI	A-01-R
RB-081815	160-13435-5	LI	GA-01-R
RB-081815	160-13435-5 DU	LI	9315
RB-081815	160-13435-5 DU	LI	9320

CLIENT_SAMPLE_DESCRIPTION	LAB_SAMPLE_ID	MATRIX	ANALYSIS_METHOD
RB-081815	160-13435-5 DU	LI	A-01-R
RB-081815	160-13435-5 DU	LI	GA-01-R

3. DATA QUALIFIERS

Final Data qualifiers are codes placed on an analytical result that alert data users to the validator's concern about the result. These qualifiers may be summarized as U, J, R, or Q in the final validation report.

None the analysis was performed and radioactivity was detected. The result is statistically positive at the 95% confidence level, above the critical level and above the MDC. The radionuclide is considered to be present in the sample.

U A normal, not detected (< critical value) result.

UJ The analyte was not detected, but the required MDA was not attained. A number of specific problems also resulted in assignment of a J qualifier where results were more uncertain than usual.

Q A reported combined standard uncertainty, which exceeds the project's required method uncertainty. (In this report Q was only used as an intermediate or preliminary qualifier.)

J An unusually uncertain or estimated result.

R A rejected result: the problems (quantitative or qualitative) are so severe that the data cannot be used.

The data validator should be aware that a data qualifier or a set of qualifiers does not apply to all similar data. The data validator should incorporate the project MQOs into the testing and qualifying decision-making process.

During the data validation process the data validator may use additional qualifiers based on QC sample results and acceptance criteria. The final validation reports should also include a summary of QC sample performance for use by the data assessor. Intermediate or preliminary qualifiers, such as 'S', 'B' or 'P' are assigned on the basis of QC sample performance and these are taken into consideration in assignment of a final qualifier to an analytical result.

J1+ A result for a sample whose associated blank contained detected activity above the critical level and the result for the sample was less than 5 times the result for the blank.

S A result with a related spike result (laboratory control sample [LCS], matrix spike [MS] or matrix spike duplicate [MSD]) that is outside the control limit for recovery (%R); S+ or S- used to indicate high or low recovery.

P A result with an associated replicate result that exceeds the control limit.

P1 A result for a particular analyte and sample that has associated with it a poorly performing pair of field replicates.

B A result with associated blank result, which is outside the control limit, B+ or B-.used to indicate high or low results.

The logic for mapping preliminary data qualifiers to final data qualifiers is provided in the following table (next page). Each sample result has only one final data qualifier, but may have several preliminary or intermediate data qualifiers.

4. Equations

The following equations are frequently used to compare the performance of pairs of aliquots that were drawn from the same sample.

A. Duplicate error ratio

The duplicate error ratio is the relative error in a pair of measurements and takes into account the measurement results, Ma and Mb, as well as the standard errors associated with the measurements, 2Sa and 2Sb.

By convention, laboratories report analytical errors as 2 times the standard deviation, 2 Sa and 2 Sb. If Ma and Mb are results from duplicate aliquots that were taken from a homogeneous sample, then ninety-five percent of the time the DER is expected to be less than 1.96. Ninety-nine percent of the time it is expected to be less than 2.58.

$$DER = 2 \times \frac{Abs(Ma - Mb)}{\sqrt{(2\,Sa)^2 + (2\,Sb)^2}}$$

B. Relative Percent Difference

The relative percent difference (RPctD) is a measure of consistency of measured concentration between two aliquots of a sample.

$$RPctD = 200\% \times \frac{Abs(Ma - Mb)}{Ma + Mb}$$

C. Matrix Spike Percent Difference

$$MSPctD = 100\% \times \frac{Spike\ Result - Unspiked\ Result}{Spike}$$

D. Matrix Spike Normalized Difference

$$MSND = 200\% \times \frac{Spike\ Result - Unspiked\ Result - Spike}{((2\ S_{Spike\ Result})^2 + (2\ S_{UnSpike\ Result})^2 + (2\ S_{Spike\ Result})^2)^{0.5}}$$

Ninety-five percent of the time the absolute value of the matrix spike normalized difference is expected to be less than 1.96, and ninety-nine percent of the time it should be less than 2.58.

Table of preliminary and final data qualifiers for this dataset.

Det	Final
B+,	J
J,	J
J-, R,	R
J+, P,	J
J+, P, J1+, B+, Q, U	U
J1+, B+,	J
J1+, B+, J,	J
J1+, B+, Q, J,	J
J1+, B+, Q, U	U
P,	J
P, Q, U	U
P1,	J
P1, B+,	J
P1, B+, J,	J

Det	Final
P1, J+, P, B+,	J
P1, J+, P, J1+, B+,	J
P1, J1+, B+, J,	J
P1, J1+, B+, Q, U	U
P1, Q, U	U
Q, U	U
S, B+,	J
S, J1+, B+,	J
S+,	J
S+, B+,	J
S+, J1+, B+,	J
S+, J1+, B+, J,	J
S+, Q, U	U

5. SAMPLE HANDLING AND ANALYSIS EVALUATION

This section contains the technical review comments describing the findings and observations for each of the main verification and validation parameters described in MARLAP Chapter 8 - Radiochemical Data Verification and Validation.

E. Sample Descriptors (MARLAP 8.5.1.1)

Each sample should have a unique identification code that can be cross-referenced to a unique laboratory identification number.

Discussion

The laboratory identification numbers were correctly listed in the cover page/case narrative in the data package. No issues of this type were recognized and no qualifiers were assigned on this basis.

F. Aliquot Size (MARLAP 8.5.1.2)

The aliquot or sample size used for analysis should be documented so that it can be checked when reviewing calculations, examining dilution factors or

analyzing any data that requires aliquant as an input. It is also imperative that the appropriate unit (liter, kilogram, etc.) is assigned to the aliquant.

Discussion

Each sample in the data package had an aliquot size associated with each result. No issues of this type were recognized and no qualifiers were assigned on this basis.

G. Dates of Sample Collection, Preparation, and Analysis (MARLAP 8.5.1.3)

The analytical data package should report date of sampling, preparation, and analysis. These data are used to calculate radiological holding times, some of which may be specified in the Field Sampling Plan.

Discussion

Data were provided and the holding time requirements (i.e. <6 months) were met for every analysis in the data package. No issues of this type were recognized and no qualifiers were assigned on this basis.

H. Preservation (MARLAP 8.5.1.4)

Appropriate preservation is dependent upon analyte and matrix and should be defined in sampling and analysis documentation.

Discussion

The last page of each data package is the "Login Sample Receipt Checklist," which describes the preservation state of samples. The lab reported that all samples were acceptably preserved by temperature or acidification.

No issues of this type were noted and no sample results were assigned qualifiers on this basis.

I. Tracking (MARLAP 8.5.1.5)

Each analytical result should be linked to the instrument or detector on which it was counted.

Discussion

Each analytical result in the data package was linked to a specific detector. Thus no issues of this type were recognized and no qualifiers were assigned on

this basis.

J. Traceability (MARLAP 8.5.1.6)

The traceability of standards and reference materials to be used during the analysis should be specified in the Field Sampling Plan.

Discussion

The Field Sampling Plan did not provide specific requirements for traceability. However, there is documentation that all radioactive standards are directly or indirectly traceable to NIST. No qualifiers were assigned on this basis.

K. QC Types and Linkages (MARLAP 8.5.1.7)

The type and quantity of QC samples should be identified and listed in the SOW and the results provided by the laboratory in a summary report. Replicates and matrix spike results should be linked to the original sample results.

The information obtained from the analysis of laboratory-generated duplicates is useful to evaluate analytical variability and laboratory precision. Results from the analysis of laboratory-generated duplicate samples can also reflect the homogeneity or inhomogeneity of individual samples or groups of samples of the same matrices.

Discussion

There is one laboratory replicate pair for each analyte. In addition, results for method blanks, and a laboratory control standard were supplied for each analyte. Matrix spikes or matrix spike duplicates were not required by the Field Sampling Plan. For each analyte there is a pair of field duplicates and a rinse blank. The QC types are clearly linked to the analytes and methods. Field replicates are clearly linked to analytes and methods.

No qualifiers were assigned on this basis.

L. Chemical Separation (Yield) (MARLAP 8.5.1.8)

Yield assesses the effects of the sample matrix and the chemical separation steps on the analytical result and estimates the analyte loss throughout the total analytical process.

The evaluation of an analytical yield serves to evaluate the efficiency of radiochemical separations utilized when preparing samples for measurement or analysis. The use of a tracer is conducted when a known amount of a chemical tracer is added to unknown samples; during analysis, a yield or recovery of the

tracer material is used to determine the efficiency of the entire analytical process. The tracer that is chosen is used because it mimics the properties of one or more target radionuclides. A tracer refers to a radioactive isotope, while a carrier is a non-radioactive substance.

Discussion

The analyses that employed a tracer or carrier include:

- Radium-226 and radium-228 by gas flow proportional counting. The carriers employed were stable barium and yttrium.
- Isotopic thorium by alpha spectroscopy (thorium-229 tracer),
- Isotopic uranium by alpha spectroscopy (uranium-232 tracer).

All samples exhibited an acceptable tracer recovery. Thus no issues of this type were recognized and no qualifiers were assigned on this basis.

M. Self-Absorption (MARLAP 8.5.1.9)

For some radiochemical analytical methods, the SOW may specify the generation of a self-absorption curve, which correlates mass of sample deposited in a known geometry to detector efficiency.

Discussion

The laboratory employed self-absorption corrections in determination of radium-226 and radium-228 by gas flow proportional counting (GFPC).

No qualifiers were assigned on this basis.

N. Efficiency, Calibration Curves, and Instrument Background (MARLAP 8.5.1.10)

The determination of detector efficiency is a detailed process that is best checked during an audit of the laboratory's capabilities and is usually not part of the verification and validation process.

Discussion

Overall this data was not organized in a fashion that allowed it to be reviewed in a comprehensive fashion in a reasonable amount of time.

Efficiency -Efficiency and self-absorption are accounted for with GFPC by a correction curve, which was addressed in the "Self-Absorption" section, above. Efficiency and energy calibration were checked daily, monthly and annually for alpha and gamma spectrometers.

Backgrounds – Daily, monthly and annual backgrounds are provided for alpha and gamma spectrometers as well as GFPC units. Energy calibration and background was determined daily for gamma spectrometers.

The background and detector response histories are well documented in the data packages. Iin addition, .the laboratory QA narratives did not identify any deficiencies of this nature. No issues of these types were recognized and no qualifiers were assigned on this basis.

O. Spectrometry Resolution (MARLAP 8.5.1,11)

The measured resolution of alpha and gamma spectrometers, and spectral information should be provided in the data package to evaluate if proper peak identification and separation was made.

Discussion

Overall the spectrometry resolution and peak width data was not organized in a fashion that allowed it to be reviewed in a comprehensive fashion in a reasonable amount of time.

FWHM data are provided for the alpha spectroscopy results. There are no established acceptance criteria for alpha spectrometer resolution in the QAPP. Energy resolution was sufficient to allow resolution of the alpha emitting thorium or uranium isotopes of interest. The individual alpha spectra for samples and standards are provided.

FWHM data for gamma spectroscopy results are within 0.5%, which meets the requirements of the QAPP.

In addition, the laboratory narratives did not identify any issues related to spectrometer resolution.

No issues with missing spectra or spectral resolution were recognized and no qualifiers were assigned on this basis.

P. Dilution and Correction Factors (MARLAP 8.5.1.12)

Samples for radiochemistry are usually not diluted. If required, dilution and correction factors (i.e., dry weight correction, ashed weight correction) should be provided in the data package so that the final calculations of all data affected by dilution factors can be recalculated and confirmed.

Discussion

Dilutions of the standard solutions are addressed in the data packages. Aliquot sizes, wet weights and dry weights are provided in the data package for each

sample and method of analysis. No issues with these factors were recognized and no qualifiers were assigned on this basis.

Q. Counts and Count Time (Duration) (MARLAP 8.5.1.13)

The count time for each sample, QC analysis, and instrument background should be recorded in the data package. The ability to detect radionuclides is directly related to the count time.

Discussion

Count times, QC analyses, and backgrounds are documented in the data package. Count times were nearly always sufficient for results to have the required MDC. No issues with missing data of these types were recognized.

R. Result of Measurement, Uncertainty, Minimum Detectable Concentration, and Units (MARLAP 8.5.1.14)

The result of each measurement, its expanded measurement uncertainty, and the estimated sample- or analyte-specific MDC should be reported for each sample in the appropriate units.

Discussion

No issues with these factors were recognized and no qualifiers were assigned on this basis.

6. QUALITY CONTROL SAMPLES TECHNICAL REVIEW

A. Method Blanks (MARLAP 8.5.2.1)

The requirement for a method blank is usually established in the SOW and appropriate plan documents. Check to see if a method blank was analyzed and no detected concentration/activity found in the results.

Discussion

Method blank results were provided for every analyte in the data package.

Activity was detected in method blanks for soil and liquid as noted below. An intermediate qualifier value of ‘J’ means that the analyte was detected above the critical level in the method blank. If no intermediate qualifier value is provided for a method blank, then the analyte of interest was detected above the

minimum detectable concentration MDC.

Table of method blanks having detected activity.

LAB_SAMPLE_ID	MATRIX	METHOD	ISOTOPE	CONC	UNITS	INTERMEDIATE QUALIFIERS
MB 160-204945/1-A	LI	A-01-R	Thorium-228	0.08	pCi/L	J,
MB 160-204945/1-A	LI	A-01-R	Thorium-230	0.13	pCi/L	
MB 160-205166/1-A	SO	A-01-R	Thorium-228	0.05	pCi/g	J,
MB 160-205166/1-A	SO	A-01-R	Thorium-230	0.09	pCi/g	
MB 160-206670/1-A	LI	A-01-R	Thorium-228	0.11	pCi/L	J,
MB 160-206670/1-A	LI	A-01-R	Thorium-230	0.05	pCi/L	Q, J,
MB 160-206674/1-A	LI	A-01-R	Uranium-233/234	0.06	pCi/L	Q, J,
MB 160-206728/1-A	SO	A-01-R	Thorium-228	0.09	pCi/g	
MB 160-206728/1-A	SO	A-01-R	Thorium-230	0.1	pCi/g	
MB 160-206737/1-A	SO	A-01-R	Uranium-238	0.03	pCi/g	
MB 160-206737/1-A	SO	A-01-R	Uranium-235/236	0.02	pCi/g	Q, J,
MB 160-206737/1-A	SO	A-01-R	Uranium-233/234	0.03	pCi/g	Q, J,
MB 160-206991/1-A	SO	GA-01-R	Radium-228	0.05	pCi/g	J,
MB 160-206998/1-A	SO	GA-01-R	Radium-226	0.74	pCi/g	J,

B. Laboratory Control Samples (MARLAP 8.5.2.2)

LCS samples were run for each batch and analysis type, and all spike and recovery results for LCS samples were acceptable, based on QAPP requirements. Tracer/carrier results were also within the QAPP limits.

No LCS duplicates were recognized during the data validation. The QAPP did not state any specification for LCS duplicates, however.

No issues of this type with Laboratory Control Samples were recognized and no qualifiers were assigned on this basis.

C. Laboratory Replicates (MARLAP 8.5.2.3)

The objective of replicate analyses is to measure laboratory precision based on each sample matrix. Check to see if laboratory replicate was analyzed and within control limits.

Discussion

Lab replicates exhibited reasonable Duplicate Error Ratios (DER), with all DERs being less than 1.96. Those pairs that exhibited a high relative percent difference (RPctD) involved at least one non-detected concentration and one concentration near the critical level, or involved a pair of non-detected concentrations. Such lab replicates are summarized below. An elevated value for RPctD for these sample pairs should not be considered a significant finding.

Table summarizing laboratory replicate performance.

Client Sample ID	LabID	LabID_Du	MATRIX	Method	Isotope	RPctD	DER
C001-SS001-0012-01	160-13435-1	160-13435-1 DU	SO	GA-01-R	Cesium-137	43	0.02
C003-SS001-2448-01	160-13266-4	160-13266-4 DU	SO	GA-01-R	Cesium-137	492	0.32
RB-080515	160-13266-7	160-13266-7 DU	LI	A-01-R	Thorium-228	105	1.42
RB-080515	160-13266-7	160-13266-7 DU	LI	A-01-R	Thorium-232	4420	1.88
RB-080515	160-13266-7	160-13266-7 DU	LI	A-01-R	Uranium-233/234	200	1.66
RB-080515	160-13266-7	160-13266-7 DU	LI	A-01-R	Uranium-235/236	587	0.68
RB-080515	160-13266-7	160-13266-7 DU	LI	A-01-R	Uranium-238	101	0.34
RB-081815	160-13435-5	160-13435-5 DU	LI	GA-01-R	Cesium-137	342	0.06
RB-081815	160-13435-5	160-13435-5 DU	LI	9315	Radium-226	118	1.18
RB-081815	160-13435-5	160-13435-5 DU	LI	A-01-R	Thorium-228	48	0.64
RB-081815	160-13435-5	160-13435-5 DU	LI	A-01-R	Uranium-233/234	328	1.18
RB-081815	160-13435-5	160-13435-5 DU	LI	A-01-R	Uranium-235/236	81	0.7
RB-081815	160-13435-5	160-13435-5 DU	LI	A-01-R	Uranium-238	52	0.12

No qualifiers were assigned on the basis of laboratory replicate performance.

D. Matrix Spikes and Matrix Spike Duplicates (MARLAP 8.5.2.4)

Matrix spike samples provide information about the effect of each sample matrix on the preparation and measurement methodology. The test uncovers the possible existence of recovery problems, based on either a statistical test or a specified fixed control limit.

Discussion

Matrix spikes or matrix spike duplicates were not required by the QAPP for water samples.

Three of the matrix spike/matrix spike duplicate pairs resulted in **spike recoveries** outside the range permitted by the QAPP or large **spike normalized**

differences (*i.e* absolute values greater than 1.96). Thorium-230 and uranium-238 sample results for field samples associated with the spike pairs in ***bolded italics*** in the following table were assigned an intermediate qualifier of 'S+' or 'S-' as appropriate.

Table summarizing matrix spike performance.

Spike Sample ID	Client Sample ID	Sample ID	Isotope	METHOD	UNITS	Spike Normalized Diff	Spike Recovery (%)
160-13266-4 MS	C003-SS001-2448-01	160-13266-4	Thorium-230	A-01-R	pCi/g	0.57	108
160-13435-1 MS	C001-SS001-0012-01	160-13435-1	Thorium-230	A-01-R	pCi/g	1.16	112
160-13435-1 MSD	***C001-SS001-0012-01***	***160-13435-1***	***Thorium-230***	***A-01-R***	***pCi/g***	***2.21***	***123***
160-13266-4 MSD	***C003-SS001-2448-01***	***160-13266-4***	***Thorium-230***	***A-01-R***	***pCi/g***	***1.55***	***124***
160-13435-1 MS	C001-SS001-0012-01	160-13435-1	Uranium-233/234	A-01-R	pCi/g	-1.82	89
160-13435-1 MSD	C001-SS001-0012-01	160-13435-1	Uranium-233/234	A-01-R	pCi/g	-1.39	91
160-13266-4 MSD	C003-SS001-2448-01	160-13266-4	Uranium-233/234	A-01-R	pCi/g	-0.58	96
160-13266-4 MS	C003-SS001-2448-01	160-13266-4	Uranium-233/234	A-01-R	pCi/g	-0.46	97
160-13435-1 MS	C001-SS001-0012-01	160-13435-1	Uranium-235/236	A-01-R	pCi/g	0.8	117
160-13266-4 MS	C003-SS001-2448-01	160-13266-4	Uranium-235/236	A-01-R	pCi/g	0.82	119
160-13266-4 MSD	C003-SS001-2448-01	160-13266-4	Uranium-235/236	A-01-R	pCi/g	1.06	126
160-13435-1 MSD	C001-SS001-0012-01	160-13435-1	Uranium-235/236	A-01-R	pCi/g	2.26	157
160-13266-4 MS	C003-SS001-2448-01	160-13266-4	Uranium-238	A-01-R	pCi/g	0.76	105
160-13266-4 MSD	C003-SS001-2448-01	160-13266-4	Uranium-238	A-01-R	pCi/g	1.54	111
160-13435-1 MS	***C001-SS001-0012-01***	***160-13435-1***	***Uranium-238***	***A-01-R***	***pCi/g***	***-2.17***	***87***
160-13435-1 MSD	C001-SS001-0012-01	160-13435-1	Uranium-238	A-01-R	pCi/g	-0.58	96

The following table demonstrates that relative percent differences and duplicate error ratios are acceptable. No qualifiers were assigned on this basis.

Table summarizing matrix spike /matrix spike duplicate performance. Concentrations and 2S (twice the standard error) values are in pCi/g.

MAT SPIKE	MAT SPIKE DUP	METHOD	ISOTOPE	CONC	CONC DUP	MEDIA	2S	2S DUP	RPctD	DER
160-13266-4 MS	160-13266-4 MSD	A-01-R	Uranium-233/234	6.74	6.66	SO	0.75	0.75	1	0.16
160-13266-4 MS	160-13266-4 MSD	A-01-R	Thorium-230	9.58	10.17	SO	0.98	1.03	6	0.82
160-13266-4 MS	160-13266-4 MSD	A-01-R	Uranium-235/236	0.37	0.39	SO	0.13	0.14	5	0.2
160-13266-4 MS	160-13266-4 MSD	A-01-R	Uranium-238	7.3	7.64	SO	0.8	0.83	4	0.58
160-13435-1 MS	160-13435-1 MSD	A-01-R	Uranium-233/234	6.15	6.29	SO	0.68	0.7	2	0.28

MAT SPIKE	MAT SPIKE DUP	METHOD	ISOTOPE	CONC	CONC DUP	MEDIA	2S	2S DUP	RPctD	DER
160-13435-1 MS	160-13435-1 MSD	A-01-R	Thorium-230	6.56	7.03	SO	0.72	0.77	7	0.9
160-13435-1 MS	160-13435-1 MSD	A-01-R	Uranium-235/236	0.37	0.48	SO	0.13	0.15	28	1.22
160-13435-1 MS	160-13435-1 MSD	A-01-R	Uranium-238	6.18	6.78	SO	0.69	0.75	9	1.18

E. Field Replicate Sample Performance

Field replicates are given in the following table.

:

Field Sample	Field Replicate
C001-SS001-0012-01	C001-SS001-0012-02
C003-SS001-2448-01	C003-SS001-2448-02

Oddly, both of the field replicate pairs included samples that formed the bases for certain lab replicates. The lab replicates always have a **Lab_Sample_ID** that ends in the letters "DU." The samples ending in the letters DU were excluded from the field replicate analysis to limit the scope of the data validation task. No criteria for field duplicates is given in the QAPP other than Worksheet 35, which states "Compare results of field duplicate (or replicate) analyses with RPD criteria." No duplicate error ratio performance requirement is provided.

The relative percent differences (RPctD) were calculated for the field duplicate pairs of samples. This statistic potentially can provide indications of the uniformity of the analyte in the media sampled. Values of relative percent difference greater than 40% suggest that the distribution of contaminants in the media sampled might be relatively heterogeneous. The more discordant field duplicates are provided in the table below.

Table of relatively discordant field duplicate values.

Client Sample ID1	Client Sample ID2	Lab Sample ID1	Lab Sample ID2	Data Package #	Method	Isotope	Ingrowth Days	RPctD	DER
C003-SS001-2448-01	C003-SS001-2448-02	160-13266-4	160-13266-5	160-13266-2	GA-01-R	Radium-226	21	41	2.34
C003-SS001-2448-01	C003-SS001-2448-02	160-13266-4	160-13266-5	160-13266-3	GA-01-R	Ac-228	10	48	1.5
C003-SS001-2448-01	C003-SS001-2448-02	160-13266-4	160-13266-5	160-13266-3	GA-01-R	Pb-212	10	44	1.92
C003-SS001-2448-01	C003-SS001-2448-02	160-13266-4	160-13266-5	160-13266-3	GA-01-R	Radium-228	10	48	1.5
C001-SS001-0012-01	C001-SS001-0012-02	160-13435-1	160-13435-2	160-13435-2	GA-01-R	Radium-226	21	51	2.28

Client Sample ID1	Client Sample ID2	Lab Sample ID1	Lab Sample ID2	Data Package #	Method	Isotope	Ingrowth Days	RPctD	DER
C001-SS001-0012-01	C001-SS001-0012-02	160-13435-1	160-13435-2	160-13435-1	GA-01-R	Ac-228	1	49	2.58
C001-SS001-0012-01	C001-SS001-0012-02	160-13435-1	160-13435-2	160-13435-1	GA-01-R	Radium-228	1	49	2.58
C001-SS001-0012-01	C001-SS001-0012-02	160-13435-1	160-13435-2	160-13435-1	GA-01-R	Radium-226	1	61	2.84

A "P1" qualifier was assigned to regular samples / analytes that were associated with these field duplicate QA sample pair results.

F. Rinse Blank Sample Performance

Rinse blank duplicate performance was addressed along with other laboratory replicates in a previous section. Rinse blanks with activity reported in excess of the critical level are provided in the following table. Results that have an intermediate qualifier that includes 'B+' correspond to samples that have an associated laboratory blank with activity reported above the critical level.

The samples of primary interest in this investigation are soil samples. The presence of a small amount of activity in the rinse blanks does not imply that cross-contamination between soil samples occurred to a degree that is likely to compromise the validity of the soil sample results.

Table of analytical results for rinse blanks.

SAMPLE ID	LAB SAMPLE ID	METHOD	ISOTOPE	CONC	TWO S	MDC	NOMINAL CRITICAL LEVEL	INTERMEDIATE QUALIFIERS
RB-080515	160-13266-7	9315	Radium-226	0.06	0.07	0.11	0.05	J,
RB-080515	160-13266-7	A-01-R	Thorium-228	0.19	0.15	0.2	0.1	J1+, B+, J,
RB-080515	160-13266-7 DU	A-01-R	Thorium-230	0.1	0.1	0.14	0.07	J,
RB-080515	160-13266-7	A-01-R	Thorium-230	0.15	0.11	0.06	0.03	
RB-081815	160-13435-5	9315	Radium-226	0.05	0.05	0.08	0.04	J,
RB-081815	160-13435-5 DU	9320	Radium-228	0.18	0.22	0.35	0.18	J,
RB-081815	160-13435-5	A-01-R	Thorium-228	0.14	0.12	0.15	0.08	J1+, B+, J,
RB-081815	160-13435-5 DU	A-01-R	Thorium-230	0.13	0.11	0.13	0.06	J1+, B+,
RB-081815	160-13435-5	A-01-R	Thorium-230	0.1	0.09	0.11	0.05	J1+, B+, J,

7. TEST OF DETECTION AND UNUSUAL UNCERTAINTY EVALUATION

A. Detection (MARLAP 8.5.3.1)

Detection qualifiers were assigned following the rationale described in Section 3.

Discussion

The following field samples carry an intermediate qualifier.

The following samples carry either a preliminary data qualifier or a final data qualifier.

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C001-SS001-0012-01	160-13435-1	SO	A-01-R	Thorium-228	S+, B+,	J
C001-SS001-0012-01	160-13435-1	SO	A-01-R	Thorium-230	S+, B+,	J
C001-SS001-0012-01	160-13435-1 MS	SO	A-01-R	Thorium-230	S+, B+,	J
C001-SS001-0012-01	160-13435-1 MSD	SO	A-01-R	Thorium-230	S+, B+,	J
C001-SS001-0012-01	160-13435-1	SO	A-01-R	Thorium-232	S+,	J
C001-SS001-0012-01	160-13435-1 MSD	SO	A-01-R	Uranium-233/234	B+,	J
C001-SS001-0012-01	160-13435-1 MS	SO	A-01-R	Uranium-233/234	B+,	J
C001-SS001-0012-01	160-13435-1	SO	A-01-R	Uranium-233/234	B+,	J
C001-SS001-0012-01	160-13435-1 MSD	SO	A-01-R	Uranium-235/236	B+,	J
C001-SS001-0012-01	160-13435-1 MS	SO	A-01-R	Uranium-235/236	B+,	J
C001-SS001-0012-01	160-13435-1	SO	A-01-R	Uranium-235/236	J1+, B+, Q, U	U
C001-SS001-0012-01	160-13435-1 MS	SO	A-01-R	Uranium-238	S, B+,	J
C001-SS001-0012-01	160-13435-1	SO	A-01-R	Uranium-238	S, B+,	J
C001-SS001-0012-01	160-13435-1 MSD	SO	A-01-R	Uranium-238	S, B+,	J
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Ac-228	P1,	J
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Ac-228	P1,	J
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Bi-214	J-, R,	R

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Bi-214	J-, R,	R
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Cesium-137	P, Q, U	U
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Cesium-137	P, Q, U	U
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Pb-212	J-, R,	R
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Pb-212	J-, R,	R
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Pb-214	J-, R,	R
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Pb-214	J-, R,	R
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Radium-226	P1,	J
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Radium-226	P1,	J
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Radium-226	P1, J+, P, B+,	J
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Radium-226	P1, J+, P, B+,	J
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Radium-228	P1,	J
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Radium-228	P1,	J
C001-SS001-0012-01	160-13435-1 DU	SO	GA-01-R	Tl-208	J-, R,	R
C001-SS001-0012-01	160-13435-1	SO	GA-01-R	Tl-208	J-, R,	R
C001-SS001-0012-02	160-13435-2	SO	A-01-R	Thorium-228	S+, B+,	J
C001-SS001-0012-02	160-13435-2	SO	A-01-R	Thorium-230	S+, B+,	J
C001-SS001-0012-02	160-13435-2	SO	A-01-R	Thorium-232	S+,	J
C001-SS001-0012-02	160-13435-2	SO	A-01-R	Uranium-233/234	B+,	J
C001-SS001-0012-02	160-13435-2	SO	A-01-R	Uranium-235/236	J1+, B+, J,	J
C001-SS001-0012-02	160-13435-2	SO	A-01-R	Uranium-238	S, B+,	J
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Ac-228	P1,	J
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Bi-214	J-, R,	R
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Cesium-137	P, Q, U	U
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Pb-212	J-, R,	R
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Pb-214	J-, R,	R
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Radium-226	P1,	J
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Radium-226	P1, J+, P, B+,	J
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Radium-228	P1,	J
C001-SS001-0012-02	160-13435-2	SO	GA-01-R	Tl-208	J-, R,	R

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C001-SS002-0012-01	160-13435-3	SO	A-01-R	Thorium-228	S+, B+,	J
C001-SS002-0012-01	160-13435-3	SO	A-01-R	Thorium-230	S+, B+,	J
C001-SS002-0012-01	160-13435-3	SO	A-01-R	Thorium-232	S+,	J
C001-SS002-0012-01	160-13435-3	SO	A-01-R	Uranium-233/234	B+,	J
C001-SS002-0012-01	160-13435-3	SO	A-01-R	Uranium-235/236	J1+, B+,	J
C001-SS002-0012-01	160-13435-3	SO	A-01-R	Uranium-238	S, B+,	J
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Ac-228	P1,	J
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Bi-214	J-, R,	R
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Cesium-137	P, Q, U	U
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Pb-212	J-, R,	R
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Pb-214	J-, R,	R
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Radium-226	P1,	J
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Radium-226	P1, J+, P, J1+, B+,	J
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Radium-228	P1,	J
C001-SS002-0012-01	160-13435-3	SO	GA-01-R	Tl-208	J-, R,	R
C001-SS003-0012-01	160-13435-4	SO	A-01-R	Thorium-228	S+, B+,	J
C001-SS003-0012-01	160-13435-4	SO	A-01-R	Thorium-230	S+, B+,	J
C001-SS003-0012-01	160-13435-4	SO	A-01-R	Thorium-232	S+,	J
C001-SS003-0012-01	160-13435-4	SO	A-01-R	Uranium-233/234	B+,	J
C001-SS003-0012-01	160-13435-4	SO	A-01-R	Uranium-235/236	J1+, B+, J,	J
C001-SS003-0012-01	160-13435-4	SO	A-01-R	Uranium-238	S, B+,	J
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Ac-228	P1,	J
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Bi-214	J-, R,	R
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Cesium-137	P, Q, U	U
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Pb-212	J-, R,	R
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Pb-214	J-, R,	R
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Radium-226	P1, J+, P, J1+, B+,	J
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Radium-226	P1,	J
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Radium-228	P1,	J
C001-SS003-0012-01	160-13435-4	SO	GA-01-R	Tl-208	J-, R,	R

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C002-SS001-2448-01	160-13266-1	SO	A-01-R	Thorium-228	S+, B+,	J
C002-SS001-2448-01	160-13266-1	SO	A-01-R	Thorium-230	S+, B+,	J
C002-SS001-2448-01	160-13266-1	SO	A-01-R	Thorium-232	S+,	J
C002-SS001-2448-01	160-13266-1	SO	A-01-R	Uranium-235/236	Q, U	U
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Ac-228	P1,	J
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Bi-214	J-, R,	R
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Cesium-137	P, Q, U	U
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Pb-212	P1,	J
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Pb-214	J-, R,	R
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Radium-226	J+, P,	J
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Radium-226	P1,	J
C002-SS001-2448-01	160-13266-1	SO	GA-01-R	Radium-228	P1, B+,	J
C002-SS002-2448-01	160-13266-2	SO	A-01-R	Thorium-228	S+, B+,	J
C002-SS002-2448-01	160-13266-2	SO	A-01-R	Thorium-230	S+, B+,	J
C002-SS002-2448-01	160-13266-2	SO	A-01-R	Thorium-232	S+,	J
C002-SS002-2448-01	160-13266-2	SO	A-01-R	Uranium-235/236	Q, U	U
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Ac-228	P1,	J
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Bi-214	J-, R,	R
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Cesium-137	P, Q, U	U
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Pb-212	P1,	J
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Pb-214	J-, R,	R
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Radium-226	J+, P,	J
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Radium-226	P1,	J
C002-SS002-2448-01	160-13266-2	SO	GA-01-R	Radium-228	P1, B+,	J
C002-SS003-2448-01	160-13266-3	SO	A-01-R	Thorium-228	S+, B+,	J
C002-SS003-2448-01	160-13266-3	SO	A-01-R	Thorium-230	S+, B+,	J
C002-SS003-2448-01	160-13266-3	SO	A-01-R	Thorium-232	S+,	J
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Ac-228	P1,	J
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Bi-214	J-, R,	R
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Cesium-137	P, Q, U	U

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Pb-212	P1,	J
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Pb-214	J-, R,	R
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Radium-226	P1,	J
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Radium-226	J+, P,	J
C002-SS003-2448-01	160-13266-3	SO	GA-01-R	Radium-228	P1, B+,	J
C002-TRENCH-0036-01	160-13266-9	SO	A-01-R	Thorium-228	S+, B+,	J
C002-TRENCH-0036-01	160-13266-9	SO	A-01-R	Thorium-230	S+, B+,	J
C002-TRENCH-0036-01	160-13266-9	SO	A-01-R	Thorium-232	S+,	J
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Ac-228	P1,	J
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Bi-214	J-, R,	R
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Cesium-137	P, Q, U	U
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Pb-212	P1,	J
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Pb-214	J-, R,	R
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Radium-226	J+, P,	J
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Radium-226	P1,	J
C002-TRENCH-0036-01	160-13266-9	SO	GA-01-R	Radium-228	P1, B+,	J
C003-SS001-2448-01	160-13266-4	SO	A-01-R	Thorium-228	S+, B+,	J
C003-SS001-2448-01	160-13266-4 MSD	SO	A-01-R	Thorium-230	S+, B+,	J
C003-SS001-2448-01	160-13266-4	SO	A-01-R	Thorium-230	S+, B+,	J
C003-SS001-2448-01	160-13266-4 MS	SO	A-01-R	Thorium-230	S+, B+,	J
C003-SS001-2448-01	160-13266-4	SO	A-01-R	Thorium-232	S+,	J
C003-SS001-2448-01	160-13266-4	SO	A-01-R	Uranium-235/236	Q, U	U
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Ac-228	P1,	J
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Ac-228	P1,	J
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Bi-214	J-, R,	R
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Bi-214	J-, R,	R
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Cesium-137	P, Q, U	U
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Cesium-137	P, Q, U	U
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Pb-212	P1,	J
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Pb-212	P1,	J

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Pb-214	J-, R,	R
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Pb-214	J-, R,	R
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Radium-226	J+, P,	J
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Radium-226	P1,	J
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Radium-226	P1,	J
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Radium-226	J+, P,	J
C003-SS001-2448-01	160-13266-4	SO	GA-01-R	Radium-228	P1, B+,	J
C003-SS001-2448-01	160-13266-4 DU	SO	GA-01-R	Radium-228	P1, B+,	J
C003-SS001-2448-02	160-13266-5	SO	A-01-R	Thorium-228	S+, B+,	J
C003-SS001-2448-02	160-13266-5	SO	A-01-R	Thorium-230	S+, B+,	J
C003-SS001-2448-02	160-13266-5	SO	A-01-R	Thorium-232	S+,	J
C003-SS001-2448-02	160-13266-5	SO	A-01-R	Uranium-235/236	Q, U	U
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Ac-228	P1,	J
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Bi-214	J-, R,	R
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Cesium-137	P, Q, U	U
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Pb-212	P1,	J
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Pb-214	J-, R,	R
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Radium-226	P1,	J
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Radium-226	J+, P,	J
C003-SS001-2448-02	160-13266-5	SO	GA-01-R	Radium-228	P1, B+,	J
C003-SS002-0024-01	160-13266-6	SO	A-01-R	Thorium-228	S+, B+,	J
C003-SS002-0024-01	160-13266-6	SO	A-01-R	Thorium-230	S+, B+,	J
C003-SS002-0024-01	160-13266-6	SO	A-01-R	Thorium-232	S+,	J
C003-SS002-0024-01	160-13266-6	SO	A-01-R	Uranium-235/236	Q, U	U
C003-SS002-0024-01	160-13266-6	SO	GA-01-R	Bi-214	J-, R,	R
C003-SS002-0024-01	160-13266-6	SO	GA-01-R	Cesium-137	P, Q, U	U
C003-SS002-0024-01	160-13266-6	SO	GA-01-R	Pb-214	J-, R,	R
C003-SS002-0024-01	160-13266-6	SO	GA-01-R	Radium-226	J+, P,	J
C003-SS002-0024-01	160-13266-6	SO	GA-01-R	Radium-226	P1,	J
C003-SS002-0024-01	160-13266-6	SO	GA-01-R	Radium-228	P1, B+, J,	J

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
C003-SS003-2448-01	160-13266-8	SO	A-01-R	Thorium-228	S+, B+,	J
C003-SS003-2448-01	160-13266-8	SO	A-01-R	Thorium-230	S+, B+,	J
C003-SS003-2448-01	160-13266-8	SO	A-01-R	Thorium-232	S+,	J
C003-SS003-2448-01	160-13266-8	SO	A-01-R	Uranium-235/236	Q, U	U
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Ac-228	P1,	J
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Bi-214	J-, R,	R
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Cesium-137	P, Q, U	U
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Pb-212	P1,	J
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Pb-214	J-, R,	R
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Radium-226	P1,	J
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Radium-226	J+, P,	J
C003-SS003-2448-01	160-13266-8	SO	GA-01-R	Radium-228	P1, B+,	J
C004-SS001-1824-01	160-13266-10	SO	A-01-R	Thorium-228	S+, B+,	J
C004-SS001-1824-01	160-13266-10	SO	A-01-R	Thorium-230	S+, B+,	J
C004-SS001-1824-01	160-13266-10	SO	A-01-R	Thorium-232	S+,	J
C004-SS001-1824-01	160-13266-10	SO	A-01-R	Uranium-235/236	J,	J
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Ac-228	P1,	J
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Bi-214	J-, R,	R
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Cesium-137	P,	J
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Pb-212	P1,	J
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Pb-214	J-, R,	R
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Radium-226	P1,	J
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Radium-226	J+, P,	J
C004-SS001-1824-01	160-13266-10	SO	GA-01-R	Radium-228	P1, B+,	J
LABQC	MB 160-204925/1-A	LI	9315	Radium-226	Q, U	
LABQC	MB 160-206678/1-A	LI	9315	Radium-226	Q, U	
LABQC	MB 160-204941/1-A	LI	9320	Radium-228	Q, U	
LABQC	MB 160-206681/1-A	LI	9320	Radium-228	Q, U	
LABQC	MB 160-205166/1-A	SO	A-01-R	Thorium-228	S+, J1+, B+, J,	
LABQC	MB 160-204945/1-A	LI	A-01-R	Thorium-228	J1+, B+, J,	

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
LABQC	MB 160-206670/1-A	LI	A-01-R	Thorium-228	J1+, B+, J,	
LABQC	MB 160-206728/1-A	SO	A-01-R	Thorium-228	S+, J1+, B+,	
LABQC	LCS 160-206670/2-A	LI	A-01-R	Thorium-230	B+,	
LABQC	MB 160-206728/1-A	SO	A-01-R	Thorium-230	S+, J1+, B+,	
LABQC	MB 160-206670/1-A	LI	A-01-R	Thorium-230	J1+, B+, Q, J,	
LABQC	MB 160-205166/1-A	SO	A-01-R	Thorium-230	S+, J1+, B+,	
LABQC	LCS 160-205166/2-A	SO	A-01-R	Thorium-230	S+, B+,	
LABQC	MB 160-204945/1-A	LI	A-01-R	Thorium-230	J1+, B+,	
LABQC	LCS 160-206728/2-A	SO	A-01-R	Thorium-230	S+, B+,	
LABQC	LCS 160-204945/2-A	LI	A-01-R	Thorium-230	B+,	
LABQC	MB 160-205166/1-A	SO	A-01-R	Thorium-232	S+, Q, U	
LABQC	MB 160-204945/1-A	LI	A-01-R	Thorium-232	Q, U	
LABQC	MB 160-206670/1-A	LI	A-01-R	Thorium-232	Q, U	
LABQC	MB 160-206728/1-A	SO	A-01-R	Thorium-232	S+, Q, U	
LABQC	LCS 160-204950/2-A	LI	A-01-R	Uranium-233/234	B+,	
LABQC	MB 160-204950/1-A	LI	A-01-R	Uranium-233/234	J1+, B+, Q, U	
LABQC	LCS 160-205183/2-A	SO	A-01-R	Uranium-233/234	B+,	
LABQC	MB 160-205183/1-A	SO	A-01-R	Uranium-233/234	J1+, B+, Q, U	
LABQC	MB 160-206674/1-A	LI	A-01-R	Uranium-233/234	J1+, B+, Q, J,	
LABQC	LCS 160-206737/2-A	SO	A-01-R	Uranium-233/234	B+,	
LABQC	MB 160-206737/1-A	SO	A-01-R	Uranium-233/234	J1+, B+, Q, J,	
LABQC	LCS 160-206674/2-A	LI	A-01-R	Uranium-233/234	B+,	
LABQC	MB 160-206737/1-A	SO	A-01-R	Uranium-235/236	J1+, B+, Q, J,	
LABQC	MB 160-205183/1-A	SO	A-01-R	Uranium-235/236	J1+, B+, Q, U	
LABQC	LCS 160-205183/2-A	SO	A-01-R	Uranium-235/236	B+,	
LABQC	LCS 160-206674/2-A	LI	A-01-R	Uranium-235/236	B+,	
LABQC	LCS 160-204950/2-A	LI	A-01-R	Uranium-235/236	B+,	
LABQC	MB 160-206674/1-A	LI	A-01-R	Uranium-235/236	J1+, B+, Q, U	
LABQC	LCS 160-206737/2-A	SO	A-01-R	Uranium-235/236	B+,	
LABQC	MB 160-204950/1-A	LI	A-01-R	Uranium-235/236	J1+, B+, Q, U	

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
LABQC	MB 160-204950/1-A	LI	A-01-R	Uranium-238	J1+, B+, Q, U	
LABQC	LCS 160-205183/2-A	SO	A-01-R	Uranium-238	B+,	
LABQC	LCS 160-206737/2-A	SO	A-01-R	Uranium-238	S, B+,	
LABQC	LCS 160-204950/2-A	LI	A-01-R	Uranium-238	B+,	
LABQC	LCS 160-206674/2-A	LI	A-01-R	Uranium-238	B+,	
LABQC	MB 160-205183/1-A	SO	A-01-R	Uranium-238	J1+, B+, Q, U	
LABQC	MB 160-206674/1-A	LI	A-01-R	Uranium-238	J1+, B+, Q, U	
LABQC	MB 160-206737/1-A	SO	A-01-R	Uranium-238	S, J1+, B+,	
LABQC	MB 160-206991/1-A	SO	GA-01-R	Cesium-137	P, Q, U	
LABQC	MB 160-206697/1-A	LI	GA-01-R	Cesium-137	Q, U	
LABQC	MB 160-205192/1-A	LI	GA-01-R	Cesium-137	Q, U	
LABQC	LCS 160-206998/2-A	SO	GA-01-R	Cesium-137	P,	
LABQC	LCS 160-206991/2-A	SO	GA-01-R	Cesium-137	P,	
LABQC	MB 160-206998/1-A	SO	GA-01-R	Cesium-137	P, Q, U	
LABQC	MB 160-205239/1-A	SO	GA-01-R	Radium-226	P1, Q, U	
LABQC	MB 160-206991/1-A	SO	GA-01-R	Radium-226	J+, P, J1+, B+, Q, U	
LABQC	MB 160-206992/1-A	SO	GA-01-R	Radium-226	P1, Q, U	
LABQC	MB 160-206998/1-A	SO	GA-01-R	Radium-226	P1, J+, P, J1+, B+, J,	
LABQC	MB 160-206991/1-A	SO	GA-01-R	Radium-228	P1, J1+, B+, J,	
LABQC	MB 160-206998/1-A	SO	GA-01-R	Radium-228	P1, J1+, B+, Q, U	
RB-080515	160-13266-7	LI	9315	Radium-226	J,	J
RB-080515	160-13266-7	LI	9320	Radium-228	Q, U	U
RB-080515	160-13266-7	LI	A-01-R	Thorium-228	J1+, B+, J,	J
RB-080515	160-13266-7 DU	LI	A-01-R	Thorium-228	J1+, B+, Q, U	U
RB-080515	160-13266-7 DU	LI	A-01-R	Thorium-230	J,	J
RB-080515	160-13266-7 DU	LI	A-01-R	Thorium-232	Q, U	U
RB-080515	160-13266-7	LI	A-01-R	Thorium-232	Q, U	U
RB-080515	160-13266-7	LI	A-01-R	Uranium-233/234	Q, U	U
RB-080515	160-13266-7 DU	LI	A-01-R	Uranium-233/234	Q, U	U
RB-080515	160-13266-7 DU	LI	A-01-R	Uranium-235/236	Q, U	U

CLIENT SAMPLE ID	LAB SAMPLE ID	MATRIX	METHOD	ISOTOPE	INTERMEDIATE QUALIFIERS	FINAL QUALIFIERS
RB-080515	160-13266-7	LI	A-01-R	Uranium-235/236	Q, U	U
RB-080515	160-13266-7	LI	A-01-R	Uranium-238	Q, U	U
RB-080515	160-13266-7 DU	LI	A-01-R	Uranium-238	Q, U	U
RB-080515	160-13266-7	LI	GA-01-R	Cesium-137	Q, U	U
RB-080515	160-13266-7 DU	LI	GA-01-R	Cesium-137	Q, U	U
RB-081815	160-13435-5	LI	9315	Radium-226	J,	J
RB-081815	160-13435-5 DU	LI	9315	Radium-226	Q, U	U
RB-081815	160-13435-5	LI	9320	Radium-228	Q, U	U
RB-081815	160-13435-5 DU	LI	9320	Radium-228	J,	J
RB-081815	160-13435-5	LI	A-01-R	Thorium-228	J1+, B+, J,	J
RB-081815	160-13435-5 DU	LI	A-01-R	Thorium-228	J1+, B+, Q, U	U
RB-081815	160-13435-5 DU	LI	A-01-R	Thorium-230	J1+, B+,	J
RB-081815	160-13435-5	LI	A-01-R	Thorium-230	J1+, B+, J,	J
RB-081815	160-13435-5	LI	A-01-R	Thorium-232	Q, U	U
RB-081815	160-13435-5 DU	LI	A-01-R	Thorium-232	Q, U	U
RB-081815	160-13435-5	LI	A-01-R	Uranium-233/234	J1+, B+, Q, U	U
RB-081815	160-13435-5 DU	LI	A-01-R	Uranium-233/234	J1+, B+, Q, U	U
RB-081815	160-13435-5	LI	A-01-R	Uranium-235/236	Q, U	U
RB-081815	160-13435-5 DU	LI	A-01-R	Uranium-235/236	Q, U	U
RB-081815	160-13435-5 DU	LI	A-01-R	Uranium-238	Q, U	U
RB-081815	160-13435-5	LI	A-01-R	Uranium-238	Q, U	U
RB-081815	160-13435-5	LI	GA-01-R	Cesium-137	Q, U	U
RB-081815	160-13435-5 DU	LI	GA-01-R	Cesium-137	Q, U	U

B. Detection Capability (MARLAP 8.5.3.2)

If the project requires a certain detection capability, the requirement should be expressed as a required minimum detectable concentration (RMDC). A failure to meet the RMDC is more often an important issue when the analyte is not detected.

