




Final Status Survey Final Report Phase V

**Appendix A12
Survey Unit Release Record
9520-0006, Southwest Site Storage Area**

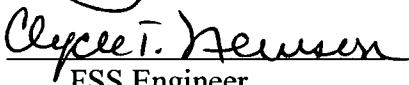
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CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
SOUTHWEST SITE STORAGE AREA
(NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9520-0006 (Southwest Site Storage Area (non-protected area) is designated as Final Status Survey (FSS) Class 1 and consists of approximately nineteen thousand, four hundred and sixty one square feet (19,461 ft²) or one thousand eight hundred eight square meters (1,808 m²) of uninhabited, undeveloped land and is located approximately one thousand eight hundred four feet (1,804 ft) from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The survey unit is bounded as follows: land Survey Unit 9304-0001 to the north (called north as oriented with the north to south flow of the Connecticut River), and land Survey Unit 9522-0001 to the east, south, and to the west. The survey unit is flat and de-vegetated. This is a result of soil grading in support of commodity removal.

The reference coordinates associated with this survey unit are E004 through E006 by S072 through S074 (refer to "*HNP License Termination Plan*" (LTP) Section 5.4.4). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS) based on the Connecticut State Plane System North American Datum (NAD) 1927.

2. CLASSIFICATION BASIS

The survey unit was classified in accordance with Procedure RPM 5.1-10, "*Survey Unit Classification.*"

The "*Classification Basis Summary*" conducted for Survey Unit 9520-0006 consisted of:

- a) A review of the 10CFR50.75 (g) (1) database,
- b) A review of the "*Initial Characterization Report*" and the "*Historic Site Assessment Supplement,*"
- c) Historic and current survey records review,
- d) Visual inspections and a "walk-down."

A review of the "*Initial and Supplemental Characterization Reports*" as well as the previous "*Classification Basis Summaries*" was performed. Survey Unit 9520-0006 was initially part of Survey Unit 9520-0001, designated as the Southwest Site Storage Area, which was designated as Class 2 during the development of the LTP. The source documents, the "*Connecticut Yankee Haddam Neck Characterization Report*" and "*Initial Classification for Survey Areas at Connecticut Yankee*", were incorporated by reference in LTP revision 0.

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The Southeast Site Storage area had a documented history as a radioactive materials storage area in which at least one (1) case of contamination to underlying soil had been recorded. Examples of some of the major events are provided below.

- Plant Incident Report (PIR) 80-37 reported the discovery of three (3) discrete sources of elevated activity within the Southeast Site Storage area in of March 1980, along with other areas around the site. The ground level dose rate over one (1) spot was 3 millirem per hour (mr/hr) and, after digging below about one and a half feet (1 ½ ft) of dirt, the contact reading was reported at about 400 mr/hr. The activity was found above a piece of uncontaminated construction rubble. Isotopic analysis of this discrete source identified Co-60 as the predominate isotope. Subsequent radiological surveys identified an additional discrete source which was also identified as predominately Co-60. Both these locations are believed to be associated with Survey Unit 9520-0001 based on a review of the 1980 survey maps. Records indicate that both elevated areas were removed.
- In 1989, contaminated soil was found along the peninsula access road in both the upper and middle peninsula areas (Areas 9520 and 9530). The soil was subsequently removed, and was determined to have come from the area south of the 115 kV switchyard.
- In 2006, utilities were being removed as part of the decommissioning effort on the Upper Peninsula which included Survey Areas 9520 and 9530. Construction debris, including Asbestos Containing Material (ACM) was identified and remediated. In addition to the ACM, two (2) objects were also identified that had detectable radioactivity. The first was a piece of angle iron located in the water utility trench in Survey Area 9530-0004, and the second was a weathered drum containing turbine blades in Survey Area 9520-0002. To further characterize the extent of buried metallic objects, and to identify if any additional drums were present, an Electromagnetic (EM) survey was performed. The survey was conducted in three phases from February 2006 through March 2006 and identified over ninety (90) locations which were then further characterized by test pitting the areas. A total of ninety-four (94) test pits were completed to characterize subsurface materials.