The RMDC is usually specified in the QAPP and is compared to the sample-specific MDC achieved by the method. Required detection limits are provided in the QAPP. Samples are qualified "UJ" where no activity was detected in a sample but the required detection limit was not attained.

Discussion

In practice the required MDC was sufficiently high that the actual detection limit was well below the required detection limit.

C. Large or Unusual Uncertainty (MARLAP 8.5.3.3)

The reported combined standard uncertainty is compared to the maximum allowable standard uncertainty. Either absolute (in concentration units) or relative uncertainties (expressed as a percent) are used in the comparison, depending on the reported concentration.

Discussion

No specific requirement in the project QAPP was recognized for qualifying results based on maximum allowable uncertainty. Samples were assigned an intermediate qualifier 'Q' if the sample result was not statistically distinguishable from zero based on a one-tailed 95% confidence bound. In practice these samples tended to receive either a J or a U final data qualifier, depending upon whether the nominal critical level was exceeded.

Samples were qualified as '***J***' if activity was found in the blank and the sample result was less than 5 times the result in the blank, or if there was some other reason to conclude that the analytical result was biased high and more uncertain than usual. The "other reason" may be surmised from the intermediate data qualifiers that were assigned to the result in nearly every instance.

8. SUMMARY OF DATA USABILITY

There were a total of 271 radionuclide results associated with the field samples in this data package and a total of 363 results, including field samples. The meaning of each qualifier is described in section 3 of this report. The count of each final qualifier type for field samples is provided in the following table.

Table of the number of each of the various final data qualifiers.

Final	CountOfFinal
	57
J	128
R	40

Final	CountOfFinal
U	46

The distribution of qualifiers among field samples is further broken down in the following table.

Table of counts of various qualifiers by counting technique

Test America Method	Description	Final	CountOfFinal
9315	Separation and Gas Flow Proportional Counting (Alpha)	J	2
9315	Separation and Gas Flow Proportional Counting (Alpha)	U	1
9320	Separation and Gas Flow Proportional Counting (Beta)	J	1
9320	Separation and Gas Flow Proportional Counting (Beta)	U	2
A-01-R	Chemical Separation and Alpha Spectroscopy		21
A-01-R	Chemical Separation and Alpha Spectroscopy	J	56
A-01-R	Chemical Separation and Alpha Spectroscopy	U	25
GA-01-R	Gamma Spectroscopy		36
GA-01-R	Gamma Spectroscopy	J	69
GA-01-R	Gamma Spectroscopy	R	40
GA-01-R	Gamma Spectroscopy	U	18

9. REFERENCES

SITE-SPECIFIC UFP QUALITY ASSURANCE PROJECT PLAN CANADIAN RADIUM AND URANIUM CORPORATION SITE, MOUNT KISCO, WESTCHESTER COUNTY, NEW YORK, DC No.: RST3-02-D-0010, TDD No.: TO-0006-0053. July 2015.

Multi-Agency Radiological Laboratory Analytical Protocols Manual, Volume I, NUREG-1576, EPA 402-B-04-001A, NTIS PB2004-105421, July 2004.

10. APPENDED DOCUMENTS

- Consolidated table of analytical results with qualifiers (17 pages).
- Radiological Data Verification/Validation Checklist (2 pages).
- Excerpts from Level IV Reports of Analysis, Chain of Custody, Narrative, Analytical Results (~~127~~ pages).

Canadian Radium Site

DCN: RST3-02-F-0072

Test America data packages 160-13266-1, 160-13266-2, 160-13266-3, 160-13435-1 and 160-13435-2

Data Package # / Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
160-13266-1										
C002-SS001-2448-01										
	A-01-R	Thorium-228	160-13266-1	SO	1.04	0.2	0.08	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-1	SO	0.79	0.17	0.05	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-1	SO	1.14	0.21	0.02	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-1	SO	0.71	0.17	0.09			pCi/g
	A-01-R	Uranium-235/236	160-13266-1	SO	0.02	0.05	0.09	Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13266-1	SO	0.6	0.16	0.07			pCi/g
C002-SS002-2448-01										
	A-01-R	Thorium-228	160-13266-2	SO	0.99	0.21	0.08	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-2	SO	1.63	0.28	0.05	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-2	SO	0.66	0.16	0.05	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-2	SO	0.43	0.14	0.08			pCi/g
	A-01-R	Uranium-235/236	160-13266-2	SO	0.02	0.04	0.07	Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13266-2	SO	0.43	0.14	0.07			pCi/g
C002-SS003-2448-01										
	A-01-R	Thorium-228	160-13266-3	SO	0.75	0.18	0.09	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-3	SO	20.4	1.91	0.06	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-3	SO	0.61	0.16	0.05	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-3	SO	0.99	0.22	0.09			pCi/g
	A-01-R	Uranium-235/236	160-13266-3	SO	0.06	0.05	0.04			pCi/g
	A-01-R	Uranium-238	160-13266-3	SO	0.99	0.21	0.07			pCi/g
C002-TRENCH-0036-01										

Data Package #

Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	A-01-R	Thorium-228	160-13266-9	SO	0.62	0.16	0.07	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-9	SO	14.8	1.43	0.05	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-9	SO	0.79	0.18	0.05	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-9	SO	3.26	0.44	0.06			pCi/g
	A-01-R	Uranium-235/236	160-13266-9	SO	0.31	0.12	0.07			pCi/g
	A-01-R	Uranium-238	160-13266-9	SO	1.83	0.3	0.06			pCi/g
C003-SS001-2448-01										
	A-01-R	Thorium-228	160-13266-4	SO	0.82	0.18	0.08	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-4 MS	SO	9.58	0.98	0.02	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-4	SO	5.23	0.6	0.05	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-4 MS	SO	10.17	1.03	0.07	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-4	SO	0.7	0.16	0.05	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-4 MS	SO	6.66	0.75	0.09			pCi/g
	A-01-R	Uranium-233/234	160-13266-4 MS	SO	6.74	0.75	0.1			pCi/g
	A-01-R	Uranium-233/234	160-13266-4	SO	0.56	0.15	0.09			pCi/g
	A-01-R	Uranium-235/236	160-13266-4 MS	SO	0.39	0.14	0.08			pCi/g
	A-01-R	Uranium-235/236	160-13266-4 MS	SO	0.37	0.13	0.05			pCi/g
	A-01-R	Uranium-235/236	160-13266-4	SO	0.01	0.03	0.07	Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13266-4 MS	SO	7.3	0.8	0.07			pCi/g
	A-01-R	Uranium-238	160-13266-4	SO	0.46	0.14	0.08			pCi/g
	A-01-R	Uranium-238	160-13266-4 MS	SO	7.64	0.83	0.08			pCi/g
C003-SS001-2448-02										
	A-01-R	Thorium-228	160-13266-5	SO	0.73	0.17	0.08	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-5	SO	5.29	0.61	0.07	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-5	SO	0.67	0.16	0.05	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-5	SO	0.44	0.13	0.06			pCi/g

Data Package #

Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	A-01-R	Uranium-235/236	160-13266-5	SO	0	0.02	0.07	Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13266-5	SO	0.49	0.14	0.05			pCi/g
C003-SS002-0024-01										
	A-01-R	Thorium-228	160-13266-6	SO	1	0.2	0.09	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-6	SO	42	3.71	0.07	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-6	SO	0.95	0.19	0.06	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-6	SO	1.62	0.28	0.06			pCi/g
	A-01-R	Uranium-235/236	160-13266-6	SO	0.01	0.02	0.03	Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13266-6	SO	1.55	0.27	0.07			pCi/g
C003-SS003-2448-01										
	A-01-R	Thorium-228	160-13266-8	SO	0.77	0.18	0.08	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-8	SO	8.96	0.94	0.07	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-8	SO	0.73	0.17	0.05	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-8	SO	0.58	0.16	0.07			pCi/g
	A-01-R	Uranium-235/236	160-13266-8	SO	0.02	0.03	0.06	Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13266-8	SO	0.51	0.14	0.06			pCi/g
C004-SS001-1824-01										
	A-01-R	Thorium-228	160-13266-10	SO	0.64	0.16	0.08	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13266-10	SO	0.77	0.17	0.05	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13266-10	SO	0.85	0.18	0.04	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13266-10	SO	0.57	0.16	0.08			pCi/g
	A-01-R	Uranium-235/236	160-13266-10	SO	0.03	0.04	0.03	J,	J	pCi/g
	A-01-R	Uranium-238	160-13266-10	SO	0.5	0.14	0.06			pCi/g
LABQC										
	A-01-R	Thorium-228	MB 160-205166/	SO	0.05	0.05	0.05	S+, J1+, B+, J		pCi/g
	A-01-R	Thorium-228	MB 160-204945/	LI	0.08	0.08	0.1	J1+, B+, J,		pCi/L

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A-01-R	Thorium-230	MB 160-205166/	SO	0.09	0.06	0.06	S+, J1+, B+,		pCi/g
A-01-R	Thorium-230	MB 160-204945/	LI	0.13	0.1	0.05	J1+, B+,		pCi/L
A-01-R	Thorium-230	LCS 160-205166/	SO	23.6	2.33	0.08	S+, B+,		pCi/g
A-01-R	Thorium-230	LCS 160-204945/	LI	7.54	0.92	0.07	B+,		pCi/L
A-01-R	Thorium-232	MB 160-205166/	SO	0	0.02	0.05	S+, Q, U		pCi/g
A-01-R	Thorium-232	MB 160-204945/	LI	0.02	0.04	0.09	Q, U		pCi/L
A-01-R	Uranium-233/234	MB 160-205183/	SO	0.01	0.02	0.04	J1+, B+, Q, U		pCi/g
A-01-R	Uranium-233/234	MB 160-204950/	LI	0.03	0.06	0.1	J1+, B+, Q, U		pCi/L
A-01-R	Uranium-233/234	LCS 160-205183/	SO	6.52	0.74	0.05	B+,		pCi/g
A-01-R	Uranium-233/234	LCS 160-204950/	LI	11.15	1.26	0.11	B+,		pCi/L
A-01-R	Uranium-235/236	MB 160-205183/	SO	0	0.01	0.03	J1+, B+, Q, U		pCi/g
A-01-R	Uranium-235/236	LCS 160-204950/	LI	0.61	0.23	0.11	B+,		pCi/L
A-01-R	Uranium-235/236	LCS 160-205183/	SO	0.39	0.14	0.06	B+,		pCi/g
A-01-R	Uranium-235/236	MB 160-204950/	LI	0	0.01	0.09	J1+, B+, Q, U		pCi/L
A-01-R	Uranium-238	LCS 160-204950/	LI	11.73	1.31	0.1	B+,		pCi/L
A-01-R	Uranium-238	MB 160-204950/	LI	0.01	0.03	0.09	J1+, B+, Q, U		pCi/L
A-01-R	Uranium-238	LCS 160-205183/	SO	6.42	0.73	0.03	B+,		pCi/g
A-01-R	Uranium-238	MB 160-205183/	SO	0.01	0.02	0.03	J1+, B+, Q, U		pCi/g
GA-01-R	Americium-241	LCS 160-205192/	LI	13840	16000	462			pCi/L
GA-01-R	Cesium-137	LCS 160-205192/	LI	49250	4900	175			pCi/L
GA-01-R	Cesium-137	MB 160-205192/	LI	0.65	5.74	10.6	Q, U		pCi/L
GA-01-R	Cobalt-60	LCS 160-205192/	LI	48020	4740	128			pCi/L
RB-080515									
A-01-R	Thorium-228	160-13266-7	LI	0.19	0.15	0.2	J1+, B+, J,	J	pCi/L
A-01-R	Thorium-228	160-13266-7 DU	LI	0.06	0.1	0.19	J1+, B+, Q, U	U	pCi/L
A-01-R	Thorium-230	160-13266-7	LI	0.15	0.11	0.06			pCi/L

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Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	A-01-R	Thorium-230	160-13266-7 DU	LI	0.1	0.1	0.14	J,	J	pCi/L
	A-01-R	Thorium-232	160-13266-7	LI	0.02	0.04	0.06	Q, U	U	pCi/L
	A-01-R	Thorium-232	160-13266-7 DU	LI	-0.02	0.02	0.13	Q, U	U	pCi/L
	A-01-R	Uranium-233/234	160-13266-7	LI	-0.06	0.05	0.19	Q, U	U	pCi/L
	A-01-R	Uranium-233/234	160-13266-7 DU	LI	0	0.04	0.13	Q, U	U	pCi/L
	A-01-R	Uranium-235/236	160-13266-7	LI	-0.01	0.01	0.11	Q, U	U	pCi/L
	A-01-R	Uranium-235/236	160-13266-7 DU	LI	0.01	0.05	0.13	Q, U	U	pCi/L
	A-01-R	Uranium-238	160-13266-7	LI	0	0.04	0.11	Q, U	U	pCi/L
	A-01-R	Uranium-238	160-13266-7 DU	LI	0.01	0.04	0.09	Q, U	U	pCi/L
	GA-01-R	Cesium-137	160-13266-7 DU	LI	0	1.37	11.3	Q, U	U	pCi/L
	GA-01-R	Cesium-137	160-13266-7	LI	-0.17	6.02	11.2	Q, U	U	pCi/L
160-13266-2										
C002-SS001-2448-01										
	GA-01-R	Radium-226	160-13266-1	SO	1.86	0.36	0.2	P1,	J	pCi/g
C002-SS002-2448-01										
	GA-01-R	Radium-226	160-13266-2	SO	1.45	0.25	0.11	P1,	J	pCi/g
C002-SS003-2448-01										
	GA-01-R	Radium-226	160-13266-3	SO	9.84	1.2	0.25	P1,	J	pCi/g
C002-TRENCH-0036-01										
	GA-01-R	Radium-226	160-13266-9	SO	10.4	1.21	0.22	P1,	J	pCi/g
C003-SS001-2448-01										
	GA-01-R	Radium-226	160-13266-4 DU	SO	10.52	1.28	0.33	P1,	J	pCi/g
	GA-01-R	Radium-226	160-13266-4	SO	10.3	1.19	0.23	P1,	J	pCi/g
C003-SS001-2448-02										
	GA-01-R	Radium-226	160-13266-5	SO	11.3	1.33	0.31	P1,	J	pCi/g
C003-SS002-0024-01										

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GA-01-R	Radium-226	160-13266-6	SO	129	13.6	0.7	P1,	J	pCi/g
C003-SS003-2448-01									
GA-01-R	Radium-226	160-13266-8	SO	15.1	1.75	0.36	P1,	J	pCi/g
C004-SS001-1824-01									
GA-01-R	Radium-226	160-13266-10	SO	1.59	0.29	0.16	P1,	J	pCi/g
LABQC									
9315	Radium-226	LCS 160-204925/	LI	11.56	1.14	0.08			pCi/L
9315	Radium-226	MB 160-204925/	LI	0.01	0.04	0.08	Q, U		pCi/L
9320	Radium-228	LCS 160-204941/	LI	2.92	0.47	0.34			pCi/L
9320	Radium-228	MB 160-204941/	LI	0.14	0.21	0.36	Q, U		pCi/L
GA-01-R	Americium-241	LCS 160-205239/	SO	98.19	10.3	1.14			pCi/g
GA-01-R	Cesium-137	LCS 160-205239/	SO	30.63	3.26	0.26			pCi/g
GA-01-R	Cobalt-60	LCS 160-205239/	SO	19.04	1.96	0.1			pCi/g
GA-01-R	Radium-226	MB 160-205239/	SO	-0.01	0.13	0.19	P1, Q, U		pCi/g
RB-080515									
9315	Radium-226	160-13266-7	LI	0.06	0.07	0.11	J,	J	pCi/L
9320	Radium-228	160-13266-7	LI	0.12	0.22	0.38	Q, U	U	pCi/L
160-13266-3									
C002-SS001-2448-01									
GA-01-R	Ac-228	160-13266-1	SO	1.23	0.28	0.25	P1,	J	pCi/g
GA-01-R	Bi-214	160-13266-1	SO	1.92	0.35	0.21	J-, R,	R	pCi/g
GA-01-R	Cesium-137	160-13266-1	SO	0	0.05	0.09	P, Q, U	U	pCi/g
GA-01-R	K-40	160-13266-1	SO	12.3	2.17	1.06			pCi/g
GA-01-R	Pb-212	160-13266-1	SO	1.04	0.23	0.19	P1,	J	pCi/g
GA-01-R	Pb-214	160-13266-1	SO	2.03	0.31	0.2	J-, R,	R	pCi/g
GA-01-R	Radium-226	160-13266-1	SO	3.83	1.96	2.18	J+, P,	J	pCi/g

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	GA-01-R	Radium-228	160-13266-1	SO	1.23	0.28	0.25	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-1	SO	0.44	0.11	0.07			pCi/g
C002-SS002-2448-01										
	GA-01-R	Ac-228	160-13266-2	SO	1.15	0.32	0.14	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13266-2	SO	1.5	0.29	0.14	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13266-2	SO	-0.04	0.39	0.16	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13266-2	SO	14.3	2.59	0.88			pCi/g
	GA-01-R	Pb-212	160-13266-2	SO	0.8	0.2	0.17	P1,	J	pCi/g
	GA-01-R	Pb-214	160-13266-2	SO	1.74	0.31	0.17	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13266-2	SO	3.52	1.66	1.84	J+, P,	J	pCi/g
	GA-01-R	Radium-228	160-13266-2	SO	1.15	0.32	0.14	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-2	SO	0.28	0.09	0.06			pCi/g
C002-SS003-2448-01										
	GA-01-R	Ac-228	160-13266-3	SO	0.62	0.29	0.52	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13266-3	SO	9.04	1.1	0.28	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13266-3	SO	-0.05	0.34	0.17	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13266-3	SO	14.2	2.46	0.8			pCi/g
	GA-01-R	Pb-210	160-13266-3	SO	8.64	3.3	3.85			pCi/g
	GA-01-R	Pb-212	160-13266-3	SO	0.57	0.24	0.28	P1,	J	pCi/g
	GA-01-R	Pb-214	160-13266-3	SO	9.6	1.16	0.36	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13266-3	SO	8.12	2.86	3.73	J+, P,	J	pCi/g
	GA-01-R	Radium-228	160-13266-3	SO	0.62	0.29	0.52	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-3	SO	0.22	0.12	0.13			pCi/g
C002-TRENCH-0036-01										
	GA-01-R	Ac-228	160-13266-9	SO	0.76	0.32	0.46	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13266-9	SO	10.4	1.23	0.28	J-, R,	R	pCi/g

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METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
GA-01-R	Cesium-137	160-13266-9	SO	0	0.05	0.1	P, Q, U	U	pCi/g
GA-01-R	K-40	160-13266-9	SO	10.8	2.14	1.18			pCi/g
GA-01-R	Pb-210	160-13266-9	SO	11.6	4	4.47			pCi/g
GA-01-R	Pb-212	160-13266-9	SO	0.73	0.22	0.23	P1,	J	pCi/g
GA-01-R	Pb-214	160-13266-9	SO	10.8	1.26	0.38	J-, R,	R	pCi/g
GA-01-R	Radium-226	160-13266-9	SO	14.8	4.05	3.39	J+, P,	J	pCi/g
GA-01-R	Radium-228	160-13266-9	SO	0.76	0.32	0.46	P1, B+,	J	pCi/g
GA-01-R	Tl-208	160-13266-9	SO	0.35	0.12	0.12			pCi/g
C003-SS001-2448-01									
GA-01-R	Ac-228	160-13266-4 DU	SO	1.15	0.32	0.3	P1,	J	pCi/g
GA-01-R	Ac-228	160-13266-4	SO	0.97	0.34	0.31	P1,	J	pCi/g
GA-01-R	Bi-214	160-13266-4 DU	SO	9.48	1.12	0.29	J-, R,	R	pCi/g
GA-01-R	Bi-214	160-13266-4	SO	9.78	1.15	0.26	J-, R,	R	pCi/g
GA-01-R	Cesium-137	160-13266-4	SO	0.01	0.08	0.14	P, Q, U	U	pCi/g
GA-01-R	Cesium-137	160-13266-4 DU	SO	-0.01	0.09	0.16	P, Q, U	U	pCi/g
GA-01-R	K-40	160-13266-4 DU	SO	12.89	2.12	0.98			pCi/g
GA-01-R	K-40	160-13266-4	SO	14.1	2.33	0.9			pCi/g
GA-01-R	Pb-210	160-13266-4 DU	SO	8.31	3.1	3.55			pCi/g
GA-01-R	Pb-210	160-13266-4	SO	7.7	3.07	3.71			pCi/g
GA-01-R	Pb-212	160-13266-4 DU	SO	0.64	0.21	0.22	P1,	J	pCi/g
GA-01-R	Pb-212	160-13266-4	SO	0.83	0.22	0.22	P1,	J	pCi/g
GA-01-R	Pb-214	160-13266-4	SO	9.63	1.12	0.29	J-, R,	R	pCi/g
GA-01-R	Pb-214	160-13266-4 DU	SO	10.41	1.2	0.28	J-, R,	R	pCi/g
GA-01-R	Radium-226	160-13266-4 DU	SO	13.96	3.94	3.31	J+, P,	J	pCi/g
GA-01-R	Radium-226	160-13266-4	SO	16.2	4.68	3.7	J+, P,	J	pCi/g
GA-01-R	Radium-228	160-13266-4 DU	SO	1.15	0.32	0.3	P1, B+,	J	pCi/g

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Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	GA-01-R	Radium-228	160-13266-4	SO	0.97	0.34	0.31	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-4 DU	SO	0.28	0.12	0.12			pCi/g
	GA-01-R	Tl-208	160-13266-4	SO	0.35	0.14	0.13			pCi/g
C003-SS001-2448-02										
	GA-01-R	Ac-228	160-13266-5	SO	0.6	0.37	0.55	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13266-5	SO	11.2	1.34	0.3	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13266-5	SO	0.02	0.1	0.18	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13266-5	SO	13.5	2.77	1.53			pCi/g
	GA-01-R	Pb-210	160-13266-5	SO	6.32	3.49	4.42			pCi/g
	GA-01-R	Pb-212	160-13266-5	SO	0.53	0.21	0.25	P1,	J	pCi/g
	GA-01-R	Pb-214	160-13266-5	SO	12.1	1.42	0.38	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13266-5	SO	15.6	4.36	3.8	J+, P,	J	pCi/g
	GA-01-R	Radium-228	160-13266-5	SO	0.6	0.37	0.55	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-5	SO	0.47	0.17	0.16			pCi/g
C003-SS002-0024-01										
	GA-01-R	Bi-212	160-13266-6	SO	15.4	3.85	5.75			pCi/g
	GA-01-R	Bi-214	160-13266-6	SO	120	12.6	0.81	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13266-6	SO	-0.57	0.42	0.61	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13266-6	SO	18.1	5.86	4.77			pCi/g
	GA-01-R	Pb-210	160-13266-6	SO	99.7	17.7	14.4			pCi/g
	GA-01-R	Pb-214	160-13266-6	SO	129	13.5	1.11	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13266-6	SO	165	31	11.8	J+, P,	J	pCi/g
	GA-01-R	Radium-228	160-13266-6	SO	1.24	1.17	1.8	P1, B+, J,	J	pCi/g
C003-SS003-2448-01										
	GA-01-R	Ac-228	160-13266-8	SO	0.99	0.32	0.31	P1,	J	pCi/g
	GA-01-R	Bi-212	160-13266-8	SO	2.51	1.23	1.52			pCi/g

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	GA-01-R	Bi-214	160-13266-8	SO	13.2	1.48	0.24	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13266-8	SO	-0.03	0.08	0.14	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13266-8	SO	14.6	2.44	1.26			pCi/g
	GA-01-R	Pb-210	160-13266-8	SO	13.5	4.55	4.58			pCi/g
	GA-01-R	Pb-212	160-13266-8	SO	0.95	0.32	0.31	P1,	J	pCi/g
	GA-01-R	Pb-214	160-13266-8	SO	15.3	1.68	0.25	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13266-8	SO	19.1	4.83	3.58	J+, P,	J	pCi/g
	GA-01-R	Radium-228	160-13266-8	SO	0.99	0.32	0.31	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-8	SO	0.35	0.13	0.12			pCi/g
C004-SS001-1824-01										
	GA-01-R	Ac-228	160-13266-10	SO	1.19	0.29	0.21	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13266-10	SO	1.31	0.25	0.12	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13266-10	SO	0.23	0.09	0.07	P,	J	pCi/g
	GA-01-R	K-40	160-13266-10	SO	12.4	2.2	0.79			pCi/g
	GA-01-R	Pb-212	160-13266-10	SO	0.9	0.23	0.19	P1,	J	pCi/g
	GA-01-R	Pb-214	160-13266-10	SO	1.31	0.26	0.19	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13266-10	SO	3.51	1.93	2.06	J+, P,	J	pCi/g
	GA-01-R	Radium-228	160-13266-10	SO	1.19	0.29	0.21	P1, B+,	J	pCi/g
	GA-01-R	Tl-208	160-13266-10	SO	0.2	0.09	0.12			pCi/g
LABQC										
	GA-01-R	Americium-241	LCS 160-206991/	SO	100.4	10.6	1.22			pCi/g
	GA-01-R	Cesium-137	LCS 160-206991/	SO	30.4	3.24	0.25	P,		pCi/g
	GA-01-R	Cesium-137	MB 160-206991/	SO	0	0.03	0.06	P, Q, U		pCi/g
	GA-01-R	Cobalt-60	LCS 160-206991/	SO	18.77	1.94	0.1			pCi/g
	GA-01-R	Radium-226	MB 160-206991/	SO	0.01	0.51	0.94	J+, P, J1+, B+		pCi/g
	GA-01-R	Radium-228	MB 160-206991/	SO	0.05	0.05	0.09	P1, J1+, B+, J		pCi/g

Data Package # / Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
160-13435-1										
C001-SS001-0012-01										
	A-01-R	Thorium-228	160-13435-1	SO	0.74	0.16	0.06	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13435-1 MS	SO	7.03	0.77	0.05	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13435-1 MS	SO	6.56	0.72	0.04	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13435-1	SO	2.08	0.31	0.04	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13435-1	SO	0.85	0.18	0.02	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13435-1 MS	SO	6.15	0.68	0.05	B+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13435-1 MS	SO	6.29	0.7	0.08	B+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13435-1	SO	0.47	0.13	0.02	B+,	J	pCi/g
	A-01-R	Uranium-235/236	160-13435-1 MS	SO	0.48	0.15	0.03	B+,	J	pCi/g
	A-01-R	Uranium-235/236	160-13435-1 MS	SO	0.37	0.13	0.03	B+,	J	pCi/g
	A-01-R	Uranium-235/236	160-13435-1	SO	0.01	0.02	0.03	J1+, B+, Q, U	U	pCi/g
	A-01-R	Uranium-238	160-13435-1 MS	SO	6.78	0.75	0.07	S, B+,	J	pCi/g
	A-01-R	Uranium-238	160-13435-1	SO	0.5	0.13	0.02	S, B+,	J	pCi/g
	A-01-R	Uranium-238	160-13435-1 MS	SO	6.18	0.69	0.02	S, B+,	J	pCi/g
	GA-01-R	Ac-228	160-13435-1	SO	0.74	0.25	0.3	P1,	J	pCi/g
	GA-01-R	Ac-228	160-13435-1 DU	SO	0.62	0.19	0.13	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13435-1 DU	SO	2.05	0.29	0.11	J-, R,	R	pCi/g
	GA-01-R	Bi-214	160-13435-1	SO	2.33	0.36	0.16	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13435-1 DU	SO	0	0.04	0.07	P, Q, U	U	pCi/g
	GA-01-R	Cesium-137	160-13435-1	SO	0	0.06	0.11	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13435-1 DU	SO	12.8	1.87	0.52			pCi/g
	GA-01-R	K-40	160-13435-1	SO	12.6	2.11	0.63			pCi/g
	GA-01-R	Pb-210	160-13435-1 DU	SO	3.18	1.45	1.6			pCi/g
	GA-01-R	Pb-210	160-13435-1	SO	4.17	1.71	1.87			pCi/g

Data Package #

Client Sample ID

METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
GA-01-R	Pb-212	160-13435-1	SO	0.57	0.15	0.14	J-, R,	R	pCi/g
GA-01-R	Pb-212	160-13435-1 DU	SO	0.57	0.13	0.11	J-, R,	R	pCi/g
GA-01-R	Pb-214	160-13435-1	SO	2.37	0.35	0.17	J-, R,	R	pCi/g
GA-01-R	Pb-214	160-13435-1 DU	SO	2.3	0.31	0.13	J-, R,	R	pCi/g
GA-01-R	Radium-226	160-13435-1 DU	SO	5.7	1.8	1.5	P1, J+, P, B+,	J	pCi/g
GA-01-R	Radium-226	160-13435-1	SO	6.83	2.2	1.8	P1, J+, P, B+,	J	pCi/g
GA-01-R	Radium-228	160-13435-1	SO	0.74	0.25	0.3	P1,	J	pCi/g
GA-01-R	Radium-228	160-13435-1 DU	SO	0.62	0.19	0.13	P1,	J	pCi/g
GA-01-R	Tl-208	160-13435-1 DU	SO	0.24	0.06	0.05	J-, R,	R	pCi/g
GA-01-R	Tl-208	160-13435-1	SO	0.21	0.08	0.08	J-, R,	R	pCi/g
C001-SS001-0012-02									
A-01-R	Thorium-228	160-13435-2	SO	1.01	0.2	0.07	S+, B+,	J	pCi/g
A-01-R	Thorium-230	160-13435-2	SO	2.53	0.35	0.05	S+, B+,	J	pCi/g
A-01-R	Thorium-232	160-13435-2	SO	0.89	0.18	0.04	S+,	J	pCi/g
A-01-R	Uranium-233/234	160-13435-2	SO	0.45	0.13	0.07	B+,	J	pCi/g
A-01-R	Uranium-235/236	160-13435-2	SO	0.04	0.04	0.05	J1+, B+, J,	J	pCi/g
A-01-R	Uranium-238	160-13435-2	SO	0.57	0.14	0.06	S, B+,	J	pCi/g
GA-01-R	Ac-228	160-13435-2	SO	1.21	0.27	0.14	P1,	J	pCi/g
GA-01-R	Bi-214	160-13435-2	SO	2.49	0.36	0.16	J-, R,	R	pCi/g
GA-01-R	Cesium-137	160-13435-2	SO	0.02	0.05	0.09	P, Q, U	U	pCi/g
GA-01-R	K-40	160-13435-2	SO	10.3	1.71	0.8			pCi/g
GA-01-R	Pb-210	160-13435-2	SO	3.6	1.81	2.01			pCi/g
GA-01-R	Pb-212	160-13435-2	SO	1.26	0.22	0.12	J-, R,	R	pCi/g
GA-01-R	Pb-214	160-13435-2	SO	2.96	0.38	0.17	J-, R,	R	pCi/g
GA-01-R	Radium-226	160-13435-2	SO	5.75	1.98	1.77	P1, J+, P, B+,	J	pCi/g
GA-01-R	Radium-228	160-13435-2	SO	1.21	0.27	0.14	P1,	J	pCi/g

Data Package #

Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	GA-01-R	Tl-208	160-13435-2	SO	0.39	0.08	0.05	J-, R,	R	pCi/g
C001-SS002-0012-01										
	A-01-R	Thorium-228	160-13435-3	SO	0.55	0.15	0.09	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13435-3	SO	0.73	0.17	0.04	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13435-3	SO	0.62	0.16	0.06	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13435-3	SO	0.47	0.14	0.06	B+,	J	pCi/g
	A-01-R	Uranium-235/236	160-13435-3	SO	0.06	0.05	0.03	J1+, B+,	J	pCi/g
	A-01-R	Uranium-238	160-13435-3	SO	0.51	0.14	0.04	S, B+,	J	pCi/g
	GA-01-R	Ac-228	160-13435-3	SO	0.49	0.19	0.22	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13435-3	SO	0.88	0.17	0.11	J-, R,	R	pCi/g
	GA-01-R	Cesium-137	160-13435-3	SO	0.01	0.04	0.07	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13435-3	SO	7.34	1.36	0.53			pCi/g
	GA-01-R	Pb-212	160-13435-3	SO	0.48	0.13	0.12	J-, R,	R	pCi/g
	GA-01-R	Pb-214	160-13435-3	SO	0.92	0.17	0.15	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13435-3	SO	2.45	1.14	1.25	P1, J+, P, J1+	J	pCi/g
	GA-01-R	Radium-228	160-13435-3	SO	0.49	0.19	0.22	P1,	J	pCi/g
	GA-01-R	Tl-208	160-13435-3	SO	0.18	0.06	0.05	J-, R,	R	pCi/g
C001-SS003-0012-01										
	A-01-R	Thorium-228	160-13435-4	SO	0.75	0.18	0.09	S+, B+,	J	pCi/g
	A-01-R	Thorium-230	160-13435-4	SO	0.7	0.17	0.03	S+, B+,	J	pCi/g
	A-01-R	Thorium-232	160-13435-4	SO	0.69	0.16	0.04	S+,	J	pCi/g
	A-01-R	Uranium-233/234	160-13435-4	SO	0.4	0.12	0.05	B+,	J	pCi/g
	A-01-R	Uranium-235/236	160-13435-4	SO	0.04	0.04	0.06	J1+, B+, J,	J	pCi/g
	A-01-R	Uranium-238	160-13435-4	SO	0.37	0.12	0.06	S, B+,	J	pCi/g
	GA-01-R	Ac-228	160-13435-4	SO	0.38	0.18	0.32	P1,	J	pCi/g
	GA-01-R	Bi-214	160-13435-4	SO	0.76	0.17	0.1	J-, R,	R	pCi/g

Data Package #

Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	GA-01-R	Cesium-137	160-13435-4	SO	0	0.06	0.11	P, Q, U	U	pCi/g
	GA-01-R	K-40	160-13435-4	SO	9.53	1.91	0.77			pCi/g
	GA-01-R	Pb-212	160-13435-4	SO	0.68	0.16	0.12	J-, R,	R	pCi/g
	GA-01-R	Pb-214	160-13435-4	SO	0.81	0.22	0.19	J-, R,	R	pCi/g
	GA-01-R	Radium-226	160-13435-4	SO	1.38	1.03	1.37	P1, J+, P, J1+	J	pCi/g
	GA-01-R	Radium-228	160-13435-4	SO	0.38	0.18	0.32	P1,	J	pCi/g
	GA-01-R	Tl-208	160-13435-4	SO	0.15	0.07	0.1	J-, R,	R	pCi/g
LABQC										
	A-01-R	Thorium-228	MB 160-206670/	LI	0.11	0.1	0.15	J1+, B+, J,		pCi/L
	A-01-R	Thorium-228	MB 160-206728/	SO	0.09	0.06	0.08	S+, J1+, B+,		pCi/g
	A-01-R	Thorium-230	MB 160-206670/	LI	0.05	0.07	0.1	J1+, B+, Q, J,		pCi/L
	A-01-R	Thorium-230	LCS 160-206728/	SO	26.16	2.58	0.13	S+, B+,		pCi/g
	A-01-R	Thorium-230	MB 160-206728/	SO	0.1	0.06	0.03	S+, J1+, B+,		pCi/g
	A-01-R	Thorium-230	LCS 160-206670/	LI	7.81	0.96	0.12	B+,		pCi/L
	A-01-R	Thorium-232	MB 160-206670/	LI	-0.01	0.01	0.09	Q, U		pCi/L
	A-01-R	Thorium-232	MB 160-206728/	SO	0.01	0.03	0.05	S+, Q, U		pCi/g
	A-01-R	Uranium-233/234	MB 160-206674/	LI	0.06	0.07	0.11	J1+, B+, Q, J,		pCi/L
	A-01-R	Uranium-233/234	LCS 160-206737/	SO	6.63	0.74	0.05	B+,		pCi/g
	A-01-R	Uranium-233/234	LCS 160-206674/	LI	12.52	1.44	0.12	B+,		pCi/L
	A-01-R	Uranium-233/234	MB 160-206737/	SO	0.03	0.03	0.05	J1+, B+, Q, J,		pCi/g
	A-01-R	Uranium-235/236	MB 160-206674/	LI	0	0.01	0.06	J1+, B+, Q, U		pCi/L
	A-01-R	Uranium-235/236	LCS 160-206674/	LI	0.99	0.32	0.13	B+,		pCi/L
	A-01-R	Uranium-235/236	LCS 160-206737/	SO	0.26	0.11	0.03	B+,		pCi/g
	A-01-R	Uranium-235/236	MB 160-206737/	SO	0.02	0.03	0.03	J1+, B+, Q, J,		pCi/g
	A-01-R	Uranium-238	LCS 160-206737/	SO	6.22	0.7	0.04	S, B+,		pCi/g
	A-01-R	Uranium-238	LCS 160-206674/	LI	12.48	1.43	0.12	B+,		pCi/L

Data Package #

Client Sample ID

METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
A-01-R	Uranium-238	MB 160-206674/	LI	0.01	0.04	0.1	J1+, B+, Q, U		pCi/L
A-01-R	Uranium-238	MB 160-206737/	SO	0.03	0.03	0.02	S, J1+, B+,		pCi/g
GA-01-R	Americium-241	LCS 160-206998/	SO	101.6	10.7	1.33			pCi/g
GA-01-R	Americium-241	LCS 160-206697/	LI	13300	15400	457			pCi/L
GA-01-R	Cesium-137	MB 160-206998/	SO	-0.01	0.04	0.08	P, Q, U		pCi/g
GA-01-R	Cesium-137	LCS 160-206998/	SO	30.46	3.28	0.32	P,		pCi/g
GA-01-R	Cesium-137	LCS 160-206697/	LI	47380	4750	145			pCi/L
GA-01-R	Cesium-137	MB 160-206697/	LI	-0.57	7.9	14.8	Q, U		pCi/L
GA-01-R	Cobalt-60	LCS 160-206697/	LI	46270	4570	111			pCi/L
GA-01-R	Cobalt-60	LCS 160-206998/	SO	19.04	1.99	0.07			pCi/g
GA-01-R	Radium-226	MB 160-206998/	SO	0.74	0.73	1.15	P1, J+, P, J1+		pCi/g
GA-01-R	Radium-228	MB 160-206998/	SO	0.02	0.05	0.24	P1, J1+, B+,		pCi/g
RB-081815									
A-01-R	Thorium-228	160-13435-5 DU	LI	0.09	0.12	0.21	J1+, B+, Q, U	U	pCi/L
A-01-R	Thorium-228	160-13435-5	LI	0.14	0.12	0.15	J1+, B+, J,	J	pCi/L
A-01-R	Thorium-230	160-13435-5	LI	0.1	0.09	0.11	J1+, B+, J,	J	pCi/L
A-01-R	Thorium-230	160-13435-5 DU	LI	0.13	0.11	0.13	J1+, B+,	J	pCi/L
A-01-R	Thorium-232	160-13435-5	LI	-0.01	0.02	0.12	Q, U	U	pCi/L
A-01-R	Thorium-232	160-13435-5 DU	LI	-0.01	0.02	0.12	Q, U	U	pCi/L
A-01-R	Uranium-233/234	160-13435-5 DU	LI	0.03	0.07	0.14	J1+, B+, Q, U	U	pCi/L
A-01-R	Uranium-233/234	160-13435-5	LI	-0.01	0.01	0.09	J1+, B+, Q, U	U	pCi/L
A-01-R	Uranium-235/236	160-13435-5 DU	LI	-0.01	0.02	0.14	Q, U	U	pCi/L
A-01-R	Uranium-235/236	160-13435-5	LI	-0.01	0.01	0.1	Q, U	U	pCi/L
A-01-R	Uranium-238	160-13435-5 DU	LI	0	0.04	0.12	Q, U	U	pCi/L
A-01-R	Uranium-238	160-13435-5	LI	0.01	0.04	0.09	Q, U	U	pCi/L
GA-01-R	Cesium-137	160-13435-5	LI	-0.04	5.23	10.2	Q, U	U	pCi/L

Data Package # / Client Sample ID	METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS
	GA-01-R	Cesium-137	160-13435-5 DU	LI	0.15	5.26	9.84	Q, U	U	pCi/L
160-13435-2										
C001-SS001-0012-01										
	GA-01-R	Radium-226	160-13435-1 DU	SO	3.51	0.49	0.15	P1,	J	pCi/g
	GA-01-R	Radium-226	160-13435-1	SO	3.43	0.47	0.16	P1,	J	pCi/g
C001-SS001-0012-02										
	GA-01-R	Radium-226	160-13435-2	SO	3.64	0.46	0.12	P1,	J	pCi/g
C001-SS002-0012-01										
	GA-01-R	Radium-226	160-13435-3	SO	1.07	0.19	0.08	P1,	J	pCi/g
C001-SS003-0012-01										
	GA-01-R	Radium-226	160-13435-4	SO	0.92	0.19	0.14	P1,	J	pCi/g
LABQC										
	9315	Radium-226	MB 160-206678/	LI	0.02	0.04	0.07	Q, U		pCi/L
	9315	Radium-226	LCS 160-206678/	LI	11.62	1.13	0.08			pCi/L
	9320	Radium-228	MB 160-206681/	LI	-0.01	0.19	0.33	Q, U		pCi/L
	9320	Radium-228	LCS 160-206681/	LI	2.67	0.43	0.32			pCi/L
	GA-01-R	Americium-241	LCS 160-206992/	SO	98.76	10.4	1.04			pCi/g
	GA-01-R	Cesium-137	LCS 160-206992/	SO	30.95	3.31	0.27			pCi/g
	GA-01-R	Cobalt-60	LCS 160-206992/	SO	19	1.97	0.08			pCi/g
	GA-01-R	Radium-226	MB 160-206992/	SO	-0.05	0.37	0.17	P1, Q, U		pCi/g
RB-081815										
	9315	Radium-226	160-13435-5 DU	LI	0.01	0.04	0.08	Q, U	U	pCi/L
	9315	Radium-226	160-13435-5	LI	0.05	0.05	0.08	J,	J	pCi/L
	9320	Radium-228	160-13435-5 DU	LI	0.18	0.22	0.35	J,	J	pCi/L
	9320	Radium-228	160-13435-5	LI	0.15	0.19	0.31	Q, U	U	pCi/L

Data Package #

Client Sample ID

METHOD	ISOTOPE	Lab Sample ID	MATRIX	Conc	2S	MDC	QUALIFIERS	FINAL QUALIFIER	UNITS

Qualifier Explanation

See section 3 of the memo DCN: RST3-02-F-0072

Radiological Data Verification/Validation Checklist

Site Name:_Canadain Uranium and Radium Corporation Ste ____ Analytical Laboratory_____ TestAmerica Laboratories

Case Number_____TDD: TO-0006-0053 _____ Reviewer _____Rick Haaker, CHP, CIH__ Date _____January 16, 2016

RF Haaker

Part 1 - Sample Handling and Analysis Evaluation

MARLAP Ref.	Criteria	Yes	No	NA	Comments
8.5.1.1	Sample Descriptors - Each sample has a unique ID code which is cross-reference to unique Lab ID	X			
8.5.1.2	Aliquant Size - amount of sample used in analysis provided	X			
8.5.1.3	Dates of sample collection, sample prep and sample analysis provided	X			
8.5.1.4	Samples properly preserved	X			
8.5.1.5	Each analytical result linked to instrument/detector	X			
8.5.1.6	Traceability of standards and reference materials provided	X			
8.5.1.7	QC samples analyzed	X			
8.5.1.8	Yield (chemical separation, carrier and/or radiotracer) within acceptable ranges	X			
8.5.1.9	Self-absorption curve provided	X			Curves provided for Ra-226 & Ra-228 by gas flow proportional counting.
8.5.1.10	Efficiency, calibration curves and instrument background information provided	X			
8.5.1.11	Spectrometry resolution data provided	X			
8.5.1.12	Dilution factors and corrections factors addressed and documentation provided.	X			Provided in data packages but not reviewed in detail by the validator.
8.5.1.13	Count Time for each sample, QC analysis and instrument background provided	X			
8.5.1.14	For each measurement: 1) Measurement uncertainty reported 2) Analyte MDC reported 3) Appropriate units used	 X X X			

*** Covers Test America Data Packages: 160-13266-1, 160-13266-2, 160-13266-3, 160-13435-1, 160-13435-2**

Part 2 - Quality Control

MARLAP Ref.	Criteria	Yes	No	NA	Comments
8.5.2.1	Method Blanks analyzed and no detected concentration/activity found		X		See section 6A of the validation report for detections in the method blanks.
8.5.2.2	Laboratory Control Samples analyzed and within acceptable ranges	X			
8.5.2.3	Laboratory replicates analyzed and within control limits	X			
8.5.2.4	Matrix Spikes/Matrix Spike Duplicate analyzed and within established criteria	X			Matrix spikes were analyzed. MS duplicates were analyzed for solids as required by the field sampling plan. See section 6D of report for details of poorly performing spikes.
8.5.3.1	Test of detection information (critical value) provided.			X	The MDC was provided based on alpha = beta = 0.05. The critical value was not required by QAPP. The critical level can be approximated as 50% of the MDC. It can be calculated from the data provided in the package.
8.5.3.2	Detection Capability: Required Minimum Detectable Concentration (RMDC) less than the Minimum Detectable Concentration (MDC) for each analyte		X		The required MDC for radium-226 by gamma spectroscopy utilizing the 186 kev line did not always meet the required detection limit of 1 pCi/g. This analysis was requested for a quick radium-226 estimate.
8.5.3.3	Uncertainty 1. Laboratory's combined standard uncertainty at concentrations lower that the action level less than required method uncertainty (expressed in concentration units) 2. Laboratory's relative combined standard uncertainty at concentrations above the action level less than required relative method uncertainty (express as a percent)			X X	No precision criteria was recognized in the QAPP for individual analytical results. Such samples would have received a final qualifier of J or U, depending on whether the critical level was exceeded, however.

Additional Comments: Lead-214 and bismuth-214 determined on aliquots having 10-days of ingrowth, or less, by gamma spectroscopy have a low bias and were rejected. Rinse blanks had detected activity, see section 6F for additional detail.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 160-13266-1

Job Description: EPA RST2 - RFP No. 334

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

Attention: Ms. Smita Sumbaly

Rhonda Ridenhower

Approved for release.
Rhonda E Ridenhower
Manager of Project Management
8/19/2015 10:02 AM

Rhonda E Ridenhower, Manager of Project Management
13715 Rider Trail North, Earth City, MO, 63045
rhonda.ridenhower@testamericainc.com
08/19/2015

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

ANALYTICAL REPORT

Job Number: 160-13266-2

Job Description: EPA RST2 - RFP No. 334

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

Attention: Ms. Smita Sumbaly

Approved for release.
Rhonda E Ridenhower
Manager of Project Management
9/3/2015 1:35 PM

Rhonda E Ridenhower, Manager of Project Management
13715 Rider Trail North, Earth City, MO, 63045
rhonda.ridenhower@testamericainc.com
09/03/2015

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
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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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 334

Report Number: 160-13266-2

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.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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."

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

RECEIPT
The samples were received on 08/08/2015; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 3.0º C.

RADIUM 226 (21 DAY INGROWTH)
Sample RB-080515 (160-13266-7) was analyzed for Radium 226 (21 day ingrowth) in accordance with SW- 846 Method 9315. The samples were prepared on 08/11/2015 and analyzed on 09/02/2015.

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

RADIUM-228 (GFPC)
Sample RB-080515 (160-13266-7) was analyzed for Radium-228 (GFPC) in accordance with SW-846 Method 9320. The samples were prepared on 08/11/2015 and analyzed on 08/26/2015.

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 C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for Radium-226 by gamma spec (21 day ingrowth) in accordance with EPA GA_01_R. The samples were dried on 08/10/2015, prepared on 08/12/2015 and analyzed on 09/02/2015.

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

Client Sample ID: C002-SS001-2448-01 — Lab Sample ID: 160-13266-1

Date Collected: 08/05/15 10:50 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	1.86		0.304	0.360	1.00	0.199	pCi/g	08/12/15 14:12	09/02/15 06:59	1

Client Sample ID: C002-SS002-2448-01 — Lab Sample ID: 160-13266-2

Date Collected: 08/05/15 11:40 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	1.45		0.202	0.252	1.00	0.112	pCi/g	08/12/15 14:12	09/02/15 07:00	1

Client Sample ID: C002-SS003-2448-01 — Lab Sample ID: 160-13266-3

Date Collected: 08/05/15 12:10 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	9.84		0.631	1.20	1.00	0.255	pCi/g	08/12/15 14:12	09/02/15 07:01	1

Client Sample ID: C003-SS001-2448-01 — Lab Sample ID: 160-13266-4

Date Collected: 08/05/15 14:10 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	10.3		0.511	1.19	1.00	0.228	pCi/g	08/12/15 14:12	09/02/15 06:58	1

Client Sample ID: C003-SS001-2448-02 — Lab Sample ID: 160-13266-5

Date Collected: 08/05/15 14:12 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	11.3		0.634	1.33	1.00	0.306	pCi/g	08/12/15 14:12	09/02/15 07:31	1

Client Sample ID: C003-SS002-0024-01 — Lab Sample ID: 160-13266-6

Date Collected: 08/05/15 14:55 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	129		1.94	13.6	1.00	0.699	pCi/g	08/12/15 14:12	09/02/15 07:32	1

Client Sample ID: RB-080515 — Lab Sample ID: 160-13266-7

Date Collected: 08/05/15 15:00 — **Matrix: Water**
Date Received: 08/08/15 08:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0623	U	0.0663	0.0665	1.00	0.108	pCi/L	08/11/15 11:00	09/02/15 06:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*08/11/15 11:00*	*09/02/15 06:44*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.117	U	0.222	0.222	1.00	0.376	pCi/L	08/11/15 11:23	08/26/15 11:19	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*40 - 110*	*08/11/15 11:23*	*08/26/15 11:19*	*1*
Y Carrier	*88.6*		*40 - 110*	*08/11/15 11:23*	*08/26/15 11:19*	*1*

Client Sample ID: C003-SS003-2448-01 — Lab Sample ID: 160-13266-8

Date Collected: 08/05/15 15:15 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	15.1		0.766	1.75	1.00	0.356	pCi/g	08/12/15 14:12	09/02/15 07:37	1

Client Sample ID: C002-TRENCH-0036-01 — Lab Sample ID: 160-13266-9

Date Collected: 08/05/15 15:30 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	10.4		0.546	1.21	1.00	0.219	pCi/g	08/12/15 14:12	09/02/15 07:36	1

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-2

Client Sample ID: C004-SS001-1824-01

Lab Sample ID: 160-13266-10

Date Collected: 08/07/15 08:15

Matrix: Solid

Date Received: 08/08/15 08:10

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
Radium-226	1.59		0.241	0.292	1.00	0.161	pCi/g	08/12/15 14:12	09/02/15 07:34	1

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-2

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**Ba (40-110)**							
160-13266-7	RB-080515	105							
LCS 160-204925/2-A	Lab Control Sample	93.2							
MB 160-204925/1-A	Method Blank	98.8							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**Ba (40-110)**	**Y (40-110)**						
160-13266-7	RB-080515	105	88.6						
LCS 160-204941/2-A	Lab Control Sample	93.2	89.0						
MB 160-204941/1-A	Method Blank	98.8	89.0						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-204925/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 209120 — **Prep Batch: 204925**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.005908	U	0.0431	0.0431	1.00	0.0817	pCi/L	08/11/15 10:41	09/02/15 06:37	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*08/11/15 10:41*	*09/02/15 06:37*	*1*

Lab Sample ID: LCS 160-204925/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 209120 — **Prep Batch: 204925**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	11.56		1.14	1.00	0.0794	pCi/L	104	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.2*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-204941/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207920 — **Prep Batch: 204941**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1404	U	0.214	0.214	1.00	0.359	pCi/L	08/11/15 11:23	08/26/15 11:21	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*08/11/15 11:23*	*08/26/15 11:21*	*1*
Y Carrier	*89.0*		*40 - 110*	*08/11/15 11:23*	*08/26/15 11:21*	*1*

Lab Sample ID: LCS 160-204941/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207920 — **Prep Batch: 204941**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			3.31	2.921		0.471	1.00	0.345	pCi/L	88	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.2*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

QC Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-2

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-205239/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 209099 — **Prep Batch: 205239**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01030	U	0.134	0.134	1.00	0.188	pCi/g	08/12/15 14:12	09/02/15 07:30	1

Lab Sample ID: LCS 160-205239/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 209098 — **Prep Batch: 205239**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	97.2	98.19		10.3		1.14	pCi/g	101	87 - 116
Cesium-137	30.2	30.63		3.26		0.264	pCi/g	101	87 - 120
Cobalt-60	19.0	19.04		1.96		0.0953	pCi/g	100	87 - 115

Lab Sample ID: 160-13266-4 DU — **Client Sample ID: C003-SS001-2448-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 209102 — **Prep Batch: 205239**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	10.3		10.52		1.28	1.00	0.330	pCi/g	0.08	1

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-2

Rad

Leach Batch: 204744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13266-1	C002-SS001-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-2	C002-SS002-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-3	C002-SS003-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-4	C003-SS001-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-4 DU	C003-SS001-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-5	C003-SS001-2448-02	Total/NA	Solid	Dry and Grind	
160-13266-6	C003-SS002-0024-01	Total/NA	Solid	Dry and Grind	
160-13266-8	C003-SS003-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-9	C002-TRENCH-0036-01	Total/NA	Solid	Dry and Grind	
160-13266-10	C004-SS001-1824-01	Total/NA	Solid	Dry and Grind	

Prep Batch: 204925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13266-7	RB-080515	Total/NA	Water	PrecSep-21	
LCS 160-204925/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-204925/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 204941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13266-7	RB-080515	Total/NA	Water	PrecSep_0	
LCS 160-204941/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-204941/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 205239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13266-1	C002-SS001-2448-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-2	C002-SS002-2448-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-3	C002-SS003-2448-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-4	C003-SS001-2448-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-4 DU	C003-SS001-2448-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-5	C003-SS001-2448-02	Total/NA	Solid	Fill_Geo-21	204744
160-13266-6	C003-SS002-0024-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-8	C003-SS003-2448-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-9	C002-TRENCH-0036-01	Total/NA	Solid	Fill_Geo-21	204744
160-13266-10	C004-SS001-1824-01	Total/NA	Solid	Fill_Geo-21	204744
LCS 160-205239/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	
MB 160-205239/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	

Analysis Batch: 177223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVABT 160-177223/1	ACV			GFPC_SUM	
ACVABT 160-177223/2	ACV			GFPC_SUM	
ACVABT 160-177223/3	ACV			GFPC_SUM	

Analysis Batch: 181823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ACVRA6 160-181823/1	ACV			GFPC_SUM	

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-2

Client Sample ID: C002-SS001-2448-01 — Lab Sample ID: 160-13266-1

Date Collected: 08/05/15 10:50
Matrix: Solid
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-21			205239	08/12/15 14:12	R1S	TAL SL
Total/NA	Analysis	GA-01-R		1	209105	09/02/15 06:59	ALS	TAL SL

Client Sample ID: C002-SS002-2448-01 — Lab Sample ID: 160-13266-2

Date Collected: 08/05/15 11:40
Matrix: Solid
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-21			205239	08/12/15 14:12	R1S	TAL SL
Total/NA	Analysis	GA-01-R		1	209104	09/02/15 07:00	ALS	TAL SL

Client Sample ID: C002-SS003-2448-01 — Lab Sample ID: 160-13266-3

Date Collected: 08/05/15 12:10
Matrix: Solid
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-21			205239	08/12/15 14:12	R1S	TAL SL
Total/NA	Analysis	GA-01-R		1	209102	09/02/15 07:01	ALS	TAL SL

Client Sample ID: C003-SS001-2448-01 — Lab Sample ID: 160-13266-4

Date Collected: 08/05/15 14:10
Matrix: Solid
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-21			205239	08/12/15 14:12	R1S	TAL SL
Total/NA	Analysis	GA-01-R		1	209103	09/02/15 06:58	ALS	TAL SL

Client Sample ID: C003-SS001-2448-02 — Lab Sample ID: 160-13266-5

Date Collected: 08/05/15 14:12
Matrix: Solid
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-21			205239	08/12/15 14:12	R1S	TAL SL
Total/NA	Analysis	GA-01-R		1	209097	09/02/15 07:31	ALS	TAL SL

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CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C002-SS001-2448-01	8/5/2015	10:50	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS002-2448-01	8/5/2015	11:40	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS003-2448-01	8/5/2015	12:10	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	4	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15	TA	8/8/15 0840	

160-13266 Chain of Custody

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AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-02	8/5/2015	14:12	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS002-0024-01	8/5/2015	14:55	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15	TA	8/8/15 0810	

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DateShipped: 8/5/2015

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AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	C003-SS003-2448-01	8/5/2015	15:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C004-SS001-1824-01	8/7/2015	08:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Weston Solutions	8/7/15		8/8/15 0810	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-13266-2

Login Number: 13266
List Number: 1
Creator: Daniels, Brian J

List Source: 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.	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	
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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 160-13266-3

Job Description: EPA RST2 - RFP No. 334

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

Attention: Ms. Smita Sumbaly

Approved for release.
Rhonda E Ridenhower
Manager of Project Management
8/25/2015 1:17 PM

Rhonda E Ridenhower, Manager of Project Management
13715 Rider Trail North, Earth City, MO, 63045
rhonda.ridenhower@testamericainc.com
08/25/2015

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

TestAmerica Laboratories, Inc.
TestAmerica St. Louis 13715 Rider Trail North, Earth City, MO 63045
Tel (314) 298-8566 Fax (314) 298-8757 www.testamericainc.com

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Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-3

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 334

Report Number: 160-13266-3

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.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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."

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

RECEIPT

The samples were received on 08/08/2015; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2º C and 3.0º C. Radium 226 with no ingrowth was added to the requested analysis.

RADIUM 226 (NO INGROWTH)

Samples C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for Radium 226 (No ingrowth) in accordance with GA-01-R. The samples were leached on 08/10/2015, prepared on 08/12/2015 and analyzed on 08/22/2015.

Ra-226 by gamma spectroscopy is typically determined by inference from daughters (e.g. Bi-214) after sealing the sample in an appropriate counting geometry/container and waiting 21 days to allow the Ra-226 decay chain through Rn-222 to reach secular equilibrium. Such an approach is considered to be the most reliable and representative means for establishing the true Ra-226 concentration in the sample. The method requested by the client to report Ra-226, using its own 186 keV gamma-ray emission, is subject to interference and potential bias due to the 185.7 keV U-235 gamma ray. Experience also indicates gamma spectroscopy software does not consistently assign accurate peak areas to Ra-226 (186 keV), with the problem compounded by slight drift of the instrumentation. The laboratory considers Ra-226 reported based upon the 186 keV gamma-ray emission to be best used by the client in a qualitative fashion.The MDC was greater than the requested limit of 1 pCi/g for Radium-226. Radium-226 was requested to be reported with no ingrowth for this batch; therefore, samples were reported from the only usable gamma energy line, 185.99 KeV. This energy line has a low efficiency which causes an elevated MDC.The following samples were affected: C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-01 (160-13266-4[DU]), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9), C004-SS001-1824-01 (160-13266-10), (LCS 160-206991/2-A) and (MB 160-206991/1-A). .

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

Client Sample ID: C002-SS001-2448-01 — Lab Sample ID: 160-13266-1

Date Collected: 08/05/15 10:50
Matrix: Solid
Date Received: 08/08/15 08:10

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
Radium-226	**3.83**		1.84	1.96	1.00	2.18	pCi/g	08/12/15 14:12	08/22/15 18:13	1
Radium-228	**1.23**		0.250	0.280		0.249	pCi/g	08/12/15 14:12	08/22/15 18:13	1
Cesium-137	0.00117	U	0.0458	0.0458		0.0863	pCi/g	08/12/15 14:12	08/22/15 18:13	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*1.23*		*0.250*	*0.280*		*0.249*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Bi-214	*1.92*		*0.288*	*0.350*		*0.206*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
K-40	*12.3*		*1.77*	*2.17*		*1.06*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Pb-212	*1.04*		*0.187*	*0.230*		*0.187*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Pb-214	*2.03*		*0.223*	*0.307*		*0.203*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Tl-208	*0.437*		*0.0975*	*0.108*		*0.0748*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*

Client Sample ID: C002-SS002-2448-01 — Lab Sample ID: 160-13266-2

Date Collected: 08/05/15 11:40
Matrix: Solid
Date Received: 08/08/15 08:10

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
Radium-226	**3.52**		1.54	1.66	1.00	1.84	pCi/g	08/12/15 14:12	08/22/15 18:13	1
Radium-228	**1.15**		0.299	0.321		0.143	pCi/g	08/12/15 14:12	08/22/15 18:13	1
Cesium-137	-0.0436	U	0.386	0.386		0.161	pCi/g	08/12/15 14:12	08/22/15 18:13	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*1.15*		*0.299*	*0.321*		*0.143*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Bi-214	*1.50*		*0.241*	*0.287*		*0.141*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
K-40	*14.3*		*2.14*	*2.59*		*0.877*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Pb-212	*0.798*		*0.171*	*0.200*		*0.175*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Pb-214	*1.74*		*0.258*	*0.315*		*0.168*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*
Tl-208	*0.279*		*0.0842*	*0.0890*		*0.0571*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:13*	*1*

Client Sample ID: C002-SS003-2448-01 — Lab Sample ID: 160-13266-3

Date Collected: 08/05/15 12:10
Matrix: Solid
Date Received: 08/08/15 08:10

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
Radium-226	**8.12**		2.48	2.86	1.00	3.73	pCi/g	08/12/15 14:12	08/22/15 18:15	1
Radium-228	**0.622**		0.288	0.295		0.524	pCi/g	08/12/15 14:12	08/22/15 18:15	1
Cesium-137	-0.0500	U	0.343	0.343		0.171	pCi/g	08/12/15 14:12	08/22/15 18:15	1

Client Sample ID: C002-SS003-2448-01 — Lab Sample ID: 160-13266-3

Date Collected: 08/05/15 12:10 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*0.622*		*0.288*	*0.295*		*0.524*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*
Bi-214	*9.04*		*0.579*	*1.10*		*0.280*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*
K-40	*14.2*		*1.98*	*2.46*		*0.796*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*
Pb-210	*8.64*		*3.14*	*3.30*		*3.85*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*
Pb-212	*0.571*		*0.231*	*0.242*		*0.277*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*
Pb-214	*9.60*		*0.588*	*1.16*		*0.356*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*
Tl-208	*0.220*		*0.117*	*0.119*		*0.130*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:15*	*1*

Client Sample ID: C003-SS001-2448-01 — Lab Sample ID: 160-13266-4

Date Collected: 08/05/15 14:10 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	**16.2**		3.73	4.68	1.00	3.70	pCi/g	08/12/15 14:12	08/22/15 18:16	1
Radium-228	**0.972**		0.325	0.339		0.310	pCi/g	08/12/15 14:12	08/22/15 18:16	1
Cesium-137	0.0140	U	0.0783	0.0783		0.136	pCi/g	08/12/15 14:12	08/22/15 18:16	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*0.972*		*0.325*	*0.339*		*0.310*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*
Bi-214	*9.78*		*0.546*	*1.15*		*0.256*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*
K-40	*14.1*		*1.83*	*2.33*		*0.903*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*
Pb-210	*7.70*		*2.94*	*3.07*		*3.71*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*
Pb-212	*0.831*		*0.196*	*0.223*		*0.225*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*
Pb-214	*9.63*		*0.499*	*1.12*		*0.287*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*
Tl-208	*0.355*		*0.137*	*0.142*		*0.131*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:16*	*1*

Client Sample ID: C003-SS001-2448-02 — Lab Sample ID: 160-13266-5

Date Collected: 08/05/15 14:12 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	**15.6**		3.41	4.36	1.00	3.80	pCi/g	08/12/15 14:12	08/22/15 18:48	1
Radium-228	**0.596**		0.360	0.365		0.549	pCi/g	08/12/15 14:12	08/22/15 18:48	1
Cesium-137	0.0230	U	0.103	0.103		0.183	pCi/g	08/12/15 14:12	08/22/15 18:48	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*0.596*		*0.360*	*0.365*		*0.549*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*
Bi-214	*11.2*		*0.661*	*1.34*		*0.297*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*
K-40	*13.5*		*2.40*	*2.77*		*1.53*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*
Pb-210	*6.32*		*3.41*	*3.49*		*4.42*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*

Client Sample ID: C003-SS001-2448-02 — Lab Sample ID: 160-13266-5

Date Collected: 08/05/15 14:12 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Pb-212	*0.533*		*0.203*	*0.214*		*0.255*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*
Pb-214	*12.1*		*0.654*	*1.42*		*0.377*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*
Tl-208	*0.466*		*0.167*	*0.174*		*0.158*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:48*	*1*

Client Sample ID: C003-SS002-0024-01 — Lab Sample ID: 160-13266-6

Date Collected: 08/05/15 14:55 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	**165**		11.6	31.0	1.00	11.8	pCi/g	08/12/15 14:12	08/22/15 18:50	1
Radium-228	1.24	U	1.16	1.17		1.80	pCi/g	08/12/15 14:12	08/22/15 18:50	1
Cesium-137	-0.566	U	0.412	0.417		0.610	pCi/g	08/12/15 14:12	08/22/15 18:50	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Bi-212	*15.4*		*3.51*	*3.85*		*5.75*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Bi-214	*120*		*2.02*	*12.6*		*0.807*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
K-40	*18.1*		*5.56*	*5.86*		*4.77*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Pb-210	*99.7*		*13.3*	*17.7*		*14.4*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Pb-214	*129*		*2.04*	*13.5*		*1.11*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*

Client Sample ID: C003-SS003-2448-01 — Lab Sample ID: 160-13266-8

Date Collected: 08/05/15 15:15 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	**19.1**		3.49	4.83	1.00	3.58	pCi/g	08/12/15 14:12	08/22/15 18:50	1
Radium-228	**0.988**		0.303	0.319		0.309	pCi/g	08/12/15 14:12	08/22/15 18:50	1
Cesium-137	-0.0267	U	0.0848	0.0848		0.144	pCi/g	08/12/15 14:12	08/22/15 18:50	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*0.988*		*0.303*	*0.319*		*0.309*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Bi-212	*2.51*		*1.20*	*1.23*		*1.52*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Bi-214	*13.2*		*0.561*	*1.48*		*0.237*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
K-40	*14.6*		*1.93*	*2.44*		*1.26*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Pb-210	*13.5*		*4.26*	*4.55*		*4.58*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Pb-212	*0.948*		*0.291*	*0.316*		*0.305*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Pb-214	*15.3*		*0.553*	*1.68*		*0.253*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*
Tl-208	*0.355*		*0.124*	*0.129*		*0.117*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:50*	*1*

Client Sample ID: C002-TRENCH-0036-01 — Lab Sample ID: 160-13266-9

Date Collected: 08/05/15 15:30 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	**14.8**		3.11	4.05	1.00	3.39	pCi/g	08/12/15 14:12	08/22/15 18:51	1
Radium-228	**0.763**		0.313	0.322		0.461	pCi/g	08/12/15 14:12	08/22/15 18:51	1
Cesium-137	0.00143	U	0.0520	0.0520		0.0958	pCi/g	08/12/15 14:12	08/22/15 18:51	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*0.763*		*0.313*	*0.322*		*0.461*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*
Bi-214	*10.4*		*0.588*	*1.23*		*0.275*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*
K-40	*10.8*		*1.84*	*2.14*		*1.18*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*
Pb-210	*11.6*		*3.76*	*4.00*		*4.47*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*
Pb-212	*0.734*		*0.193*	*0.215*		*0.235*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*
Pb-214	*10.8*		*0.580*	*1.26*		*0.378*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*
Tl-208	*0.350*		*0.115*	*0.121*		*0.116*	*pCi/g*	*08/12/15 14:12*	*08/22/15 18:51*	*1*

Client Sample ID: C004-SS001-1824-01 — Lab Sample ID: 160-13266-10

Date Collected: 08/07/15 08:15 — **Matrix: Solid**
Date Received: 08/08/15 08:10

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
Radium-226	**3.51**		1.83	1.93	1.00	2.06	pCi/g	08/12/15 14:12	08/22/15 19:33	1
Radium-228	**1.19**		0.262	0.289		0.214	pCi/g	08/12/15 14:12	08/22/15 19:33	1
Cesium-137	**0.227**		0.0839	0.0871		0.0695	pCi/g	08/12/15 14:12	08/22/15 19:33	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*1.19*		*0.262*	*0.289*		*0.214*	*pCi/g*	*08/12/15 14:12*	*08/22/15 19:33*	*1*
Bi-214	*1.31*		*0.205*	*0.246*		*0.122*	*pCi/g*	*08/12/15 14:12*	*08/22/15 19:33*	*1*
K-40	*12.4*		*1.80*	*2.20*		*0.789*	*pCi/g*	*08/12/15 14:12*	*08/22/15 19:33*	*1*
Pb-212	*0.904*		*0.195*	*0.227*		*0.191*	*pCi/g*	*08/12/15 14:12*	*08/22/15 19:33*	*1*
Pb-214	*1.31*		*0.226*	*0.264*		*0.188*	*pCi/g*	*08/12/15 14:12*	*08/22/15 19:33*	*1*
Tl-208	*0.198*		*0.0885*	*0.0908*		*0.120*	*pCi/g*	*08/12/15 14:12*	*08/22/15 19:33*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-206991/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207152 — **Prep Batch: 206991**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.005472	U	0.515	0.515	1.00	0.944	pCi/g	08/12/15 14:12	08/22/15 17:40	1
Radium-228	0.05285	U	0.0496	0.0499		0.0924	pCi/g	08/12/15 14:12	08/22/15 17:40	1
Cesium-137	-0.003354	U	0.0288	0.0288		0.0552	pCi/g	08/12/15 14:12	08/22/15 17:40	1

Other Detected Radionuclides	*MB Result*	*MB Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Other Detected Radionuclide	*None*						*pCi/g*	*08/12/15 14:12*	*08/22/15 17:40*	*1*

Lab Sample ID: LCS 160-206991/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207151 — **Prep Batch: 206991**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Americium-241			97.3	100.4		10.6		1.22	pCi/g	103	87 - 116		
Cesium-137			30.2	30.40		3.24		0.251	pCi/g	101	87 - 120		
Cobalt-60			19.0	18.77		1.94		0.103	pCi/g	99	87 - 115		

Lab Sample ID: 160-13266-4 DU — **Client Sample ID: C003-SS001-2448-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207147 — **Prep Batch: 206991**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	16.2			13.96		3.94	1.00	3.31	pCi/g			0.27	1
Radium-228	0.972			1.151		0.325		0.298	pCi/g			0.27	1
Cesium-137	0.0140	U		-0.005907	U	0.0922		0.160	pCi/g			0.12	1

Other Detected Radionuclides	*Sample Result*	*Sample Qual*		*DU Result*	*DU Qual*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*			*RER*	*RER Limit*
Ac-228	*0.972*			*1.151*		*0.325*		*0.298*	*pCi/g*			*0.27*	*1*
Bi-214	*9.78*			*9.478*		*1.12*		*0.290*	*pCi/g*			*0.13*	*1*
K-40	*14.1*			*12.89*		*2.12*		*0.978*	*pCi/g*			*0.27*	*1*
Pb-210	*7.70*			*8.306*		*3.10*		*3.55*	*pCi/g*			*0.1*	*1*
Pb-212	*0.831*			*0.6369*		*0.206*		*0.222*	*pCi/g*			*0.45*	*1*
Pb-214	*9.63*			*10.41*		*1.20*		*0.283*	*pCi/g*			*0.34*	*1*
Tl-208	*0.355*			*0.2784*		*0.123*		*0.120*	*pCi/g*			*0.29*	*1*

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-3

Rad

Leach Batch: 204744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13266-1	C002-SS001-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-2	C002-SS002-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-3	C002-SS003-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-4	C003-SS001-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-4 DU	C003-SS001-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-5	C003-SS001-2448-02	Total/NA	Solid	Dry and Grind	
160-13266-6	C003-SS002-0024-01	Total/NA	Solid	Dry and Grind	
160-13266-8	C003-SS003-2448-01	Total/NA	Solid	Dry and Grind	
160-13266-9	C002-TRENCH-0036-01	Total/NA	Solid	Dry and Grind	
160-13266-10	C004-SS001-1824-01	Total/NA	Solid	Dry and Grind	

Prep Batch: 206991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13266-1	C002-SS001-2448-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-2	C002-SS002-2448-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-3	C002-SS003-2448-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-4	C003-SS001-2448-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-4 DU	C003-SS001-2448-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-5	C003-SS001-2448-02	Total/NA	Solid	Fill_Geo-0	204744
160-13266-6	C003-SS002-0024-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-8	C003-SS003-2448-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-9	C002-TRENCH-0036-01	Total/NA	Solid	Fill_Geo-0	204744
160-13266-10	C004-SS001-1824-01	Total/NA	Solid	Fill_Geo-0	204744
LCS 160-206991/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-0	
MB 160-206991/1-A	Method Blank	Total/NA	Solid	Fill_Geo-0	

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-3

Client Sample ID: C002-SS001-2448-01 — Lab Sample ID: 160-13266-1

Date Collected: 08/05/15 10:50 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207147	08/22/15 18:13	RTM	TAL SL

Client Sample ID: C002-SS002-2448-01 — Lab Sample ID: 160-13266-2

Date Collected: 08/05/15 11:40 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207148	08/22/15 18:13	RTM	TAL SL

Client Sample ID: C002-SS003-2448-01 — Lab Sample ID: 160-13266-3

Date Collected: 08/05/15 12:10 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207150	08/22/15 18:15	ALS	TAL SL

Client Sample ID: C003-SS001-2448-01 — Lab Sample ID: 160-13266-4

Date Collected: 08/05/15 14:10 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207151	08/22/15 18:16	RTM	TAL SL

Client Sample ID: C003-SS001-2448-02 — Lab Sample ID: 160-13266-5

Date Collected: 08/05/15 14:12 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207148	08/22/15 18:48	RTM	TAL SL

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-3

Client Sample ID: C003-SS002-0024-01 — Lab Sample ID: 160-13266-6

Date Collected: 08/05/15 14:55 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207150	08/22/15 18:50	ALS	TAL SL

Client Sample ID: C003-SS003-2448-01 — Lab Sample ID: 160-13266-8

Date Collected: 08/05/15 15:15 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207152	08/22/15 18:50	RTM	TAL SL

Client Sample ID: C002-TRENCH-0036-01 — Lab Sample ID: 160-13266-9

Date Collected: 08/05/15 15:30 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207151	08/22/15 18:51	RTM	TAL SL

Client Sample ID: C004-SS001-1824-01 — Lab Sample ID: 160-13266-10

Date Collected: 08/07/15 08:15 — **Matrix: Solid**
Date Received: 08/08/15 08:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			204744	08/10/15 14:04	MFM	TAL SL
Total/NA	Prep	Fill_Geo-0			206991	08/12/15 14:12	JDL	TAL SL
Total/NA	Analysis	GA-01-R		1	207151	08/22/15 19:33	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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DateShipped: 8/5/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C002-SS001-2448-01	8/5/2015	10:50	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS002-2448-01	8/5/2015	11:40	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS003-2448-01	8/5/2015	12:10	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	4	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15	TA	8/8/15 0840	

160-13266 Chain of Custody

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DateShipped: 8/5/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-02	8/5/2015	14:12	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS002-0024-01	8/5/2015	14:55	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15	TA	8/8/15 0810	

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DateShipped: 8/5/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	C003-SS003-2448-01	8/5/2015	15:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C004-SS001-1824-01	8/7/2015	08:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Weston Solutions	8/7/15		8/8/15 0810	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-13266-3

Login Number: 13266
List Number: 1
Creator: Daniels, Brian J

List Source: 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.	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	
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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 160-13435-1

Job Description: EPA RST2 - RFP No. 334A

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

Attention: Ms. Smita Sumbaly

Approved for release.
Rhonda E Ridenhower
Manager of Project Management
8/29/2015 10:28 AM

Rhonda E Ridenhower, Manager of Project Management
13715 Rider Trail North, Earth City, MO, 63045
rhonda.ridenhower@testamericainc.com
08/29/2015

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

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Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Qualifiers

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
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.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
F1	MS and/or MSD Recovery is outside acceptance limits.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 334A

Report Number: 160-13435-1

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.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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."

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

RECEIPT

The samples were received on 08/19/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

TOTAL METALS (ICP)- Solids

Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/21/2015 and analyzed on 08/26/2015.

Batch 208156

The low level check standard recovery associated with prep batches 206916 and 206995 and analytical batch 160-208156 is outside the acceptance criteria for the following analyte: antimony. However, the associated samples recovered below the reporting limit for the affected analyte; therefore, the results will be reported. (CRI 160-208156/7)

The low level continuing calibration verification (CCVL) associated with prep batches 206916 and 206995 and analytical batch 160-208156 recovered above the upper control limit for antimony. The samples associated with this CCVL were below the reporting limit for the affected analytes; therefore, the data have been reported. (CCVL 160-208156/73)

The following samples from preparation batch 160-206916 and analytical batch 160-208156 were diluted to bring the concentration of target analytes within the calibration range: C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-01 (160-13435-1[MS]), C001-SS001-0012-01 (160-13435-1[MSD]), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3), C001-SS003-0012-01 (160-13435-4) and (160-13435-B-1-A SD). Elevated reporting limits (RLs) are provided.

Due to the high concentration of aluminum, calcium, iron, and magnesium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-206916 and analytical batch 160-208156 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. C001-SS001-0012-01 (160-13435-1[MS]) and C001-SS001-0012-01 (160-13435-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) recovery and precision for preparation batch 160-206916 and analytical batch

160-208156 was outside control limits for copper, potassium, lead, and zinc. Sample non-homogeneity is suspected because the associated laboratory control sample recovery was within acceptance limits. C001-SS001-0012-01 (160-13435-1[MS]) and C001-SS001-0012-01 (160-13435-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-206916 and analytical batch 160-208156 were outside control limits for barium and manganese. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. C001-SS001-0012-01 (160-13435-1[MS]) and C001-SS001-0012-01 (160-13435-1[MSD])

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

TOTAL METALS (ICP)-Water
Sample RB-081815 (160-13435-5) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/21/2015 and analyzed on 08/26/2015.

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

MERCURY-Solids
Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 08/27/2015 and analyzed on 08/28/2015.

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

PERCENT SOLIDS
Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 08/20/2015.

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)-Solids
Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE A01R_Th. The samples were dried on 08/19/2015, prepared on 08/20/2015 and analyzed on 08/24/2015.

The matrix spike duplicate (MSD) recovery (123%) is outside the control limits (76-115%). Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits . The data have been qualified and reported. C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-01 (160-13435-1[MS]), C001-SS001-0012-01 (160-13435-1[MSD]), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3), C001-SS003-0012-01 (160-13435-4), (LCS 160-206728/2-A) and (MB 160-206728/1-A)

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)-Water
Sample RB-081815 (160-13435-5) was analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/20/2015 and analyzed on 08/25/2015.

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)-Solids
Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were dried on 08/19/2015, prepared on 08/20/2015 and analyzed on 08/24/2015.

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)-Water
Sample RB-081815 (160-13435-5) was analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/20/2015 and analyzed on 08/24/2015.

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

CESIUM-137 & OTHER GAMMA EMITTERS (GS)-Water
Sample RB-081815 (160-13435-5) was analyzed for Cesium-137 & Other Gamma Emitters (GS) in accordance with DOE. The samples were prepared and analyzed on 08/20/2015.

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

RADIUM 226 (NO INGROWTH)-Solids

Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Radium 226 (No ingrowth) in accordance with GA-01-R. The samples were dried on 08/19/2015, prepared on 08/21/2015 and analyzed on 08/22/2015.

Ra-226 by gamma spectroscopy is typically determined by inference from daughters (e.g. Bi-214) after sealing the sample in an appropriate counting geometry/container and waiting 21 days to allow the Ra-226 decay chain through Rn-222 to reach secular equilibrium. Such an approach is considered to be the most reliable and representative means for establishing the true Ra-226 concentration in the sample. The method requested by the client to report Ra-226, using its own 186 keV gamma-ray emission, is subject to interference and potential bias due to the 185.7 keV U-235 gamma ray. Experience also indicates gamma spectroscopy software does not consistently assign accurate peak areas to Ra-226 (186 keV), with the problem compounded by slight drift of the instrumentation. The laboratory considers Ra-226 reported based upon the 186 keV gamma-ray emission to be best used by the client in a qualitative fashion.The MDC was greater than the requested limit of 1 pCi/g for Radium-226. Radium-226 was requested to be reported with no ingrowth for this batch; therefore, samples were reported from the only usable gamma energy line, 185.99 KeV. This energy line has a low efficiency which causes an elevated MDC.The following samples were affected: C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3), C001-SS003-0012-01 (160-13435-4), (LCS 160-206998/2-A), (MB 160-206998/1-A) and (160-13435-E-1-R DU).

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

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Client Sample ID: C001-SS001-0012-01

Date Collected: 08/18/15 09:40
Date Received: 08/19/15 09:30

Lab Sample ID: 160-13435-1

Matrix: Solid
Percent Solids: 93.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	7200		190	40	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Antimony	4.3	J ^ B	9.3	2.9	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Arsenic	7.7	J B	9.3	2.2	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Barium	77	F1	47	1.0	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Beryllium	ND		4.7	0.70	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Cadmium	ND		4.7	0.32	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Calcium	21000		2300	63	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Chromium	21	B	9.3	1.3	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Cobalt	7.3	J	47	1.3	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Copper	35	F2 F1 B	23	2.3	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Iron	18000	F2	93	19	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Lead	100	F2 F1	9.3	1.2	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Magnesium	11000		930	29	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Manganese	220	F1	9.3	0.75	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Nickel	18	J	37	1.1	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Potassium	1700	J F2 F1	4700	670	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Selenium	ND		14	1.9	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Silver	ND		9.3	0.65	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Sodium	1200		930	71	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Thallium	ND		19	1.8	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Vanadium	29	J	47	4.7	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10
Zinc	120	F2 F1	47	5.2	mg/Kg	☼	08/21/15 11:15	08/26/15 19:49	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12		0.031	0.010	mg/Kg	☼	08/27/15 14:00	08/28/15 15:39	1

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	0.738		0.152	0.164	1.00	0.0603	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-230	2.08		0.253	0.307	1.00	0.0371	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-232	0.847		0.161	0.176	1.00	0.0229	pCi/g	08/20/15 15:15	08/24/15 14:59	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*97.8*		*30 - 110*	*08/20/15 15:15*	*08/24/15 14:59*	*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	0.474		0.123	0.130	1.00	0.0241	pCi/g	08/20/15 15:15	08/24/15 15:02	1
Uranium-235/236	0.0100	U	0.0200	0.0200	1.00	0.0300	pCi/g	08/20/15 15:15	08/24/15 15:02	1
Uranium-238	0.505		0.127	0.134	1.00	0.0241	pCi/g	08/20/15 15:15	08/24/15 15:02	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*86.6*		*30 - 110*	*08/20/15 15:15*	*08/24/15 15:02*	*1*

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Client Sample ID: C001-SS001-0012-01

Lab Sample ID: 160-13435-1
Date Collected: 08/18/15 09:40
Matrix: Solid
Date Received: 08/19/15 09:30

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
Cesium-137	-0.00113	U	0.0615	0.0615		0.106	pCi/g	08/21/15 15:44	08/22/15 19:31	1
Radium-226	**6.83**		1.84	2.20	1.00	1.80	pCi/g	08/21/15 15:44	08/22/15 19:31	1
Radium-228	**0.735**		0.241	0.253		0.301	pCi/g	08/21/15 15:44	08/22/15 19:31	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*0.735*		*0.241*	*0.253*		*0.301*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*
Bi-214	*2.33*		*0.267*	*0.360*		*0.157*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*
K-40	*12.6*		*1.66*	*2.11*		*0.628*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*
Pb-210	*4.17*		*1.64*	*1.71*		*1.87*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*
Pb-212	*0.570*		*0.128*	*0.147*		*0.140*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*
Pb-214	*2.37*		*0.251*	*0.352*		*0.165*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*
Tl-208	*0.213*		*0.0801*	*0.0831*		*0.0761*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:31*	*1*

Client Sample ID: C001-SS001-0012-02

Lab Sample ID: 160-13435-2
Date Collected: 08/18/15 09:40
Matrix: Solid
Date Received: 08/19/15 09:30
Percent Solids: 92.1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**6800**		190	41	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Antimony	**3.5**	**J ^ B**	9.6	3.0	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Arsenic	**4.1**	**J B**	9.6	2.3	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Barium	**72**		48	1.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Beryllium	ND		4.8	0.72	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Cadmium	ND		4.8	0.33	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Calcium	**18000**		2400	65	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Chromium	**17**	**B**	9.6	1.3	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Cobalt	**6.3**	**J**	48	1.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Copper	**22**	**J B**	24	2.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Iron	**13000**		96	19	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Lead	**160**		9.6	1.2	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Magnesium	**7400**		960	30	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Manganese	**130**		9.6	0.77	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Nickel	**16**	**J**	38	1.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Potassium	**2700**	**J**	4800	700	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Selenium	ND		14	2.0	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Silver	ND		9.6	0.67	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Sodium	**830**	**J**	960	73	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Thallium	ND		19	1.8	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Vanadium	**13**	**J**	48	4.9	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10
Zinc	**100**		48	5.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:17	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.13**		0.031	0.010	mg/Kg	☼	08/27/15 14:00	08/28/15 15:47	1

Client Sample ID: C001-SS001-0012-02

Lab Sample ID: 160-13435-2

Date Collected: 08/18/15 09:40

Matrix: Solid

Date Received: 08/19/15 09:30

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	**1.01**		0.180	0.199	1.00	0.0736	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-230	**2.53**		0.283	0.354	1.00	0.0486	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-232	**0.888**		0.167	0.183	1.00	0.0438	pCi/g	08/20/15 15:15	08/24/15 14:59	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*93.4*		*30 - 110*	*08/20/15 15:15*	*08/24/15 14:59*	*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	**0.446**		0.121	0.127	1.00	0.0669	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-235/236	0.0440	U	0.0443	0.0444	1.00	0.0548	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-238	**0.569**		0.135	0.143	1.00	0.0589	pCi/g	08/20/15 15:15	08/24/15 15:03	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*97.9*		*30 - 110*	*08/20/15 15:15*	*08/24/15 15:03*	*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
Cesium-137	0.0174	U	0.0501	0.0501		0.0862	pCi/g	08/21/15 15:44	08/22/15 19:32	1
Radium-226	**5.75**		1.70	1.98	1.00	1.77	pCi/g	08/21/15 15:44	08/22/15 19:32	1
Radium-228	**1.21**		0.237	0.267		0.141	pCi/g	08/21/15 15:44	08/22/15 19:32	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Ac-228	*1.21*		*0.237*	*0.267*		*0.141*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*
Bi-214	*2.49*		*0.253*	*0.362*		*0.158*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*
K-40	*10.3*		*1.35*	*1.71*		*0.799*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*
Pb-210	*3.60*		*1.75*	*1.81*		*2.01*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*
Pb-212	*1.26*		*0.142*	*0.217*		*0.121*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*
Pb-214	*2.96*		*0.217*	*0.376*		*0.167*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*
Tl-208	*0.390*		*0.0699*	*0.0807*		*0.0513*	*pCi/g*	*08/21/15 15:44*	*08/22/15 19:32*	*1*

Client Sample ID: C001-SS002-0012-01

Lab Sample ID: 160-13435-3

Date Collected: 08/18/15 11:30

Matrix: Solid

Date Received: 08/19/15 09:30

Percent Solids: 91.8

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11000**		200	43	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Antimony	ND	^	10	3.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Arsenic	ND		10	2.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Barium	**42**	**J**	51	1.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Beryllium	ND		5.1	0.76	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Cadmium	ND		5.1	0.35	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Client Sample ID: C001-SS002-0012-01

Date Collected: 08/18/15 11:30
Date Received: 08/19/15 09:30

Lab Sample ID: 160-13435-3

Matrix: Solid
Percent Solids: 91.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11000		2500	68	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Chromium	11	B	10	1.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Cobalt	13	J	51	1.5	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Copper	46	B	25	2.5	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Iron	22000		100	20	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Lead	22		10	1.3	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Magnesium	6900		1000	32	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Manganese	270		10	0.81	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Nickel	13	J	41	1.2	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Potassium	ND		5100	740	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Selenium	ND		15	2.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Silver	0.91	J B	10	0.71	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Sodium	1700		1000	77	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Thallium	ND		20	1.9	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Vanadium	42	J	51	5.2	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10
Zinc	50	J	51	5.7	mg/Kg	☼	08/21/15 11:15	08/26/15 20:21	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.15		0.033	0.011	mg/Kg	☼	08/27/15 14:00	08/28/15 15:50	1

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	0.552		0.142	0.149	1.00	0.0879	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-230	0.728		0.158	0.169	1.00	0.0411	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-232	0.625		0.147	0.156	1.00	0.0564	pCi/g	08/20/15 15:15	08/24/15 14:59	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*82.2*		*30 - 110*	*08/20/15 15:15*	*08/24/15 14:59*	*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	0.471		0.131	0.137	1.00	0.0593	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-235/236	0.0553		0.0494	0.0497	1.00	0.0332	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-238	0.512		0.135	0.142	1.00	0.0429	pCi/g	08/20/15 15:15	08/24/15 15:03	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*83.2*		*30 - 110*	*08/20/15 15:15*	*08/24/15 15:03*	*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
Cesium-137	0.0143	U	0.0419	0.0419		0.0736	pCi/g	08/21/15 15:44	08/22/15 20:06	1
Radium-226	2.45		1.06	1.14	1.00	1.25	pCi/g	08/21/15 15:44	08/22/15 20:06	1
Radium-228	0.492		0.178	0.185		0.223	pCi/g	08/21/15 15:44	08/22/15 20:06	1

Client Sample ID: C001-SS002-0012-01 — Lab Sample ID: 160-13435-3

Date Collected: 08/18/15 11:30 — **Matrix: Solid**
Date Received: 08/19/15 09:30

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Ac-228	0.492		0.178	0.185		0.223	pCi/g	08/21/15 15:44	08/22/15 20:06	1
Bi-214	0.875		0.150	0.175		0.112	pCi/g	08/21/15 15:44	08/22/15 20:06	1
K-40	7.34		1.13	1.36		0.529	pCi/g	08/21/15 15:44	08/22/15 20:06	1
Pb-212	0.478		0.115	0.130		0.116	pCi/g	08/21/15 15:44	08/22/15 20:06	1
Pb-214	0.916		0.147	0.175		0.149	pCi/g	08/21/15 15:44	08/22/15 20:06	1
Tl-208	0.182		0.0524	0.0557		0.0496	pCi/g	08/21/15 15:44	08/22/15 20:06	1

Client Sample ID: C001-SS003-0012-01 — Lab Sample ID: 160-13435-4

Date Collected: 08/18/15 12:50 — **Matrix: Solid**
Date Received: 08/19/15 09:30 — **Percent Solids: 90.3**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9800		200	42	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Antimony	ND	^	10	3.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Arsenic	7.7	J B	10	2.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Barium	51		50	1.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Beryllium	ND		5.0	0.75	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Cadmium	ND		5.0	0.34	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Calcium	5400		2500	67	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Chromium	18	B	10	1.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Cobalt	8.9	J	50	1.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Copper	32	B	25	2.4	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Iron	20000		100	20	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Lead	23		10	1.3	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Magnesium	5200		1000	31	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Manganese	310		10	0.80	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Nickel	16	J	40	1.2	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Potassium	1200	J	5000	720	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Selenium	ND		15	2.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Silver	ND		10	0.70	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Sodium	700	J	1000	76	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Thallium	ND		20	1.9	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Vanadium	35	J	50	5.1	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10
Zinc	66		50	5.6	mg/Kg	☼	08/21/15 11:15	08/26/15 20:25	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.029	J	0.036	0.012	mg/Kg	☼	08/27/15 14:00	08/28/15 15:51	1

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	0.748		0.165	0.176	1.00	0.0888	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-230	0.697		0.155	0.165	1.00	0.0258	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-232	0.685		0.153	0.164	1.00	0.0414	pCi/g	08/20/15 15:15	08/24/15 14:59	1

Client Sample ID: C001-SS003-0012-01

Lab Sample ID: 160-13435-4
Date Collected: 08/18/15 12:50
Matrix: Solid
Date Received: 08/19/15 09:30

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	86.9		30 - 110	08/20/15 15:15	08/24/15 14:59	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	**0.404**		0.119	0.124	1.00	0.0529	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-235/236	0.0373	U	0.0433	0.0434	1.00	0.0596	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-238	**0.374**		0.115	0.119	1.00	0.0607	pCi/g	08/20/15 15:15	08/24/15 15:03	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	87.6		30 - 110	08/20/15 15:15	08/24/15 15:03	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
Cesium-137	0.000163	U	0.0570	0.0570		0.112	pCi/g	08/21/15 15:44	08/22/15 20:04	1
Radium-226	**1.38**		0.997	1.03	1.00	1.37	pCi/g	08/21/15 15:44	08/22/15 20:04	1
Radium-228	**0.378**		0.180	0.184		0.319	pCi/g	08/21/15 15:44	08/22/15 20:04	1

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Ac-228	0.378		0.180	0.184		0.319	pCi/g	08/21/15 15:44	08/22/15 20:04	1
Bi-214	0.758		0.156	0.175		0.0982	pCi/g	08/21/15 15:44	08/22/15 20:04	1
K-40	9.53		1.64	1.91		0.766	pCi/g	08/21/15 15:44	08/22/15 20:04	1
Pb-212	0.683		0.132	0.159		0.118	pCi/g	08/21/15 15:44	08/22/15 20:04	1
Pb-214	0.810		0.199	0.216		0.190	pCi/g	08/21/15 15:44	08/22/15 20:04	1
Tl-208	0.151		0.0715	0.0732		0.0963	pCi/g	08/21/15 15:44	08/22/15 20:04	1