In 2006, surface soil samples were collected to characterize the radiological condition of the surface soils following the decommissioning of buried commodities and systems. Cs-137 was the only gamma emitting radionuclide positively identified in concentrations meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). The statistical quantities (i.e., mean, median and standard deviation) from the characterization are provided in Table 1.

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Table 1 – Sample Analysis Results from Characterization Soil Samples

	Cs-137 (pCi/g)
Minimum Value :	6.38E-03
Maximum Value :	9.94E-02
Mean :	4.49E-02
Median :	4.87E-02
Standard Deviation :	3.48E-02

In January of 2007, a FSS was designed and performed in this survey unit. Systematic soil samples were taken in a triangular grid pattern from a random start location. This was combined with a scan survey of 50% of the surface and investigative soil samples at locations exceeding the scan alarm set-point. Fifteen (15) systematic, four (4) biased and six (6) investigative surface soil samples were taken in Survey Unit 9520-0001. Of the twenty five (25) total samples taken, Cs-137 was positively identified (i.e. a result greater than two (2) standard deviations) in fifteen (15) soil samples. Other radionuclides were also positively identified by gamma spectroscopy and HTD analysis but at concentrations less than the screening criteria. Radionuclide screening or de-selection is a process where an individual radionuclide or aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the combined Operational DCGL for aggregates. A summary of the results for the statistical sample population are provided in Table 2.

Table 2 – Systematic Sample Analysis Results from Initial FSS Soil Samples

	Cs-137 (pCi/g)
Minimum Value :	1.34E-02
Maximum Value :	3.40E-01
Mean :	9.07E-02
Median :	6.06E-02
Standard Deviation :	8.12E-02

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Initial FSS results were documented in the Connecticut Yankee Final Status Survey Final Report – Phase V. Following the completion of FSS, the area was used to stockpile “radiologically clean” rubblized asphalt intended to be used to pave the ISFSI access road after final site grading was complete. In June of 2007, a surveillance survey was performed on the surface soils under the asphalt pile following the removal of the pile. Removal of the pile had removed additional soil below the original grade and exposed additional buried commodities. In addition, two elevated areas were identified at the same location. On-site analysis of soil samples indicated the presence of Co-60 and Cs-137 in sufficient concentrations to warrant remediation and a Class 1 designation for a new survey unit, 9520-0006, which was established around the area of concern that is located within the original boundary of 9520-0001. Due to the reconfiguration of the survey unit boundaries, the remainder of Survey Unit 9520-0001 was re-subjected to FSS.

In Survey Unit 9520-0006, remediation was performed to remove the discovered buried pipe (broken pieces of vitreous clay piping believed to be part of the original sanitary leech field that was decommissioned in 1979) and the identified soils exhibiting elevated activity. Following remediation, the area was scanned and six (6) post remediation surface soil samples were taken at the locations exhibiting the highest scan results. The results of the post remediation soil samples were used to design the Final Status Survey. The statistical quantities (i.e., mean, median and standard deviation) are provided in Table 3.

Table 3 – Sample Analysis Results for Post Remediation Soil Samples	
	Cs-137 (pCi/g)
Minimum Value :	6.73E-02
Maximum Value :	1.68E+00
Mean :	4.95E-01
Median :	3.08E-01
Standard Deviation :	6.09E-01

No HTD radionuclides were positively identified (i.e. a result greater than two (2) standard deviations) in the initial FSS soil samples.

The FSS Engineer performed a visual inspection and walk-down during June 2007 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions.

This survey area is affected by existing groundwater (reference CY memo ISC 06-024) which will be a source of dose from residual radioactivity, as discussed in Section 3 under the Data Quality Objectives.