Client Sample ID: RB-081815

Lab Sample ID: 160-13435-5
Date Collected: 08/18/15 11:45
Matrix: Water
Date Received: 08/19/15 09:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		08/21/15 15:55	08/26/15 20:37	1
Antimony	**4.4**	**J ^**	10	3.7	ug/L		08/21/15 15:55	08/26/15 20:37	1
Arsenic	**2.4**	**J**	10	1.8	ug/L		08/21/15 15:55	08/26/15 20:37	1
Barium	ND		50	2.1	ug/L		08/21/15 15:55	08/26/15 20:37	1
Beryllium	ND		5.0	0.28	ug/L		08/21/15 15:55	08/26/15 20:37	1
Cadmium	ND		5.0	0.34	ug/L		08/21/15 15:55	08/26/15 20:37	1
Calcium	ND		1000	54	ug/L		08/21/15 15:55	08/26/15 20:37	1
Chromium	ND		10	3.4	ug/L		08/21/15 15:55	08/26/15 20:37	1
Cobalt	ND		50	2.7	ug/L		08/21/15 15:55	08/26/15 20:37	1
Copper	ND		25	2.1	ug/L		08/21/15 15:55	08/26/15 20:37	1
Iron	**19**	**J**	100	13	ug/L		08/21/15 15:55	08/26/15 20:37	1
Lead	ND		10	0.60	ug/L		08/21/15 15:55	08/26/15 20:37	1
Magnesium	ND		1000	51	ug/L		08/21/15 15:55	08/26/15 20:37	1
Manganese	ND		15	1.0	ug/L		08/21/15 15:55	08/26/15 20:37	1
Nickel	ND		40	2.6	ug/L		08/21/15 15:55	08/26/15 20:37	1

Client Sample ID: RB-081815

Date Collected: 08/18/15 11:45
Date Received: 08/19/15 09:30

Lab Sample ID: 160-13435-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		5000	460	ug/L		08/21/15 15:55	08/26/15 20:37	1
Selenium	**2.3**	**J B**	15	2.1	ug/L		08/21/15 15:55	08/26/15 20:37	1
Silver	ND		10	0.99	ug/L		08/21/15 15:55	08/26/15 20:37	1
Sodium	ND		1000	110	ug/L		08/21/15 15:55	08/26/15 20:37	1
Thallium	ND		20	2.4	ug/L		08/21/15 15:55	08/26/15 20:37	1
Vanadium	ND		50	4.4	ug/L		08/21/15 15:55	08/26/15 20:37	1
Zinc	**13**	**J**	20	8.3	ug/L		08/21/15 15:55	08/26/15 20:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		08/20/15 10:26	08/21/15 09:17	1

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	0.141	U	0.119	0.120	1.00	0.152	pCi/L	08/20/15 08:50	08/25/15 10:39	1
Thorium-230	0.102	U	0.0943	0.0947	1.00	0.109	pCi/L	08/20/15 08:50	08/25/15 10:39	1
Thorium-232	-0.0145	U	0.0168	0.0168	1.00	0.120	pCi/L	08/20/15 08:50	08/25/15 10:39	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*73.5*		*30 - 110*	*08/20/15 08:50*	*08/25/15 10:39*	*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	-0.00843	U	0.0119	0.0119	1.00	0.0944	pCi/L	08/20/15 08:50	08/24/15 14:57	1
Uranium-235/236	-0.00524	U	0.0105	0.0105	1.00	0.101	pCi/L	08/20/15 08:50	08/24/15 14:57	1
Uranium-238	0.00841	U	0.0357	0.0357	1.00	0.0942	pCi/L	08/20/15 08:50	08/24/15 14:57	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*84.2*		*30 - 110*	*08/20/15 08:50*	*08/24/15 14:57*	*1*

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.0400	U	5.23	5.23	20.0	10.2	pCi/L	08/20/15 10:44	08/20/15 15:39	1

Other Detected Radionuclides	*Result*	*Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Other Detected Radionuclide	*None*						*pCi/L*	*08/20/15 10:44*	*08/20/15 15:39*	*1*

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Method: 6010C - Metals (ICP)

Analyte	RL	MDL	Units	Method
Aluminum	20	4.3	mg/Kg	6010C
Aluminum	200	22	ug/L	6010C
Antimony	1.0	0.31	mg/Kg	6010C
Antimony	10	3.7	ug/L	6010C
Arsenic	1.0	0.24	mg/Kg	6010C
Arsenic	10	1.8	ug/L	6010C
Barium	5.0	0.11	mg/Kg	6010C
Barium	50	2.1	ug/L	6010C
Beryllium	0.50	0.075	mg/Kg	6010C
Beryllium	5.0	0.28	ug/L	6010C
Cadmium	0.50	0.034	mg/Kg	6010C
Cadmium	5.0	0.34	ug/L	6010C
Calcium	250	6.7	mg/Kg	6010C
Calcium	1000	54	ug/L	6010C
Chromium	1.0	0.14	mg/Kg	6010C
Chromium	10	3.4	ug/L	6010C
Cobalt	5.0	0.14	mg/Kg	6010C
Cobalt	50	2.7	ug/L	6010C
Copper	2.5	0.25	mg/Kg	6010C
Copper	25	2.1	ug/L	6010C
Iron	10	2.0	mg/Kg	6010C
Iron	100	13	ug/L	6010C
Lead	1.0	0.13	mg/Kg	6010C
Lead	10	0.60	ug/L	6010C
Magnesium	100	3.2	mg/Kg	6010C
Magnesium	1000	51	ug/L	6010C
Manganese	1.0	0.080	mg/Kg	6010C
Manganese	15	1.0	ug/L	6010C
Nickel	4.0	0.12	mg/Kg	6010C
Nickel	40	2.6	ug/L	6010C
Potassium	500	72	mg/Kg	6010C
Potassium	5000	460	ug/L	6010C
Selenium	1.5	0.21	mg/Kg	6010C
Selenium	15	2.1	ug/L	6010C
Silver	1.0	0.070	mg/Kg	6010C
Silver	10	0.99	ug/L	6010C
Sodium	100	7.6	mg/Kg	6010C
Sodium	1000	110	ug/L	6010C
Thallium	2.0	0.19	mg/Kg	6010C
Thallium	20	2.4	ug/L	6010C
Vanadium	5.0	0.51	mg/Kg	6010C
Vanadium	50	4.4	ug/L	6010C
Zinc	5.0	0.56	mg/Kg	6010C
Zinc	20	8.3	ug/L	6010C

Method: 7470A - Mercury (CVAA)

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.060	ug/L	7470A

Method: 7471B - Mercury (CVAA)

Default Detection Limits

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Method: 7471B - Mercury (CVAA)

Analyte	RL	MDL	Units	Method
Mercury	0.033	0.011	mg/Kg	7471B

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

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)						
160-13435-1	C001-SS001-0012-01	97.8						
160-13435-1 MS	C001-SS001-0012-01	89.2						
160-13435-1 MSD	C001-SS001-0012-01	88.3						
160-13435-2	C001-SS001-0012-02	93.4						
160-13435-3	C001-SS002-0012-01	82.2						
160-13435-4	C001-SS003-0012-01	86.9						
LCS 160-206728/2-A	Lab Control Sample	84.8						
MB 160-206728/1-A	Method Blank	83.1						

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)						
160-13435-5	RB-081815	73.5						
160-13435-5 DU	RB-081815	78.2						
LCS 160-206670/2-A	Lab Control Sample	93.7						
MB 160-206670/1-A	Method Blank	88.5						

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)						
160-13435-1	C001-SS001-0012-01	86.6						
160-13435-1 MS	C001-SS001-0012-01	87.0						
160-13435-1 MSD	C001-SS001-0012-01	87.5						
160-13435-2	C001-SS001-0012-02	97.9						
160-13435-3	C001-SS002-0012-01	83.2						
160-13435-4	C001-SS003-0012-01	87.6						
LCS 160-206737/2-A	Lab Control Sample	78.4						
MB 160-206737/1-A	Method Blank	95.3						

Tracer/Carrier Legend

U-232 = Uranium-232

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

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)**							
160-13435-5	RB-081815	84.2							
160-13435-5 DU	RB-081815	70.8							
LCS 160-206674/2-A	Lab Control Sample	78.5							
MB 160-206674/1-A	Method Blank	83.1							

Tracer/Carrier Legend

U-232 = Uranium-232

QC Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-206916/1-A
Matrix: Solid
Analysis Batch: 208156

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 206916

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		17	3.6	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Antimony	0.399	J ^	0.85	0.26	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Arsenic	0.263	J	0.85	0.20	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Barium	ND		4.2	0.093	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Beryllium	ND		0.42	0.064	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Cadmium	ND		0.42	0.029	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Calcium	ND		210	5.7	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Chromium	0.170	J	0.85	0.12	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Cobalt	ND		4.2	0.12	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Copper	0.221	J	2.1	0.21	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Iron	ND		8.5	1.7	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Lead	ND		0.85	0.11	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Magnesium	ND		85	2.7	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Manganese	ND		0.85	0.068	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Nickel	ND		3.4	0.098	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Potassium	ND		420	61	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Selenium	ND		1.3	0.17	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Silver	0.0679	J	0.85	0.059	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Sodium	ND		85	6.5	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Thallium	ND		1.7	0.16	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Vanadium	ND		4.2	0.43	mg/Kg		08/21/15 11:15	08/26/15 19:41	1
Zinc	ND		4.2	0.48	mg/Kg		08/21/15 11:15	08/26/15 19:41	1

Lab Sample ID: LCSSRM 160-206916/2-A
Matrix: Solid
Analysis Batch: 208156

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 206916

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	8060	6220		mg/Kg		77.1	39.5 - 160.0
Antimony	94.0	44.7	^	mg/Kg		47.5	22.8 - 257.4
Arsenic	113	95.4		mg/Kg		84.4	69.7 - 142.5
Barium	155	139		mg/Kg		89.4	72.9 - 127.1
Beryllium	109	96.5		mg/Kg		88.5	74.7 - 124.8
Cadmium	67.5	61.4		mg/Kg		90.9	73.2 - 126.8
Calcium	5850	5410		mg/Kg		92.4	73.7 - 126.5
Chromium	164	153		mg/Kg		93.0	70.7 - 129.9
Cobalt	100	94.7		mg/Kg		94.7	74.4 - 126.0
Copper	128	110		mg/Kg		85.7	75.2 - 125.8
Iron	15200	11300		mg/Kg		74.7	37.4 - 162.5

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

Lab Sample ID: LCSSRM 160-206916/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206916**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	90.1	81.6		mg/Kg		90.6	70.1 - 129.9
Magnesium	2790	2470		mg/Kg		88.5	65.2 - 135.1
Manganese	363	343		mg/Kg		94.5	75.8 - 124.5
Nickel	89.3	85.2		mg/Kg		95.4	72.0 - 127.7
Potassium	2770	2300		mg/Kg		82.9	61.7 - 138.3
Selenium	156	132		mg/Kg		84.9	67.3 - 132.1
Silver	52.6	48.6		mg/Kg		92.3	66.7 - 133.5
Sodium	686	604		mg/Kg		88.0	55.8 - 144.2
Thallium	116	110		mg/Kg		94.7	67.4 - 131.9
Vanadium	73.0	59.7		mg/Kg		81.8	59.7 - 139.7
Zinc	168	152		mg/Kg		90.3	69.0 - 131.5

Lab Sample ID: 160-13435-1 MS — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206916**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	7200		1040	10600	4	mg/Kg	☼	324	75 - 125
Antimony	4.3	J ^ B	52.1	44.2	^	mg/Kg	☼	77	75 - 125
Arsenic	7.7	J B	104	102		mg/Kg	☼	91	75 - 125
Barium	77	F1	104	187		mg/Kg	☼	106	75 - 125
Beryllium	ND		104	101		mg/Kg	☼	97	75 - 125
Cadmium	ND		104	106		mg/Kg	☼	101	75 - 125
Calcium	21000		1040	17400	4	mg/Kg	☼	-355	75 - 125
Chromium	21	B	104	136		mg/Kg	☼	111	75 - 125
Cobalt	7.3	J	104	119		mg/Kg	☼	107	75 - 125
Copper	35	F2 F1 B	104	136		mg/Kg	☼	97	75 - 125
Iron	18000	F2	1040	17000	4	mg/Kg	☼	-130	75 - 125
Lead	100	F2 F1	104	205		mg/Kg	☼	100	75 - 125
Magnesium	11000		1040	11000	4	mg/Kg	☼	5	75 - 125
Manganese	220	F1	104	337		mg/Kg	☼	111	75 - 125
Nickel	18	J	104	127		mg/Kg	☼	105	75 - 125
Potassium	1700	J F2 F1	1040	4430	J F1	mg/Kg	☼	261	75 - 125
Selenium	ND		52.1	51.7		mg/Kg	☼	99	75 - 125
Silver	ND		20.8	21.4		mg/Kg	☼	102	75 - 125
Sodium	1200		1040	2210		mg/Kg	☼	92	75 - 125
Thallium	ND		20.9	20.4	J	mg/Kg	☼	98	75 - 125
Vanadium	29	J	104	131		mg/Kg	☼	98	75 - 125
Zinc	120	F2 F1	104	213		mg/Kg	☼	87	75 - 125

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

Lab Sample ID: 160-13435-1 MSD — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206916**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	7200		973	10200	4	mg/Kg	☼	305	75 - 125	4	30
Antimony	4.3	J ^ B	48.7	56.3	^	mg/Kg	☼	107	75 - 125	24	30
Arsenic	7.7	J B	97.3	91.8		mg/Kg	☼	86	75 - 125	11	30
Barium	77	F1	97.3	217	F1	mg/Kg	☼	145	75 - 125	15	30
Beryllium	ND		97.3	95.9		mg/Kg	☼	98	75 - 125	6	30
Cadmium	ND		97.3	100		mg/Kg	☼	103	75 - 125	5	30
Calcium	21000		973	20200	4	mg/Kg	☼	-90	75 - 125	15	30
Chromium	21	B	97.3	127		mg/Kg	☼	109	75 - 125	7	30
Cobalt	7.3	J	97.3	115		mg/Kg	☼	111	75 - 125	3	30
Copper	35	F2 F1 B	97.3	185	F1 F2	mg/Kg	☼	155	75 - 125	31	30
Iron	18000	F2	973	31200	4 F2	mg/Kg	☼	1315	75 - 125	59	30
Lead	100	F2 F1	97.3	3750	F1 F2	mg/Kg	☼	3750	75 - 125	179	30
Magnesium	11000		973	11100	4	mg/Kg	☼	23	75 - 125	2	30
Manganese	220	F1	97.3	426	F1	mg/Kg	☼	210	75 - 125	23	30
Nickel	18	J	97.3	125		mg/Kg	☼	111	75 - 125	2	30
Potassium	1700	J F2 F1	973	2720	J F2	mg/Kg	☼	105	75 - 125	48	30
Selenium	ND		48.7	40.7		mg/Kg	☼	84	75 - 125	24	30
Silver	ND		19.5	20.3		mg/Kg	☼	104	75 - 125	5	30
Sodium	1200		973	2380		mg/Kg	☼	117	75 - 125	8	30
Thallium	ND		19.5	20.0		mg/Kg	☼	102	75 - 125	2	30
Vanadium	29	J	97.3	130		mg/Kg	☼	104	75 - 125	1	30
Zinc	120	F2 F1	97.3	321	F1 F2	mg/Kg	☼	204	75 - 125	41	30

Lab Sample ID: MB 160-206995/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206995**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	22	ug/L		08/21/15 15:55	08/26/15 20:29	1
Antimony	ND	^	10	3.7	ug/L		08/21/15 15:55	08/26/15 20:29	1
Arsenic	ND		10	1.8	ug/L		08/21/15 15:55	08/26/15 20:29	1
Barium	ND		50	2.1	ug/L		08/21/15 15:55	08/26/15 20:29	1
Beryllium	ND		5.0	0.28	ug/L		08/21/15 15:55	08/26/15 20:29	1
Cadmium	ND		5.0	0.34	ug/L		08/21/15 15:55	08/26/15 20:29	1
Calcium	ND		1000	54	ug/L		08/21/15 15:55	08/26/15 20:29	1
Chromium	ND		10	3.4	ug/L		08/21/15 15:55	08/26/15 20:29	1
Cobalt	ND		50	2.7	ug/L		08/21/15 15:55	08/26/15 20:29	1
Copper	ND		25	2.1	ug/L		08/21/15 15:55	08/26/15 20:29	1
Iron	ND		100	13	ug/L		08/21/15 15:55	08/26/15 20:29	1
Lead	ND		10	0.60	ug/L		08/21/15 15:55	08/26/15 20:29	1
Magnesium	ND		1000	51	ug/L		08/21/15 15:55	08/26/15 20:29	1
Manganese	ND		15	1.0	ug/L		08/21/15 15:55	08/26/15 20:29	1
Nickel	ND		40	2.6	ug/L		08/21/15 15:55	08/26/15 20:29	1
Potassium	ND		5000	460	ug/L		08/21/15 15:55	08/26/15 20:29	1
Selenium	4.90	J	15	2.1	ug/L		08/21/15 15:55	08/26/15 20:29	1
Silver	ND		10	0.99	ug/L		08/21/15 15:55	08/26/15 20:29	1
Sodium	ND		1000	110	ug/L		08/21/15 15:55	08/26/15 20:29	1
Thallium	ND		20	2.4	ug/L		08/21/15 15:55	08/26/15 20:29	1

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

Lab Sample ID: MB 160-206995/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206995**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	ND		50	4.4	ug/L		08/21/15 15:55	08/26/15 20:29	1
Zinc	ND		20	8.3	ug/L		08/21/15 15:55	08/26/15 20:29	1

Lab Sample ID: LCS 160-206995/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206995**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	10200		ug/L		102	80 - 120
Antimony	500	514	^	ug/L		103	80 - 120
Arsenic	1000	952		ug/L		95	80 - 120
Barium	1000	995		ug/L		100	80 - 120
Beryllium	1000	984		ug/L		98	80 - 120
Cadmium	1000	1030		ug/L		103	80 - 120
Calcium	10000	10800		ug/L		108	80 - 120
Chromium	1000	1070		ug/L		107	80 - 120
Cobalt	1000	1100		ug/L		110	80 - 120
Copper	1000	1020		ug/L		102	80 - 120
Iron	10000	9990		ug/L		100	80 - 120
Lead	1000	1030		ug/L		103	80 - 120
Magnesium	10000	10000		ug/L		100	80 - 120
Manganese	1000	1040		ug/L		104	80 - 120
Nickel	1000	1100		ug/L		110	80 - 120
Potassium	10000	9770		ug/L		98	80 - 120
Selenium	500	489		ug/L		98	80 - 120
Silver	200	208		ug/L		104	80 - 120
Sodium	10000	9920		ug/L		99	80 - 120
Thallium	200	217		ug/L		108	80 - 120
Vanadium	1000	974		ug/L		97	80 - 120
Zinc	1000	1030		ug/L		103	80 - 120

Lab Sample ID: 160-13435-5 MS — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206995**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND		10000	10300		ug/L		103	75 - 125
Antimony	4.4	J ^	500	517	^	ug/L		103	75 - 125
Arsenic	2.4	J	1000	955		ug/L		95	75 - 125
Barium	ND		1000	1010		ug/L		101	75 - 125
Beryllium	ND		1000	993		ug/L		99	75 - 125
Cadmium	ND		1000	1030		ug/L		103	75 - 125
Calcium	ND		10000	10700		ug/L		107	75 - 125
Chromium	ND		1000	1070		ug/L		107	75 - 125
Cobalt	ND		1000	1090		ug/L		109	75 - 125
Copper	ND		1000	1020		ug/L		102	75 - 125
Iron	19	J	10000	10100		ug/L		101	75 - 125
Lead	ND		1000	1020		ug/L		102	75 - 125
Magnesium	ND		10000	10100		ug/L		101	75 - 125

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

Lab Sample ID: 160-13435-5 MS — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206995**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	ND		1000	1050		ug/L		105	75 - 125
Nickel	ND		1000	1090		ug/L		109	75 - 125
Potassium	ND		10000	9900		ug/L		99	75 - 125
Selenium	2.3	J B	500	493		ug/L		98	75 - 125
Silver	ND		200	211		ug/L		106	75 - 125
Sodium	ND		10000	9990		ug/L		100	75 - 125
Thallium	ND		200	218		ug/L		109	75 - 125
Vanadium	ND		1000	988		ug/L		99	75 - 125
Zinc	13	J	1000	1040		ug/L		103	75 - 125

Lab Sample ID: 160-13435-5 MSD — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 208156 — **Prep Batch: 206995**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND		10000	10100		ug/L		101	75 - 125	2	20
Antimony	4.4	J ^	500	503	^	ug/L		100	75 - 125	3	20
Arsenic	2.4	J	1000	944		ug/L		94	75 - 125	1	20
Barium	ND		1000	993		ug/L		99	75 - 125	1	20
Beryllium	ND		1000	982		ug/L		98	75 - 125	1	20
Cadmium	ND		1000	1020		ug/L		102	75 - 125	1	20
Calcium	ND		10000	10600		ug/L		106	75 - 125	1	20
Chromium	ND		1000	1060		ug/L		106	75 - 125	1	20
Cobalt	ND		1000	1080		ug/L		108	75 - 125	1	20
Copper	ND		1000	1020		ug/L		102	75 - 125	1	20
Iron	19	J	10000	9950		ug/L		99	75 - 125	2	20
Lead	ND		1000	1010		ug/L		101	75 - 125	1	20
Magnesium	ND		10000	9890		ug/L		99	75 - 125	2	20
Manganese	ND		1000	1030		ug/L		103	75 - 125	3	20
Nickel	ND		1000	1080		ug/L		108	75 - 125	1	20
Potassium	ND		10000	9810		ug/L		98	75 - 125	1	20
Selenium	2.3	J B	500	490		ug/L		98	75 - 125	1	20
Silver	ND		200	209		ug/L		104	75 - 125	1	20
Sodium	ND		10000	9880		ug/L		99	75 - 125	1	20
Thallium	ND		200	214		ug/L		107	75 - 125	2	20
Vanadium	ND		1000	969		ug/L		97	75 - 125	2	20
Zinc	13	J	1000	1030		ug/L		102	75 - 125	1	20

Lab Sample ID: LRC 160-208156/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water
Analysis Batch: 208156

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	100000	104000		ug/L		104	90 - 110
Antimony	2000	2020		ug/L		101	90 - 110
Arsenic	10000	10100		ug/L		101	90 - 110
Barium	10000	10200		ug/L		102	90 - 110
Beryllium	10000	10300		ug/L		103	90 - 110
Cadmium	10000	10200		ug/L		102	90 - 110

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

Lab Sample ID: LRC 160-208156/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water
Analysis Batch: 208156

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	100000	101000		ug/L		101	90 - 110
Chromium	10000	10300		ug/L		103	90 - 110
Cobalt	10000	10100		ug/L		101	90 - 110
Copper	10000	10100		ug/L		101	90 - 110
Iron	100000	102000		ug/L		102	90 - 110
Lead	10000	10000		ug/L		100	90 - 110
Magnesium	100000	104000		ug/L		104	90 - 110
Manganese	10000	10300		ug/L		103	90 - 110
Nickel	10000	10200		ug/L		102	90 - 110
Potassium	100000	104000		ug/L		104	90 - 110
Selenium	2000	2030		ug/L		102	90 - 110
Silver	2000	2010		ug/L		101	90 - 110
Sodium	100000	103000		ug/L		103	90 - 110
Thallium	2000	2010		ug/L		100	90 - 110
Vanadium	10000	10300		ug/L		103	90 - 110
Zinc	10000	10100		ug/L		101	90 - 110

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 160-206284/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 206952 — **Prep Batch: 206284**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		08/18/15 14:10	08/21/15 08:45	1

Lab Sample ID: LCS 160-206284/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 206952 — **Prep Batch: 206284**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.68		ug/L		94	80 - 120

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 160-208211/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208443 — **Prep Batch: 208211**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.010	mg/Kg		08/27/15 14:00	08/28/15 15:36	1

Lab Sample ID: LCSSRM 160-208211/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208443 — **Prep Batch: 208211**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.37	7.04		mg/Kg		84.1	51.3 - 148.1

Lab Sample ID: 160-13435-1 MS — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208443 — **Prep Batch: 208211**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.12		0.795	0.897		mg/Kg	☼	98	80 - 120

Lab Sample ID: 160-13435-1 MSD — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 208443 — **Prep Batch: 208211**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.12		0.862	0.960		mg/Kg	☼	98	80 - 120	7	30

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Lab Sample ID: MB 160-206670/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207599 — **Prep Batch: 206670**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.1121	U	0.105	0.105	1.00	0.150	pCi/L	08/20/15 08:50	08/24/15 14:54	1
Thorium-230	0.05259	U	0.0658	0.0660	1.00	0.0991	pCi/L	08/20/15 08:50	08/24/15 14:54	1
Thorium-232	-0.007974	U	0.0113	0.0113	1.00	0.0893	pCi/L	08/20/15 08:50	08/24/15 14:54	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*88.5*		*30 - 110*	*08/20/15 08:50*	*08/24/15 14:54*	*1*

Lab Sample ID: LCS 160-206670/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207600 — **Prep Batch: 206670**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Thorium-230			8.03	7.809		0.958	1.00	0.117	pCi/L	97	81 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*93.7*		*30 - 110*

Lab Sample ID: 160-13435-5 DU — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207844 — **Prep Batch: 206670**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Thorium-228	0.141	U		0.08611	U	0.122	1.00	0.207	pCi/L			0.23	1
Thorium-230	0.102	U		0.1342		0.111	1.00	0.128	pCi/L			0.16	1
Thorium-232	-0.0145	U		-0.01431	U	0.0166	1.00	0.118	pCi/L			0.01	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Thorium-229	*78.2*		*30 - 110*

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-206728/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207615 — **Prep Batch: 206728**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.09090		0.0639	0.0644	1.00	0.0763	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-230	0.1039		0.0600	0.0606	1.00	0.0260	pCi/g	08/20/15 15:15	08/24/15 14:59	1
Thorium-232	0.01077	U	0.0255	0.0255	1.00	0.0533	pCi/g	08/20/15 15:15	08/24/15 14:59	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*83.1*		*30 - 110*	*08/20/15 15:15*	*08/24/15 14:59*	*1*

Lab Sample ID: LCS 160-206728/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207616 — **Prep Batch: 206728**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230			24.5	26.16		2.58	1.00	0.131	pCi/g	107	81 - 118		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Thorium-229	*84.8*		*30 - 110*

Lab Sample ID: 160-13435-1 MS — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207619 — **Prep Batch: 206728**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Thorium-230	2.08		4.01	6.559		0.719	1.00	0.0392	pCi/g	112	76 - 115		

Tracer	*MS %Yield*	*MS Qualifier*	*Limits*
Thorium-229	*89.2*		*30 - 110*

Lab Sample ID: 160-13435-1 MSD — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207845 — **Prep Batch: 206728**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Thorium-230	2.08		4.01	7.030	F1	0.767	1.00	0.0528	pCi/g	123	76 - 115	0.32	1

Tracer	*MSD %Yield*	*MSD Qualifier*	*Limits*
Thorium-229	*88.3*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-206674/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207607 — **Prep Batch: 206674**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.05606	U	0.0706	0.0708	1.00	0.107	pCi/L	08/20/15 08:50	08/24/15 14:57	1
Uranium-235/236	0.0000	U	0.0107	0.0107	1.00	0.0644	pCi/L	08/20/15 08:50	08/24/15 14:57	1
Uranium-238	0.008607	U	0.0365	0.0365	1.00	0.0964	pCi/L	08/20/15 08:50	08/24/15 14:57	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*83.1*		*30 - 110*	*08/20/15 08:50*	*08/24/15 14:57*	*1*

Lab Sample ID: LCS 160-206674/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207609 — **Prep Batch: 206674**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Uranium-233/234			12.7	12.52		1.44	1.00	0.119	pCi/L	98	84 - 120		
Uranium-238			13.0	12.48		1.43	1.00	0.118	pCi/L	96	83 - 121		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*78.5*		*30 - 110*

Lab Sample ID: 160-13435-5 DU — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 207611 — **Prep Batch: 206674**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Uranium-233/234	-0.00843	U		0.03478	U	0.0724	1.00	0.141	pCi/L			0.51	1
Uranium-235/236	-0.00524	U		-0.01237	U	0.0175	1.00	0.139	pCi/L			0.25	1
Uranium-238	0.00841	U		0.004959	U	0.0432	1.00	0.123	pCi/L			0.04	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*70.8*		*30 - 110*

Lab Sample ID: MB 160-206737/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207549 — **Prep Batch: 206737**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	0.02595	U	0.0327	0.0327	1.00	0.0494	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-235/236	0.01987	U	0.0281	0.0282	1.00	0.0298	pCi/g	08/20/15 15:15	08/24/15 15:03	1
Uranium-238	0.03187		0.0319	0.0320	1.00	0.0239	pCi/g	08/20/15 15:15	08/24/15 15:03	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-206737/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207549 — **Prep Batch: 206737**

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	95.3		30 - 110	08/20/15 15:15	08/24/15 15:03	1

Lab Sample ID: LCS 160-206737/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207552 — **Prep Batch: 206737**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Uranium-233/234	6.37	6.629		0.738	1.00	0.0494	pCi/g	104	84 - 120
Uranium-238	6.51	6.222		0.702	1.00	0.0426	pCi/g	96	82 - 122

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	78.4		30 - 110

Lab Sample ID: 160-13435-1 MS — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207628 — **Prep Batch: 206737**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Uranium-233/234	0.474		6.37	6.146		0.684	1.00	0.0505	pCi/g	89	70 - 130
Uranium-238	0.505		6.51	6.180		0.686	1.00	0.0244	pCi/g	87	70 - 130

Tracer	MS %Yield	MS Qualifier	Limits
Uranium-232	87.0		30 - 110

Lab Sample ID: 160-13435-1 MSD — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207630 — **Prep Batch: 206737**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Uranium-233/234	0.474		6.36	6.287		0.705	1.00	0.0763	pCi/g	91	70 - 130	0.10	1
Uranium-238	0.505		6.51	6.777		0.748	1.00	0.0736	pCi/g	96	70 - 130	0.42	1

Tracer	MSD %Yield	MSD Qualifier	Limits
Uranium-232	87.5		30 - 110

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-206697/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 206658 — **Prep Batch: 206697**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.5713	U	7.90	7.90	20.0	14.8	pCi/L	08/20/15 10:44	08/20/15 15:36	1

Other Detected Radionuclides	*MB Result*	*MB Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Other Detected Radionuclide	*None*						*pCi/L*	*08/20/15 10:44*	*08/20/15 15:36*	*1*

Lab Sample ID: LCS 160-206697/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 206660 — **Prep Batch: 206697**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Americium-241			137000	133000		15400		457	pCi/L	97	90 - 111		
Cesium-137			48700	47380		4750	20.0	145	pCi/L	97	90 - 111		
Cobalt-60			48400	46270		4570		111	pCi/L	96	89 - 110		

Lab Sample ID: 160-13435-5 DU — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 206660 — **Prep Batch: 206697**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	-0.0400	U		0.1528	U	5.26	20.0	9.84	pCi/L			0.02	1

Other Detected Radionuclides	*Sample Result*	*Sample Qual*		*DU Result*	*DU Qual*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*			*RER*	*RER Limit*
Other Detected Radionuclide	*None*			*None*					*pCi/L*				

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-206998/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207147 — **Prep Batch: 206998**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.01338	U	0.0422	0.0423		0.0762	pCi/g	08/21/15 15:44	08/22/15 19:30	1
Radium-226	0.7402	U	0.721	0.733	1.00	1.15	pCi/g	08/21/15 15:44	08/22/15 19:30	1
Radium-228	0.02202	U	0.0451	0.0452		0.239	pCi/g	08/21/15 15:44	08/22/15 19:30	1

Other Detected Radionuclides	*MB Result*	*MB Qualifier*	*Count Uncert. (2σ+/-)*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*Prepared*	*Analyzed*	*Dil Fac*
Other Detected Radionuclide	*None*						*pCi/g*	*08/21/15 15:44*	*08/22/15 19:30*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-206998/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207148 — **Prep Batch: 206998**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	97.3	101.6		10.7		1.33	pCi/g	105	87 - 116
Cesium-137	30.2	30.46		3.28		0.325	pCi/g	101	87 - 120
Cobalt-60	19.0	19.04		1.99		0.0729	pCi/g	100	87 - 115

Lab Sample ID: 160-13435-1 DU — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 207152 — **Prep Batch: 206998**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-0.00113	U	-0.00073 27	U	0.0377		0.0682	pCi/g	0	1
Radium-226	6.83		5.697		1.80	1.00	1.50	pCi/g	0.28	1
Radium-228	0.735		0.6190		0.186		0.129	pCi/g	0.26	1

Other Detected Radionuclides	*Sample Result*	*Sample Qual*	*DU Result*	*DU Qual*	*Total Uncert. (2σ+/-)*	*RL*	*MDC*	*Unit*	*RER*	*RER Limit*
Ac-228	*0.735*		*0.6190*		*0.186*		*0.129*	*pCi/g*	*0.26*	*1*
Bi-214	*2.33*		*2.054*		*0.292*		*0.113*	*pCi/g*	*0.42*	*1*
K-40	*12.6*		*12.80*		*1.87*		*0.525*	*pCi/g*	*0.04*	*1*
Pb-210	*4.17*		*3.185*		*1.45*		*1.60*	*pCi/g*	*0.31*	*1*
Pb-212	*0.570*		*0.5678*		*0.128*		*0.107*	*pCi/g*	*0.01*	*1*
Pb-214	*2.37*		*2.303*		*0.315*		*0.127*	*pCi/g*	*0.10*	*1*
Tl-208	*0.213*		*0.2440*		*0.0650*		*0.0495*	*pCi/g*	*0.21*	*1*

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Metals

Prep Batch: 206284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	7470A	
LCS 160-206284/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 160-206284/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 206916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	3050B	
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	3050B	
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	3050B	
160-13435-1 SD	C001-SS001-0012-01	Total/NA	Solid	3050B	
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	3050B	
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	3050B	
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	3050B	
LCSSRM 160-206916/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 160-206916/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 206952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	7470A	206284
LCS 160-206284/2-A	Lab Control Sample	Total/NA	Water	7470A	206284
MB 160-206284/1-A	Method Blank	Total/NA	Water	7470A	206284

Prep Batch: 206995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	3010A	
160-13435-5 MS	RB-081815	Total/NA	Water	3010A	
160-13435-5 MSD	RB-081815	Total/NA	Water	3010A	
160-13435-5 SD	RB-081815	Total/NA	Water	3010A	
LCS 160-206995/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-206995/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 208156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	6010C	206916
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	6010C	206916
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	6010C	206916
160-13435-1 SD	C001-SS001-0012-01	Total/NA	Solid	6010C	206916
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	6010C	206916
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	6010C	206916
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	6010C	206916
160-13435-5	RB-081815	Total/NA	Water	6010C	206995
160-13435-5 MS	RB-081815	Total/NA	Water	6010C	206995
160-13435-5 MSD	RB-081815	Total/NA	Water	6010C	206995
160-13435-5 SD	RB-081815	Total/NA	Water	6010C	206995
CRI 160-208156/7	DL		Water	6010C	
ICSA 160-208156/8	ICS		Water	6010C	
ICSAB 160-208156/9	ICS		Water	6010C	
LCS 160-206995/2-A	Lab Control Sample	Total/NA	Water	6010C	206995
LCSSRM 160-206916/2-A	Lab Control Sample	Total/NA	Solid	6010C	206916
LRC 160-208156/10	Lab Control Sample		Water	6010C	
MB 160-206916/1-A	Method Blank	Total/NA	Solid	6010C	206916

Metals (Continued)

Analysis Batch: 208156 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-206995/1-A	Method Blank	Total/NA	Water	6010C	206995

Prep Batch: 208211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	7471B	
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	7471B	
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	7471B	
160-13435-1 SD	C001-SS001-0012-01	Total/NA	Solid	7471B	
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	7471B	
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	7471B	
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	7471B	
LCSSRM 160-208211/2-A	Lab Control Sample	Total/NA	Solid	7471B	
MB 160-208211/1-A	Method Blank	Total/NA	Solid	7471B	

Analysis Batch: 208443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	7471B	208211
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	7471B	208211
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	7471B	208211
160-13435-1 SD	C001-SS001-0012-01	Total/NA	Solid	7471B	208211
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	7471B	208211
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	7471B	208211
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	7471B	208211
LCSSRM 160-208211/2-A	Lab Control Sample	Total/NA	Solid	7471B	208211
MB 160-208211/1-A	Method Blank	Total/NA	Solid	7471B	208211

General Chemistry

Analysis Batch: 206634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	Moisture	
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	Moisture	
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	Moisture	
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	Moisture	

Rad

Leach Batch: 206522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-1 DU	C001-SS001-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	Dry and Grind	
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	Dry and Grind	

Prep Batch: 206670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	ExtChrom	

Rad (Continued)

Prep Batch: 206670 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5 DU	RB-081815	Total/NA	Water	ExtChrom	
LCS 160-206670/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-206670/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 206674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	ExtChrom	
160-13435-5 DU	RB-081815	Total/NA	Water	ExtChrom	
LCS 160-206674/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-206674/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 206697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	Fill_Geo-0	
160-13435-5 DU	RB-081815	Total/NA	Water	Fill_Geo-0	
LCS 160-206697/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-206697/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

Prep Batch: 206728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	ExtChrom	206522
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	ExtChrom	206522
LCS 160-206728/2-A	Lab Control Sample	Total/NA	Solid	ExtChrom	
MB 160-206728/1-A	Method Blank	Total/NA	Solid	ExtChrom	

Prep Batch: 206737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-1 MS	C001-SS001-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-1 MSD	C001-SS001-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	ExtChrom	206522
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	ExtChrom	206522
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	ExtChrom	206522
LCS 160-206737/2-A	Lab Control Sample	Total/NA	Solid	ExtChrom	
MB 160-206737/1-A	Method Blank	Total/NA	Solid	ExtChrom	

Prep Batch: 206998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	Fill_Geo-0	206522
160-13435-1 DU	C001-SS001-0012-01	Total/NA	Solid	Fill_Geo-0	206522
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	Fill_Geo-0	206522
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	Fill_Geo-0	206522
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	Fill_Geo-0	206522
LCS 160-206998/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-0	
MB 160-206998/1-A	Method Blank	Total/NA	Solid	Fill_Geo-0	

ANALYTICAL REPORT

Job Number: 160-13435-2

Job Description: EPA RST2 - RFP No. 334A

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

Attention: Ms. Smita Sumbaly

Approved for release.
Rhonda E Ridenhower
Manager of Project Management
9/15/2015 2:19 PM

Rhonda E Ridenhower, Manager of Project Management
13715 Rider Trail North, Earth City, MO, 63045
rhonda.ridenhower@testamericainc.com
09/15/2015

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

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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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 334A

Report Number: 160-13435-2

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.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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."

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

RECEIPT
The samples were received on 08/19/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

RADIUM 226 (21 DAY INGROWTH)
Sample RB-081815 (160-13435-5) was analyzed for Radium 226 (21 day ingrowth) in accordance with SW- 846 Method 9315. The samples were prepared on 08/20/2015 and analyzed on 09/11/2015.

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

RADIUM-228 (GFPC)
Sample RB-081815 (160-13435-5) was analyzed for Radium-228 (GFPC) in accordance with SW-846 Method 9320. The samples were prepared on 08/20/2015 and analyzed on 09/03/2015.

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 C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Radium-226 by gamma spec (21 day ingrowth) in accordance with EPA GA_01_R. The samples were dried on 08/19/2015, prepared on 08/21/2015 and analyzed on 09/11/2015.

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

Client Sample ID: C001-SS001-0012-01 — Lab Sample ID: 160-13435-1

Date Collected: 08/18/15 09:40 — **Matrix: Solid**
Date Received: 08/19/15 09:30

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
Radium-226	3.43		0.313	0.475	1.00	0.164	pCi/g	08/21/15 15:44	09/11/15 19:15	1

Client Sample ID: C001-SS001-0012-02 — Lab Sample ID: 160-13435-2

Date Collected: 08/18/15 09:40 — **Matrix: Solid**
Date Received: 08/19/15 09:30

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
Radium-226	3.64		0.265	0.462	1.00	0.121	pCi/g	08/21/15 15:44	09/11/15 19:15	1

Client Sample ID: C001-SS002-0012-01 — Lab Sample ID: 160-13435-3

Date Collected: 08/18/15 11:30 — **Matrix: Solid**
Date Received: 08/19/15 09:30

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
Radium-226	1.07		0.150	0.186	1.00	0.0819	pCi/g	08/21/15 15:44	09/11/15 19:16	1

Client Sample ID: C001-SS003-0012-01 — Lab Sample ID: 160-13435-4

Date Collected: 08/18/15 12:50 — **Matrix: Solid**
Date Received: 08/19/15 09:30

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
Radium-226	0.922		0.168	0.194	1.00	0.138	pCi/g	08/21/15 15:44	09/11/15 19:16	1

Client Sample ID: RB-081815 — Lab Sample ID: 160-13435-5

Date Collected: 08/18/15 11:45 — **Matrix: Water**
Date Received: 08/19/15 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0527	U	0.0493	0.0496	1.00	0.0778	pCi/L	08/20/15 09:24	09/11/15 06:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*107*		*40 - 110*	*08/20/15 09:24*	*09/11/15 06:52*	*1*

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-2

Client Sample ID: RB-081815

Date Collected: 08/18/15 11:45
Date Received: 08/19/15 09:30

Lab Sample ID: 160-13435-5

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.147	U	0.188	0.189	1.00	0.313	pCi/L	08/20/15 09:28	09/03/15 11:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*107*		*40 - 110*	*08/20/15 09:28*	*09/03/15 11:38*	*1*
Y Carrier	*93.5*		*40 - 110*	*08/20/15 09:28*	*09/03/15 11:38*	*1*

Tracer/Carrier Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-2

Method: 9315 - Radium-226 (GFPC)

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

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (40-110)							
160-13435-5	RB-081815	107							
160-13435-5 DU	RB-081815	106							
LCS 160-206678/2-A	Lab Control Sample	102							
MB 160-206678/1-A	Method Blank	106							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

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

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)						
160-13435-5	RB-081815	107	93.5						
160-13435-5 DU	RB-081815	106	93.1						
LCS 160-206681/2-A	Lab Control Sample	102	94.6						
MB 160-206681/1-A	Method Blank	106	94.2						

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-206678/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 210373 — **Prep Batch: 206678**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01893	U	0.0400	0.0400	1.00	0.0707	pCi/L	08/20/15 09:24	09/11/15 06:52	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*08/20/15 09:24*	*09/11/15 06:52*	*1*

Lab Sample ID: LCS 160-206678/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 210373 — **Prep Batch: 206678**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	11.62		1.13	1.00	0.0761	pCi/L	104	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*

Lab Sample ID: 160-13435-5 DU — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 210373 — **Prep Batch: 206678**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0527	U		0.01367	U	0.0444	1.00	0.0810	pCi/L			0.42	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*106*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-206681/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 209287 — **Prep Batch: 206681**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.01350	U	0.186	0.186	1.00	0.333	pCi/L	08/20/15 09:28	09/03/15 11:38	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*08/20/15 09:28*	*09/03/15 11:38*	*1*
Y Carrier	*94.2*		*40 - 110*	*08/20/15 09:28*	*09/03/15 11:38*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-206681/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 209287 — **Prep Batch: 206681**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			3.30	2.669		0.428	1.00	0.318	pCi/L	81	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*
Y Carrier	*94.6*		*40 - 110*

Lab Sample ID: 160-13435-5 DU — **Client Sample ID: RB-081815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 209287 — **Prep Batch: 206681**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.147	U		0.1803	U	0.215	1.00	0.353	pCi/L			0.08	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*106*		*40 - 110*
Y Carrier	*93.1*		*40 - 110*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-206992/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 210532 — **Prep Batch: 206992**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.04699	U	0.372	0.372	1.00	0.169	pCi/g	08/21/15 15:44	09/11/15 20:01	1

Lab Sample ID: LCS 160-206992/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 210379 — **Prep Batch: 206992**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Americium-241			97.2	98.76		10.4		1.04	pCi/g	102	87 - 116		
Cesium-137			30.2	30.95		3.31		0.266	pCi/g	103	87 - 120		
Cobalt-60			18.9	19.00		1.97		0.0787	pCi/g	101	87 - 115		

Lab Sample ID: 160-13435-1 DU — **Client Sample ID: C001-SS001-0012-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 210535 — **Prep Batch: 206992**

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	3.43			3.506		0.491	1.00	0.151	pCi/g			0.08	1

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-2

Rad

Leach Batch: 206522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-1 DU	C001-SS001-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	Dry and Grind	
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	Dry and Grind	
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	Dry and Grind	

Prep Batch: 206678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	PrecSep-21	
160-13435-5 DU	RB-081815	Total/NA	Water	PrecSep-21	
LCS 160-206678/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-206678/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 206681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-5	RB-081815	Total/NA	Water	PrecSep_0	
160-13435-5 DU	RB-081815	Total/NA	Water	PrecSep_0	
LCS 160-206681/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-206681/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 206992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-13435-1	C001-SS001-0012-01	Total/NA	Solid	Fill_Geo-21	206522
160-13435-1 DU	C001-SS001-0012-01	Total/NA	Solid	Fill_Geo-21	206522
160-13435-2	C001-SS001-0012-02	Total/NA	Solid	Fill_Geo-21	206522
160-13435-3	C001-SS002-0012-01	Total/NA	Solid	Fill_Geo-21	206522
160-13435-4	C001-SS003-0012-01	Total/NA	Solid	Fill_Geo-21	206522
LCS 160-206992/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	
MB 160-206992/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-2

Client Sample ID: C001-SS001-0012-01 — Lab Sample ID: 160-13435-1

Date Collected: 08/18/15 09:40 — **Matrix: Solid**
Date Received: 08/19/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			206522	08/19/15 15:26	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			206992	08/21/15 15:44	MRB	TAL SL
Total/NA	Analysis	GA-01-R		1	210534	09/11/15 19:15	ALS	TAL SL

Client Sample ID: C001-SS001-0012-02 — Lab Sample ID: 160-13435-2

Date Collected: 08/18/15 09:40 — **Matrix: Solid**
Date Received: 08/19/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			206522	08/19/15 15:26	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			206992	08/21/15 15:44	MRB	TAL SL
Total/NA	Analysis	GA-01-R		1	210381	09/11/15 19:15	ALS	TAL SL

Client Sample ID: C001-SS002-0012-01 — Lab Sample ID: 160-13435-3

Date Collected: 08/18/15 11:30 — **Matrix: Solid**
Date Received: 08/19/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			206522	08/19/15 15:26	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			206992	08/21/15 15:44	MRB	TAL SL
Total/NA	Analysis	GA-01-R		1	210380	09/11/15 19:16	ALS	TAL SL

Client Sample ID: C001-SS003-0012-01 — Lab Sample ID: 160-13435-4

Date Collected: 08/18/15 12:50 — **Matrix: Solid**
Date Received: 08/19/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			206522	08/19/15 15:26	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			206992	08/21/15 15:44	MRB	TAL SL
Total/NA	Analysis	GA-01-R		1	210532	09/11/15 19:16	ALS	TAL SL

Client Sample ID: RB-081815 — Lab Sample ID: 160-13435-5

Date Collected: 08/18/15 11:45 — **Matrix: Water**
Date Received: 08/19/15 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			206678	08/20/15 09:24	LEM	TAL SL
Total/NA	Analysis	9315		1	210373	09/11/15 06:52	CDH	TAL SL
Total/NA	Prep	PrecSep_0			206681	08/20/15 09:28	CMC	TAL SL
Total/NA	Analysis	9320		1	209287	09/03/15 11:38	CDH	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

USEPA

DateShipped: 8/18/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5864

CHAIN OF CUSTODY RECORD

Case #: 334A

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081815-162509-0004

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/18/15	Jill Clark TA STL	8.19.15 0930	

160-13435 Chain of Custody

USEPA

DateShipped: 8/18/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5864

CHAIN OF CUSTODY RECORD

Case #: 334A

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081815-162509-0004

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-081815	8/18/2015	11:45	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	RB-081815	8/18/2015	11:45	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/18/15	Jim Clarke TA STL	8-19-15 0830	

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-13435-2

Login Number: 13435
List Number: 1
Creator: Clarke, Jill C

List Source: 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.	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	
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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment G:

Data Validation Memo - Soil Analytical Results (TAL Metals and Mercury)

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Edison, New Jersey 08837-3703
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www.westonsolutions.com

The Trusted Integrator for Sustainable Solutions

REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

RST 3-02-F-0028

TRANSMITTAL MEMO

To:	Mr. Eric Daly, On-Scene Coordinator Response and Prevention Branch U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer RST 3, Region II
Subject:	Canadian Uranium and Radium Site Data Validation Assessment
Date:	October 2, 2015

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

  TAL Metals and Mercury — 15 Samples

- Matrices and Number of Samples

  Soil — 13 Samples
  Aqueous (Rinsate Blank) — 2 Samples

- Sampling Dates: August 5, 7 and 18, 2015

The final data assessment narrative and original analytical data package are attached.

cc:	RST 3 SPM:	Bernard Nwosu
	RST 3 SITE FILE TDD #:	TO-0006-0053
	RST 3 ANALYTICAL TDD #:	TO-0006-0070
	TASK#:	2070

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **October 2, 2015**

TO: **Eric Daly, On-Scene Coordinator**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
RST 3 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 EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Holding Time	MS/MSD
Calibration, Initial	Calibration, Continuing
ICP Interference Check	Blanks
Data Completeness	Laboratory Control Sample
Serial Dilution	CRQL Check Standard
Field Duplicate	

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I TAL Metals and Mercury
Acceptable as Submitted	
Acceptable with Comments	X
Unacceptable, Action Pending	
Unacceptable	

Data Reviewed by: Smita Sumbaly Date: 10/2/15

Approved By: [signature] Date: 10/6/15

Area Code/Phone No.: (732) 585-4410

NARRATIVE

PCS No. 2070

SITE NAME: **Canadian Uranium and Radium Site**
Mount Kisco
Westchester County
New York

Laboratory Name: TestAmerica Laboratories, Inc., TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045.

INTRODUCTION:

The laboratory's portion of this case consisted of 13 soil samples and two aqueous rinsate blank samples for TAL Metals and Mercury analyses. All samples were collected on August 5, 7 and 18, 2015. The TestAmerica Laboratories, Inc., Job numbers are: 160-13266-1 and 160-13435-1.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of TAL Metals and 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.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Inorganic:

Y Holding Time	Y MS/MSD
Y Calibration, Initial	Y CRQL Check Standard
Y Calibration, Continuing	Y ICP Interference Check
Y Blanks	Y Data Completeness
Y Laboratory Control Sample	Y Serial Dilution
Y Field Duplicate	Y Laboratory Duplicate

Comments:

1. Refer to Data Assessment Narrative.

Inorganic Data Review Narrative

RFP# 334 **TASK # 2070**	**Site: Canadian Uranium and Radium Site**	**Matrix** **Soil: 13** **Aqueous (RB): 2**
SDG# 160-13266-1 and 160-13435-1	**Lab: TestAmerical Laboratories, Inc.**	
Sampling Team: RST 3	**Reviewer: Smita Sumbaly**	

A.2.1 Data Validation Flags:

The following flags may have been applied in red by the data validator and must be considered by the data user.

J - This flag indicates the result qualified as estimated.

R and Red-Line - A red-line drawn through a sample result indicates un-usable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

U - This data validation qualifier is applied to sample results ≥ MDL when associated blank is contaminated.

Fully Usable Data - The results that do not carry "J" or "red-line" are fully usable.

A.2.2 Laboratory Qualifiers:

The Non-CLP laboratory applies a contractual qualifier on all Form Is and the QC Form when a QC analysis is outside the control limits. These qualifiers and their meanings are as follows:

U: This is a concentration qualifier that the laboratory applies to a non-detected result which is essentially less than the Method Detection Limit (MDL). A non-detected result of an analyte is indicated by the Contract Required Quantitation Limit (CRQL) of that analyte suffixed with "U".

J: This is also a concentration qualifier that the laboratory applies to a positive result below the CRQL.

NOTE: The laboratory qualifiers are crossed out and replaced with the appropriate data validation qualifiers (J, R, or U) by the data validator.

A.2.3.1 **Data Case Description:**

On August 5, 7 and 18, 2015, U.S. EPA, Region II, RST 3 sampling personnel collected 13 soil samples, including two field duplicates, and two aqueous rinsate blank samples from the Canadian Uranium and Radium Site located in Mount Kisco, Westchester County, New York. On August 7 and 18, 2015, these samples for TAL Metals and Mercury analyses were shipped, via FedEx, to TestAmerica Laboratories, Inc., located at 13715 Rider Trail North, Earth City, MO 63045. The laboratory verified that samples were received intact, properly sealed, and refrigerated. Sample cooler temperatures were recorded at 2.2°C, 3.0°C, and 2.4°C.

TAL Metals analysis was performed by using the EPA SW-846 Method 6010C and the Mercury analysis was performed by using Method 7471B/7470A.

The following USEPA Region II standard operating procedures (SOPs) were used for data validation.

- No. HW-3a (Revision 15), December 2012, for validating metals by Contract Laboratory Program (CLP) Statement of Work (SOW) ISM01.2 in conjunction with SW 846 Method 6010C/7471B (soil)/7470A (aqueous) and laboratory established QC criteria.

Client identification (ID) and laboratory ID numbers are as follows:

Field Sample ID	Lab Sample ID	Matrix	Analysis	Sampling Date
TestAmerica Job Number: 160-13266-1				
C002-SS001-2448-01	160-13266-1	Soil	TAL Metals and Mercury	8/05/2015
C002-SS002-2448-01	160-13266-2	Soil		8/05/2015
C002-SS003-2448-01	160-13266-3	Soil		8/05/2015
C003-SS001-2448-01	160-13266-4	Soil		8/05/2015
C003-SS001-2448-02[1]	160-13266-5	Soil		8/05/2015
C003-SS002-0024-01	160-13266-6	Soil		8/05/2015
RB-080515	160-13266-7	Aqueous		8/05/2015
C003-SS003-2448-01	160-13266-8	Soil		8/05/2015
C002-TRENCH-0036-01	160-13266-9	Soil		8/05/2015
C004-SS001-1824-01	160-13266-10	Soil		8/07/2015
[1] Field duplicate of Sample No. C003-SS001-2448-01				
TestAmerica Job Number: 160-13435-1				
C001-SS001-0012-01	160-13435-1	Soil	TAL Metals and Mercury	8/18/2015
C001-SS001-0012-02[2]	160-13435-2	Soil		8/18/2015
C001-SS002-0012-01	160-13435-3	Soil		8/18/2015
C001-SS003-0012-01	160-13435-4	Soil		8/18/2015
RB-081815	160-13435-5	Aqueous		8/18/2015
[2] Field duplicate of Sample No. C001-SS001-0012-01				

All samples were reviewed for the following quality control (QC) parameters. Two MS/MSD samples and two field duplicate samples were collected. All QC results were evaluated, but only non-compliant QC observations, if any, are discussed in detail in this report.

- Sample Preservation
- Holding Time
- Initial Calibration
- Initial Calibration Verification (including Initial Calibration Blank)
- Continuing Calibration Verification (including Continuing Calibration Blank and Method Blank)
- CRQL Check Standard
- ICP Interference Check Sample (only for ICP Metals)
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Duplicate
- Laboratory Control Sample
- Field Duplicate
- ICP Serial Dilution (only for ICP Metals)

A.2.3.3 Technical Review:

The results presented in the data package are acceptable with the exception noted in the following data assessment narrative.

TAL Metals and Mercury – SDG# 160-13266-1 and 160-13435-1

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 are not within the acceptable range), the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (<2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R".

SDG# 160-13266-1 and 160-13435-1

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 on the Inorganic Target Analyte List (TAL). 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 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. They-intercept of the curve must be less than the CRQL.

SDG# 160-13266-1 and 160-13435-1

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(s). 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%.

SDG# 160-13266-1 and 160-13435-1

No problems were found for this criterion.

The low level check standard recovery associated with analytical batch 160-208156 is outside the acceptance criteria (70-130%) for the antimony. The associated samples results ≥ MDL are qualified J.

SDG# 160-13435-1

Antimony J – RB-081815

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 (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. 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.

ICP-AES

The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Method blank analyte results are greater than or equal to MDLs but less than

or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

SDG# 160-13266-1

"U" -> Se -> C002-SS002-2448-01

SDG# 160-13435-1

"U" -> Sb -> C001-SS001-0012-01 and C001-SS001-0012-02
"U" -> As -> C001-SS001-0012-01, C001-SS001-0012-02, and C001-SS003-0012-01
"U" -> Cu -> C001-SS001-0012-02
"U" -> Ag -> C001-SS002-0012-01
"U" -> Se -> RB-081815

The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated at CRQLs.

SDG# 160-13266-1

"U" -> As -> C002-SS001-2448-01, C002-SS002-2448-01, C002-SS003-2448-01, C003-S002-0024-01, C003-SS003-2448-01, and C004-SS001-2448-01
"U" -> V -> C003-SS002-0024-01, C003-SS003-2448-01, and C004-SS001-2448-01
"U" -> Se -> C002-SS002-2448-01[1]

SDG# 160-13435-1

"U" -> Sb -> C001-SS001-0012-01[1] and C001-SS001-0012-02[1]
"U" -> As -> C001-SS001-0012-02[1] and C001-SS003-0012-01[1]

[1] Previously qualified due to method blank QC criteria.

4. Contract Required Quantitation Limit Check Standard

SDG # 160-13435-1

The recovery of antimony exceeded 130% in the CRQL check standard. The antimony concentration in samples C001-SS001-0012-01 and C001-SS001-0012-02 are < 2x reporting limit, thus estimated (J).

5. 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 Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS.

SDG# 160-13266-1 and 160-13435-1

No problems were found for this criterion.

6. 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%. However, spike recovery limits do not apply when the sample concentration is ≥ 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.

SDG# 160-13266-1

The following MS/MSD samples have percent recoveries in the range of 30-74%. Detected analytes with results greater than or equal to MDLs are qualified J. Non-detected analytes are qualified UJ.

Antimony, Manganese, and Zinc – J/UJ – C003-SS001-2448-01

SDG# 160-13435-1

The following MS/MSD samples have percent recoveries in the range of >125% for potassium, barium, Copper, lead, and zinc; and Relative Percent Difference >30% for copper, lead, and zinc. Detected analytes with results greater than or equal to MDLs are qualified J.

Barium, Copper, Lead, Potassium and Zinc – J - C001-SS001-0012-01

7. 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% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (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.

Not Applicable

Note: Instead of laboratory duplicate analysis, laboratory analyzed matrix spike recovery, matrix spike duplicate recovery and calculated relative percent difference, which serves as lab duplicate.

8. 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 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of 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.

SDG# 160-13266-1

Field duplicate pairs C003-SS001-2448-01 and C003-SS001-2448-02: qualification was not required as the relative percent difference of all results were <50%.

SDG# 160-13435-1

The following Duplicate (C001-SS001-0012-02) and original (C001-SS001-0012-01) sample results are greater than 5xRL and RPD is greater than 50%. The original and duplicate sample results are qualified J.

Manganese -> J -> C001-SS001-0012-01 and C001-SS001-0012-02

9. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the 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 Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%.

SDG# 160-13266-1 and 160-13435-1

No problems were found for this criterion.

10. 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 > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. 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.

SDG# 160-13266-1 and 160-13435-1

No problems were found for this criterion.

11. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J".

SDG# 160-13266-1 and 160-13435-1

No problems were found for this criterion.

11. METHOD NON-COMPLIANCE

SDG# 160-13266-1 and 160-13435-1: Laboratory did not report pH for aqueous samples in data package. Data reviewer contacted the laboratory and was told that since it was not requested or listed in COC, pH was not measured in the lab. Since, SPM preserved both aqueous samples in field at pH<2, no qualification was required.

Reviewer's Signature: Smita Sumbaly **Date:** 10/2/2015

Verified By: _____ **Date:** 10/2/15

OTHER ANALYTES WORK TABLE

Project: Canadian Uranium and Radium Site

Sampling Date: August 5, 2015

SAMPLE #/CONCENTRATION (MG/KG)

TAL Metals	Matrix:	Soil	Soil	Soil	Soil	Soil
	Client ID:	C002-SS001-2448-01	C002-SS002-2448-01	C002-SS003-2448-01	C003-SS001-2448-01	C003-SS001-2448-02
	Lab ID:	160-13266-1	160-13266-2	160-13266-3	160-13266-4	160-13266-5
Percent Solids		90.2	92.9	88.4	91.7	91.2
Dilution Factor	MDL	10	10	10	10	10
Aluminum	4.26	12000	10000	8600	8900	11000
Antimony	0.309	U	U	U	U J	U
Arsenic	0.236	9.9 U	10 U	11 U	20	19
Barium	0.11	87	130	1700	89	99
Beryllium	0.075	U	U	U	U	U
Cadmium	0.034	U	U	U	U	U
Calcium	6.73	13000	5000	9000	49000	36000
Chromium	0.138	24	29	59	43	38
Cobalt	0.144	9.1 J	8.9 J	10 J	7.6 J	8.1 J
Copper	0.245	24 J	27	45	60	77
Iron	1.99	19000	19000	31000	25000	19000
Lead	0.129	56	46	510	130	140
Magnesium	3.16	8600	5300	7600	12000	7500
Manganese	0.08	410	310	290	290 J	270
Nickel	0.116	19 J	19 J	42 J	19 J	18 J
Potassium	72.4	1800 J	2700 J	3300 J	1600 J	2300 J
Selenium	0.206	U	15 U	U	U	U
Silver	0.07	U	0.82 J	U	U	0.65 J
Sodium	7.62	500 J	230 J	330 J	200 J	300 J
Thallium	0.19	U	U	U	U	U
Vanadium	0.507	33 J	37 J	29 J	31 J	38 J
Zinc	0.562	94	76	830	190 J	170
Mercury	0.011	*0.070	*0.061	*0.028 J	*0.21	*0.20
		*D/F X 1	*D/F X 1	*D/F X 1	*D/F X 1	*D/F X 1

Inorganic Qualifiers

D/F - Dilution Factor
MDL - Method Detection Limit /RL-Reporting Limit
U - non-detected analyte
J (lab qualifier)- estimated value <RL and > MDL
J - estimated value
Note: MDL reported on the Form Is for the soil matrix have been adjusted to reflect the sample volume, percent solid, sample weight, and dilution factor.

OTHER ANALYTES WORK TABLE

Project: Canadian Uranium and Radium Site

Sampling Dates: August 5 and 7, 2015

SAMPLE #/CONCENTRATION (MG/KG)

TAL Metals	Matrix:	Soil	Soil	Soil	Soil
	Client ID:	C003-SS002-0024-01	C003-SS003-2448-01	C002-TRENCH-0036-01	C004-SS001-2448-01
	Lab ID:	160-13266-6	160-13266-8	160-13266-9	160-13266-10
Percent Solids		89.3	87.0	87.7	80.1
Dilution Factor	MDL	10	10	10	10
Aluminum	4.26	7600	9200	16000	13000
Antimony	0.309	U	U	U	U
Arsenic	0.236	10 U	11 U	12	12 U
Barium	0.11	170	130	370	130
Beryllium	0.075	U	U	U	U
Cadmium	0.034	U	U	U	U
Calcium	6.73	6200	26000	11000	1900 J
Chromium	0.138	20	24	90	31
Cobalt	0.144	9.1 J	9.5 J	16 J	7.7 J
Copper	0.245	85	97	71	27 J
Iron	1.99	20000	20000	29000	16000
Lead	0.129	220	180	220	120
Magnesium	3.16	4300	14000	12000	3600
Manganese	0.08	190	290	410	250
Nickel	0.116	23 J	21 J	62	19 J
Potassium	72.4	2100 J	2300 J	6000	940 J
Selenium	0.206	U	U	U	U
Silver	0.07	U	U	U	U
Sodium	7.62	2400	1800	740 J	280 J
Thallium	0.19	U	U	U	U
Vanadium	0.507	52 U	55 U	63	61 U
Zinc	0.562	160	140	180	130
Mercury	0.011	*0.13	*0.18	*0.12	*0.11
		*D/F X 1	*D/F X 1	*D/F X 1	*D/F X 1

Inorganic Qualifiers

D/F - Dilution Factor
MDL - Method Detection Limit /RL-Reporting Limit
U - non-detected analyte
J (lab qualifier)- estimated value <RL and > MDL
J - estimated value
Note: MDL reported on the Form Is for the soil matrix have been adjusted to reflect the sample volume, percent solid, sample weight, and dilution factor.

OTHER ANALYTES WORK TABLE

Project: Canadian Uranium and Radium Site

Sampling Date: August 5, 2015

SAMPLE #/CONCENTRATION (UG/L)

TAL Metals	Matrix: Client ID: Lab ID:	Aqueous RB-080515 160-13266-7
Percent Solids		NA
Dilution Factor	MDL	1.0
Aluminum	22.4	U
Antimony	3.74	U
Arsenic	1.78	U
Barium	2.12	U
Beryllium	0.283	U
Cadmium	0.336	U
Calcium	54.2	90 J
Chromium	3.35	U
Cobalt	2.72	U
Copper	2.1	U
Iron	12.8	U
Lead	0.598	10 U
Magnesium	50.5	U
Manganese	1	U
Nickel	2.57	U
Potassium	456	U
Selenium	2.08	U
Silver	0.994	U
Sodium	105	U
Thallium	2.38	U
Vanadium	4.39	U
Zinc	8.32	13 J
Mercury	0.06	U

Inorganic Qualifiers

MDL - Method Detection Limit /RL-Reporting Limit
U - non-detected analyte
J (lab qualifier)- estimated value <RL and > MDL

FIELD DUPLICATE

EPA SAMPLE NO.
C003-SS001-2448-01 &
C003-SS001-2448-02

Lab Name: Test America

Contract: WESTON-RST 3

Lab Code: Test America

RFP No.: 334

SDG No.: 160-13266-1

Matrix (soil/water): Soil

Level (low/med): LOW

% Solids for Sample: 91.7

% Solids for Duplicate: 91.2

Concentration Units (ug/L or mg/kg dry weight): mg/kg

ANALYTE	CONTROL LIMIT	SAMPLE(S) C003-SS001-2448-01	C	DUPLICATE(D) C003-SS001-2448-02	C	RPD	Q
Aluminum	50%	8900		11000		21.1%	
Antimony	-	U		U		NC	
Arsenic	50%	20		19		5.1%	
Barium	50%	89		99		10.6%	
Beryllium	-	U		U		NC	
Cadmium	-	U		U		NC	
Calcium	50%	49000		36000		30.6%	
Chromium	50%	43		38		12.3%	
Cobalt	<100	7.6	J	8.1	J	<2 X RL	
Copper	50%	60		77		24.8%	
Iron	50%	25000		19000		27.3%	
Lead	50%	130		140		7.4%	
Magnesium	50%	12000		7500		46.2%	
Manganese	50%	290		270		7.1%	
Nickel	<80	19	J	18	J	<2 X RL	
Potassium	<10000	1600	J	2300	J	<2 X RL	
Selenium	-	U		U		NC	
Silver	<20	U		0.65	J	<2 X RL	
Sodium	<10000	200	J	300	J	<2 X RL	
Thallium	-	U		U		NC	
Vanadium	<100	31	J	38	J	<2 X RL	
Zinc	50%	190		170		11.1%	
Mercury	50%	0.21		0.20		4.9%	

Difference < 2 X RL, when sample and/or duplicate conc. <5X RL
RPD requirement: <50% when both results are ≥ 5 X RL

Job ID: 160-13266-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 334

Report Number: 160-13266-1

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.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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."

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

RECEIPT

The samples were received on 08/08/2015; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.2° C and 3.0° C.

TOTAL METALS (ICP)-Solids

Samples C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/12/2015 and analyzed on 08/13/2015.

Batch 205614

The following samples from preparation batch 160-205179 and analytical batch 160-205614 were diluted to bring the concentration of target analytes within the calibration range: C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-01 (160-13266-4[MS]), C003-SS001-2448-01 (160-13266-4[MSD]), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6),

Job ID: 160-13266-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9), C004-SS001-1824-01 (160-13266-10) and (160-13266-F-4-B SD). Elevated reporting limits (RLs) are provided.

Due to the high concentration of aluminum, calcium, iron, and magnesium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-205179 and analytical batch 160-205614 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. C003-SS001-2448-01 (160-13266-4[MS]) and C003-SS001-2448-01 (160-13266-4[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-205179 and analytical batch 160-205614 were outside control limits manganese, antimony, and zinc. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. C003-SS001-2448-01 (160-13266-4[MS]) and C003-SS001-2448-01 (160-13266-4[MSD])

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

TOTAL METALS (ICP)-Waters

Sample RB-080515 (160-13266-7) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/11/2015 and analyzed on 08/13/2015.

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

MERCURY-Solids

Samples C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 08/13/2015 and 08/14/2015 and analyzed on 08/14/2015 and 08/17/2015.

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

TOTAL MERCURY-Waters

Sample RB-080515 (160-13266-7) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 08/13/2015.

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

PERCENT SOLIDS

Samples C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 08/12/2015.

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)-Solids

Samples C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE A01R_Th. The samples were leached on 08/10/2015, prepared on 08/12/2015 and analyzed on 08/16/2015.

The matrix spike duplicate (MSD) recovery (124%) was outside QC limits (76-115%). Sample matrix interference is suspected; the samples contained small rocks and are non-homogeneous. The associated laboratory control sample (LCS) recovery was within acceptance limits. The results have been qualified and reported.C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-01 (160-13266-4[MS]),

Job ID: 160-13266-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

C003-SS001-2448-01 (160-13266-4[MSD]), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9), C004-SS001-1824-01 (160-13266-10), (LCS 160-205166/2-A) and (MB 160-205166/1-A)

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)-Waters

Sample RB-080515 (160-13266-7) was analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/11/2015 and analyzed on 08/16/2015.

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)-Solids

Samples C002-SS001-2448-01 (160-13266-1), C002-SS002-2448-01 (160-13266-2), C002-SS003-2448-01 (160-13266-3), C003-SS001-2448-01 (160-13266-4), C003-SS001-2448-02 (160-13266-5), C003-SS002-0024-01 (160-13266-6), C003-SS003-2448-01 (160-13266-8), C002-TRENCH-0036-01 (160-13266-9) and C004-SS001-1824-01 (160-13266-10) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were leached on 08/10/2015, prepared on 08/12/2015 and analyzed on 08/16/2015 and 08/17/2015.

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)-Waters

Sample RB-080515 (160-13266-7) was analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/11/2015 and analyzed on 08/16/2015.

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

CESIUM-137 & OTHER GAMMA EMITTERS (GS)

Sample RB-080515 (160-13266-7) was analyzed for Cesium-137 & Other Gamma Emitters (GS) in accordance with DOE. The samples were prepared and analyzed on 08/12/2015.

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

Qualifiers

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.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
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.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
F1	MS and/or MSD Recovery is outside acceptance limits.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334

TestAmerica Job ID: 160-13266-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SL
7470A	7470A – Mercury (CVAA) – Aqueous Matrix	SW846	TAL SL
7471B	Mercury (CVAA)	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
A-01-R	Isotopic Thorium (Alpha Spectrometry)	DOE	TAL SL
GA-01-R	Cesium-137 & Other Gamma Emitters (GS)	DOE	TAL SL

Protocol References:

DOE = U.S. Department of Energy

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 SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

COVER PAGE
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-13266-1

SDG No.:

Project: EPA RST2 - RFP No. 334

Client Sample ID	Lab Sample ID
C002-SS001-2448-01	160-13266-1
C002-SS002-2448-01	160-13266-2
C002-SS003-2448-01	160-13266-3
C003-SS001-2448-01	160-13266-4
C003-SS001-2448-02	160-13266-5
C003-SS002-0024-01	160-13266-6
RB-080515	160-13266-7
C003-SS003-2448-01	160-13266-8
C002-TRENCH-0036-01	160-13266-9
C004-SS001-1824-01	160-13266-10

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C002-SS001-2448-01

Lab Sample ID: 160-13266-1

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/05/2015 10:50

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 90.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	200	42	mg/Kg			10	6010C
7440-36-0	Antimony	ND	9.9	3.1	mg/Kg			10	6010C
7440-38-2	Arsenic	9.9 ~~4.7~~	9.9	2.3	mg/Kg	~~J~~ U		10	6010C
7440-39-3	Barium	87	49	1.1	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	4.9	0.74	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	4.9	0.34	mg/Kg			10	6010C
7440-70-2	Calcium	13000	2500	67	mg/Kg			10	6010C
7440-47-3	Chromium	24	9.9	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	9.1	49	1.4	mg/Kg	J		10	6010C
7440-50-8	Copper	24	25	2.4	mg/Kg	J		10	6010C
7439-89-6	Iron	19000	99	20	mg/Kg		B	10	6010C
7439-92-1	Lead	56	9.9	1.3	mg/Kg		B	10	6010C
7439-95-4	Magnesium	8600	990	31	mg/Kg			10	6010C
7439-96-5	Manganese	410	9.9	0.79	mg/Kg		B	10	6010C
7440-02-0	Nickel	19	40	1.1	mg/Kg	J		10	6010C
7440-09-7	Potassium	1800	4900	720	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	15	2.0	mg/Kg			10	6010C
7440-22-4	Silver	ND	9.9	0.69	mg/Kg			10	6010C
7440-23-5	Sodium	500	990	75	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	20	1.9	mg/Kg			10	6010C
7440-62-2	Vanadium	33	49	5.0	mg/Kg	J		10	6010C
7440-66-6	Zinc	94	49	5.6	mg/Kg			10	6010C
7439-97-6	Mercury	0.070	0.033	0.011	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C002-SS002-2448-01

Lab Sample ID: 160-13266-2

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/05/2015 11:40

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 92.9

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	200	44	mg/Kg			10	6010C
7440-36-0	Antimony	ND	10	3.2	mg/Kg			10	6010C
7440-38-2	Arsenic	10 ~~3.8~~	10	2.4	mg/Kg	~~J~~ U		10	6010C
7440-39-3	Barium	130	51	1.1	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	5.1	0.77	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.1	0.35	mg/Kg			10	6010C
7440-70-2	Calcium	5000	2600	69	mg/Kg			10	6010C
7440-47-3	Chromium	29	10	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	8.9	51	1.5	mg/Kg	J		10	6010C
7440-50-8	Copper	27	26	2.5	mg/Kg			10	6010C
7439-89-6	Iron	19000	100	20	mg/Kg		B	10	6010C
7439-92-1	Lead	46	10	1.3	mg/Kg		B	10	6010C
7439-95-4	Magnesium	5300	1000	32	mg/Kg			10	6010C
7439-96-5	Manganese	310	10	0.82	mg/Kg		B	10	6010C
7440-02-0	Nickel	19	41	1.2	mg/Kg	J		10	6010C
7440-09-7	Potassium	2700	5100	740	mg/Kg	J		10	6010C
7782-49-2	Selenium	15 U ~~2.9~~	15	2.1	mg/Kg	J	B	10	6010C
7440-22-4	Silver	0.82	10	0.72	mg/Kg	J		10	6010C
7440-23-5	Sodium	230	1000	78	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	20	1.9	mg/Kg			10	6010C
7440-62-2	Vanadium	37	51	5.2	mg/Kg	J		10	6010C
7440-66-6	Zinc	76	51	5.7	mg/Kg			10	6010C
7439-97-6	Mercury	0.061	0.035	0.012	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C002-SS003-2448-01

Lab Sample ID: 160-13266-3

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/05/2015 12:10

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 88.4

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	8600	220	46	mg/Kg			10	6010C
7440-36-0	Antimony	ND	11	3.3	mg/Kg			10	6010C
7440-38-2	Arsenic	11 ~~6.5~~	11	2.5	mg/Kg	~~J~~ U		10	6010C
7440-39-3	Barium	1700	54	1.2	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	5.4	0.81	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.4	0.37	mg/Kg			10	6010C
7440-70-2	Calcium	9000	2700	73	mg/Kg			10	6010C
7440-47-3	Chromium	59	11	1.5	mg/Kg		B	10	6010C
7440-48-4	Cobalt	10	54	1.6	mg/Kg	J		10	6010C
7440-50-8	Copper	45	27	2.6	mg/Kg			10	6010C
7439-89-6	Iron	31000	110	21	mg/Kg		B	10	6010C
7439-92-1	Lead	510	11	1.4	mg/Kg		B	10	6010C
7439-95-4	Magnesium	7600	1100	34	mg/Kg			10	6010C
7439-96-5	Manganese	290	11	0.86	mg/Kg		B	10	6010C
7440-02-0	Nickel	42	43	1.3	mg/Kg	J		10	6010C
7440-09-7	Potassium	3300	5400	780	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	16	2.2	mg/Kg			10	6010C
7440-22-4	Silver	ND	11	0.76	mg/Kg			10	6010C
7440-23-5	Sodium	330	1100	82	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	22	2.1	mg/Kg			10	6010C
7440-62-2	Vanadium	29	54	5.5	mg/Kg	J		10	6010C
7440-66-6	Zinc	830	54	6.1	mg/Kg			10	6010C
7439-97-6	Mercury	0.028	0.035	0.012	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C003-SS001-2448-01

Lab Sample ID: 160-13266-4

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/05/2015 14:10

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 91.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	8900	210	44	mg/Kg			10	6010C
7440-36-0	Antimony	ND	10	3.2	mg/Kg	J	F1	10	6010C
7440-38-2	Arsenic	20	10	2.5	mg/Kg			10	6010C
7440-39-3	Barium	89	52	1.1	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	5.2	0.78	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.2	0.35	mg/Kg			10	6010C
7440-70-2	Calcium	49000	2600	70	mg/Kg		F2	10	6010C
7440-47-3	Chromium	43	10	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	7.6	52	1.5	mg/Kg	J		10	6010C
7440-50-8	Copper	60	26	2.5	mg/Kg			10	6010C
7439-89-6	Iron	25000	100	21	mg/Kg		B	10	6010C
7439-92-1	Lead	130	10	1.3	mg/Kg		B	10	6010C
7439-95-4	Magnesium	12000	1000	33	mg/Kg			10	6010C
7439-96-5	Manganese	290	10	0.83	mg/Kg	J	B F1	10	6010C
7440-02-0	Nickel	19	42	1.2	mg/Kg	J		10	6010C
7440-09-7	Potassium	1600	5200	750	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	16	2.1	mg/Kg			10	6010C
7440-22-4	Silver	ND	10	0.73	mg/Kg			10	6010C
7440-23-5	Sodium	200	1000	79	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	21	2.0	mg/Kg			10	6010C
7440-62-2	Vanadium	31	52	5.3	mg/Kg	J		10	6010C
7440-66-6	Zinc	190	52	5.8	mg/Kg	J	F1	10	6010C
7439-97-6	Mercury	0.21	0.035	0.012	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C003-SS001-2448-02
Lab Sample ID: 160-13266-5
Lab Name: TestAmerica St. Louis
Job No.: 160-13266-1
SDG ID.:
Matrix: Solid
Date Sampled: 08/05/2015 14:12
Reporting Basis: DRY
Date Received: 08/08/2015 08:10
% Solids: 91.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	190	40	mg/Kg			10	6010C
7440-36-0	Antimony	ND	9.3	2.9	mg/Kg			10	6010C
7440-38-2	Arsenic	19	9.3	2.2	mg/Kg			10	6010C
7440-39-3	Barium	99	46	1.0	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	4.6	0.70	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	4.6	0.32	mg/Kg			10	6010C
7440-70-2	Calcium	36000	2300	63	mg/Kg			10	6010C
7440-47-3	Chromium	38	9.3	1.3	mg/Kg		B	10	6010C
7440-48-4	Cobalt	8.1	46	1.3	mg/Kg	J		10	6010C
7440-50-8	Copper	77	23	2.3	mg/Kg			10	6010C
7439-89-6	Iron	19000	93	18	mg/Kg		B	10	6010C
7439-92-1	Lead	140	9.3	1.2	mg/Kg		B	10	6010C
7439-95-4	Magnesium	7500	930	29	mg/Kg			10	6010C
7439-96-5	Manganese	270	9.3	0.74	mg/Kg		B	10	6010C
7440-02-0	Nickel	18	37	1.1	mg/Kg	J		10	6010C
7440-09-7	Potassium	2300	4600	670	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	14	1.9	mg/Kg			10	6010C
7440-22-4	Silver	0.65	9.3	0.65	mg/Kg	J		10	6010C
7440-23-5	Sodium	300	930	71	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	19	1.8	mg/Kg			10	6010C
7440-62-2	Vanadium	38	46	4.7	mg/Kg	J		10	6010C
7440-66-6	Zinc	170	46	5.2	mg/Kg			10	6010C
7439-97-6	Mercury	0.20	0.032	0.011	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C003-SS002-0024-01

Lab Sample ID: 160-13266-6

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/05/2015 14:55

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 89.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	7600	210	45	mg/Kg			10	6010C
7440-36-0	Antimony	ND	10	3.2	mg/Kg			10	6010C
7440-38-2	Arsenic	10 ~~8.8~~	10	2.5	mg/Kg	~~J~~ U		10	6010C
7440-39-3	Barium	170	52	1.2	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	5.2	0.79	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.2	0.36	mg/Kg			10	6010C
7440-70-2	Calcium	6200	2600	71	mg/Kg			10	6010C
7440-47-3	Chromium	20	10	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	9.1	52	1.5	mg/Kg	J		10	6010C
7440-50-8	Copper	85	26	2.6	mg/Kg			10	6010C
7439-89-6	Iron	20000	100	21	mg/Kg		B	10	6010C
7439-92-1	Lead	220	10	1.4	mg/Kg		B	10	6010C
7439-95-4	Magnesium	4300	1000	33	mg/Kg			10	6010C
7439-96-5	Manganese	190	10	0.84	mg/Kg		B	10	6010C
7440-02-0	Nickel	23	42	1.2	mg/Kg	J		10	6010C
7440-09-7	Potassium	2100	5200	760	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	16	2.2	mg/Kg			10	6010C
7440-22-4	Silver	ND	10	0.73	mg/Kg			10	6010C
7440-23-5	Sodium	2400	1000	80	mg/Kg			10	6010C
7440-28-0	Thallium	ND	21	2.0	mg/Kg			10	6010C
7440-62-2	Vanadium	52 U ~~23~~	52	5.3	mg/Kg	J		10	6010C
7440-66-6	Zinc	160	52	5.9	mg/Kg			10	6010C
7439-97-6	Mercury	0.13	0.035	0.012	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RB-080515 | Lab Sample ID: 160-13266-7

Lab Name: TestAmerica St. Louis | Job No.: 160-13266-1

SDG ID.:

Matrix: Water | Date Sampled: 08/05/2015 15:00

Reporting Basis: WET | Date Received: 08/08/2015 08:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	200	22	ug/L			1	6010C
7440-36-0	Antimony	ND	10	3.7	ug/L			1	6010C
7440-38-2	Arsenic	ND	10	1.8	ug/L			1	6010C
7440-39-3	Barium	ND	50	2.1	ug/L			1	6010C
7440-41-7	Beryllium	ND	5.0	0.28	ug/L			1	6010C
7440-43-9	Cadmium	ND	5.0	0.34	ug/L			1	6010C
7440-70-2	Calcium	90	1000	54	ug/L	J		1	6010C
7440-47-3	Chromium	ND	10	3.4	ug/L			1	6010C
7440-48-4	Cobalt	ND	50	2.7	ug/L			1	6010C
7440-50-8	Copper	ND	25	2.1	ug/L			1	6010C
7439-89-6	Iron	ND	100	13	ug/L			1	6010C
7439-92-1	Lead	10 U ~~0.60~~	10	0.60	ug/L	J		1	6010C
7439-95-4	Magnesium	ND	1000	51	ug/L			1	6010C
7439-96-5	Manganese	ND	15	1.0	ug/L			1	6010C
7440-02-0	Nickel	ND	40	2.6	ug/L			1	6010C
7440-09-7	Potassium	ND	5000	460	ug/L			1	6010C
7782-49-2	Selenium	ND	15	2.1	ug/L			1	6010C
7440-22-4	Silver	ND	10	0.99	ug/L			1	6010C
7440-23-5	Sodium	ND	1000	110	ug/L			1	6010C
7440-28-0	Thallium	ND	20	2.4	ug/L			1	6010C
7440-62-2	Vanadium	ND	50	4.4	ug/L			1	6010C
7440-66-6	Zinc	13	20	8.3	ug/L	J		1	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C003-SS003-2448-01 .

Lab Sample ID: 160-13266-8

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/05/2015 15:15

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 87.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9200	220	47	mg/Kg			10	6010C
7440-36-0	Antimony	ND	11	3.4	mg/Kg			10	6010C
7440-38-2	Arsenic	11 ~~7.1~~	11	2.6	mg/Kg	~~J~~ U		10	6010C
7440-39-3	Barium	130	55	1.2	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	5.5	0.82	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.5	0.37	mg/Kg			10	6010C
7440-70-2	Calcium	26000	2700	73	mg/Kg			10	6010C
7440-47-3	Chromium	24	11	1.5	mg/Kg		B	10	6010C
7440-48-4	Cobalt	9.5	55	1.6	mg/Kg	J		10	6010C
7440-50-8	Copper	97	27	2.7	mg/Kg			10	6010C
7439-89-6	Iron	20000	110	22	mg/Kg		B	10	6010C
7439-92-1	Lead	180	11	1.4	mg/Kg		B	10	6010C
7439-95-4	Magnesium	14000	1100	35	mg/Kg			10	6010C
7439-96-5	Manganese	290	11	0.87	mg/Kg		B	10	6010C
7440-02-0	Nickel	21	44	1.3	mg/Kg	J		10	6010C
7440-09-7	Potassium	2300	5500	790	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	16	2.2	mg/Kg			10	6010C
7440-22-4	Silver	ND	11	0.76	mg/Kg			10	6010C
7440-23-5	Sodium	1800	1100	83	mg/Kg			10	6010C
7440-28-0	Thallium	ND	22	2.1	mg/Kg			10	6010C
7440-62-2	Vanadium	55 U ~~28~~	55	5.5	mg/Kg	J		10	6010C
7440-66-6	Zinc	140	55	6.1	mg/Kg			10	6010C
7439-97-6	Mercury	0.18	0.037	0.012	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C002-TRENCH-0036-01
Lab Sample ID: 160-13266-9
Lab Name: TestAmerica St. Louis
Job No.: 160-13266-1
SDG ID.:
Matrix: Solid
Date Sampled: 08/05/2015 15:30
Reporting Basis: DRY
Date Received: 08/08/2015 08:10
% Solids: 87.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	16000	200	43	mg/Kg			10	6010C
7440-36-0	Antimony	ND	10	3.1	mg/Kg			10	6010C
7440-38-2	Arsenic	12	10	2.4	mg/Kg			10	6010C
7440-39-3	Barium	370	50	1.1	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	5.0	0.75	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.0	0.34	mg/Kg			10	6010C
7440-70-2	Calcium	11000	2500	67	mg/Kg			10	6010C
7440-47-3	Chromium	90	10	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	16	50	1.4	mg/Kg	J		10	6010C
7440-50-8	Copper	71	25	2.4	mg/Kg			10	6010C
7439-89-6	Iron	29000	100	20	mg/Kg		B	10	6010C
7439-92-1	Lead	220	10	1.3	mg/Kg		B	10	6010C
7439-95-4	Magnesium	12000	1000	32	mg/Kg			10	6010C
7439-96-5	Manganese	410	10	0.80	mg/Kg		B	10	6010C
7440-02-0	Nickel	62	40	1.2	mg/Kg			10	6010C
7440-09-7	Potassium	6000	5000	720	mg/Kg			10	6010C
7782-49-2	Selenium	ND	15	2.1	mg/Kg			10	6010C
7440-22-4	Silver	ND	10	0.70	mg/Kg			10	6010C
7440-23-5	Sodium	740	1000	76	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	20	1.9	mg/Kg			10	6010C
7440-62-2	Vanadium	63	50	5.1	mg/Kg			10	6010C
7440-66-6	Zinc	180	50	5.6	mg/Kg			10	6010C
7439-97-6	Mercury	0.12	0.034	0.011	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C004-SS001-1824-01

Lab Sample ID: 160-13266-10

Lab Name: TestAmerica St. Louis

Job No.: 160-13266-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/07/2015 08:15

Reporting Basis: DRY

Date Received: 08/08/2015 08:10

% Solids: 80.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	240	52	mg/Kg			10	6010C
7440-36-0	Antimony	ND	12	3.8	mg/Kg			10	6010C
7440-38-2	Arsenic	12 ~~3.9~~	12	2.9	mg/Kg	~~J~~ U		10	6010C
7440-39-3	Barium	130	61	1.3	mg/Kg		B	10	6010C
7440-41-7	Beryllium	ND	6.1	0.91	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	6.1	0.41	mg/Kg			10	6010C
7440-70-2	Calcium	1900	3000	82	mg/Kg	J		10	6010C
7440-47-3	Chromium	31	12	1.7	mg/Kg		B	10	6010C
7440-48-4	Cobalt	7.7	61	1.8	mg/Kg	J		10	6010C
7440-50-8	Copper	27	30	3.0	mg/Kg	J		10	6010C
7439-89-6	Iron	16000	120	24	mg/Kg		B	10	6010C
7439-92-1	Lead	120	12	1.6	mg/Kg		B	10	6010C
7439-95-4	Magnesium	3600	1200	39	mg/Kg			10	6010C
7439-96-5	Manganese	250	12	0.98	mg/Kg		B	10	6010C
7440-02-0	Nickel	19	49	1.4	mg/Kg	J		10	6010C
7440-09-7	Potassium	940	6100	880	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	18	2.5	mg/Kg			10	6010C
7440-22-4	Silver	ND	12	0.85	mg/Kg			10	6010C
7440-23-5	Sodium	280	1200	93	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	24	2.3	mg/Kg			10	6010C
7440-62-2	Vanadium	61 U ~~34~~	61	6.2	mg/Kg	J		10	6010C
7440-66-6	Zinc	130	61	6.9	mg/Kg			10	6010C
7439-97-6	Mercury	0.11	0.038	0.013	mg/Kg			1	7471B

Copy

USEPA

DateShipped: 8/5/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C002-SS001-2448-01	8/5/2015	10:50	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS001-2448-01	8/5/2015	10:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS002-2448-01	8/5/2015	11:40	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS002-2448-01	8/5/2015	11:40	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-SS003-2448-01	8/5/2015	12:10	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-SS003-2448-01	8/5/2015	12:10	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	4	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15	TA	8/8/15 0810	

160-13266 Chain of Custody

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DateShipped: 8/5/2015

CarrierName: FedEx
AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-080515-230111-0001

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO
Lab Contact: Mike Franks
Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-01	8/5/2015	14:10	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS001-2448-02	8/5/2015	14:12	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS001-2448-02	8/5/2015	14:12	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C003-SS002-0024-01	8/5/2015	14:55	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS002-0024-01	8/5/2015	14:55	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-080515	8/5/2015	15:00	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	[signature] Weston Solutions	8/7/15	[signature] TA	8/8/15 0810	

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DateShipped: 8/5/2015

CarrierName: FedEx
AirbillNo: 8037-9662-5810

CHAIN OF CUSTODY RECORD

Case #: 334

Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-080515-230111-0001
Lab: TestAmerica Laboratories, Inc. - St. Louis, MO
Lab Contact: Mike Franks
Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	RB-080515	8/5/2015	15:00	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	C003-SS003-2448-01	8/5/2015	15:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C003-SS003-2448-01	8/5/2015	15:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C002-TRENCH-0036-01	8/5/2015	15:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C004-SS001-1824-01	8/7/2015	08:15	Soil		2	16 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C004-SS001-1824-01	8/7/2015	08:15	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/7/15		8/8/15 0810	

OTHER ANALYTES WORK TABLE

Project: Canadian Uranium and Radium Site

Sampling Date: August 18, 2015

SAMPLE #/CONCENTRATION (MG/KG)

TAL Metals	Matrix:	Soil	Soil	Soil	Soil
	Client ID:	C001-SS001-0012-01	C001-SS001-0012-02	C001-SS002-0012-01	C001-SS003-0012-01
	Lab ID:	160-13435-1	160-13435-2	160-13435-3	160-13435-4
Percent Solids		93.3	92.1	91.8	90.3
Dilution Factor	MDL	10	10	10	10
Aluminum	4.26	7200	6800	11000	9800
Antimony	0.309	9.3 U	9.6 U	U	U
Arsenic	0.236	9.3 U	9.6 U	U	10 U
Barium	0.11	77 J	72	42 J	51
Beryllium	0.075	U	U	U	U
Cadmium	0.034	U	U	U	U
Calcium	6.73	21000	18000	11000	5400
Chromium	0.138	21	17	11	18
Cobalt	0.144	7.3 J	6.3 J	13 J	8.9 J
Copper	0.245	35 J	24 U	46	32
Iron	1.99	18000	13000	22000	20000
Lead	0.129	100 J	160	22	23
Magnesium	3.16	11000	7400	6900	5200
Manganese	0.08	220 J	130 J	270	310
Nickel	0.116	18 J	16 J	13 J	16 J
Potassium	72.4	1700 J	2700 J	U	1200 J
Selenium	0.206	U	U	U	U
Silver	0.07	U	U	10 U	U
Sodium	7.62	1200	830 J	1700	700 J
Thallium	0.19	U	U	U	U
Vanadium	0.507	29 J	13 J	42 J	35 J
Zinc	0.562	120 J	100	50 J	66
Mercury	0.011	*0.12	*0.13	*0.15	*0.029 J
		*D/F X 1	*D/F X 1	*D/F X 1	*D/F X 1

Inorganic Qualifiers

D/F - Dilution Factor
MDL - Method Detection Limit /RL-Reporting Limit
U - non-detected analyte
J (lab qualifier)- estimated value <RL and > MDL
J - estimated value
Note: MDL reported on the Form Is for the soil matrix have been adjusted to reflect the sample volume, percent solid, sample weight, and dilution factor.

OTHER ANALYTES WORK TABLE

Project: Canadian Uranium and Radium Site

Sampling Date: August 18, 2015

SAMPLE #/CONCENTRATION (UG/L)

TAL Metals	Matrix: Client ID: Lab ID:	Aqueous RB-081815 160-13435-5
Percent Solids		NA
Dilution Factor	MDL	1.0
Aluminum	22.4	U
Antimony	3.74	4.4 J
Arsenic	1.78	2.4 J
Barium	2.12	U
Beryllium	0.283	U
Cadmium	0.336	U
Calcium	54.2	U
Chromium	3.35	U
Cobalt	2.72	U
Copper	2.1	U
Iron	12.8	19 J
Lead	0.598	U
Magnesium	50.5	U
Manganese	1	U
Nickel	2.57	U
Potassium	456	U
Selenium	2.08	15 U
Silver	0.994	U
Sodium	105	U
Thallium	2.38	U
Vanadium	4.39	U
Zinc	8.32	13 J
Mercury	0.06	U

Inorganic Qualifiers

MDL - Method Detection Limit /RL-Reporting Limit
U - non-detected analyte
J (lab qualifier)- estimated value <RL and > MDL
J - estimated value

FIELD DUPLICATE

EPA SAMPLE NO.
C001-SS001-0012-01 &
C001-SS001-0012-02

Lab Name: Test America

Contract: WESTON-RST 3

Lab Code: Test America

RFP No.: 334

SDG No.: 160-13435

Matrix (soil/water): Soil

Level (low/med): LOW

% Solids for Sample: 93.3

% Solids for Duplicate: 92.1

Concentration Units (ug/L or mg/kg dry weight): mg/kg

ANALYTE	CONTROL LIMIT	SAMPLE(S) C001-SS001-0012-01	C	DUPLICATE(D) C001-SS001-0012-02	C	RPD	Q
Aluminum	50%	7200		6800		5.7%	
Antimony	<20	4.3	J	3.5	J	<2 X RL	
Arsenic	<20	7.7	J	4.1	J	<2 X RL	
Barium	50%	77		72		6.7%	
Beryllium	-	U		U		NC	
Cadmium	-	U		U		NC	
Calcium	50%	21000		18000		15.4%	
Chromium	50%	21		17		21.0%	
Cobalt	<100	7.3	J	6.3	J	<2 X RL	
Copper	<50	35		22	J	<2 X RL	
Iron	50%	18000		13000		32.2%	
Lead	50%	100		160		46.2%	
Magnesium	50%	11000		7400		39.1%	
Manganese	50%	220		130		**51.4%**	*
Nickel	<80	18	J	16	J	<2 X RL	
Potassium	<10000	1700	J	2700	J	<2 X RL	
Selenium	-	U		U		NC	
Silver	-	U		U		NC	
Sodium	<10000	1200		830	J	<2 X RL	
Thallium	-	U		U		NC	
Vanadium	<100	29	J	13	J	<2 X RL	
Zinc	50%	120		100		18.2%	
Mercury	50%	0.12		0.13		8.0%	

Difference < 2 X RL, when sample and/or duplicate conc. <5X RL
RPD requirement: <50% when both results are ≥ 5 X RL

Job ID: 160-13435-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 334A

Report Number: 160-13435-1

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.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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."