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Based upon the identification of radioactive material above the Derived Concentration Guideline Levels (DCGLs), and the need for radiological remediation, it was concluded that there was some probability for residual radioactivity in concentrations greater than the DCGLs, justifying a final survey unit classification of Class 1 for Survey Unit 9520-0006 (refer to Section 3).

3. DATA QUALITY OBJECTIVES (DQO)

FSS design and planning used the Data Quality Objective (DQO) process as described by the LTP, Procedure RPM 5.1-11, "*Preparation of Final Status Survey Plan*," and the "*Multi-Agency Radiation Survey and Site Investigation Manual*" (MARSSIM). A summary of the main features of the DQO process are provided herein.

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would indicate that residual activity within the survey unit does not exceed the release criteria. Therefore, the survey unit would satisfy the primary objective of the FSS plan.

The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9520-0006 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of DCGLs. The DCGLs represent average levels of radioactivity above background levels and are presented in terms of surface or mass activity concentrations.

Chapter 6 of the LTP describes in detail the modeling used to develop the DCGLs for soil (called Base Case Soil DCGL), existing groundwater radioactivity and future groundwater radioactivity that will be contributed by building basements and footings.

The DCGLs presented in Chapter 6 of the LTP were developed for exposures from three (3) components, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity. Equation 1 shows the mathematical relationship between the three (3) components and the total dose.

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Equation 1

$$H_{\text{Total}} = H_{\text{Soil}} + H_{\text{Existing GW}} + H_{\text{Future GW}}$$

The total dose under the LTP criteria is twenty-five (25) mrem/yr TEDE from all three (3) components. The allowable total dose under the Connecticut Department of Environmental Protection (CTDEP) radiological remediation standard for CY is nineteen (19) mrem/yr TEDE. To satisfy both the LTP and CY CTDEP criteria, the dose from soil must be reduced when using the existing and future groundwater dose values discussed above.

This survey area is affected by existing groundwater (reference CY memo ISC 06-024). Therefore, the dose contribution from existing groundwater is bounded by two (2) mrem/yr TEDE.

This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no buried concrete foundations or footings containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater, the third dose component is, therefore, zero (0) mrem/yr TEDE.

Equation 2

$$19 \text{ mrem/yr}_{\text{Total}} = 17 \text{ mrem/yr}_{\text{Soil}} + 2 \text{ mrem/yr}_{\text{Existing GW}} + 0 \text{ mrem/yr}_{\text{Future GW}}$$

The allowable dose for soil in this survey unit is seventeen (17) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in seventeen (17) mrem/yr TEDE is designated as the Operational DCGL, and has been established for the radionuclides of concern as provided in Table 4.

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Table 4 – Radionuclide Specific Base Case Soil DCGLs, Operational DCGLs and Required Minimum Detectable Concentrations (MDCs)

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pC/g) ⁽²⁾	Operational DCGL (pC/g) ⁽³⁾	Required MDC (pC/g) ⁽⁴⁾
H-3	4.12E+02	2.80E+02	1.65E+01
C-14	5.66E+00	3.85E+00	2.26E-01
Mn-54	1.74E+01	1.18E+01	6.96E-01
Fe-55	2.74E+04	1.86E+04	1.10E+03
Co-60	3.81E+00	2.59E+00	1.52E-01
Ni-63	7.23E+02	4.92E+02	2.89E+01
Sr-90	1.55E+00	1.05E+00	6.20E-02
Nb-94	7.12E+00	4.84E+00	2.85E-01
Tc-99	1.26E+01	8.57E+00	5.04E-01
Ag-108m	7.14E+00	4.86E+00	2.86E-01
Cs-134	4.67E+00	3.18E+00	1.87E-01
Cs-137	7.91E+00	5.38E+00	3.16E-01
Eu-152	1.01E+01	6.87E+00	4.04E-01
Eu-154	9.29E+00	6.32E+00	3.72E-01
Eu-155	3.92E+02	2.67E+02	1.57E+01
Pu-238	2.96E+01	2.01E+01	1.18E+00
Pu-239/240	2.67E+01	1.82E+01	1.07E+00
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00
Pu-241	8.70E+02	5.92E+02	3.48E+01
Cm-243/244	2.90E+01	1.97E+01	1.16E+00