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

RECEIPT

The samples were received on 08/19/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

TOTAL METALS (ICP)- Solids

Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/21/2015 and analyzed on 08/26/2015.

Batch 208156

The low level check standard recovery associated with prep batches 206916 and 206995 and analytical batch 160-208156 is outside the acceptance criteria for the following analyte: antimony. However, the associated samples recovered below the reporting limit for the affected analyte; therefore, the results will be reported. (CRI 160-208156/7)

The low level continuing calibration verification (CCVL) associated with prep batches 206916 and 206995 and analytical batch

Job ID: 160-13435-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

160-208156 recovered above the upper control limit for antimony. The samples associated with this CCVL were below the reporting limit for the affected analytes; therefore, the data have been reported. (CCVL 160-208156/73)

The following samples from preparation batch 160-206916 and analytical batch 160-208156 were diluted to bring the concentration of target analytes within the calibration range: C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-01 (160-13435-1[MS]), C001-SS001-0012-01 (160-13435-1[MSD]), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3), C001-SS003-0012-01 (160-13435-4) and (160-13435-B-1-A SD). Elevated reporting limits (RLs) are provided.

Due to the high concentration of aluminum, calcium, iron, and magnesium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-206916 and analytical batch 160-208156 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. C001-SS001-0012-01 (160-13435-1[MS]) and C001-SS001-0012-01 (160-13435-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) recovery and precision for preparation batch 160-206916 and analytical batch 160-208156 was outside control limits for copper, potassium, lead, and zinc. Sample non-homogeneity is suspected because the associated laboratory control sample recovery was within acceptance limits. C001-SS001-0012-01 (160-13435-1[MS]) and C001-SS001-0012-01 (160-13435-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-206916 and analytical batch 160-208156 were outside control limits for barium and manganese. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. C001-SS001-0012-01 (160-13435-1[MS]) and C001-SS001-0012-01 (160-13435-1[MSD])

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

TOTAL METALS (ICP)-Water

Sample RB-081815 (160-13435-5) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/21/2015 and analyzed on 08/26/2015.

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

MERCURY-Solids

Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 08/27/2015 and analyzed on 08/28/2015.

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

PERCENT SOLIDS

Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 08/20/2015.

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)-Solids

Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE A01R_Th. The samples were dried on 08/19/2015, prepared on 08/20/2015 and analyzed on 08/24/2015.

The matrix spike duplicate (MSD) recovery (123%) is outside the control limits (76-115%). Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits . The data have been qualified and reported. C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-01 (160-13435-1[MS]), C001-SS001-0012-01 (160-13435-1[MSD]), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3), C001-SS003-0012-01 (160-13435-4), (LCS 160-206728/2-A) and (MB 160-206728/1-A)

Job ID: 160-13435-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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

ISOTOPIC THORIUM (ALPHA SPECTROMETRY)-Water
Sample RB-081815 (160-13435-5) was analyzed for Isotopic Thorium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/20/2015 and analyzed on 08/25/2015.

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)-Solids
Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were dried on 08/19/2015, prepared on 08/20/2015 and analyzed on 08/24/2015.

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

ISOTOPIC URANIUM (ALPHA SPECTROMETRY)-Water
Sample RB-081815 (160-13435-5) was analyzed for Isotopic Uranium (Alpha Spectrometry) in accordance with DOE. The samples were prepared on 08/20/2015 and analyzed on 08/24/2015.

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

CESIUM-137 & OTHER GAMMA EMITTERS (GS)-Water
Sample RB-081815 (160-13435-5) was analyzed for Cesium-137 & Other Gamma Emitters (GS) in accordance with DOE. The samples were prepared and analyzed on 08/20/2015.

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

RADIUM 226 (NO INGROWTH)-Solids
Samples C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3) and C001-SS003-0012-01 (160-13435-4) were analyzed for Radium 226 (No ingrowth) in accordance with GA-01-R. The samples were dried on 08/19/2015, prepared on 08/21/2015 and analyzed on 08/22/2015.

Ra-226 by gamma spectroscopy is typically determined by inference from daughters (e.g. Bi-214) after sealing the sample in an appropriate counting geometry/container and waiting 21 days to allow the Ra-226 decay chain through Rn-222 to reach secular equilibrium. Such an approach is considered to be the most reliable and representative means for establishing the true Ra-226 concentration in the sample. The method requested by the client to report Ra-226, using its own 186 keV gamma-ray emission, is subject to interference and potential bias due to the 185.7 keV U-235 gamma ray. Experience also indicates gamma spectroscopy software does not consistently assign accurate peak areas to Ra-226 (186 keV), with the problem compounded by slight drift of the instrumentation. The laboratory considers Ra-226 reported based upon the 186 keV gamma-ray emission to be best used by the client in a qualitative fashion.The MDC was greater than the requested limit of 1 pCi/g for Radium-226. Radium-226 was requested to be reported with no ingrowth for this batch; therefore, samples were reported from the only usable gamma energy line, 185.99 KeV. This energy line has a low efficiency which causes an elevated MDC.The following samples were affected: C001-SS001-0012-01 (160-13435-1), C001-SS001-0012-02 (160-13435-2), C001-SS002-0012-01 (160-13435-3), C001-SS003-0012-01 (160-13435-4), (LCS 160-206998/2-A), (MB 160-206998/1-A) and (160-13435-E-1-R DU).

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

Qualifiers

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
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.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
F1	MS and/or MSD Recovery is outside acceptance limits.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 334A

TestAmerica Job ID: 160-13435-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
7471B	Mercury (CVAA)	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
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
GA-01-R	Cesium-137 & Other Gamma Emitters (GS)	DOE	TAL SL

Protocol References:

DOE = U.S. Department of Energy

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 SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 160-13435-2

Login Number: 13435
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

5

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.	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	
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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

COVER PAGE
METALS

Lab Name: TestAmerica St. Louis Job Number: 160-13435-1

SDG No.:

Project: EPA RST2 - RFP No. 334A

Client Sample ID	Lab Sample ID
C001-SS001-0012-01	160-13435-1
C001-SS001-0012-02	160-13435-2
C001-SS002-0012-01	160-13435-3
C001-SS003-0012-01	160-13435-4
RB-081815	160-13435-5

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C001-SS001-0012-01

Lab Sample ID: 160-13435-1

Lab Name: TestAmerica St. Louis

Job No.: 160-13435-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/18/2015 09:40

Reporting Basis: DRY

Date Received: 08/19/2015 09:30

% Solids: 93.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	7200	190	40	mg/Kg			10	6010C
7440-36-0	Antimony	9.3 ~~4.3~~	9.3	2.9	mg/Kg	~~J~~U	^ B	10	6010C
7440-38-2	Arsenic	9.3 ~~7.7~~	9.3	2.2	mg/Kg	~~J~~U	B	10	6010C
7440-39-3	Barium	77	47	1.0	mg/Kg	J	F1	10	6010C
7440-41-7	Beryllium	ND	4.7	0.70	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	4.7	0.32	mg/Kg			10	6010C
7440-70-2	Calcium	21000	2300	63	mg/Kg			10	6010C
7440-47-3	Chromium	21	9.3	1.3	mg/Kg		B	10	6010C
7440-48-4	Cobalt	7.3	47	1.3	mg/Kg	J		10	6010C
7440-50-8	Copper	35	23	2.3	mg/Kg	J	F2 F1 B	10	6010C
7439-89-6	Iron	18000	93	19	mg/Kg		F2	10	6010C
7439-92-1	Lead	100	9.3	1.2	mg/Kg	J	F2 F1	10	6010C
7439-95-4	Magnesium	11000	930	29	mg/Kg			10	6010C
7439-96-5	Manganese	220	9.3	0.75	mg/Kg	J	F1	10	6010C
7440-02-0	Nickel	18	37	1.1	mg/Kg	J		10	6010C
7440-09-7	Potassium	1700	4700	670	mg/Kg	~~J~~	F2 F1	10	6010C
7782-49-2	Selenium	ND	14	1.9	mg/Kg			10	6010C
7440-22-4	Silver	ND	9.3	0.65	mg/Kg			10	6010C
7440-23-5	Sodium	1200	930	71	mg/Kg			10	6010C
7440-28-0	Thallium	ND	19	1.8	mg/Kg			10	6010C
7440-62-2	Vanadium	29	47	4.7	mg/Kg	J		10	6010C
7440-66-6	Zinc	120	47	5.2	mg/Kg	J	F2 F1	10	6010C
7439-97-6	Mercury	0.12	0.031	0.010	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C001-SS001-0012-02

Lab Sample ID: 160-13435-2

Lab Name: TestAmerica St. Louis

Job No.: 160-13435-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/18/2015 09:40

Reporting Basis: DRY

Date Received: 08/19/2015 09:30

% Solids: 92.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6800	190	41	mg/Kg			10	6010C
7440-36-0	Antimony	9.6 ~~3.5~~	9.6	3.0	mg/Kg	~~J~~ U	^ B	10	6010C
7440-38-2	Arsenic	9.6 ~~4.1~~	9.6	2.3	mg/Kg	~~J~~ U	B	10	6010C
7440-39-3	Barium	72	48	1.1	mg/Kg			10	6010C
7440-41-7	Beryllium	ND	4.8	0.72	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	4.8	0.33	mg/Kg			10	6010C
7440-70-2	Calcium	18000	2400	65	mg/Kg			10	6010C
7440-47-3	Chromium	17	9.6	1.3	mg/Kg		B	10	6010C
7440-48-4	Cobalt	6.3	48	1.4	mg/Kg	J		10	6010C
7440-50-8	Copper	24 ~~22~~	24	2.4	mg/Kg	~~J~~ U	B	10	6010C
7439-89-6	Iron	13000	96	19	mg/Kg			10	6010C
7439-92-1	Lead	160	9.6	1.2	mg/Kg			10	6010C
7439-95-4	Magnesium	7400	960	30	mg/Kg			10	6010C
7439-96-5	Manganese	130	9.6	0.77	mg/Kg	J		10	6010C
7440-02-0	Nickel	16	38	1.1	mg/Kg	J		10	6010C
7440-09-7	Potassium	2700	4800	700	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	14	2.0	mg/Kg			10	6010C
7440-22-4	Silver	ND	9.6	0.67	mg/Kg			10	6010C
7440-23-5	Sodium	830	960	73	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	19	1.8	mg/Kg			10	6010C
7440-62-2	Vanadium	13	48	4.9	mg/Kg	J		10	6010C
7440-66-6	Zinc	100	48	5.4	mg/Kg			10	6010C
7439-97-6	Mercury	0.13	0.031	0.010	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C001-SS002-0012-01

Lab Sample ID: 160-13435-3

Lab Name: TestAmerica St. Louis

Job No.: 160-13435-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/18/2015 11:30

Reporting Basis: DRY

Date Received: 08/19/2015 09:30

% Solids: 91.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	200	43	mg/Kg			10	6010C
7440-36-0	Antimony	ND	10	3.1	mg/Kg		^	10	6010C
7440-38-2	Arsenic	ND	10	2.4	mg/Kg			10	6010C
7440-39-3	Barium	42	51	1.1	mg/Kg	J		10	6010C
7440-41-7	Beryllium	ND	5.1	0.76	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.1	0.35	mg/Kg			10	6010C
7440-70-2	Calcium	11000	2500	68	mg/Kg			10	6010C
7440-47-3	Chromium	11	10	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	13	51	1.5	mg/Kg	J		10	6010C
7440-50-8	Copper	46	25	2.5	mg/Kg		B	10	6010C
7439-89-6	Iron	22000	100	20	mg/Kg			10	6010C
7439-92-1	Lead	22	10	1.3	mg/Kg			10	6010C
7439-95-4	Magnesium	6900	1000	32	mg/Kg			10	6010C
7439-96-5	Manganese	270	10	0.81	mg/Kg			10	6010C
7440-02-0	Nickel	13	41	1.2	mg/Kg	J		10	6010C
7440-09-7	Potassium	ND	5100	740	mg/Kg			10	6010C
7782-49-2	Selenium	ND	15	2.1	mg/Kg			10	6010C
7440-22-4	Silver	10 ~~0.92~~	10	0.71	mg/Kg	↗U	B	10	6010C
7440-23-5	Sodium	1700	1000	77	mg/Kg			10	6010C
7440-28-0	Thallium	ND	20	1.9	mg/Kg			10	6010C
7440-62-2	Vanadium	42	51	5.2	mg/Kg	J		10	6010C
7440-66-6	Zinc	50	51	5.7	mg/Kg	J		10	6010C
7439-97-6	Mercury	0.15	0.033	0.011	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: C001-SS003-0012-01

Lab Sample ID: 160-13435-4

Lab Name: TestAmerica St. Louis

Job No.: 160-13435-1

SDG ID.:

Matrix: Solid

Date Sampled: 08/18/2015 12:50

Reporting Basis: DRY

Date Received: 08/19/2015 09:30

% Solids: 90.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9800	200	42	mg/Kg			10	6010C
7440-36-0	Antimony	ND	10	3.1	mg/Kg		^	10	6010C
7440-38-2	Arsenic	10 ~~4.7~~	10	2.4	mg/Kg	~~J~~ U	B	10	6010C
7440-39-3	Barium	51	50	1.1	mg/Kg			10	6010C
7440-41-7	Beryllium	ND	5.0	0.75	mg/Kg			10	6010C
7440-43-9	Cadmium	ND	5.0	0.34	mg/Kg			10	6010C
7440-70-2	Calcium	5400	2500	67	mg/Kg			10	6010C
7440-47-3	Chromium	18	10	1.4	mg/Kg		B	10	6010C
7440-48-4	Cobalt	8.9	50	1.4	mg/Kg	J		10	6010C
7440-50-8	Copper	32	25	2.4	mg/Kg		B	10	6010C
7439-89-6	Iron	20000	100	20	mg/Kg			10	6010C
7439-92-1	Lead	23	10	1.3	mg/Kg			10	6010C
7439-95-4	Magnesium	5200	1000	31	mg/Kg			10	6010C
7439-96-5	Manganese	310	10	0.80	mg/Kg			10	6010C
7440-02-0	Nickel	16	40	1.2	mg/Kg	J		10	6010C
7440-09-7	Potassium	1200	5000	720	mg/Kg	J		10	6010C
7782-49-2	Selenium	ND	15	2.1	mg/Kg			10	6010C
7440-22-4	Silver	ND	10	0.70	mg/Kg			10	6010C
7440-23-5	Sodium	700	1000	76	mg/Kg	J		10	6010C
7440-28-0	Thallium	ND	20	1.9	mg/Kg			10	6010C
7440-62-2	Vanadium	35	50	5.1	mg/Kg	J		10	6010C
7440-66-6	Zinc	66	50	5.6	mg/Kg			10	6010C
7439-97-6	Mercury	0.029	0.036	0.012	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RB-081815

Lab Sample ID: 160-13435-5

Lab Name: TestAmerica St. Louis

Job No.: 160-13435-1

SDG ID.:

Matrix: Water

Date Sampled: 08/18/2015 11:45

Reporting Basis: WET

Date Received: 08/19/2015 09:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	200	22	ug/L			1	6010C
7440-36-0	Antimony	4.4	10	3.7	ug/L	~~B~~ J	^	1	6010C
7440-38-2	Arsenic	2.4	10	1.8	ug/L	J		1	6010C
7440-39-3	Barium	ND	50	2.1	ug/L			1	6010C
7440-41-7	Beryllium	ND	5.0	0.28	ug/L			1	6010C
7440-43-9	Cadmium	ND	5.0	0.34	ug/L			1	6010C
7440-70-2	Calcium	ND	1000	54	ug/L			1	6010C
7440-47-3	Chromium	ND	10	3.4	ug/L			1	6010C
7440-48-4	Cobalt	ND	50	2.7	ug/L			1	6010C
7440-50-8	Copper	ND	25	2.1	ug/L			1	6010C
7439-89-6	Iron	19	100	13	ug/L	J		1	6010C
7439-92-1	Lead	ND	10	0.60	ug/L			1	6010C
7439-95-4	Magnesium	ND	1000	51	ug/L			1	6010C
7439-96-5	Manganese	ND	15	1.0	ug/L			1	6010C
7440-02-0	Nickel	ND	40	2.6	ug/L			1	6010C
7440-09-7	Potassium	ND	5000	460	ug/L			1	6010C
7782-49-2	Selenium	15 ~~2.3~~	15	2.1	ug/L	~~B~~ U	B	1	6010C
7440-22-4	Silver	ND	10	0.99	ug/L			1	6010C
7440-23-5	Sodium	ND	1000	110	ug/L			1	6010C
7440-28-0	Thallium	ND	20	2.4	ug/L			1	6010C
7440-62-2	Vanadium	ND	50	4.4	ug/L			1	6010C
7440-66-6	Zinc	13	20	8.3	ug/L	J		1	6010C
7439-97-6	Mercury	ND	0.20	0.060	ug/L			1	7470A

USEPA

DateShipped: 8/18/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5864

CHAIN OF CUSTODY RECORD

Case #: 334A

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081815-162509-0004

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS001-0012-01	8/18/2015	09:40	Soil	Y	2	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS001-0012-02	8/18/2015	09:45	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS002-0012-01	8/18/2015	11:30	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	TAL Metals	SW846 3050B/6010C
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Mercury	SW846 7471B
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Isotopic Thorium	HASL-300 A-01-R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/18/15	Jill Clark TA STL	8.19.15 0930	

160-13435 Chain of Custody

USEPA

DateShipped: 8/18/2015

CarrierName: FedEx

AirbillNo: 8037-9662-5864

CHAIN OF CUSTODY RECORD

Case #: 334A

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081815-162509-0004

Lab: TestAmerica Laboratories, Inc. - St. Louis, MO

Lab Contact: Mike Franks

Lab Phone: 314-298-8566

Lab #	Sample #	Sample Date	Sample Time	Matrix	Lab QC	Numb Cont	Container	Preservative	Analyses	Analytical_Method
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	2 oz glass jar	4 C	Isotopic Uranium	HASL-300 A-01-R
	C001-SS003-0012-01	8/18/2015	12:50	Soil		1	32 oz glass jar	4 C	Gamma Spectroscopy	HASL-300 GA-01-0R
	RB-081815	8/18/2015	11:45	Aqueous		1	500 ml poly bottle	HNO3 pH<2	TAL Metals	SW846 3050B/6010C
	RB-081815	8/18/2015	11:45	Aqueous		1	500 ml poly bottle	HNO3 pH<2	Mercury	SW846 7471B
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Thorium	HASL-300 A-01-R
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Isotopic Uranium	HASL-300 A-01-R
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-226	SW846 9315
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Radium-228	SW846 9320
	RB-081815	8/18/2015	11:45	Aqueous		1	1 L poly bottle	HNO3 pH<2	Gamma Spectroscopy	HASL-300 GA-01-0R

Special Instructions: Results for Radium-226 and Radium-228 analyzed via gamma spectroscopy should be reported separately for soil samples.

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 Analyses	Bernard Nwosu Weston Solutions	8/18/15	Jill Clarke TA STL	8.19.15 0830	

Attachment H:

Wipe QA/QC Form and Ludlum 3030 Calibration Sheet

QA/QC Form for Counting Wipes

OSC:	Eric Daly				
Site Name:	Canadian Radium & Uranium				
Location:	Mount Kisco, NY				
Date Received:	Monday, Oct 19, 2015				
Counting Instrument:	3030	Detector:	ZnS + Plastic Scint.	Calibration Date:	6/7/2015
Serial #:	190638	Serial #:	N/A	12 month calibration:	6/7/2016
Detector Active Area or Area Covered by Smear (cm^2):		100		NRC 6 Mo Cal. Due Date?	OK

	Efficiency (fraction)	Source Nuclide	Source Number	Original Source Activity (DPM)	Source Creation Date	$T_{1/2}$ (yr)	Source Decayed Activity	Required MDA ($DPM/100cm^2$)	Control Chart Bkg Count Time	Control Chart Source Count Time	Control Chart bkg Average α/β cpm	Control Chart bkg 1 sigma, cpm	Control Chart Source-bkg Average α/β cpm	Control Chart source 1 sigma, cpm
Alpha	0.3437	Th-230	5044-03	6,920	7/23/2003	7.70E+04	6,919	5.5	1	1	0.20	0.42	2181.6	87.45
Beta	0.3126	SrY-90	5043-03	4,270	7/22/2003	2.88E+01	3,177	34.6	1	1	36.40	6.55	1171.8	56.70

Date	Daily Bkg Counts		Daily Check Source Counts		Count Time		Net Daily Source Rate (cpm		Bkg QC Pass/Fail		Source QC Pass/Fail		MDC α (dpm)	MDC β (dpm)	α MDA OK?	β MDA OK?	H.P. Initials
	Alpha	Beta	Alpha	Beta	Bkgd	Source	Alpha	Beta	Alpha	Beta	Alpha	Beta					
10/28/2015	0	37	2161	1203	10.0	10.0	2161.0	1203.0	PASS	PASS	PASS	PASS	0.80	29.50	Yes	Yes	LKN

Sample #	BKG Count		Sample Count		Count Time		Net Sample Count Rate		Below Limits?		H.P. Technician	Technician Initials	Notes
	Alpha	Beta	Alpha	Beta	BKG	Sample	Alpha	Beta	Alpha	Beta			
C001-W-01	0	37	0	31	10.0	10.0	0.0	-6.0	Yes	Yes	LKN	LKN	
C001-W-02	0	37	0	34	10.0	10.0	0.0	-3.0	Yes	Yes	LKN	LKN	
C001-W-03	0	37	0	33	10.0	10.0	0.0	-4.0	Yes	Yes	LKN	LKN	
C002-W-01	0	37	0	34	10.0	10.0	0.0	-3.0	Yes	Yes	LKN	LKN	
C003-W-01	0	37	0	32	10.0	10.0	0.0	-5.0	Yes	Yes	LKN	LKN	
C003-W-02	0	37	0	37	10.0	10.0	0.0	0.0	Yes	Yes	LKN	LKN	
C003-W-03	0	37	0	39	10.0	10.0	0.0	2.0	Yes	Yes	LKN	LKN	
C003-W-04	0	37	0	35	10.0	10.0	0.0	-2.0	Yes	Yes	LKN	LKN	

Completed by: _____ Date Completed: _____

Model 3030 Plateau Data

6/7/2015
10:44:53 AM

Header 1: EPA ERT-W
Header 2: 190638
Header 3:
Header 4:
Header 5:
Header 6:

Calibration Due Date: 6/7/2016

Model 3030 Date: 6/7/2015
Model 3030 Time: 8:29:07 AM

User PC Time: 1.0

Alpha Isotope: Pu239
Alpha Source Size (dpm): 24900
Alpha Source Size (Bq): 415.0
Alpha Source Size (µCi): 0.011216216

Beta Isotope: Tc99
Beta Source Size (dpm): 93200
Beta Source Size (Bq): 1553.33
Beta Source Size (µCi): 0.041981982

Starting High Voltage: 675
Starting High Voltage: 800
High Voltage Increment: 25

Plateau Count Mode: SCALER
Source Count Time (min): 1.0
Background Count Time (min): 1.0

	ALPHA					BETA				
HV	Source	(Beta)	Background	Eff	CrossTalk	Source	(Alpha)	Background	Eff	Crosstalk
675	9835	(265)	1	39.5%	2.4%	22608	(51)	29	24.2%	0.2%
700	10150	(289)	0	40.8%	2.5%	25736	(43)	39	27.6%	0.2%
725	10032	(283)	1	40.3%	2.5%	28437	(37)	32	30.5%	0.1%
750	10084	(264)	1	40.5%	2.2%	31190	(32)	46	33.4%	0.1%
775	10088	(231)	0	40.5%	1.8%	32404	(30)	51	34.7%	0.1%
800	10306	(192)	1	41.4%	1.2%	33107	(45)	65	35.5%	0.1%

Ludlum Measurements, Inc.
Model 3030 MDA Calculation Data

6/7/2015
10:44:57 AM

Alpha Background(cpm): 1.0
Beta Background(cpm): 32.0

Alpha Efficiency %: 40.3
Beta Efficiency %: 30.5

Confidence Level: 95%

Count Time	Alpha MDA(dpm)	Beta MDA(dpm)
0.1	94.3	291.2
0.5	27.6	123.5
1.0	18.3	95.2
2.0	13.4	79.2
5.0	10.3	68.6
10.0	9.2	64.9
60.0	8.3	61.7
PC (1.0)	18.3	95.2

Model 3030 Parameters

6/7/2015
10:53:07 AM

Header 1: EPA ERT-W
Header 2: 190638
Header 3:
Header 4:
Header 5:
Header 6:

Calibration Due Date: 6/7/2016

Model 3030 Date: 6/7/2015
Model 3030 Time: 8:29:07 AM

Count Time Switch (min): 1.0
User PC Time (min): 1.0

Alpha Alarm: 20
Beta Alarm: 1000
Alpha + Beta Alarm: 1200

High Voltage (VDC): 725

Loss of Count Time (min): 30.0

Count Mode: SCALER

Alpha Efficiency %: 40.3
Beta Efficiency %: 30.5

Background Subtract: OFF
Alpha Background: 1.0
Beta Background: 32.0

Crosstalk Correction: OFF
Alpha to Beta Crosstalk %: 2.5
Beta to Alpha Crosstalk %: 0.1

Show Parameters during startup: Disabled

Daily QC Check: OFF

Last Alpha Efficiency %: 39.0
Last Beta Efficiency %: 30.0

Standard Alpha Efficiency %: 40
Standard Beta Efficiency %: 30

Allowable Alpha QC Efficiency ± %: 15
Allowable Beta QC Efficiency ± %: 15

Alpha Source Size (dpm): 24900
Alpha Source Size (Bq): 415.
Alpha Source Size (µCi): 0.01121621622

Beta Source Size (dpm): 93200
Beta Source Size (Bq): 1553.33
Beta Source Size (µCi): 0.04198198198

Last Alpha QC Background: 0.0
Last Beta QC Background: 52.0

Alpha Background Upper Limit (cpm): 3
Alpha Background Lower Limit (cpm): 0
Beta Background Upper Limit (cpm): 60
Beta Background Lower Limit (cpm): 0

Next Sample Number: 0001
User-defined Comment: Sc Lk Test
Logging Mode: Log All
Recycle Mode: OFF
Printer Mode: OFF

APPENDICES

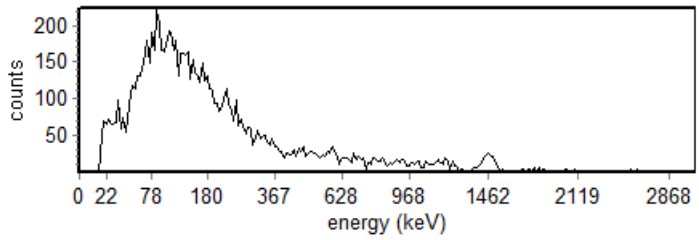
Appendix 1: Gamma (SAM-940) Field Survey Data Sheets
Appendix 2: Radon/Thoron Field Survey Data Sheets

Filename: SPEC0108.N42

INSTRUMENT INFORMATION
- Instrument Type: Radionuclide Identifier
- Manufacturer: Berkeley Nucleonics Corp.
- Instrument Model: SAM Eagle
- Instrument ID: Serial 40354
- Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
- Spectrum Type: PHA
- Energy Units: keV
- Start Time: 2015-08-05 12:02:22
- Real Time: 60.45 sec
- Live Time: 60 sec
- Bias: 650
- Coarse Gain: 1
- Fine Gain: 1.2174
- Group Size: 256
- LLD: 0.80
- ULD: 100.00
- Zero: +0.1620

LOCATIONAL INFORMATION
- Latitude: 41.214012
- Longitude: -73.726450



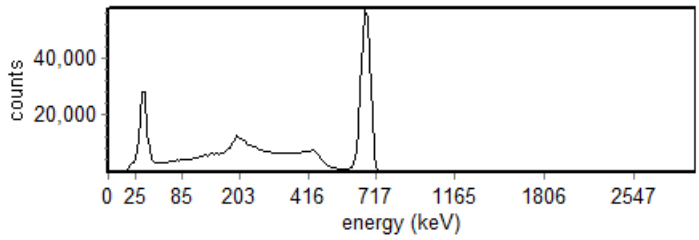
PHOTON DATA
- Detector: gamma
- Real Time: 60.45 sec
- Live Time: 60 sec
- Count Rate: 159.267 CPS
- Total: 9556 Counts
- Dose Rate: 0 uSv/h (0 urem/h)

Filename: SPEC0109.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 12:11:31
Real Time: 300.99 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2162
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.214012
Longitude: -73.726363



PHOTON DATA
Detector: gamma
Real Time: 300.99 sec
Live Time: 300 sec
Count Rate: 3089.97 CPS
Total: 926990 Counts
Dose Rate: 2.0386 uSv/h (203.86 urem/h)

ANALYSIS RESULT
Threat Description:

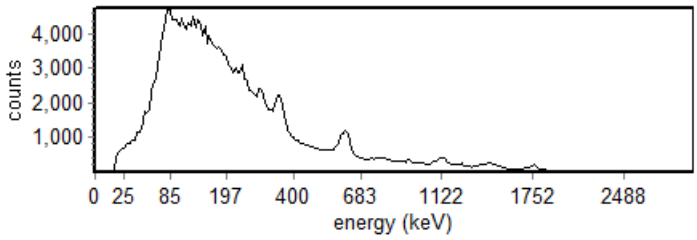
Nuclide Name: Cs-137
Nuclide Type: Industrial
Nuclide ID Confidence: 0.989826
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 1.45799 uSv/h (145.799 urem/h)

Filename: SPEC0110.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 14:00:12
Real Time: 300.24 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2179
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.211357
Longitude: -73.727637



PHOTON DATA
Detector: gamma
Real Time: 300.24 sec
Live Time: 300 sec
Count Rate: 837.28 CPS
Total: 251184 Counts
Dose Rate: 0.517175 uSv/h (51.7175 urem/h)

ANALYSIS RESULT
Threat Description:

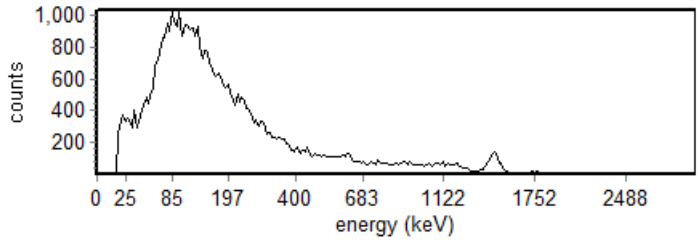
Nuclide Name: Ra-226
Nuclide Type: NORM
Nuclide ID Confidence: 0.794839
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.0759592 uSv/h (7.59592 urem/h)

Filename: SPEC0111.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 15:07:15
Real Time: 300.04 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2376
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.211035
Longitude: -73.728015



PHOTON DATA
Detector: gamma
Real Time: 300.04 sec
Live Time: 300 sec
Count Rate: 161.657 CPS
Total: 48497 Counts
Dose Rate: 0.0919729 uSv/h (9.19729 urem/h)

ANALYSIS RESULT
Threat Description:

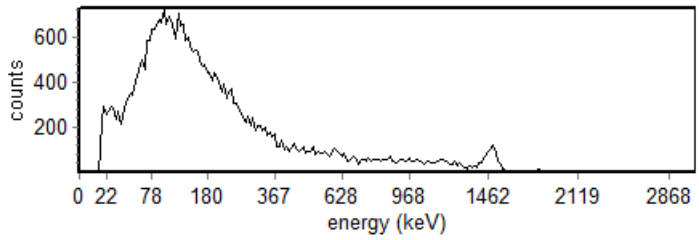
None Detected

Filename: SPEC0112.N42

INSTRUMENT INFORMATION
- Instrument Type: Radionuclide Identifier
- Manufacturer: Berkeley Nucleonics Corp.
- Instrument Model: SAM Eagle
- Instrument ID: Serial 40354
- Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
- Spectrum Type: PHA
- Energy Units: keV
- Start Time: 2015-08-05 15:17:11
- Real Time: 300.04 sec
- Live Time: 300 sec
- Bias: 650
- Coarse Gain: 1
- Fine Gain: 1.2376
- Group Size: 256
- LLD: 0.80
- ULD: 100.00
- Zero: +0.1620

LOCATIONAL INFORMATION
- Latitude: 41.211682
- Longitude: -73.727778



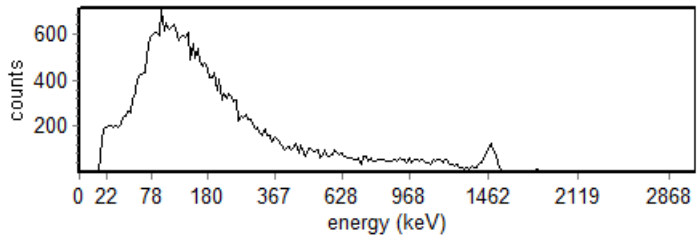
PHOTON DATA
- Detector: gamma
- Real Time: 300.04 sec
- Live Time: 300 sec
- Count Rate: 120.61 CPS
- Total: 36183 Counts
- Dose Rate: 0.0702351 uSv/h (7.02351 urem/h)

Filename: SPEC0113.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 15:50:02
Real Time: 300.03 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2216
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.211745
Longitude: -73.727815



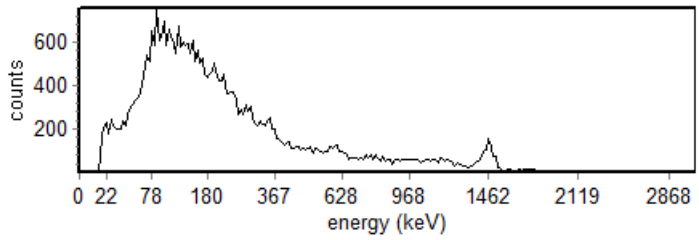
PHOTON DATA
Detector: gamma
Real Time: 300.03 sec
Live Time: 300 sec
Count Rate: 112.74 CPS
Total: 33822 Counts
Dose Rate: 0.0650492 uSv/h (6.50492 urem/h)

Filename: SPEC0114.N42

INSTRUMENT INFORMATION
- Instrument Type: Radionuclide Identifier
- Manufacturer: Berkeley Nucleonics Corp.
- Instrument Model: SAM Eagle
- Instrument ID: Serial 40354
- Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
- Spectrum Type: PHA
- Energy Units: keV
- Start Time: 2015-08-05 17:44:05
- Real Time: 300.04 sec
- Live Time: 300 sec
- Bias: 650
- Coarse Gain: 1
- Fine Gain: 1.2120
- Group Size: 256
- LLD: 0.80
- ULD: 100.00
- Zero: +0.1620

LOCATIONAL INFORMATION
- Latitude: 41.212613
- Longitude: -73.726947



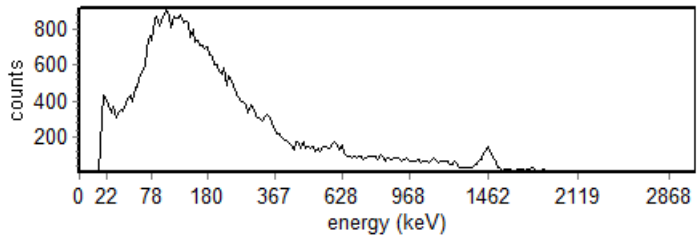
PHOTON DATA
- Detector: gamma
- Real Time: 300.04 sec
- Live Time: 300 sec
- Count Rate: 122.553 CPS
- Total: 36766 Counts
- Dose Rate: 0.0802686 uSv/h (8.02686 urem/h)

Filename: SPEC0115.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 18:46:26
Real Time: 300.06 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2189
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.212050
Longitude: -73.726665



PHOTON DATA
Detector: gamma
Real Time: 300.06 sec
Live Time: 300 sec
Count Rate: 167.27 CPS
Total: 50181 Counts
Dose Rate: 0.100579 uSv/h (10.0579 urem/h)

ANALYSIS RESULT
Threat Description:

None Detected

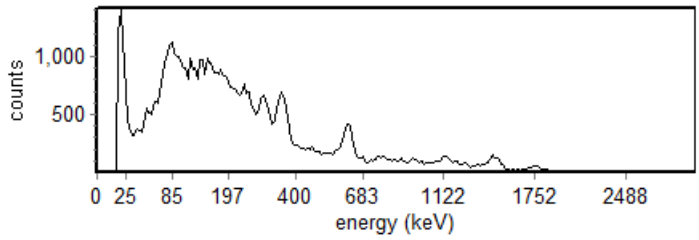
Filename: SPEC0116.N42

INSTRUMENT INFORMATION

Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION

Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 20:10:07
Real Time: 303.52 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2181
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA

Detector: gamma
Real Time: 303.52 sec
Live Time: 300 sec
Count Rate: 224.063 CPS
Total: 67219 Counts
Dose Rate: 0.151885 uSv/h (15.1885 urem/h)

ANALYSIS RESULT

Threat Description:

Nuclide Name: Ra-226
Nuclide Type: NORM
Nuclide ID Confidence: 0.796696
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.0230806 uSv/h (2.30806 urem/h)

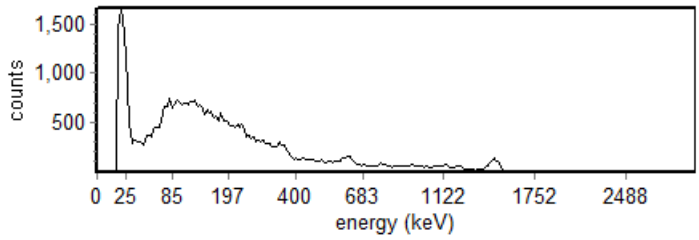
Filename: SPEC0117.N42

INSTRUMENT INFORMATION

Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION

Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 20:18:13
Real Time: 307.94 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2193
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA

Detector: gamma
Real Time: 307.94 sec
Live Time: 300 sec
Count Rate: 158.14 CPS
Total: 47442 Counts
Dose Rate: 0.0908415 uSv/h (9.08415 urem/h)

ANALYSIS RESULT

Threat Description:

None Detected

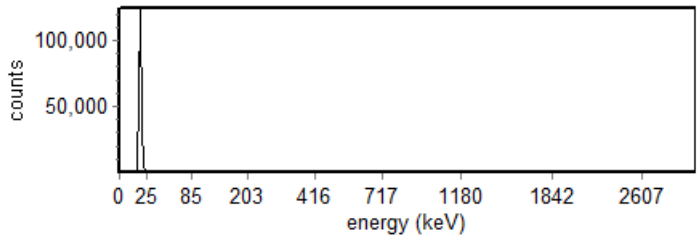
Filename: SPEC0118.N42

INSTRUMENT INFORMATION

Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION

Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-05 20:27:34
Real Time: 305.45 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2166
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA

Detector: gamma
Real Time: 305.45 sec
Live Time: 300 sec
Count Rate: 679.423 CPS
Total: 203827 Counts
Dose Rate: 0.111415 uSv/h (11.1415 urem/h)

ANALYSIS RESULT

Threat Description:

None Detected

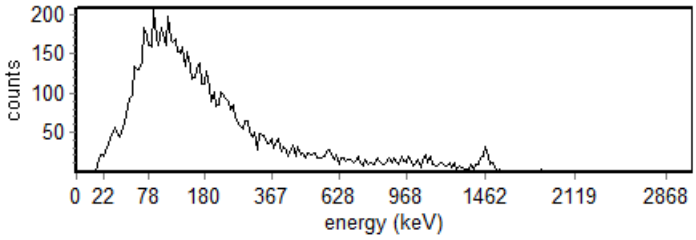
Filename: SPEC0119.N42

INSTRUMENT INFORMATION

Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION

Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-06 11:44:29
Real Time: 60.01 sec
Live Time: 60 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.1968
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA

Detector: gamma
Real Time: 60.01 sec
Live Time: 60 sec
Count Rate: 148.55 CPS
Total: 8913 Counts
Dose Rate: 0 uSv/h (0 urem/h)

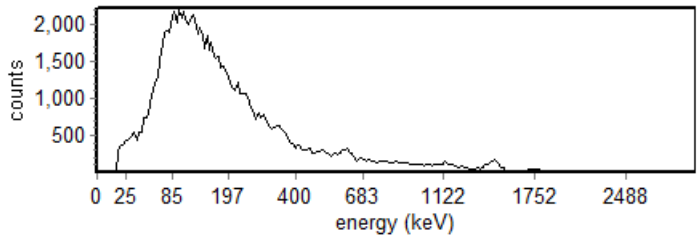
Filename: SPEC0120.N42

INSTRUMENT INFORMATION

Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION

Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-06 17:51:37
Real Time: 300.11 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2114
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA

Detector: gamma
Real Time: 300.11 sec
Live Time: 300 sec
Count Rate: 345.823 CPS
Total: 103747 Counts
Dose Rate: 0.180475 uSv/h (18.0475 urem/h)

ANALYSIS RESULT

Threat Description:

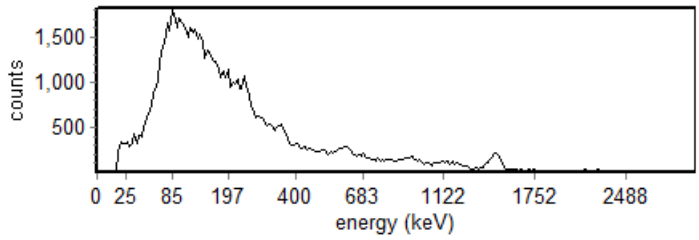
Nuclide Name: K-40
Nuclide Type: NORM
Nuclide ID Confidence: 0.693443
Nuclide ID Confidence Description: Medium
Nuclide Dose Rate: 0.0048991 uSv/h (0.48991 urem/h)

Nuclide Name: Ra-226
Nuclide Type: NORM
Nuclide ID Confidence: 0.708808
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.0121701 uSv/h (1.21701 urem/h)

Filename: SPEC0121.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-06 19:52:57
Real Time: 300.10 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2161
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA
Detector: gamma
Real Time: 300.10 sec
Live Time: 300 sec
Count Rate: 287.453 CPS
Total: 86236 Counts
Dose Rate: 0.191634 uSv/h (19.1634 urem/h)

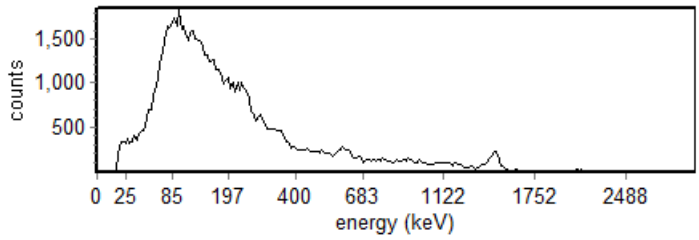
ANALYSIS RESULT
Threat Description:

Nuclide Name: Th-232
Nuclide Type: NORM
Nuclide ID Confidence: 0.840575
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.0239651 uSv/h (2.39651 urem/h)

Filename: SPEC0122.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-06 19:59:37
Real Time: 300.07 sec
Live Time: 300 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2048
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620



PHOTON DATA
Detector: gamma
Real Time: 300.07 sec
Live Time: 300 sec
Count Rate: 278.247 CPS
Total: 83474 Counts
Dose Rate: 0.177814 uSv/h (17.7814 urem/h)

ANALYSIS RESULT
Threat Description:

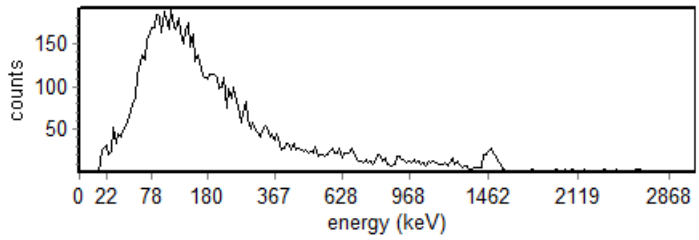
Nuclide Name: K-40
Nuclide Type: NORM
Nuclide ID Confidence: 0.719991
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.00892891 uSv/h (0.892891 urem/h)

Filename: SPEC0123.N42

INSTRUMENT INFORMATION
- Instrument Type: Radionuclide Identifier
- Manufacturer: Berkeley Nucleonics Corp.
- Instrument Model: SAM Eagle
- Instrument ID: Serial 40354
- Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
- Spectrum Type: PHA
- Energy Units: keV
- Start Time: 2015-08-07 11:56:34
- Real Time: 60.70 sec
- Live Time: 60 sec
- Bias: 650
- Coarse Gain: 1
- Fine Gain: 1.2127
- Group Size: 256
- LLD: 0.80
- ULD: 100.00
- Zero: +0.1620

LOCATIONAL INFORMATION
- Latitude: 41.214008
- Longitude: -73.726428



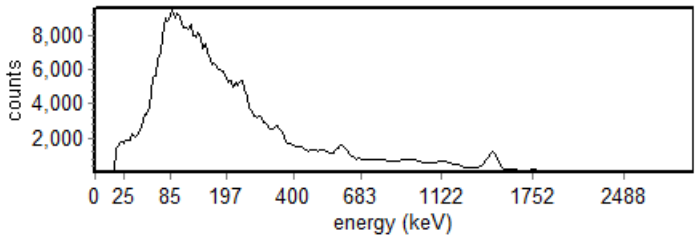
PHOTON DATA
- Detector: gamma
- Real Time: 60.70 sec
- Live Time: 60 sec
- Count Rate: 151.383 CPS
- Total: 9083 Counts
- Dose Rate: 0 uSv/h (0 urem/h)

Filename: SPEC0124.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-07 12:20:02
Real Time: 1800.49 sec
Live Time: 1800 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2028
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.212178
Longitude: -73.727497



PHOTON DATA
Detector: gamma
Real Time: 1800.49 sec
Live Time: 1800 sec
Count Rate: 254.491 CPS
Total: 458083 Counts
Dose Rate: 0.164942 uSv/h (16.4942 urem/h)

ANALYSIS RESULT
Threat Description:

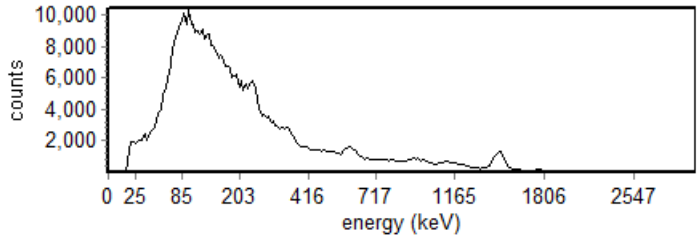
Nuclide Name: Th-232
Nuclide Type: NORM
Nuclide ID Confidence: 0.908534
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.0183878 uSv/h (1.83878 urem/h)

Filename: SPEC0125.N42

INSTRUMENT INFORMATION
Instrument Type: Radionuclide Identifier
Manufacturer: Berkeley Nucleonics Corp.
Instrument Model: SAM Eagle
Instrument ID: Serial 40354
Probe Type: Serial 42285, Type 2x2 NaI

SPECTRUM INFORMATION
Spectrum Type: PHA
Energy Units: keV
Start Time: 2015-08-07 13:29:41
Real Time: 1800.53 sec
Live Time: 1800 sec
Bias: 650
Coarse Gain: 1
Fine Gain: 1.2049
Group Size: 256
LLD: 0.80
ULD: 100.00
Zero: +0.1620

LOCATIONAL INFORMATION
Latitude: 41.212178
Longitude: -73.727497



PHOTON DATA
Detector: gamma
Real Time: 1800.53 sec
Live Time: 1800 sec
Count Rate: 270.364 CPS
Total: 486656 Counts
Dose Rate: 0.176337 uSv/h (17.6337 urem/h)

ANALYSIS RESULT
Threat Description:

Nuclide Name: Ra-226
Nuclide Type: NORM
Nuclide ID Confidence: 0.71237
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.00326609 uSv/h (0.326609 urem/h)

Nuclide Name: Th-232
Nuclide Type: NORM
Nuclide ID Confidence: 0.91368
Nuclide ID Confidence Description: High
Nuclide Dose Rate: 0.0222068 uSv/h (2.22068 urem/h)

Location ID:
C004-SS001

Date:
8/3/2015

Sample ID:
C004-SS001-RW001

RAD7 #:
2895

Test ID:
0101

0101 0.00±0.62 p Sniff
0.00±1.25 p Thoron
MON 03-AUG-15 14:04
38.8°C RH:16% B:6.39V

Location ID:
C004-SS001

Date:
8/3/2015

Sample ID:
C004-SS001-RC001

RAD7 #:
2534

Test ID:
0101

0101 0.28±0.77 p Sniff
0.57±1.56 p Thoron
MON 03-AUG-15 14:06
35.9°C RH:14% B:6.33V

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID: P003-BK001 - '	**Site Address:**
Location Description: Background	

Date: 8/3/15 **RST 3 Sampler:** Rob Croskey

Starting Weather Information	
Cloud Coverage: NONE	UV Index: 9 - very high
Temperature: 87 F	Dew Point: 61°
Wind Direction: SSW	Humidity: 41%
Wind Speed: 9	Pressure: 29.82 in

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

BW001-01

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1337/1407	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: NONE	UV Index: 8 very high
Temperature: 88	Dew Point: 59
Wind Direction: SSW	Humidity: 37
Wind Speed: 9	Pressure: 29.79

Measurements from RAD7 Print Out:	
Run ID #: 0101	Run Duration: 30 mins
Radon Measurement: 0.00 ± 0.62	Thoron Measurement: 0.00 ± 1.25
Temperature: 36.8°C	Relative Humidity: 16%

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

BC001-01

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1337/1407	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: NONE	UV Index: 8 very high
Temperature: 88	Dew Point: 59
Wind Direction: SSW	Humidity: 37
Wind Speed: 9	Pressure: 29.79

Measurements from RAD7 Print Out:	
Run ID #: 0101	Run Duration: 30 minutes
Radon Measurement: 0.28 ± 0.77	Thoron Measurement: 0.57 ± 1.56
Temperature: 35.9	Relative Humidity: 14%

Comments:

Location ID:
C003-AA009

Date:
8/3/2015

Sample ID:
C003-AA009-SW001

RAD7 #:
2895

Test ID:
0201

0201 1.87±3.02 p Sniff
1.88±5.13 p Thoron
MON 03-AUG-15 14:59
32.9°C RH:13% B:6.39V

Location ID:
C003-AA009

Date:
8/3/2015

Sample ID:
C003-AA009-RW001

RAD7 #:
2895

Test ID:
0301

0301 5.00±2.11 p Sniff
0.00±1.26 p Thoron
MON 03-AUG-15 15:53
29.5°C RH:23% B:6.39V

Location ID:
C003-AA009

Date:
8/3/2015

Sample ID:
C003-AA009-SC001

RAD7 #:
2534

Test ID:
0201

0201 5.54±4.04 p Sniff
0.00±3.42 p Thoron
MON 03-AUG-15 15:01
32.8°C RH: 9% B:6.30V

Location ID:
C003-AA009

Date:
8/3/2015

Sample ID:
C003-AA009-RC001

RAD7 #:
2534

Test ID:
0301

0301 10.8±2.79 p Sniff
0.29±1.56 p Thoron
MON 03-AUG-15 15:55
29.5°C RH:19% B:6.27V

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID: P002 - R5001	**Site Address:**
Location Description: Show room 1 - R1	

Date: 8/3/15	**RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9 Very High
Temperature: 89	Dew Point: 68
Wind Direction: SSW	Humidity: 50
Wind Speed: 9	Pressure: 29.78

#2895

Radon/Thoron Sniff Test - Waist SW001-01

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date:
Time (Start/Stop): 1450/1500	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: ~~Clear~~ Partly cloudy	UV Index: 9 very high
Temperature: 89	Dew Point: 68
Wind Direction: SSW	Humidity: 50
Wind Speed: 9	Pressure: 29.78

Measurements from RAD7 Print Out:	
Sniff ID #: 0201	Sniff Duration: 10 minutes
Radon Measurement: 1.87 ± 3.02	Thoron Measurement: 1.88 ± 5.13
Temperature: 32.9	Relative Humidity: 13

RW001-01

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date:
Time (Start/Stop): 1525/1555	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 7
Temperature: 89	Dew Point: 66
Wind Direction: SSW	Humidity: 46
Wind Speed: 16	Pressure: 29.77

Measurements from RAD7 Print Out:	
Run ID #: 0301	Run Duration: 30 min
Radon Measurement: 5.00 ± 2.11	Thoron Measurement: 0.00 ± 1.26
Temperature: 29.5	Relative Humidity: 23

#2534

Radon/Thoron Sniff Test - Contact ~~SW~~ SC001-01

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date:
Time (Start/Stop): 1450/1500	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Partly cloudy	UV Index: 9 very high
Temperature: 89	Dew Point:
Wind Direction: SSW	Humidity:
Wind Speed: 9	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #: 0201	Sniff Duration: 10 minutes
Radon Measurement: 5.54 ± 4.04	Thoron Measurement: 0.00 ± 3.42
Temperature: 32.8	Relative Humidity: 9%

RC001-01

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date:
Time (Start/Stop): 1525/1555	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Partly cloudy	UV Index: 7
Temperature: 89	Dew Point: 66
Wind Direction: SSW	Humidity: 46
Wind Speed: 16	Pressure: 29.77

Measurements from RAD7 Print Out:	
Run ID #: 0301	Run Duration: 30 minutes
Radon Measurement: 10.8 ± 2.79	Thoron Measurement: 0.29 ± 1.56
Temperature: 29.5	Relative Humidity: 19

Comments:

R1

Location ID:
C004-SS001

Date:
8/4/2015

Sample ID:
C004-SS001-RW002

RAD7 #:
2895

Test ID:
0401

```
0401 0.62±1.01 p Sniff
     0.00±1.25 p Thoron
  TUE 04-AUG-15 08:39
  26.2°C RH:17% B:6.30V
```

Location ID:
C004-SS001

Date:
8/4/2015

Sample ID:
C004-SS001-RC002

RAD7 #:
2534

Test ID:
0401

```
0401 1.28±1.18 p Sniff
     0.29±1.38 p Thoron
  TUE 04-AUG-15 08:41
  24.3°C RH:29% B:6.24V
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID: P003-BK00	**Site Address:**
Location Description: Background	

Date: 8/4/15	**RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 0
Temperature: 68	Dew Point: 67
Wind Direction: SSW	Humidity: 96
Wind Speed: 0	Pressure: 29.84↓

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0812/0842	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 02
Temperature: 68	Dew Point: 67
Wind Direction: SSW	Humidity: 96
Wind Speed: 11	Pressure: 29.85 ↔

Measurements from RAD7 Print Out:	
Run ID #: 0401	Run Duration: 30 min
Radon Measurement: 0.62 ± 1.01	Thoron Measurement: 0.00 ± 1.25
Temperature: 26.2	Relative Humidity: 17%

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date:
Time (Start/Stop): 0812/0842	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 02
Temperature: 68	Dew Point: 67
Wind Direction: SSW	Humidity: 96
Wind Speed: 11	Pressure: 29.85 ↔

Measurements from RAD7 Print Out:	
Run ID #: 0401	Run Duration: 30 minutes
Radon Measurement: 1.28 ± 1.18	Thoron Measurement: 0.71 ± 1.38
Temperature: 24.3	Relative Humidity: 29%

Comments:

0757 begin purge, 0807 end purge

Location ID:
C003-AA009

Date:
8/4/2015

Sample ID:
C003-AA009-SW002

RAD7 #:
2895

Test ID:
0501

0501 0.00±1.87 p Sniff
0.94±4.53 p Thoron
TUE 04-AUG-15 09:22
27.1°C RH:38% B:6.30V

Location ID:
C003-AA009

Date:
8/4/2015

Sample ID:
C003-AA009-RW002

RAD7 #:
2534

Test ID:
0601

0601 2.36±11.4 p Sniff
0.00±19.0 p Thoron
TUE 04-AUG-15 09:29
27.1°C RH:37% B:6.33V

Location ID:
C003-AA009

Date:
8/4/2015

Sample ID:
C003-AA009-SC002

RAD7 #:
2534

Test ID:
0501

0501 0.00±1.70 p Sniff
0.00±3.42 p Thoron
TUE 04-AUG-15 09:23
26.1°C RH:42% B:6.21V

Location ID:
C003-AA009

Date:
8/4/2015

Sample ID:
C003-AA009-RC002

RAD7 #:
2534

Test ID:
0601

0601 0.00±8.50 p Sniff
0.00±17.1 p Thoron
TUE 04-AUG-15 09:31
26.4°C RH:40% B:6.24V

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: Show Room 1-R2	

Date: 8/4/15 **RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 4
Temperature: 69	Dew Point: 67
Wind Direction: SSW	Humidity: 93
Wind Speed: 1	Pressure: 29.84 rising

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0914/0924	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 4
Temperature: 69	Dew Point: 67
Wind Direction: SSW	Humidity: 93
Wind Speed: 1	Pressure: 29.84 rising

Measurements from RAD7 Print Out:	
Sniff ID #: 0501	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.87	Thoron Measurement: 0.94 ± 4.53
Temperature: 27.1	Relative Humidity: 38%

Radon/Thoron ~~Run~~ Sniff Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 09:29/0931	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: ~~00:30~~ 2	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 4
Temperature: 70	Dew Point: 67
Wind Direction: SSW	Humidity: 91
Wind Speed: 1	Pressure: 29.84 rising

Measurements from RAD7 Print Out:	
Run ID #: 0601	Run Duration: 2 mins
Radon Measurement: 2.36 ± 11.4	Thoron Measurement: 0.00 ± 19.0
Temperature: 27.1	Relative Humidity: 37

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0914/0924	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 4
Temperature: 69	Dew Point: 67
Wind Direction: SSW	Humidity: 93
Wind Speed: 1	Pressure: 29.84 rising

Measurements from RAD7 Print Out:	
Sniff ID #: 0501	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.70	Thoron Measurement: 0.00 ± 3.42
Temperature: 26.1	Relative Humidity: 42%

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0929/0931	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: ~~00:30~~ 2	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 4
Temperature: 70	Dew Point: 67
Wind Direction: SSW	Humidity: 91
Wind Speed: 1	Pressure: 29.84 rising

Measurements from RAD7 Print Out:	
Run ID #: 0601	Run Duration: ~~30~~ 2 minutes
Radon Measurement: 0.00 ± 8.50	Thoron Measurement: 0.00 ± 17.1
Temperature: 26.4	Relative Humidity: 40%

Comments:

~~R1~~ R2 - stopped after 2 mins & moved over hole in floor

Location ID:
C003-AA009

Date:
8/4/2015

Sample ID:
C003-AA009-RW003

RAD7 #:
2895

Test ID:
0701

0701 1.09±1.19 p Sniff
0.31±1.51 p Thoron
TUE 04-AUG-15 10:08
27.4°C RH:41% B:6.30V

Location ID:
C003-AA009

Date:
8/4/2015

Sample ID:
C003-AA009-RC003

RAD7 #:
2534

Test ID:
0701

0701 7.68±2.39 p Sniff
0.86±1.71 p Thoron
TUE 04-AUG-15 10:10
27.0°C RH:35% B:6.21V

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: Show Room 1-R3	

Date: 8/4/13 **RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: mostly cloudy	UV Index: 4
Temperature: 69	Dew Point: 67
Wind Direction: SSW	Humidity: 93
Wind Speed: 12	Pressure: 29.84 rising

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0941/~~0940~~ 1011	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Partly cloudy	UV Index: 4
Temperature: 71	Dew Point: 68
Wind Direction: SSW	Humidity: 89
Wind Speed: 2	Pressure: 29.84 rising

Measurements from RAD7 Print Out:	
Run ID #: 0701	Run Duration: 30 mins
Radon Measurement: 1.09 ± 1.19	Thoron Measurement: 0.31 ± 1.51
Temperature: 27.4	Relative Humidity: 41%

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0941/1011	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Partly cloudy	UV Index: 4
Temperature: 71	Dew Point: 68
Wind Direction: SSW	Humidity: 89
Wind Speed: 2	Pressure: 29.84 rising

Measurements from RAD7 Print Out:	
Run ID #: 0701	Run Duration: 30 minutes
Radon Measurement: 7.68 ± 2.39	Thoron Measurement: 0.86 ± 1.71
Temperature: 27.0	Relative Humidity: 35%

Comments:

R3 — resorted from R2

Location ID:
C003-AA008

Date:
8/4/2015

Sample ID:
C003-AA008-SW001

RAD7 #:
2895

Test ID:
0801

```
0801 0.47±2.26 p Sniff
     0.00±3.75 p Thoron
  TUE 04-AUG-15 10:45
  27.4°C RH: 9% B:6.30V
```

Location ID:
C003-AA008

Date:
8/4/2015

Sample ID:
C003-AA008-SC001

RAD7 #:
2534

Test ID:
0801

```
0801 3.83±3.55 p Sniff
     0.00±3.42 p Thoron
  TUE 04-AUG-15 10:47
  27.7°C RH:11% B:6.18V
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: showroom 1-R4	

Date: 8/4/15 **RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 74	Dew Point: 67
Wind Direction: SSW	Humidity: 77
Wind Speed: 1	Pressure: 29.83 rising

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1038/1048	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ Sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 74	Dew Point: 67
Wind Direction: SSW	Humidity: 77
Wind Speed: 1	Pressure: 29.83 rising

Measurements from RAD7 Print Out:	
Sniff ID #: 0801	Sniff Duration: 10 minutes
Radon Measurement: 0.47±2.26	Thoron Measurement: 0.00±3.75
Temperature: 27.4	Relative Humidity: 9

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1038/1048	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ Sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 74	Dew Point: 67
Wind Direction: SSW	Humidity: 77
Wind Speed: 1	Pressure: 29.83 rising

Measurements from RAD7 Print Out:	
Sniff ID #: 0801	Sniff Duration: 10 minutes
Radon Measurement: 3.83±3.55	Thoron Measurement: 0.00±3.42
Temperature: 27.7	Relative Humidity: 11

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

R4 purged at 1021 stopped at 1035

Location ID:
C003-AA011

Date:
8/4/2015

Sample ID:
C003-AA011-SW001

RAD7 #:
2895

Test ID:
0901

0901 0.00±1.87 p Sniff
0.94±4.53 p Thoron
TUE 04-AUG-15 11:05
27.4°C RH: 8% B:6.33V

Location ID:
C003-AA011

Date:
8/4/2015

Sample ID:
C003-AA011-RW001

RAD7 #:
2895

Test ID:
1001

1001 0.00±0.62 p Sniff
0.31±1.51 p Thoron
TUE 04-AUG-15 11:39
27.4°C RH:15% B:6.30V

Location ID:
C003-AA011

Date:
8/4/2015

Sample ID:
C003-AA011-SC001

RAD7 #:
2534

Test ID:
0901

0901 0.85±2.33 p Sniff
22.3±10.6 p Thoron
TUE 04-AUG-15 11:07
27.7°C RH: 7% B:6.21V

Location ID:
C003-AA011

Date:
8/4/2015

Sample ID:
C003-AA011-RC001

RAD7 #:
2534

Test ID:
1001

1001 1.29±1.19 p Sniff
33.1±6.77 p Thoron
TUE 04-AUG-15 11:41
27.3°C RH: 6% B:6.18V

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: Show Room 2 -R5	

Date: 8/4/15 **RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: clear	UV Index: 6
Temperature: 76	Dew Point: 67
Wind Direction: SSW	Humidity: 74
Wind Speed: 1	Pressure: 29.83 rising

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1058/1108	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: clear	UV Index: 9
Temperature: 76	Dew Point: 67
Wind Direction: SSW	Humidity: 74
Wind Speed: 1	Pressure: 29.84 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 0901	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.87	Thoron Measurement: 0.94 ± 4.53
Temperature: 27.4	Relative Humidity: 8

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1111/1141	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: clear	UV Index: 9
Temperature: 77	Dew Point: 67
Wind Direction: SSW	Humidity: 71
Wind Speed: 1	Pressure: 29.84 steady

Measurements from RAD7 Print Out:	
Run ID #: 1001	Run Duration: 30 mins
Radon Measurement: 0.00 ± 0.62	Thoron Measurement: 0.31 ± 1.51
Temperature: 27.4	Relative Humidity: 15

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1058/1108	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: clear	UV Index: 9
Temperature: 76	Dew Point: 67
Wind Direction: SSW	Humidity: 74
Wind Speed: 1	Pressure: 29.84 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 0901	Sniff Duration: 10 minutes
Radon Measurement: 0.85 ± 2.33	Thoron Measurement: 22.3 ± 10.6
Temperature: 27.7	Relative Humidity: 7

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1111/1141	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: clear	UV Index: 9
Temperature: 77	Dew Point: 67
Wind Direction: SSW	Humidity: 71
Wind Speed: 1	Pressure: 29.84 steady

Measurements from RAD7 Print Out:	
Run ID #: 1001	Run Duration: 30 minutes
Radon Measurement: 1.29 ± 1.19	Thoron Measurement: 33.1 ± 6.77
Temperature: 27.3	Relative Humidity: 6

Comments:

R5

Location ID:
C003-AA010

Date:
8/4/2015

Sample ID:
C003-AA010-SW001

RAD7 #:
2895

Test ID:
1101

```
1101 0.00±1.87 p Sniff
     0.00±3.75 p Thoron
  TUE 04-AUG-15 11:59
  27.4°C RH: 5% B:6.30V
```

Location ID:
C003-AA010

Date:
8/4/2015

Sample ID:
C003-AA010-SC001

RAD7 #:
2534

Test ID:
1101

```
1101 0.85±2.32 p Sniff
     0.00±3.41 p Thoron
  TUE 04-AUG-15 12:01
  27.7°C RH: 6% B:5.94V
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: Show Room 2 - R6	

Date: 8/4/15	**RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 80	Dew Point: 69
Wind Direction: SSW	Humidity: 70
Wind Speed: 3	Pressure: 29.84 steady

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1152/1200	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ Sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 81	Dew Point: 70
Wind Direction: SSW	Humidity: 68
Wind Speed: 4	Pressure: 29.84 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 1101	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.87	Thoron Measurement: 0.00 ± 3.75
Temperature: ~~0.00 ± 3.75~~ 27.4	Relative Humidity: 5

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: ~~AUTO~~ Sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 81	Dew Point: 70
Wind Direction: SSW	Humidity: 68
Wind Speed: 4	Pressure: 29.84 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 1101	Sniff Duration: 10 minutes
Radon Measurement: 0.85 ± 2.32	Thoron Measurement: 0.00 ± 3.41
Temperature: 27.7	Relative Humidity: 6

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

R6

Location ID:
C003-AA012

Date:
8/4/2015

Sample ID:
C003-AA012-SW001

RAD7 #:
2895

Test ID:
1201

```
1201 0.00±1.87 p Sniff
     0.00±3.75 p Thoron
  TUE 04-AUG-15 13:59
  28.3°C RH:22% B:6.33V
Total Counts:  12.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.28±0.99 cpm   100%
```

Location ID:
C003-AA012

Date:
8/4/215

Sample ID:
C003-AA012-SC001

RAD7 #:
2534

Test ID:
1201

```
1201 1.70±2.76 p Sniff
     0.00±3.42 p Thoron
  TUE 04-AUG-15 14:01
  28.6°C RH:24% B:6.18V
Total Counts:  10.
Livetime:    9.3min
A: 0.43±0.69 cpm  40.0%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm  10.0%
D: 0.11±0.52 cpm  10.0%
O: 0.43±0.69 cpm  40.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: showroom 3 R7	

Date: 8/4/15	**RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 86	Dew Point: 68
Wind Direction: SSW	Humidity: 55
Wind Speed: 2	Pressure: 29.82 steady

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1352/1402	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 86	Dew Point: 65
Wind Direction: SSW	Humidity: 50
Wind Speed: 2	Pressure: 29.82 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 1201	Sniff Duration: 10 minutes
Radon Measurement: 0.00±1.87	Thoron Measurement: 0.00±3.75
Temperature: 28.3	Relative Humidity: 22

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1352/1402	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 86	Dew Point: 65
Wind Direction: SSW	Humidity: 50
Wind Speed: 2	Pressure: 29.82 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 1201	Sniff Duration: 10 minutes
Radon Measurement: 1.70±2.76	Thoron Measurement: 0.00±3.42
Temperature: 28.6	Relative Humidity: 24

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

R7

Location ID:
C003-AA011

Date:
8/4/2015

Sample ID:
C003-AA011-RW002

RAD7 #:
2895

Test ID:
1301

```
1301 0.31±0.85 p Sniff
     0.94±1.88 p Thoron
  TUE 04-AUG-15 14:37
  28.0°C RH: 4% B:6.27V
Total Counts:  56.
Livetime:   28.0min
A: 0.07±0.19 cpm   3.6%
B: 0.11±0.21 cpm   5.4%
C: 0.04±0.17 cpm   1.8%
D: 0.00±0.14 cpm   0.0%
O: 1.78±0.58 cpm  89.3%
```

Location ID:
C003-AA011

Date:
8/4/2015

Sample ID:
C003-AA011-RC002

RAD7 #:
2534

Test ID:
1301

```
1301 1.28±1.31 p Sniff
     16.9±5.01 p Thoron
  TUE 04-AUG-15 14:39
  28.3°C RH: 5% B:6.18V
Total Counts:  93.
Livetime:   27.9min
A: 0.39±0.32 cpm  11.8%
B: 2.11±0.63 cpm  63.5%
C: 0.07±0.20 cpm   2.2%
D: 0.18±0.25 cpm   5.4%
O: 0.57±0.37 cpm  17.2%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: Show Room 2 - 128	

Date: 8/4/15 **RST 3 Sampler:** RC

Starting Weather Information			
Cloud Coverage	Partly Cloudy	UV Index	9
Temperature	87	Dew Point	65
Wind Direction	SSW	Humidity	48
Wind Speed	4	Pressure	29.82 steady

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1410/1440	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	87	Dew Point	65
Wind Direction	SSW	Humidity	48
Wind Speed	4	Pressure	29.82 steady

Measurements from RAD7 Print Out:	
Run ID #: 1301	Run Duration: 30 mins
Radon Measurement: 0.31 ± 0.85	Thoron Measurement: 0.94 ± 1.88
Temperature: 28.0	Relative Humidity: 4

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1410/1440	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	87	Dew Point	65
Wind Direction	SSW	Humidity	48
Wind Speed	4	Pressure	29.82 steady

Measurements from RAD7 Print Out:	
Run ID #: 1301	Run Duration: 30 minutes
Radon Measurement: 1.28 ± 1.31	Thoron Measurement: 16.9 ± 5.01
Temperature: 28.3	Relative Humidity: 5

Comments:

RS 30 minute run to check RS

Location ID:
C003-AA014

Date:
8/4/2015

Sample ID:
C003-AA014-SW001

RAD7 #:
2895

Test ID:
1401

```
1401 0.47±2.25 p Sniff
     0.00±3.74 p Thoron
  TUE 04-AUG-15 14:54
  28.3°C RH: 4% B:6.30V
Total Counts:  13.
Livetime:    9.3min
A: 0.11±0.52 cpm   7.7%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm   7.7%
D: 0.00±0.43 cpm   0.0%
O: 1.17±0.95 cpm  84.6%
```

Location ID:
C003-AA014

Date:
8/4/2015

Sample ID:
C003-AA014-SC001

RAD7 #:
2534

Test ID:
1401

```
1401 0.42±2.05 p Sniff
     0.00±3.41 p Thoron
  TUE 04-AUG-15 14:56
  28.6°C RH: 5% B:6.18V
Total Counts:  5.
Livetime:    9.3min
A: 0.11±0.52 cpm  20.0%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm  20.0%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  60.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: office 2 - R9	

Date: 8/4/15	**RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 88	Dew Point: 62
Wind Direction: SSW	Humidity: 42
Wind Speed: 1	Pressure: 29.82 steady

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1447/1457	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ Med
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 88	Dew Point: 62
Wind Direction: SSW	Humidity: 42
Wind Speed: 1	Pressure: 29.82 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 1401	Sniff Duration: 10 minutes
Radon Measurement: 0.47 ± 2.15	Thoron Measurement: 0.00 ± 3.74
Temperature: 28.3	Relative Humidity: 4

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1447/1457	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ Med
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 88	Dew Point: 62
Wind Direction: SSW	Humidity: 42
Wind Speed: 1	Pressure: 29.82 steady

Measurements from RAD7 Print Out:	
Sniff ID #: 1401	Sniff Duration: 10 minutes
Radon Measurement: 0.42 ± 2.05	Thoron Measurement: 0.00 ± 3.41
Temperature: 28.6	Relative Humidity: 5

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

R9

Location ID:
C003-AA015

Date:
8/4/2015

Sample ID:
C003-AA015-SW001

RAD7 #:
2895

Test ID:
1402

```
1402 0.00±1.88 p Sniff
     0.00±3.77 p Thoron
  TUE 04-AUG-15 15:10
  28.6°C RH: 4% B:6.27V
Total Counts:  15.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.61±1.08 cpm   100%
```

Location ID:
C003-AA015

Date:
8/4/2015

Sample ID:
C003-AA015-RW001

RAD7 #:
2895

Test ID:
1501

```
1501 0.31±0.85 p Sniff
     0.31±1.51 p Thoron
  TUE 04-AUG-15 15:52
  29.8°C RH: 9% B:6.27V
Total Counts:  35.
Livetime:   28.0min
A: 0.07±0.19 cpm   5.7%
B: 0.04±0.17 cpm   2.9%
C: 0.04±0.17 cpm   2.9%
D: 0.00±0.14 cpm   0.0%
O: 1.11±0.48 cpm  88.6%
```

Location ID:
C003-AA015

Date:
8/4/2015

Sample ID:
C003-AA015-SC001

RAD7 #:
2534

Test ID:
1402

```
1402 0.86±2.34 p Sniff
     0.86±4.15 p Thoron
  TUE 04-AUG-15 15:12
  29.2°C RH: 5% B:6.15V
Total Counts:  6.
Livetime:    9.3min
A: 0.22±0.59 cpm  33.3%
B: 0.11±0.52 cpm  16.7%
C: 0.00±0.43 cpm   0.0%
D: 0.11±0.52 cpm  16.7%
O: 0.22±0.59 cpm  33.3%
```

Location ID:
C003-AA015

Date:
8/4/2015

Sample ID:
C003-AA015-RC001

RAD7 #:
2534

Test ID:
1501

```
1501 0.43±1.14 p Sniff
     0.29±1.38 p Thoron
  TUE 04-AUG-15 15:54
  30.1°C RH: 5% B:6.18V
Total Counts:  24.
Livetime:   28.0min
A: 0.21±0.26 cpm  25.0%
B: 0.04±0.17 cpm   4.2%
C: 0.14±0.23 cpm  16.7%
D: 0.25±0.27 cpm  29.2%
O: 0.21±0.26 cpm  25.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: office 3 - R10	

Date: 8/4/15 **RST 3 Sampler:** RC

Starting Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	88	Dew Point	60
Wind Direction	SSW	Humidity	39
Wind Speed	2	Pressure	29.82 falling

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information			
RAD7 Serial Number	2895	RAD7 Calibration Date	7/8/15
Time (Start/Stop)	1502/1512	Thoron	ON
Protocol	USER	Pump	AUTO
Cycle	00:10	Tone	GEIGER
Recycle	00	Format	~~Short~~ medium
Mode	~~AUTO~~ sniff	Rad/Temp Units	pCi/L / °C

Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	88	Dew Point	60
Wind Direction	SSW	Humidity	39
Wind Speed	2	Pressure	29.82 falling

Measurements from RAD7 Print Out:			
Sniff ID #:	1402	Sniff Duration	10 minutes
Radon Measurement	0.00 ± 1.88	Thoron Measurement	0.00 ± 3.77
Temperature	28.6	Relative Humidity	4

Radon/Thoron Run Test - Waist

Initial Run Test Information			
RAD7 Serial Number	2895	RAD7 Calibration Date	7/8/15
Time (Start/Stop)	~~15/25~~ 1525/1555	Thoron	ON
Protocol	USER	Pump	AUTO
Cycle	00:30	Tone	GEIGER
Recycle	00	Format	~~Short~~ medium
Mode	AUTO	Rad/Temp Units	pCi/L / °C

Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	87	Dew Point	62
Wind Direction	SSW	Humidity	42
Wind Speed	1	Pressure	29.82 falling

Measurements from RAD7 Print Out:			
Run ID #:	1501	Run Duration	30 mins
Radon Measurement	0.31 ± 0.85	Thoron Measurement	0.31 ± 1.51
Temperature	25.8	Relative Humidity	9

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information			
RAD7 Serial Number	2534	RAD7 Calibration Date	6/29/15
Time (Start/Stop)	1502/1512	Thoron	ON
Protocol	USER	Pump	AUTO
Cycle	00:10	Tone	GEIGER
Recycle	00	Format	~~Short~~ medium
Mode	~~AUTO~~ sniff	Rad/Temp Units	pCi/L / °C

Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	~~1402/1510~~ 88	Dew Point	60
Wind Direction	SSW	Humidity	39
Wind Speed	2	Pressure	29.82 falling

Measurements from RAD7 Print Out:			
Sniff ID #:	1402	Sniff Duration	10 minutes
Radon Measurement	0.86 ± 2.34	Thoron Measurement	0.86 ± 4.15
Temperature	29.2	Relative Humidity	5

Radon/Thoron Run Test - Contact

Initial Run Test Information			
RAD7 Serial Number	2534	RAD7 Calibration Date	6/29/15
Time (Start/Stop)	1525/1555	Thoron	ON
Protocol	USER	Pump	AUTO
Cycle	00:30	Tone	GEIGER
Recycle	00	Format	~~Short~~ medium
Mode	AUTO	Rad/Temp Units	pCi/L / °C

Weather Information			
Cloud Coverage	partly cloudy	UV Index	9
Temperature	87	Dew Point	62
Wind Direction	SSW	Humidity	42
Wind Speed	1	Pressure	29.82 falling

Measurements from RAD7 Print Out:			
Run ID #:	1501	Run Duration	30 minutes
Radon Measurement	0.43 ± 1.14	Thoron Measurement	0.29 ± 1.38
Temperature	30.1	Relative Humidity	5

Comments:

R10

Location ID:
C004-SS001

Date:
8/5/2015

Sample ID:
C004-SS001-RW003

RAD7 #:
2895

Test ID:
1601

```
1601 0.00±0.62 p Sniff
     0.03±1.71 p Thoron
  WED 05-AUG-15 08:32
  31.3°C RH:11% B:6.33V
Total Counts:  39.
Livetime:   28.0min
A: 0.00±0.14 cpm   0.0%
B: 0.07±0.19 cpm   5.1%
C: 0.00±0.14 cpm   0.0%
D: 0.00±0.14 cpm   0.0%
O: 1.32±0.51 cpm  94.9%
```

Location ID:
C004-SS001

Date:
8/5/2015

Sample ID:
C004-SS001-RC003

RAD7 #:
2534

Test ID:
1601

```
1601 0.71±1.03 p Sniff
     0.85±1.71 p Thoron
  WED 05-AUG-15 08:34
  28.6°C RH:13% B:6.27V
Total Counts:  18.
Livetime:   28.0min
A: 0.21±0.26 cpm  33.3%
B: 0.11±0.21 cpm  16.7%
C: 0.00±0.14 cpm   0.0%
D: 0.04±0.17 cpm   5.6%
O: 0.28±0.28 cpm  44.5%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: Background	

Date: 8/5/15 **RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 1
Temperature: 63	Dew Point: 62
Wind Direction: SSW	Humidity: 96
Wind Speed: 0	Pressure: 29.90 steady

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0805/0835	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 2
Temperature: 64	Dew Point: 63
Wind Direction: SSW	Humidity: 96
Wind Speed: 0	Pressure: 29.89 steady

Measurements from RAD7 Print Out:	
Run ID #: 1601	Run Duration: 30 mins
Radon Measurement: 0.00±0.62	Thoron Measurement: 0.63±1.71
Temperature: 31.3	Relative Humidity: 11

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0805/0835	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 2
Temperature: 64	Dew Point: 63
Wind Direction: SSW	Humidity: 96
Wind Speed: 0	Pressure: 29.89 steady

Measurements from RAD7 Print Out:	
Run ID #: 1607	Run Duration: 30 minutes
Radon Measurement: 0.71±1.03	Thoron Measurement: 0.85±1.71
Temperature: 28.6	Relative Humidity: 13

Comments:

0749 purge end @ 0759

Location ID:
C003-AA011

Date:
8/5/2015

Sample ID:
C004-AA011-RW003

RAD7 #:
2895

Test ID:
1701

```
1701 0.31±0.85 p Sniff
     0.00±1.25 p Thoron
  WED 05-AUG-15 10:26
  26.8°C RH:25% B:6.33V
Total Counts:  36.
Livetime:   28.0min
A: 0.07±0.19 cpm   5.6%
B: 0.00±0.14 cpm   0.0%
C: 0.04±0.17 cpm   2.8%
D: 0.00±0.14 cpm   0.0%
O: 1.18±0.49 cpm  91.7%
```

Location ID:
C003-AA011

Date:
8/5/2015

Sample ID:
C003-AA011-RC003

RAD7 #:
2534

Test ID:
1701

```
1701 0.57±0.98 p Sniff
     1.14±1.84 p Thoron
  WED 05-AUG-15 10:27
  27.0°C RH:22% B:6.24V
Total Counts:  17.
Livetime:   28.1min
A: 0.18±0.25 cpm  29.4%
B: 0.14±0.23 cpm  23.5%
C: 0.00±0.14 cpm   0.0%
D: 0.07±0.19 cpm  11.8%
O: 0.21±0.26 cpm  35.3%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: show Room 2 - R11	

Date: 8/5/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 72	Dew Point: 65
Wind Direction: SSW	Humidity: 80
Wind Speed: 1	Pressure: 29.90 steady

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Sniff Test Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0958/1028	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 72	Dew Point: 65
Wind Direction: SSW	Humidity: 80
Wind Speed: 1	Pressure: 29.90 steady

Run Test Sample ID#: 1701	
Measurements from RAD7 Print Out:	
Run ID #: 1701	Run Duration: 30 min
Radon Measurement: 0.31 ± 0.85	Thoron Measurement: 0.00 ± 1.25
Temperature: 26.8	Relative Humidity: 25

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Sniff Test Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0959/1029	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 72	Dew Point: 65
Wind Direction: SSW	Humidity: 80
Wind Speed: 1	Pressure: 29.90 steady

Run Test Sample ID#: 1701	
Measurements from RAD7 Print Out:	
Run ID #: 1701	Run Duration: 30 minutes
Radon Measurement: 0.57 ± 0.98	Thoron Measurement: 1.14 ± 1.34
Temperature: 27.0	Relative Humidity: 22

Comments:

R11 - 30 min Comparison to R5 & R8

Location ID:
C003-AA016

Date:
8/5/2015

Sample ID:
C003-AA016-SW001

RAD7 #:
2895

Test ID:
1801

```
1801 2.33±3.21 p Sniff
     0.00±3.74 p Thoron
  WED 05-AUG-15 11:01
  26.8°C RH: 6% B:6.33V
Total Counts:  19.
Livetime:    9.3min
A: 0.53±0.74 cpm  26.3%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.49±1.04 cpm  73.7%
```

Location ID:
C003-AA016

Date:
8/5/2015

Sample ID:
C003-AA016-RW001

RAD7 #:
2895

Test ID:
1901

```
1901 1.25±1.25 p Sniff
     0.00±1.25 p Thoron
  WED 05-AUG-15 11:37
  26.8°C RH: 3% B:6.33V
Total Counts:  79.
Livetime:   28.0min
A: 0.29±0.29 cpm  10.1%
B: 0.00±0.14 cpm   0.0%
C: 0.29±0.29 cpm  10.1%
D: 0.00±0.14 cpm   0.0%
O: 2.25±0.64 cpm  79.8%
```

Location ID:
C003-AA016

Date:
8/5/2015

Sample ID:
C003-AA016-SC001

RAD7 #:
2534

Test ID:
1801

```
1801 2.55±3.10 p Sniff
     0.00±3.41 p Thoron
  WED 05-AUG-15 11:03
  27.0°C RH: 7% B:6.15V
Total Counts:  10.
Livetime:    9.3min
A: 0.64±0.78 cpm  60.0%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm  10.0%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  30.0%
```

Location ID:
C003-AA016

Date:
8/5/2015

Sample ID:
C003-AA016-RC001

RAD7 #:
2534

Test ID:
1901

```
1901 2.85±1.62 p Sniff
     1.14±1.85 p Thoron
  WED 05-AUG-15 11:39
  27.0°C RH: 5% B:6.24V
Total Counts:  41.
Livetime:   28.0min
A: 0.75±0.41 cpm  51.2%
B: 0.14±0.23 cpm   9.8%
C: 0.14±0.23 cpm   9.8%
D: 0.07±0.20 cpm   4.9%
O: 0.36±0.31 cpm  24.4%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: Show Room 3 - R12	

Date: 8/5/15 RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 73	Dew Point: 63
Wind Direction: SSW	Humidity: 71
Wind Speed: 2	Pressure: 29.90 steady

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1054/1104	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 75	Dew Point: 63
Wind Direction: SSW	Humidity: 67
Wind Speed: 2	Pressure: 29.90 steady

Sniff Test Sample ID#: 1801	
Measurements from RAD7 Print Out:	
Sniff ID #: 1801	Sniff Duration: 10 minutes
Radon Measurement: 2.33 ± 3.21	Thoron Measurement: 0.00 ± 3.74
Temperature: 26.8	Relative Humidity: 6

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1110/1140	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75	Dew Point: 63
Wind Direction: SSW	Humidity: 67
Wind Speed: 2	Pressure: 29.90 steady

Run Test Sample ID#: 1901	
Measurements from RAD7 Print Out:	
Run ID #: 1901	Run Duration: 30 min
Radon Measurement: 1.25 ± 1.25	Thoron Measurement: 0.00 ± 1.25
Temperature: 26.8	Relative Humidity: 3

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1054/1104	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 75	Dew Point: 63
Wind Direction: SSW	Humidity: 67
Wind Speed: 2	Pressure: steady

Sniff Test Sample ID#: 1801	
Measurements from RAD7 Print Out:	
Sniff ID #: 1801	Sniff Duration: 10 minutes
Radon Measurement: 2.55 ± 3.10	Thoron Measurement: 0.00 ± 3.41
Temperature: 27.0	Relative Humidity: 7

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1110/1140	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75	Dew Point: 63
Wind Direction: SSW	Humidity: 67
Wind Speed: 2	Pressure: 29.90 steady

Run Test Sample ID#: 1901	
Measurements from RAD7 Print Out:	
Run ID #: 1901	Run Duration: 30 minutes
Radon Measurement: 2.85 ± 1.62	Thoron Measurement: 1.14 ± 1.85
Temperature: 27.0	Relative Humidity: 5

Comments:

R12 ; purge at 1035 to 1049

Location ID:
C003-AA013

Date:
8/5/2015

Sample ID:
C003-AA013-SW001

RAD7 #:
2895

Test ID:
2001

```
2001 0.93±2.55 p Sniff
     0.00±3.75 p Thoron
  WED 05-AUG-15 11:56
  26.8°C RH: 3% B:6.33V
Total Counts:  21.
Livetime:    9.3min
A: 0.21±0.58 cpm   9.5%
B: 0.00±0.43 cpm   0.0%
C: 0.32±0.64 cpm  14.3%
D: 0.00±0.43 cpm   0.0%
O: 1.71±1.10 cpm  76.2%
```

Location ID:
C003-AA013

Date:
8/5/2015

Sample ID:
C003-AA013-RW001

RAD7 #:
2895

Test ID:
2101

```
2101 3.74±1.87 p Sniff
     0.31±1.51 p Thoron
  WED 05-AUG-15 13:55
  26.8°C RH: 3% B:6.30V
Total Counts:  82.
Livetime:   28.0min
A: 0.86±0.43 cpm  29.3%
B: 0.04±0.17 cpm   1.2%
C: 0.11±0.21 cpm   3.7%
D: 0.00±0.14 cpm   0.0%
O: 1.93±0.60 cpm  65.9%
```

Location ID:
C003-AA013

Date:
8/5/2015

Sample ID:
C003-AA013-SC001

RAD7 #:
2534

Test ID:
2001

```
2001 1.70±2.76 p Sniff
     0.86±4.13 p Thoron
  WED 05-AUG-15 11:58
  27.3°C RH: 5% B:6.15V
Total Counts:  11.
Livetime:    9.3min
A: 0.43±0.69 cpm  36.4%
B: 0.11±0.52 cpm   9.1%
C: 0.32±0.64 cpm  27.3%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  27.3%
```

Location ID:
C003-AA013

Date:
8/5/2015

Sample ID:
C003-AA013-RC001

RAD7 #:
2534

Test ID:
2101

```
2101 7.12±2.38 p Sniff
     0.00±1.14 p Thoron
  WED 05-AUG-15 13:57
  27.0°C RH: 4% B:6.21V
Total Counts:  71.
Livetime:   27.9min
A: 1.86±0.59 cpm  73.3%
B: 0.00±0.14 cpm   0.0%
C: 0.14±0.23 cpm   5.6%
D: 0.14±0.23 cpm   5.6%
O: 0.39±0.32 cpm  15.5%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	
	Site Address
Location Description: Showroom 3-R13	

Date: 8/5/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 78	Dew Point: 63
Wind Direction: SSW	Humidity: 60
Wind Speed: 1	Pressure: 29.90 steady

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1148/1158	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 78	Dew Point: 63
Wind Direction: SSW	Humidity: 60
Wind Speed: 1	Pressure: 29.90 steady

Sniff Test Sample ID#: 2001	
Measurements from RAD7 Print Out:	
Sniff ID #: 2001	Sniff Duration: 10 minutes
Radon Measurement: 0.93±2.55	Thoron Measurement: 0.00±3.75
Temperature: 26.8	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1328/1358	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 83	Dew Point: 64
Wind Direction: SSW	Humidity: 54
Wind Speed: 1	Pressure: 29.87 falling

Run Test Sample ID#: 2101	
Measurements from RAD7 Print Out:	
Run ID #: 2101	Run Duration: 30 min
Radon Measurement: 3.74±1.87	Thoron Measurement: 0.31±1.51
Temperature: 26.8	Relative Humidity: 3

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1148/1158	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 78	Dew Point: 63
Wind Direction: SSW	Humidity: 60
Wind Speed: 1	Pressure: 29.90 steady

Sniff Test Sample ID#: 2001	
Measurements from RAD7 Print Out:	
Sniff ID #: 2001	Sniff Duration: 10 minutes
Radon Measurement: 1.70±2.76	Thoron Measurement: 0.86±4.13
Temperature: 27.3	Relative Humidity: 5

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1328/1358	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 83	Dew Point: 64
Wind Direction: SSW	Humidity: 54
Wind Speed: 1	Pressure: 29.87 falling

Run Test Sample ID#: 2101	
Measurements from RAD7 Print Out:	
Run ID #: 2101	Run Duration: 30 minutes
Radon Measurement: 7.12±2.38	Thoron Measurement: 0.00±1.14
Temperature: 27.0	Relative Humidity: 4

Comments:

R13

Location ID:
C003-AA017

Date:
8/5/2015

Sample ID:
C003-AA017-SW001

RAD7 #:
2895

Test ID:
2201

```
2201 2.34±3.22 p Sniff
     0.94±4.53 p Thoron
  WED 05-AUG-15 14:17
  28.0°C RH: 3% B:6.27V
Total Counts:  21.
Livetime:    9.3min
A: 0.53±0.74 cpm  23.8%
B: 0.11±0.52 cpm   4.8%
C: 0.32±0.64 cpm  14.3%
D: 0.00±0.43 cpm   0.0%
O: 1.28±0.99 cpm  57.2%
```

Location ID:
C003-AA017

Date:
8/5/2015

Sample ID:
C003-AA017-RW001

RAD7 #:
2895

Test ID:
2301

```
2301 0.31±0.85 p Sniff
     0.00±1.25 p Thoron
  WED 05-AUG-15 14:49
  28.9°C RH: 3% B:6.30V
Total Counts:  55.
Livetime:   28.0min
A: 0.07±0.19 cpm   3.6%
B: 0.00±0.14 cpm   0.0%
C: 0.25±0.27 cpm  12.7%
D: 0.00±0.14 cpm   0.0%
O: 1.64±0.56 cpm  83.7%
```

Location ID:
C003-AA017

Date:
8/5/2015

Sample ID:
C003-AA017-SC001

RAD7 #:
2534

Test ID:
2201

```
2201 4.26±3.68 p Sniff
     0.86±4.13 p Thoron
  WED 05-AUG-15 14:19
  28.3°C RH: 4% B:6.15V
Total Counts:  19.
Livetime:    9.3min
A: 1.07±0.92 cpm  52.6%
B: 0.11±0.52 cpm   5.3%
C: 0.86±0.86 cpm  42.1%
D: 0.00±0.43 cpm   0.0%
O: 0.00±0.43 cpm   0.0%
```

Location ID:
C003-AA017

Date:
8/5/2015

Sample ID:
C003-AA017-RC001

RAD7 #:
2534

Test ID:
2301

```
2301 0.00±0.57 p Sniff
     0.29±1.38 p Thoron
  WED 05-AUG-15 14:51
  29.2°C RH: 4% B:6.24V
Total Counts:  34.
Livetime:   28.0min
A: 0.00±0.14 cpm   0.0%
B: 0.04±0.17 cpm   3.0%
C: 0.71±0.40 cpm  58.8%
D: 0.04±0.17 cpm   3.0%
O: 0.43±0.33 cpm  35.3%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: office 1 · R14	

Date: 8/5/15 | RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 84	Dew Point: 58
Wind Direction: SSW	Humidity: 41
Wind Speed: 1	Pressure: 29.86 falling

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1409 / 1419	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 84	Dew Point: 58
Wind Direction: ~~W~~ SSW	Humidity: 42
Wind Speed: 7	Pressure: 29.86 falling

Sniff Test Sample ID#: 2201	
Measurements from RAD7 Print Out:	
Sniff ID #: 2201	Sniff Duration: 10 minutes
Radon Measurement: 2.34 ± 3.22	Thoron Measurement: 0.94 ± 4.53
Temperature: 28.0	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1421 / 1451	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 84	Dew Point: 58
Wind Direction: SSW	Humidity: 42
Wind Speed: 7	Pressure: 29.86 falling

Run Test Sample ID#: 2301	
Measurements from RAD7 Print Out:	
Run ID #: 2301 0.31 ± 0.85	Run Duration: 30 mins
Radon Measurement: ~~0.00 ± 0.57~~	Thoron Measurement: ~~0.29 ± 1.38~~
Temperature: ~~29.2~~ 28.9	Relative Humidity: 3 0.00 ± 1.25

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1409 / 1419	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 84	Dew Point: 58
Wind Direction: SSW	Humidity: 42
Wind Speed: 7	Pressure: 29.86 falling

Sniff Test Sample ID#: 2201	
Measurements from RAD7 Print Out:	
Sniff ID #: 2201	Sniff Duration: 10 minutes
Radon Measurement: 4.26 ± 3.68	Thoron Measurement: 0.86 ± 4.13
Temperature: 28.3	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1421 / 1451	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 9
Temperature: 84	Dew Point: 58
Wind Direction: SSW	Humidity: 42
Wind Speed: 7	Pressure: 29.86 falling