- (1) Bold indicates those radionuclides considered Hard to Detect (HTD)
- (2) The Base Case Soil DCGL(s) are specified by the LTP in Chapter 6 and are equivalent to twenty-five (25) mrem/yr TEDE
- (3) The Operational DCGL is equivalent to achieving seventeen (17) mrem/yr TEDE
- (4) The required MDC is equivalent to achieving one (1) mrem/yr TEDE
- (5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed

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Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Soil samples were collected in 2006 to establish the radiological condition of Survey Unit 9520-0001 for FSS and again in 2007 for post-remediation in Survey Unit 9520-0006. In both cases, Cs-137 was the only gamma emitting radionuclide reported in a concentration with the potential for exceeding the screening criteria. Other radionuclides were positively identified (i.e., a result greater than two (2) standard deviations uncertainty) but at concentrations less than 5% of the Operational DCGL. Subsequently, Cs-137 was selected as the sole isotope of concern for this survey. The radiological survey data that was used for the survey design is provided in Table 3.

Instrument DQOs included a verification of the ability of the survey instrument to detect the radiation(s) of interest relative to the DCGL. Survey instrument response checks were required prior to issue and after the instrument had been used. Control and accountability of survey instruments was required to assure the quality and prevent the loss of data.

As part of the DQOs applied to laboratory processes, analysis results were reported as actual calculated results. Results reported as less than Minimum Detectable Concentration (MDC) were not accepted for FSS. Sample report summaries included unique sample identification, analytical method, radionuclide, result, and uncertainty to two (2) standard deviations, laboratory data qualifiers, units, and the required and observed MDC.

4. SURVEY DESIGN

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. Guidance for preparing FSS plans is provided in Procedure RPM 5.1-11, "*Preparation of Final Status Survey Plans*". The FSS plan uses an integrated sample design that combines scanning surveys and sampling which can be either random or biased.

The DQO process determined that Cs-137 would be the sole radionuclide of concern in Survey Unit 9520-0006 (refer to Section 3). The previous characterization and FSS survey data did not identify any HTD radionuclides of concern for this survey unit. Subsequently, surrogate DCGLs were not required for this survey unit via screening under LTP Section 5.4.7.2, "*Gross Activity DCGLs*". Other radionuclides that were positively identified in concentrations greater than the screening criteria during the performance of this FSS would be evaluated to ensure adequate survey design. Radionuclide screening or de-selection is a process where the dose contribution from an individual radionuclide or aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates.

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As the survey unit is classified as a Class 1 surface soils area, and discrete, elevated areas of contamination was possible, the application of the Elevated Measurement Comparison (EMC) remained an option.

The Sign Test was selected as the non-parametric statistical test. The use of the Sign Test did not require the selection or use of a background reference area, which simplified survey design and implementation. This approach was conservative since it included background Cs-137 as part of the sample set.

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, *"Determination of the Number of Surface Samples for Final Status Survey."* The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 4.16 to maintain the relative shift (Δ/σ) in the range of 1 and 3. The resulting Adjusted Relative Shift was 2.0. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10CFR20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. The survey design specified fifteen (15) surface soil samples for non-parametric statistical testing. Based upon a review of the historical information, the results of previous Characterization Surveys, the result of the previous FSS and the result of the post-remediation soil samples, the acquisition of additional judgmental surface soil samples from within this survey unit was deemed unnecessary.

The grid pattern and locations of the soil samples were determined using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, *"Identifying, and Marking Surface Sample Locations for Final Status Survey."* Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy. A systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 1 area.

Sample locations were identified using AutoCAD-LT, a commercially available plotting software package with coordinates consistent with the Connecticut State Plane System. These coordinates were integrated with a GPS to locate sample locations in the field. Sample Measurement Locations for the design are listed with the GPS coordinates in Table 5.

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Table 5 - Sample Measurement Locations with Associated GPS Coordinates

Designation	Northing	Easting
9520-0006-001F	236168.98	668761.18
9520-0006-002F	236168.98	668799.84
9520-0006-003F	236135.50	668741.85
9520-0006-004F	236135.50	668780.51
9520-0006-005F	236135.50	668819.17
9520-0006-006F	236135.50	668857.83
9520-0006-007F	236102.02	668722.52
9520-0006-008F	236102.02	668761.18
9520-0006-009F	236102.02	668799.84
9520-0006-010F	236102.02	668838.50
9520-0006-011F	236102.02	668877.16
9520-0006-012F	236068.54	668780.51
9520-0006-013F	236068.54	668819.17
9520-0006-014F	236068.54	668857.83
9520-0006-015F	236035.06	668838.50

Procedure RPM 5.1-11 specifies that 5% of the samples are required to be selected for HTD analysis. Two (2) soil samples, or about 10% of the number of samples that would be used for non-parametric statistical testing were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RANDBETWEEN" function. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in the LTP, Table 2-12, "*Radionuclides Potentially Present at Haddam Neck Plant*" and as provided in Table 4.

The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*," included the collection of one (1) soil sample for "split sample" analysis by the off-site laboratory. This location was selected randomly using the Microsoft Excel "RANDBETWEEN" function.

The LTP specifies a required scanning coverage of 100% for outdoor Class 1 areas.

For this Class 1 survey unit, the "Investigation Level" for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8. Table 6 provides a synopsis of the survey design.

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Table 6 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Survey Unit Land Area	1,808 m ²	Based on AutoCAD-LT
Number of Measurements	15 (15 systematic grid)	Type 1 and Type 2 errors were 0.05, sigma was 0.61 pCi/g, the LBGR was set at 4.16 to maintain Relative Shift in the range of 1 and 3
Grid Spacing	11.81 m	Based on triangular grid
Operational DCGL	5.38 pCi/g Cs-137	Administratively set to achieve seventeen (17) mrem/yr TEDE ⁽¹⁾
Soil Investigation Level	5.38 pCi/g Cs-137	The Operational DCGL meets the LTP criteria for a Class 1 survey unit
Scan Survey Area Coverage	Approximately 100% of the area	The LTP requires 100% area coverage for Class 1 survey units
Scan Investigation Level	An instrument response greater than the Scan MDC(DCGL _{EMC}) of 2000 cpm plus ambient background	Per BCY-HP-0239 Revision #0

(1) The allowable dose for soil in this survey unit is seventeen (17) mrem/yr TEDE as the bounding dose from existing and future groundwater has been established based on field data (reference CY memo ISC 06-024)

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5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under a FSS Plan package. The package included a detailed FSS plan, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

A single scan area was established that constituted approximately 100% of the surface area of Survey Unit 9520-0006. Grid lines, one (1) meter wide, were painted on the ground of the scan area. A background survey was performed around the survey unit and it was determined that, using an Eberline E-600 with a SPA-3 sodium iodide detector, background ranged from 6,470 counts per minute (cpm) up to 8,790 cpm.

The scan area was established and scanned for elevated readings (see Attachment 2 for all scan results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 100% of the survey unit was scanned.

Measurement locations were identified in North American Datum (NAD) 1927 coordinates using GPS coordinates; sample locations were identified and marked with a surveyor's flag or paint for identification. At each sample location, a one (1) meter radius around the sample flag or paint mark was scanned for elevated radiation levels.