Run Test Sample ID#: 2301	
Measurements from RAD7 Print Out:	
Run ID #: 2301	Run Duration: 30 minutes
Radon Measurement: 0.00 ± 0.57	Thoron Measurement: 0.29 ± 1.38
Temperature: 29.2	Relative Humidity: 4

Comments:

R14 across from PIC B-2 in office

Location ID:
C003-RS001

Date:
8/5/2015

Sample ID:
C003-RS001-SW001

RAD7 #:
2895

Test ID:
2401

```
2401 68.6±12.4 p Sniff
     0.95±4.59 p Thoron
  WED 05-AUG-15 15:05
  28.9°C RH: 3% B:6.30V
Total Counts:  178.
Livetime:    9.2min
A: 15.7±2.84 cpm  81.5%
B: 0.11±0.52 cpm   0.6%
C: 0.43±0.70 cpm   2.3%
D: 0.00±0.43 cpm   0.0%
O: 3.04±1.38 cpm  15.8%
```

Location ID:
C003-RS001

Date:
8/5/2015

Sample ID:
C003-RS001-RW001

RAD7 #:
2895

Test ID:
2501

```
2501 29.5±4.66 p Sniff
     0.63±1.89 p Thoron
  WED 05-AUG-15 15:37
  28.3°C RH: 4% B:6.30V
Total Counts:  335.
Livetime:   27.8min
A: 6.80±1.06 cpm  56.4%
B: 0.11±0.22 cpm   0.9%
C: 3.31±0.77 cpm  27.5%
D: 0.07±0.20 cpm   0.6%
O: 1.76±0.58 cpm  14.6%
```

Location ID:
C003-RS001

Date:
8/5/2015

Sample ID:
C003-RS001-SC001

RAD7 #:
2534

Test ID:
2401

```
2401 1090±48.5 p Sniff
     2.08±5.68 p Thoron
  WED 05-AUG-15 15:07
  29.2°C RH: 4% B:6.21V
Total Counts:  2268.
Livetime:    7.7min
A:  273±12.2 cpm  92.8%
B: 0.26±0.71 cpm   0.1%
C: 3.77±1.68 cpm   1.3%
D: 0.26±0.71 cpm   0.1%
O: 16.8±3.22 cpm   5.7%
```

Location ID:
C003-RS001

Date:
8/5/2015

Sample ID:
C003-RS001-RC001

RAD7 #:
2534

Test ID:
2501

```
2501  159±10.1 p Sniff
      3.63±3.63 p Thoron
  WED 05-AUG-15 15:39
  28.6°C RH: 7% B:6.18V
Total Counts:  2102.
Livetime:   26.4min
A: 39.9±2.54 cpm  50.2%
B: 0.91±0.45 cpm   1.2%
C: 36.8±2.44 cpm  46.2%
D: 0.15±0.24 cpm   0.2%
O: 1.78±0.60 cpm   2.3%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: Electric Room - R15	

Date: 8/5/15 RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 5
Temperature: 84	Dew Point: 60
Wind Direction: SSW	Humidity: 44
Wind Speed: 2	Pressure: 29.85 falling

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2985	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1457/1507	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 5
Temperature: 84	Dew Point: 60
Wind Direction: SSW	Humidity: 44
Wind Speed: 2	Pressure: 29.85 falling

Sniff Test Sample ID#: 2401	
Measurements from RAD7 Print Out:	
Sniff ID #: 2401	Sniff Duration: 10 minutes
Radon Measurement: 68.6±12.4	Thoron Measurement: 0.95±4.59
Temperature: 28.9	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2985	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1510/1540	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 5
Temperature: 85	Dew Point: 62
Wind Direction: SSW	Humidity: 45
Wind Speed: 1	Pressure: 29.85 falling

Run Test Sample ID#: 2501	
Measurements from RAD7 Print Out:	
Run ID #: 2501	Run Duration: 30 mins
Radon Measurement: 29.5±4.66	Thoron Measurement: 0.63±1.89
Temperature: 28.3	Relative Humidity: 4

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1457/1507	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: ~~[illegible]~~ partly cloudy	UV Index: 5
Temperature: 84	Dew Point: 60
Wind Direction: SSW	Humidity: 44
Wind Speed: 2	Pressure: 29.85 falling

Sniff Test Sample ID#: 2401	
Measurements from RAD7 Print Out:	
Sniff ID #: 2401	Sniff Duration: 10 minutes
Radon Measurement: 1090±48.5	Thoron Measurement: 2.08±5.68
Temperature: 29.2	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1510/1540	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 5
Temperature: 85	Dew Point: 62
Wind Direction: SSW	Humidity: 45
Wind Speed: 1	Pressure: 29.85 falling

Run Test Sample ID#: 2501	
Measurements from RAD7 Print Out:	
Run ID #: 2501	Run Duration: 30 minutes
Radon Measurement: 159±10.1	Thoron Measurement: 3.63±3.63
Temperature: 28.6	Relative Humidity: 7

Comments:

R15 - G1 location for P1C

Location ID:
C004-SS001

Date:
8/6/2015

Sample ID:
C004-SS001-RW004

RAD7 #:
2895

Test ID:
2601

```
2601 0.93±1.14 p Sniff
     0.00±1.25 p Thoron
  THU 06-AUG-15 08:42
  21.0°C RH: 8% B:6.30V
```

Location ID:
C004-SS001

Date:
8/6/2015

Sample ID:
C004-SS001-RC004

RAD7 #:
2534

Test ID:
2601

```
2601 1.00±1.09 p Sniff
     1.43±1.97 p Thoron
  THU 06-AUG-15 08:44
  21.9°C RH:15% B:6.24V
Total Counts:  40.
Livetime:   27.9min
A: 0.25±0.27 cpm  17.5%
B: 0.18±0.25 cpm  12.5%
C: 0.79±0.41 cpm  55.0%
D: 0.04±0.17 cpm   2.5%
O: 0.18±0.25 cpm  12.5%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: Background	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 1
Temperature: 60	Dew Point: 55
Wind Direction: SSW	Humidity: 84
Wind Speed: 1	Pressure: 29.96 rising

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0815/0845	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 2
Temperature: 62	Dew Point: 57
Wind Direction: SSW	Humidity: 81
Wind Speed: 0	Pressure: 29.97 rising

Sniff Test Sample ID#: 2601	
Measurements from RAD7 Print Out:	
Sniff ID #: 2601	Sniff Duration: 10 minutes
Radon Measurement: 0.93 ± 1.14	Thoron Measurement: 0.00 ± 1.25
Temperature: 21.0	Relative Humidity: 8

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0815/0845	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 2
Temperature: 62	Dew Point: 57
Wind Direction: SSW	Humidity: 81
Wind Speed: 0	Pressure: 29.97 rising

Sniff Test Sample ID#: 2601	
Measurements from RAD7 Print Out:	
Sniff ID #: 2601	Sniff Duration: 10 minutes
Radon Measurement: 1.00 ± 1.09	Thoron Measurement: 1.43 ± 1.97
Temperature: 21.9	Relative Humidity: 15

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

purge @ 0758, stop at 0812

Location ID:
C003-AA018

Date:
8/6/2015

Sample ID:
C003-AA018-SW001

RAD7 #:
2895

Test ID:
2701

```
2701 1.40±2.80 p Sniff
     0.00±3.75 p Thoron
  THU 06-AUG-15 09:31
  25.2°C RH: 4% B:6.33V
Total Counts:  19.
Livetime:    9.3min
A: 0.32±0.64 cpm  15.8%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm   5.3%
D: 0.11±0.52 cpm   5.3%
O: 1.50±1.04 cpm  73.7%
```

Location ID:
C003-AA018

Date:
8/6/2015

Sample ID:
C003-AA018-SC001

RAD7 #:
2534

Test ID:
2701

```
2701 0.43±2.06 p Sniff
     0.00±3.42 p Thoron
  THU 06-AUG-15 09:33
  24.9°C RH: 7% B:6.24V
Total Counts:  4.
Livetime:    9.3min
A: 0.11±0.52 cpm  25.0%
B: 0.00±0.43 cpm   0.0%
C: 0.21±0.58 cpm  50.0%
D: 0.00±0.43 cpm   0.0%
O: 0.11±0.52 cpm  25.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: Storage - R16	

Date: 8/6/15 RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 65	Dew Point: 58
Wind Direction: SSW	Humidity: 77
Wind Speed: 3	Pressure: 29.98 rising

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0923/0933	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 65	Dew Point: 58
Wind Direction: SSW	Humidity: 77
Wind Speed: 3	Pressure: 29.98 rising

Sniff Test Sample ID#: 2701	
Measurements from RAD7 Print Out:	
Sniff ID #: 2701	Sniff Duration: 10 minutes
Radon Measurement: 1.40±2.80	Thoron Measurement: 0.00±3.75
Temperature: 25.2	Relative Humidity: 4

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0923/0933	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 65	Dew Point: 58
Wind Direction: SSW	Humidity: 77
Wind Speed: 3	Pressure: 29.98 rising

Sniff Test Sample ID#: 2701	
Measurements from RAD7 Print Out:	
Sniff ID #: 2701	Sniff Duration: 10 minutes
Radon Measurement: 0.43±2.06	Thoron Measurement: 0.00±3.42
Temperature: 24.9	Relative Humidity: 7

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

R16, purge 0907 to 0922

Location ID:
C003-AA019

Date:
8/6/2015

Sample ID:
C003-AA019-SW001

RAD7 #:
2895

Test ID:
2702

```
2702 5.63±4.33 p Sniff
     0.00±3.77 p Thoron
  THU 06-AUG-15 09:45
  25.6°C RH: 4% B:6.30V
Total Counts:  25.
Livetime:    9.3min
A: 1.29±0.99 cpm  48.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.40±1.02 cpm  52.0%
```

Location ID:
C003-AA019

Date:
8/6/2015

Sample ID:
C003-AA019-RW001

RAD7 #:
2895

Test ID:
2801

```
2801 2.65±1.64 p Sniff
     0.31±1.51 p Thoron
  THU 06-AUG-15 10:20
  25.6°C RH: 3% B:6.30V
Total Counts:  82.
Livetime:   28.0min
A: 0.61±0.37 cpm  20.7%
B: 0.04±0.17 cpm   1.2%
C: 0.46±0.34 cpm  15.9%
D: 0.00±0.14 cpm   0.0%
O: 1.82±0.59 cpm  62.2%
```

Location ID:
C003-AA019

Date:
8/6/2015

Sample ID:
C003-AA019-SC001

RAD7 #:
2534

Test ID:
2702

```
2702 2.57±3.12 p Sniff
     0.00±3.44 p Thoron
  THU 06-AUG-15 09:47
  25.2°C RH: 5% B:6.21V
Total Counts:  10.
Livetime:    9.3min
A: 0.65±0.78 cpm  60.0%
B: 0.00±0.43 cpm   0.0%
C: 0.22±0.59 cpm  20.0%
D: 0.00±0.43 cpm   0.0%
O: 0.22±0.59 cpm  20.0%
```

Location ID:
C003-AA019

Date:
8/6/2015

Sample ID:
C003-AA019-RC001

RAD7 #:
2534

Test ID:
2801

```
2801 2.56±1.56 p Sniff
     0.57±1.56 p Thoron
  THU 06-AUG-15 10:22
  25.5°C RH: 4% B:6.24V
Total Counts:  34.
Livetime:   28.0min
A: 0.68±0.39 cpm  55.9%
B: 0.07±0.20 cpm   5.9%
C: 0.21±0.26 cpm  17.7%
D: 0.07±0.20 cpm   5.9%
O: 0.18±0.25 cpm  14.7%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: Storage - R17	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 65	Dew Point: 58
Wind Direction: SSW	Humidity: 77
Wind Speed: 3	Pressure: 29.98 rising

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0938/0948	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 66	Dew Point: 57
Wind Direction: SSW	Humidity: 73
Wind Speed: 0	Pressure: 29.98 rising

Sniff Test Sample ID#: 2702	
Measurements from RAD7 Print Out:	
Sniff ID #: 2702	Sniff Duration: 10 minutes
Radon Measurement: 5.63±4.33	Thoron Measurement: 0.00±3.77
Temperature: 25.6	Relative Humidity: 4

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0952/1022	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 67	Dew Point: 57
Wind Direction: SSW	Humidity: 72
Wind Speed: 1	Pressure: 29.98 rising

Run Test Sample ID#: 2801	
Measurements from RAD7 Print Out:	
Run ID #: 2801	Run Duration: 30 min
Radon Measurement: 2.65 ± 1.64	Thoron Measurement: 0.31 ± 1.51
Temperature: 25.6	Relative Humidity: 3

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0938/0948	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 66	Dew Point: 57
Wind Direction: SSW	Humidity: 73
Wind Speed: 0	Pressure: 29.98 rising

Sniff Test Sample ID#: 2702	
Measurements from RAD7 Print Out:	
Sniff ID #: 2702	Sniff Duration: 10 minutes
Radon Measurement: 2.57±3.12	Thoron Measurement: 0.00±3.44
Temperature: 25.2	Relative Humidity: 5

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0952/1022	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 67	Dew Point: 57
Wind Direction: SSW	Humidity: 72
Wind Speed: 1	Pressure: 29.98 rising

Run Test Sample ID#: 2801	
Measurements from RAD7 Print Out:	
Run ID #: 2801	Run Duration: 30 minutes
Radon Measurement: 2.56±1.56	Thoron Measurement: 0.57±1.56
Temperature: 25.5	Relative Humidity: 4

Comments:

R17

Location ID:
C002-SS001

Date:
8/6/2015

Sample ID:
C002-SS001-SW001

RAD7 #:
2895

Test ID:
2901

```
2901 0.00±1.87 p Sniff
     0.00±3.75 p Thoron
  THU 06-AUG-15 10:50
  31.3°C RH: 3% B:6.33V
Total Counts:  12.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm   8.3%
D: 0.00±0.43 cpm   0.0%
O: 1.18±0.95 cpm  91.7%
```

Location ID:
C002-SS001

Date:
8/6/2015

Sample ID:
C002-SS001-SC001

RAD7 #:
2534

Test ID:
2901

```
2901 0.00±1.70 p Sniff
     0.00±3.42 p Thoron
  THU 06-AUG-15 10:52
  30.4°C RH: 4% B:6.24V
Total Counts:  7.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.43±0.69 cpm  57.2%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  42.9%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: SB01	

Date: 8/6/15 RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: clear	UV Index: 6
Temperature: 74.9	Dew Point: 61
Wind Direction: Variable	Humidity: 62
Wind Speed: 0	Pressure: 29.98

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): ~~1038/1048~~	Thoron: ON
Protocol: USER 1042/1052	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 74.9	Dew Point: 61
Wind Direction: Variable	Humidity: 62
Wind Speed: 0	Pressure: 29.98

Sniff Test Sample ID#: 2901	
Measurements from RAD7 Print Out:	
Sniff ID #: 2901	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.87	Thoron Measurement: 0.00 ± 3.75
Temperature: 31.3	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): ~~1038/1048~~	Thoron: ON
Protocol: USER 1042/1052	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 74.9	Dew Point: 61
Wind Direction: Variable	Humidity: 62
Wind Speed: 0	Pressure: 29.98

Sniff Test Sample ID#: 2901	
Measurements from RAD7 Print Out:	
Sniff ID #: 2901	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.70	Thoron Measurement: 0.00 ± 3.42
Temperature: 30.4	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Location ID:
C002-AA001

Date:
8/6/2015

Sample ID:
C002-AA001-SW001

RAD7 #:
2895

Test ID:
2902

```
2902 0.00±1.88 p Sniff
     0.00±3.77 p Thoron
  THU 06-AUG-15 11:10
  29.2°C RH: 3% B:6.30V
Total Counts:  16.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.32±0.65 cpm  18.8%
D: 0.00±0.43 cpm   0.0%
O: 1.40±1.02 cpm  81.3%
```

Location ID:
C002-AA001

Date:
8/6/2015

Sample ID:
C002-AA001-SC001

RAD7 #:
2534

Test ID:
2902

```
2902 0.43±2.07 p Sniff
     0.00±3.44 p Thoron
  THU 06-AUG-15 11:12
  29.2°C RH: 4% B:6.21V
Total Counts:  8.
Livetime:    9.3min
A: 0.11±0.52 cpm  12.5%
B: 0.00±0.43 cpm   0.0%
C: 0.54±0.74 cpm  62.5%
D: 0.00±0.43 cpm   0.0%
O: 0.22±0.59 cpm  25.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: 103 office	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.1	Dew Point: 60
Wind Direction: Variable	Humidity: 60
Wind Speed: 0	Pressure: 29.97

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1103/1113	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.1	Dew Point: 60
Wind Direction: Variable	Humidity: 60
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 2902	
Measurements from RAD7 Print Out:	
Sniff ID #: 2902	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.38	Thoron Measurement: 0.00 ± 3.77
Temperature: 29.2	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1103/1113	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.1	Dew Point: 60
Wind Direction: Variable	Humidity: 60
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 2902	
Measurements from RAD7 Print Out:	
Sniff ID #: 2902	Sniff Duration: 10 minutes
Radon Measurement: 0.43 ± 2.07	Thoron Measurement: 0.00 ± 3.44
Temperature: 29.2	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Location ID:
C002-AA002

Date:
8/6/2015

Sample ID:
C002-AA002-SW001

RAD7 #:
2895

Test ID:
2903

```
2903 0.00±1.87 p Sniff
     0.00±3.76 p Thoron
  THU 06-AUG-15 11:22
  26.8°C RH: 2% B:6.30V
Total Counts:  10.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.21±0.59 cpm  20.0%
D: 0.11±0.52 cpm  10.0%
O: 0.75±0.82 cpm  70.0%
```

Location ID:
C002-AA002

Date:
8/6/2015

Sample ID:
C002-AA002-SC001

RAD7 #:
2534

Test ID:
3001

```
3001 0.00±1.70 p Sniff
     0.00±3.41 p Thoron
  THU 06-AUG-15 11:24
  26.7°C RH: 4% B:6.21V
Total Counts:  4.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm  25.0%
D: 0.11±0.52 cpm  25.0%
O: 0.21±0.58 cpm  50.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: main office -103	

Date: 8/6/15 RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.4	Dew Point: 61
Wind Direction: variable	Humidity: 61
Wind Speed: 0	Pressure: 29.97

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1115/1125	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.4	Dew Point: 61
Wind Direction: variable	Humidity: 61
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: ~~3001~~ 2903	
Measurements from RAD7 Print Out:	
Sniff ID #: ~~3001~~ 2903	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.87	Thoron Measurement: 0.00 ± 3.76
Temperature: 26.8	Relative Humidity: 2

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1115/1125	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.4	Dew Point: 61
Wind Direction: variable	Humidity: 61
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 3001	
Measurements from RAD7 Print Out:	
Sniff ID #: 3001	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.70	Thoron Measurement: 0.00 ± 3.41
Temperature: 26.7	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Radon Cannisters moved from in front of trashcan to window

Location ID:
C002-AA003

Date:
8/6/2015

Sample ID:
C002-AA003-SW001

RAD7 #:
2895

Test ID:
2904

```
2904 0.00±1.88 p Sniff
     0.00±3.77 p Thoron
  THU 06-AUG-15 11:34
  25.2°C RH: 2% B:6.30V
Total Counts:  11.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.32±0.65 cpm  27.3%
D: 0.00±0.43 cpm   0.0%
O: 0.86±0.86 cpm  72.7%
```

Location ID:
C002-AA003

Date:
8/6/2015

Sample ID:
C002-AA003-SC001

RAD7 #:
2534

Test ID:
3002

```
3002 0.00±1.71 p Sniff
     0.00±3.43 p Thoron
  THU 06-AUG-15 11:36
  25.5°C RH: 3% B:6.12V
Total Counts:  5.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.21±0.59 cpm  40.0%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  60.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	
	Site Address
Location Description: Breakroom - 103	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.4	Dew Point: 61
Wind Direction: variable	Humidity: 61
Wind Speed: 0	Pressure: 29.97

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1127/1137	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.4	Dew Point: 61
Wind Direction: variable	Humidity: 61
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 2904	
Measurements from RAD7 Print Out:	
Sniff ID #: 2904	Sniff Duration: 10 minutes
Radon Measurement: 0.00±1.88	Thoron Measurement: 0.00±3.77
Temperature: 25.2	Relative Humidity: 2

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1127/1137	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 75.4	Dew Point: 61
Wind Direction: variable	Humidity: 61
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 3002	
Measurements from RAD7 Print Out:	
Sniff ID #: 3002	Sniff Duration: 10 minutes
Radon Measurement: 0.00±1.71	Thoron Measurement: 0.00±3.43
Temperature: 25.5	Relative Humidity: 3

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Location ID:
C002-AA004

Date:
8/6/2015

Sample ID:
C002-AA004-SW001

RAD7 #:
2895

Test ID:
3001

```
3001 0.00±1.86 p Sniff
     0.00±3.74 p Thoron
  THU 06-AUG-15 11:49
  24.3°C RH: 2% B:6.27V
Total Counts:  22.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 2.35±1.24 cpm   100%
```

Location ID:
C002-AA004

Date:
8/6/2015

Sample ID:
C002-AA004-SC001

RAD7 #:
2534

Test ID:
3101

```
3101 0.42±2.05 p Sniff
     0.00±3.41 p Thoron
  THU 06-AUG-15 11:51
  24.3°C RH: 4% B:6.24V
Total Counts:  3.
Livetime:    9.3min
A: 0.11±0.52 cpm  33.3%
B: 0.00±0.43 cpm   0.0%
C: 0.21±0.58 cpm  66.7%
D: 0.00±0.43 cpm   0.0%
O: 0.00±0.43 cpm   0.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number:	Site Name
Durridge RAD7/Model 711	Canadian Radium and Uranium Corp. Site
Location ID:	Site Address
Location Description: Conex box -103	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 74.5	Dew Point: 60
Wind Direction: variable	Humidity: 60
Wind Speed: 0	Pressure: 29.97

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1142/1152	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 74.5	Dew Point: 60
Wind Direction: variable	Humidity: 60
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 3001	
Measurements from RAD7 Print Out:	
Sniff ID #: 3001	Sniff Duration: 10 minutes
Radon Measurement: 0.00±1.86	Thoron Measurement: 0.00±3.74
Temperature: 24.3	Relative Humidity: 2

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration:
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1142	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Short
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 9
Temperature: 74.5	Dew Point: 60
Wind Direction: variable	Humidity: 60
Wind Speed: 0	Pressure: 29.97

Sniff Test Sample ID#: 3101	
Measurements from RAD7 Print Out:	
Sniff ID #: 3101	Sniff Duration: 10 minutes
Radon Measurement: 0.42±2.05	Thoron Measurement: 0.00±3.41
Temperature: 24.3	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Short
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run Test Sample ID#:	
Measurements from RAD7 Print Out:	
Run ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Location ID:
C002-SS002

Date:
8/6/2015

Sample ID:
C002-SS002-SW001

RAD7 #:
2895

Test ID:
3101

```
3101 0.47±2.26 p Sniff
     0.00±3.75 p Thoron
  THU 06-AUG-15 13:27
  32.9°C RH: 3% B:6.33V
Total Counts:  15.
Livetime:    9.3min
A: 0.11±0.52 cpm   6.7%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.50±1.04 cpm  93.3%
```

Location ID:
C002-SS002

Date:
8/6/2015

Sample ID:
C002-SS002-RW001

RAD7 #:
2895

Test ID:
3201

```
3201 0.00±0.62 p Sniff
     0.94±1.88 p Thoron
  THU 06-AUG-15 14:01
  40.8°C RH: 3% B:6.30V
Total Counts:  50.
Livetime:   28.0min
A: 0.00±0.14 cpm   0.0%
B: 0.11±0.21 cpm   6.0%
C: 0.00±0.14 cpm   0.0%
D: 0.00±0.14 cpm   0.0%
O: 1.68±0.57 cpm  94.0%
```

Location ID:
C002-SS002

Date:
8/6/2015

Sample ID:
C002-SS002-SC001

RAD7 #:
2534

Test ID:
3201

```
3201 0.00±1.70 p Sniff
     1.71±4.68 p Thoron
  THU 06-AUG-15 13:28
  35.0°C RH: 5% B:6.18V
Total Counts:  5.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.21±0.58 cpm  40.0%
C: 0.00±0.43 cpm   0.0%
D: 0.11±0.52 cpm  20.0%
O: 0.21±0.58 cpm  40.0%
```

Location ID:
C002-SS002

Date:
8/6/2015

Sample ID:
C002-SS002-RC001

RAD7 #:
2534

Test ID:
3301

```
3301 1.42±1.23 p Sniff
     1.42±1.97 p Thoron
  THU 06-AUG-15 14:03
  42.0°C RH: 4% B:5.91V
Total Counts:  22.
Livetime:   28.0min
A: 0.36±0.31 cpm  45.5%
B: 0.18±0.25 cpm  22.7%
C: 0.00±0.14 cpm   0.0%
D: 0.00±0.14 cpm   0.0%
O: 0.25±0.27 cpm  31.8%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number: Durridge RAD7/Model 711	**Site Name:** Canadian Radium and Uranium Corp. Site
Location ID:	**Site Address:**
Location Description: SB02	

Date: 8/6/15 **RST 3 Sampler:** RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 10
Temperature: 75	Dew Point: 58
Wind Direction: SSW	Humidity: 57
Wind Speed: 0	Pressure: 29.96 falling

Radon/Thoron Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1319/1329	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 10
Temperature: 75	Dew Point: 58
Wind Direction: SSW	Humidity: 57
Wind Speed: 0	Pressure: 29.96 falling

Measurements from RAD7 Print Out:	
Sniff ID #: 3101	Sniff Duration: 10 minutes
Radon Measurement: 0.47 ± 2.26	Thoron Measurement: 0.00 ± 3.75
Temperature: 32.9	Relative Humidity: 3

Radon/Thoron Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1333/1403	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 10
Temperature: 75	Dew Point: 58
Wind Direction: SSW	Humidity: 56
Wind Speed: 1	Pressure: 29.96 falling

Measurements from RAD7 Print Out:	
Run ID #: 3201	Run Duration: 30 mins
Radon Measurement: 0.00 ± 0.62	Thoron Measurement: 0.94 ± 1.88
Temperature: 40.8	Relative Humidity: 3

Radon/Thoron Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1319/1329	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ med
Mode: ~~AUTO~~ sniff	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 10
Temperature: 75	Dew Point: 58
Wind Direction: SSW	Humidity: 57
Wind Speed: 0	Pressure: 29.96 falling

Measurements from RAD7 Print Out:	
Sniff ID #: 3201	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.70	Thoron Measurement: 1.71 ± 4.68
Temperature: 35.0	Relative Humidity: 5

Radon/Thoron Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1333/1403	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: ~~Short~~ NW
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 10
Temperature: 75	Dew Point: 58
Wind Direction: SSW	Humidity: 56
Wind Speed: 1	Pressure: 29.96 falling

Measurements from RAD7 Print Out:	
Run ID #: 3301	Run Duration: 30 minutes
Radon Measurement: 1.42 ± 1.23	Thoron Measurement: 1.42 ± 1.97
Temperature: 42.0	Relative Humidity: 4

Comments:

Location ID:
C003-SS001

Date:
8/6/2015

Sample ID:
C003-SS001-SW001

RAD7 #:
2895

Test ID:
3301

```
3301 0.47±2.26 p Sniff
     0.00±3.75 p Thoron
  THU 06-AUG-15 14:21
  36.8°C RH: 3% B:6.30V
Total Counts:  13.
Livetime:    9.3min
A: 0.11±0.52 cpm   7.7%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.28±0.99 cpm  92.3%
```

Location ID:
C003-SS001

Date:
8/6/2015

Sample ID:
C003-SS001-SC001

RAD7 #:
2534

Test ID:
3401

```
3401 0.85±2.32 p Sniff
     0.00±3.41 p Thoron
  THU 06-AUG-15 14:23
  37.7°C RH: 4% B:5.94V
Total Counts:  8.
Livetime:    9.3min
A: 0.21±0.58 cpm  25.0%
B: 0.00±0.43 cpm   0.0%
C: 0.21±0.58 cpm  25.0%
D: 0.11±0.52 cpm  12.5%
O: 0.32±0.64 cpm  37.5%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	Canadian Radium
Property/Location ID #	Site Address
Location Description: SB-04	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 52
Wind Speed: 1	Pressure: 29.95 falling

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1413/1423	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 52
Wind Speed: 1	Pressure: 29.95 falling

Sniff (Waist) Sample ID#: 3301	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3301	Sniff Duration: 10 minutes
Radon Measurement: 0.47±2.26	Thoron Measurement: 0.00±3.75
Temperature: 36.8	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1413/1423	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 52
Wind Speed: 1	Pressure: 29.95 falling

Sniff (Contact) Sample ID#: 3401	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3401	Sniff Duration: 10 minutes
Radon Measurement: 0.85±2.32	Thoron Measurement: 0.00±3.41
Temperature: 37.7	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Location ID:
C003-SS002

Date:
8/6/2015

Sample ID:
C003-SS002-SW001

RAD7 #:
2895

Test ID:
3302

```
3302 0.47±2.27 p Sniff
     0.94±4.55 p Thoron
  THU 06-AUG-15 14:36
  37.7°C RH: 3% B:6.30V
Total Counts:  14.
Livetime:    9.3min
A: 0.11±0.52 cpm   7.2%
B: 0.11±0.52 cpm   7.2%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.29±0.99 cpm  85.7%
```

Location ID:
C003-SS002

Date:
8/6/2015

Sample ID:
C003-SS002-RW001

RAD7 #:
2895

Test ID:
3402

```
3401 0.16±0.75 p Sniff
     0.00±1.25 p Thoron
  THU 06-AUG-15 15:16
  41.7°C RH: 5% B:6.27V
Total Counts:  37.
Livetime:   28.0min
A: 0.04±0.17 cpm   2.7%
B: 0.00±0.14 cpm   0.0%
C: 0.00±0.14 cpm   0.0%
D: 0.00±0.14 cpm   0.0%
O: 1.28±0.51 cpm  97.3%
```

Location ID:
C003-SS002

Date:
8/6/2015

Sample ID:
C003-SS002-SC001

RAD7 #:
2534

Test ID:
3402

```
3402 0.43±2.06 p Sniff
     0.00±3.43 p Thoron
  THU 06-AUG-15 14:38
  38.3°C RH: 5% B:6.12V
Total Counts:  6.
Livetime:    9.3min
A: 0.11±0.52 cpm  16.7%
B: 0.00±0.43 cpm   0.0%
C: 0.21±0.59 cpm  33.3%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  50.0%
```

Location ID:
C003-SS002

Date:
8/6/2015

Sample ID:
C003-SS002-RC001

RAD7 #:
2534

Test ID:
3501

```
3501 0.14±0.77 p Sniff
     0.28±1.37 p Thoron
  THU 06-AUG-15 15:18
  41.1°C RH: 8% B:6.21V
Total Counts:  11.
Livetime:   28.1min
A: 0.07±0.19 cpm  18.2%
B: 0.04±0.17 cpm   9.1%
C: 0.11±0.21 cpm  27.3%
D: 0.04±0.17 cpm   9.1%
O: 0.14±0.23 cpm  36.4%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	Canadian Radium
Property/Location ID #	Site Address
Location Description: SB-05	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 52
Wind Speed: 1	Pressure: 29.95 falling

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1429/1439	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 52
Wind Speed: 1	Pressure: 29.95 falling

Sniff (Waist) Sample ID#: 3302	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3302	Sniff Duration: 10 minutes
Radon Measurement: 0.47±2.27	Thoron Measurement: 0.94±4.55
Temperature: 37.7	Relative Humidity: 3

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1449/1519	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: ~~29.95~~ 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 1	Pressure: 29.95 falling

Run (Waist) Sample ID#: 3401	
Measurements from RAD7 Print Out:	
Run Test ID #: 3401	Run Duration: 30 minutes
Radon Measurement: 0.16±0.75	Thoron Measurement: 0.00±1.25
Temperature: 41.7	Relative Humidity: 5

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1429/1439	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 52
Wind Speed: 1	Pressure: 29.95 falling

Sniff (Contact) Sample ID#: 3402	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3402	Sniff Duration: 10 minutes
Radon Measurement: 0.43±2.06	Thoron Measurement: 0.00±3.43
Temperature: 38.3	Relative Humidity: 5

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1449/~~1459~~/1519	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 8
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 1	Pressure: 29.95 falling

Run (Contact) Sample ID#: 3501	
Measurements from RAD7 Print Out:	
Run Test ID #: 3501	Run Duration: 30 minutes
Radon Measurement: 0.14±0.77	Thoron Measurement: 0.28±1.37
Temperature: 41.1	Relative Humidity: 8

Comments:

Location ID:
C002-SS003

Date:
8/6/2015

Sample ID:
C002-SS003-SW001

RAD7 #:
2895

Test ID:
3501

```
3501 0.00±1.87 p Sniff
     0.00±3.75 p Thoron
  THU 06-AUG-15 15:37
  37.1°C RH: 9% B:6.27V
Total Counts:  13.
Livetime:     9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.39±1.01 cpm   100%
```

Location ID:
C002-SS003

Date:
8/6/2015

Sample ID:
C002-SS003-SC001

RAD7 #:
2534

Test ID:
3601

```
3601 0.00±1.70 p Sniff
     0.00±3.41 p Thoron
  THU 06-AUG-15 15:38
  36.8°C RH: 7% B:6.24V
Total Counts:  8.
Livetime:     9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.11±0.52 cpm   12.5%
O: 0.75±0.82 cpm   87.5%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	CANADIAN Radium
Property/Location ID #	Site Address
Location Description: SB-03	

Date: 7/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Partly cloudy	UV Index: 7
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed:	Pressure: 29.94 falling

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1529/1539	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Partly cloudy	UV Index: 7
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 1	Pressure: 29.94 falling

Sniff (Waist) Sample ID#: 3501	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3501	Sniff Duration: 10 minutes
Radon Measurement: 0.00±1.87	Thoron Measurement: 0.00±3.75
Temperature: 37.1	Relative Humidity: 9

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1529/1539	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Partly cloudy	UV Index: ~~8~~ 7
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 1	Pressure: 29.94 falling

Sniff (Contact) Sample ID#: 3601	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3601	Sniff Duration: 10 minutes
Radon Measurement: 0.00±1.70	Thoron Measurement: 0.00±3.41
Temperature: 36.8	Relative Humidity: 7

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

Location ID:
C003-SS003

Date:
8/6/2015

Sample ID:
C003-SS003-SW001

RAD7 #:
2895

Test ID:
3601

```
3601 0.00±1.86 p Sniff
     0.00±3.74 p Thoron
  THU 06-AUG-15 15:58
  34.7°C RH:10% B:6.27V
Total Counts:  15.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 1.60±1.07 cpm   100%
```

Location ID:
C003-SS003

Date:
8/6/2015

Sample ID:
C003-SS003-RW001

RAD7 #:
2895

Test ID:
3701

```
3701 0.16±0.75 p Sniff
     0.00±1.25 p Thoron
  THU 06-AUG-15 16:30
  32.9°C RH:19% B:6.27V
Total Counts:  36.
Livetime:   28.0min
A: 0.04±0.17 cpm   2.8%
B: 0.00±0.14 cpm   0.0%
C: 0.04±0.17 cpm   2.8%
D: 0.00±0.14 cpm   0.0%
O: 1.21±0.49 cpm  94.5%
```

Location ID:
C003-SS003

Date:
8/6/2015

Sample ID:
C003-SS003-SC001

RAD7 #:
2534

Test ID:
3701

```
3701 0.00±1.70 p Sniff
     0.86±4.13 p Thoron
  THU 06-AUG-15 15:59
  34.1°C RH:14% B:6.18V
Total Counts:  5.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.11±0.52 cpm  20.0%
C: 0.11±0.52 cpm  20.0%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  60.0%
```

Location ID:
C003-SS003

Date:
8/6/2015

Sample ID:
C003-SS003-RC001

RAD7 #:
2534

Test ID:
3801

```
3801 0.00±0.57 p Sniff
     0.00±1.14 p Thoron
  THU 06-AUG-15 16:32
  32.2°C RH:25% B:6.21V
Total Counts:  14.
Livetime:   28.1min
A: 0.00±0.14 cpm   0.0%
B: 0.00±0.14 cpm   0.0%
C: 0.11±0.21 cpm  21.4%
D: 0.00±0.14 cpm   0.0%
O: 0.39±0.32 cpm  78.6%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	Canadian Radium
Property/Location ID #	Site Address
Location Description: SB-06	

Date: 8/6/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: partly cloudy	UV Index: 7
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 0	Pressure: 29.94 falling

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1550/1600	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 7
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 0	Pressure: 29.94 falling

Sniff (Waist) Sample ID#: 3601	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3601	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.86	Thoron Measurement: 0.00 ± 3.74
Temperature: 34.7	Relative Humidity: 10

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1603/1633	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 6
Temperature: 75.1	Dew Point: 62
Wind Direction: variable	Humidity: 64
Wind Speed: 0	Pressure: 29.93

Run (Waist) Sample ID#: 3701	
Measurements from RAD7 Print Out:	
Run Test ID #: 3701	Run Duration: 30 minutes
Radon Measurement: 0.16 ± 0.75	Thoron Measurement: 0.00 ± 1.25
Temperature: 32.9	Relative Humidity: 19

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1550/1600	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 7
Temperature: 77	Dew Point: 58
Wind Direction: SSW	Humidity: 53
Wind Speed: 0	Pressure: 29.94 falling

Sniff (Contact) Sample ID#: 3701	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3701	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.70	Thoron Measurement: 0.86 ± 4.13
Temperature: 34.1	Relative Humidity: 14

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1603/1633	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: partly cloudy	UV Index: 6
Temperature: 75.1	Dew Point: 62
Wind Direction: variable	Humidity: 64
Wind Speed: 0	Pressure: 29.93

Run (Contact) Sample ID#: 3801	
Measurements from RAD7 Print Out:	
Run Test ID #: 3801	Run Duration: 30 minutes
Radon Measurement: 0.00 ± 0.57	Thoron Measurement: 0.00 ± 1.14
Temperature: 32.2	Relative Humidity: 25

Comments:

Location ID:
C004-SS001

Date:
8/7/2015

Sample ID:
C004-SS001-RW005

RAD7 #:
2895

Test ID:
3801

```
3801 0.00±0.62 p Sniff
     0.00±1.25 p Thoron
  FRI 07-AUG-15 08:30
  22.8°C RH: 4% B:6.33V
Total Counts:  47.
Livetime:   28.0min
A: 0.00±0.14 cpm   0.0%
B: 0.00±0.14 cpm   0.0%
C: 0.04±0.17 cpm   2.1%
D: 0.00±0.14 cpm   0.0%
O: 1.64±0.56 cpm  97.9%
```

Location ID:
C004-SS001

Date:
8/7/2015

Sample ID:
C004-SS001-RC005

RAD7 #:
2534

Test ID:
3901

```
3901 0.43±0.98 p Sniff
     1.43±1.97 p Thoron
  FRI 07-AUG-15 08:32
  24.6°C RH: 5% B:6.15V
Total Counts:  20.
Livetime:   28.0min
A: 0.14±0.23 cpm  20.0%
B: 0.18±0.25 cpm  25.0%
C: 0.04±0.17 cpm   5.0%
D: 0.07±0.19 cpm  10.0%
O: 0.29±0.29 cpm  40.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	Canadian Radium
Property/Location ID #	Site Address
Location Description: Background	

Date: 8/7/15 RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 0
Temperature: 59	Dew Point: 58
Wind Direction: SSW	Humidity: 96
Wind Speed: 1	Pressure: 29.91 rising

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Sniff (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff Test ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0802/0832	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 2
Temperature: 59	Dew Point: 58
Wind Direction: SSW	Humidity: 96
Wind Speed: 1	Pressure: 29.92 rising

Run (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #: 3801	Run Duration: 30 minutes
Radon Measurement: 0.00±0.62	Thoron Measurement: 0.00±1.25
Temperature: 22.8	Relative Humidity: 4

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Sniff (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff Test ID #:	Sniff Duration: 10 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0802/0832	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 2
Temperature: 59	Dew Point: 58
Wind Direction: SSW	Humidity: 96
Wind Speed: 1	Pressure: 29.92 rising

Run (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #: 3901	Run Duration: 30 minutes
Radon Measurement: 0.43±0.98	Thoron Measurement: 1.43±1.97
Temperature: 24.6	Relative Humidity: 5

Comments:

0745 - start purge 0800 - stop purge

Location ID:
C002-TRENCH

Date:
8/7/2015

Sample ID:
C002-TRENCH-SW001

RAD7 #:
2895

Test ID:
3901

```
3901 0.47±2.25 p Sniff
     0.00±3.74 p Thoron
  FRI 07-AUG-15 09:23
  31.0°C RH:12% B:6.33V
Total Counts:  9.
Livetime:    9.3min
A: 0.11±0.52 cpm  11.1%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 0.85±0.85 cpm  88.9%
```

Location ID:
C002-TRENCH

Date:
8/7/2015

Sample ID:
C002-TRENCH-RW001

RAD7 #:
2895

Test ID:
4001

```
4001 0.16±0.75 p Sniff
     0.00±1.25 p Thoron
  FRI 07-AUG-15 09:56
  38.7°C RH:19% B:6.36V
Total Counts:  40.
Livetime:    28.0min
A: 0.04±0.17 cpm   2.5%
B: 0.00±0.14 cpm   0.0%
C: 0.04±0.17 cpm   2.5%
D: 0.00±0.14 cpm   0.0%
O: 1.36±0.52 cpm  95.0%
```

Location ID:
C002- TRENCH

Date:
8/7/2015

Sample ID:
C002-TRENCH-SC001

RAD7 #:
2534

Test ID:
4001

```
4001 0.42±2.05 p Sniff
     0.85±4.12 p Thoron
  FRI 07-AUG-15 09:25
  28.6°C RH: 5% B:6.27V
Total Counts:  3.
Livetime:    9.3min
A: 0.11±0.52 cpm  33.3%
B: 0.11±0.52 cpm  33.3%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 0.11±0.52 cpm  33.4%
```

Location ID:
C002-TRENCH

Date:
8/7/2015

Sample ID:
C002-TRENCH-RC001

RAD7 #:
2534

Test ID:
4101

```
4101 0.14±0.68 p Sniff
     0.28±1.37 p Thoron
  FRI 07-AUG-15 09:58
  36.2°C RH: 4% B:6.27V
Total Counts:  10.
Livetime:    28.1min
A: 0.04±0.17 cpm  10.0%
B: 0.04±0.17 cpm  10.0%
C: 0.00±0.14 cpm   0.0%
D: 0.00±0.14 cpm   0.0%
O: 0.28±0.28 cpm  80.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	CANADIAN RADIUM
Property/Location ID #	**Site Address**
Location Description	
Bag 2	

Date: 8/7/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 64	Dew Point: 61
Wind Direction: SSW	Humidity: 90
Wind Speed: 0	Pressure: 29.93 rising

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0916/0926	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 64	Dew Point: 61
Wind Direction: SSW	Humidity: 90
Wind Speed: 0	Pressure: 29.93 rising

Sniff (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 3901	Sniff Duration: 10 minutes
Radon Measurement: 0.47±2.25	Thoron Measurement: 0.00±3.74
Temperature: 31.0	Relative Humidity: 12

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number: 2895	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 0929/0959	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 65	Dew Point: 61
Wind Direction: SSW	Humidity: 86
Wind Speed: 0	Pressure: 29.93 rising

Run (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #: 4001	Run Duration: 30 minutes
Radon Measurement: 0.16 ± 0.75	Thoron Measurement: 0.00 ± 1.25
Temperature: 38.7	Relative Humidity: 19

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0916/0926	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 64	Dew Point: 61
Wind Direction: SSW	Humidity: 90
Wind Speed: 0	Pressure: 29.93 rising

Sniff (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 4001	Sniff Duration: 10 minutes
Radon Measurement: 0.42±2.05	Thoron Measurement: 0.85±4.12
Temperature: 28.6	Relative Humidity: 5

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 0929/0959	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: Clear	UV Index: 4
Temperature: 65	Dew Point: 61
Wind Direction: SSW	Humidity: 86
Wind Speed: 0	Pressure: 29.93 rising

Run (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #: 4101	Run Duration: 30 minutes
Radon Measurement: 0.14±0.68	Thoron Measurement: 0.28 ± 1.37
Temperature: 36.2	Relative Humidity: 4

Comments:

Location ID:
C001-SS001

Date:
8/7/2015

Sample ID:
C001-SS001-SW001

RAD7 #:
2895

Test ID:
4101

```
4101 0.00±1.86 p Sniff
     0.00±3.74 p Thoron
  FRI 07-AUG-15 10:16
  35.3°C RH:27% B:6.36V
Total Counts:  7.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.00±0.43 cpm   0.0%
D: 0.00±0.43 cpm   0.0%
O: 0.75±0.82 cpm   100%
```

Location ID:
C001-SS001

Date:
8/7/2015

Sample ID:
C001-SS001-SC001

RAD7 #:
2534

Test ID:
4201

```
4201 0.00±1.70 p Sniff
     0.00±3.42 p Thoron
  FRI 07-AUG-15 10:18
  34.1°C RH: 4% B:6.00V
Total Counts:  4.
Livetime:    9.3min
A: 0.00±0.43 cpm   0.0%
B: 0.00±0.43 cpm   0.0%
C: 0.11±0.52 cpm  25.0%
D: 0.00±0.43 cpm   0.0%
O: 0.32±0.64 cpm  75.0%
```

U.S. Environmental Protection Agency, Region II
Weston Solutions, Inc., Removal Support Team 3
Radon/Thoron Field Measurement Data Sheet

Equipment Type/Model Number	Site Name
Durridge RAD7/Model 711	Canadian Uranium
Property/Location ID #	Site Address
Location Description: MTA fence	

Date: 8/7/15	RST 3 Sampler: RC

Starting Weather Information	
Cloud Coverage: Clear	UV Index: 6
Temperature: 68	Dew Point: 60
Wind Direction: SSW	Humidity: 78
Wind Speed: 1	Pressure: 29.93 rising

Sniff Test - Waist

Initial Sniff Test Information	
RAD7 Serial Number: 2995	RAD7 Calibration Date: 7/8/15
Time (Start/Stop): 1008/1018	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: clear	UV Index: 6
Temperature: 68	Dew Point: 60
Wind Direction: SSW	Humidity: 78
Wind Speed: 1	Pressure: 29.93 rising

Sniff (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 4101	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.86	Thoron Measurement: 0.00 ± 3.74
Temperature: 35.3	Relative Humidity: 27

Run Test - Waist

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run (Waist) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Sniff Test - Contact

Initial Sniff Test Information	
RAD7 Serial Number: 2534	RAD7 Calibration Date: 6/29/15
Time (Start/Stop): 1008/1018	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:10	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: SNIFF	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage: clear	UV Index: 6
Temperature: 68	Dew Point: 60
Wind Direction: SSW	Humidity: 78
Wind Speed: 1	Pressure: 29.93 rising

Sniff (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Sniff Test ID #: 4201	Sniff Duration: 10 minutes
Radon Measurement: 0.00 ± 1.70	Thoron Measurement: 0.00 ± 3.42
Temperature: 34.1	Relative Humidity: 4

Run Test - Contact

Initial Run Test Information	
RAD7 Serial Number:	RAD7 Calibration Date:
Time (Start/Stop):	Thoron: ON
Protocol: USER	Pump: AUTO
Cycle: 00:30	Tone: GEIGER
Recycle: 00	Format: Medium
Mode: AUTO	Rad/Temp Units: pCi/L / °C

Weather Information	
Cloud Coverage:	UV Index:
Temperature:	Dew Point:
Wind Direction:	Humidity:
Wind Speed:	Pressure:

Run (Contact) Sample ID#:	
Measurements from RAD7 Print Out:	
Run Test ID #:	Run Duration: 30 minutes
Radon Measurement:	Thoron Measurement:
Temperature:	Relative Humidity:

Comments:

area on other side of fence of Bag 2 reading