Fifteen (15) surface soil samples were collected and packaged in accordance with Haddam Neck Plant (HNP) Procedure RPM 5.1-3, "*Collection of Sample Media for Final Status Survey*" and FSS design. Samples were controlled, transported, stored, and transferred to the off-site laboratory using Chain-of-Custody (COC) protocol in accordance with Procedure RPM 5.1-5, "*Chain of Custody for Final Status Survey Samples.*"

Two (2) samples (9520-0006-007F and 9520-0006-010F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of one (1) sample (9520-0006-015F) for "split sample" analysis.

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6. SURVEY RESULTS

All field survey activities were conducted between June 19, 2007 and July 02, 2007.

The sample locations identified in the FSS plan were scanned over approximately a one (1) meter radius for elevated radiation levels. Table 7 provides an overview of the scan results for sample measurement locations. Scan results for the entire survey unit are provided in Attachment 2.

Table 7 - Scan Results for Sample Measurement Locations

Sample Measurement Location ⁽²⁾	Highest Logged Reading (kcpm)	Action Level (kcpm)	> Action Level ⁽¹⁾
1	7.55	9.87	NO
2	7.56	10.64	NO
3	8.81	10.64	NO
4	9.15	10.03	NO
5	8.40	9.54	NO
6	7.96	10.67	NO
7	9.18	10.67	NO
8	7.54	9.65	NO
9	8.42	10.66	NO
11	8.42	10.13	NO
12	8.40	10.20	NO
13	7.44	8.47	NO
15	7.84	9.89	NO

(1) The action level is based on a measurement in accordance with the FSS plan (MDC(DCGL_{EMC}) of 2,000 cpm plus ambient background)

(2) Sample locations 9520-0006-002F and 9520-0006-006F were moved approximately two meters to the west of their established coordinate locations due to their close proximity to the eastern boundary of the survey unit.

The scan area, that comprised approximately 100% of the total surface area for the survey unit, was scanned for elevated radiation levels. The area was scanned in accordance with the FSS plan between June 29, 2007 and July 02, 2007.

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Thirty-four (34) scan strips were established in this survey unit. No elevated measurement locations were identified during scanning. Table 8 provides an overview of the scan area survey. Scan results are provided in Attachment 2.

Table 8 - Scan Area Results

Scan Strips	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification ⁽²⁾	Investigation Sample
1 thru 10	9.08	10.79	None	None
11 thru 20	8.61	10.58	None	None
21 thru 30	8.98	10.58	None	None
31 thru 34	8.93	10.16	None	None

(1) The action level is based on a measurement in accordance with the FSS plan (MDC(DCGL_{EMC}) of 2,000 cpm plus ambient background)

(2) ER is an abbreviation associated with the barcodes used in the field where ER stands for Elevated Reading.

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing and the associated field split using gamma spectroscopy. Gamma spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). However, Cs-137 was the only gamma-emitting radionuclide reported in concentrations exceeding the de-selection criteria.

Cs-137 was identified in eleven (11) of the fifteen (15) samples collected for non-parametric statistical testing. The mean of the gamma spectroscopic analysis results for the sample population indicated that Cs-137 was present at levels lower than the concentrations of Cs-137 found in soil at off-site locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063. A summary of the fifteen (15) samples collected for non-parametric statistical testing results is provided in Table 9.

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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**Table 9 - Summary of Gamma Spectroscopy Results for Surface Soil
Samples Comprising the Statistical Sample Population**

Sample Number	Cs-137 pCi/g
9520-0006-001F	5.30E-02
9520-0006-002F	7.36E-02
9520-0006-003F	2.35E-02
9520-0006-004F	1.77E-01
9520-0006-005F	8.93E-02
9520-0006-006F	1.07E-01
9520-0006-007F	1.11E-02
9520-0006-008F	6.05E-02
9520-0006-009F	0.00E+00
9520-0006-010F	2.66E-01
9520-0006-011F	1.11E-01
9520-0006-012F	0.00E+00
9520-0006-013F	6.87E-01
9520-0006-014F	9.44E-02
9520-0006-015F	6.80E-02

The off-site laboratory also processed two (2) samples for HTD analysis as required by the sample plan. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC. No HTD radionuclides were detected.

7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. One sample location was selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*". Evaluation using the reported results for Cs-137 resulted in acceptable agreement between the field-split results at the selected location. The sample analysis vendor, General Engineering Laboratories, LLC, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachments 3 and 4 for data and data quality analysis results.

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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8. INVESTIGATIONS AND RESULTS

Although no elevated scan measurements were observed, six (6) additional judgmental surface soil samples were collected at the discretion of FSS supervision during the performance of FSS. These judgmental biased soil samples were analyzed for Cs-137 in accordance with the DQOs used during the survey design. Judgmental sample designations are listed with the GPS coordinates in Table 10.

Table 10 - Judgmental Sample Designations with Associated GPS Coordinates

Designation	Northing	Easting
9520-0006-024-I	236127.59	668743.92
9520-0006-025-I	236108.41	668843.20
9520-0006-026-I	236131.87	668808.84
9520-0006-027-I	236115.99	668841.76
9520-0006-028-I	236092.90	668822.91
9520-0006-029-I	236143.26	668773.04

- (1) Judgmental sample numbers for this FSS commence with the designation 9520-0006-024I as sample numbers 16I through 23I were assigned to soil samples taken during previous investigations.

The Judgmental sample results for the radionuclides of concern are provided in Table 11 below.

Table 11 - Investigative Sample Results

Sample Number	Cs-137 pCi/g
9520-0006-024-I	8.54E-02
9520-0006-025-I	1.06E-01
9520-0006-026-I	1.06E-01
9520-0006-027-I	1.30E-01
9520-0006-028-I	1.39E-01
9520-0006-029-I	2.71E-02

Cs-137 was positively identified in all of the six (6) Judgmental samples taken. All samples results were less than the Operational DCGL for Cs-137.

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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9. REMEDIATION AND RESULTS

Radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to FSS. Remediation was performed to remove buried broken pieces of vitreous clay piping believed to be part of the original sanitary leech field that was decommissioned in 1979 and surrounding soils exhibiting elevated activity. All excavations were characterized and backfilled with "clean" fill prior to performing FSS. In the area where remediation occurred, the ground area is comprised of barren dirt with no vegetation, and the soils have been graded relatively flat to the corresponding elevation of the adjacent survey units. The results for Cs-137 following remediation were well below the Operational DCGL provided in Table 3. Health Physics TSD BCY-HP-0078, "*ALARA Evaluation of Soil Remediation in Support of Final Status Survey*," determined that remediation beyond that required to meet the release criteria is unnecessary and that the remaining residual radioactivity in soil was ALARA.

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

No changes were made to the FSS plan.

11. DATA QUALITY ASSESSMENT (DQA)

The DQO sample design and data were reviewed in accordance with Procedure RPM 5.1-23, "*Data Quality Assessment*," for completeness and consistency. The sampling design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. The evaluation of the Sign Test results demonstrates that the survey unit passes the unrestricted release criteria, thus, the null hypothesis is rejected.

Documentation was complete and legible. Surveys and sample collection were consistent with the DQOs and were sufficient to ensure that the survey unit was properly designated as Class 2.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The mean and median values are well below the Operational DCGL. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs. The basic statistical quantities for the statistical sample population are provided below in Table 12.

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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**Table 12 – Basic Statistical Quantities for Cs-137
from the Final Status Survey**

	Cs-137 pCi/g
DCGL _{op} :	5.38E+00
Minimum Value:	0.00E+00
Maximum Value:	6.87E-01
Mean:	1.21E-01
Median:	7.36E-02
Standard Deviation:	1.71E-01

For Cs-137, the range of the data, about four (4) standard deviations, was not a particularly large variation considering that the levels were essentially at existing environmental levels where such variation is to be expected and the difference between the mean and median was about 28% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot indicates positive skewness as confirmed by the calculated skew of 2.9 for Cs-137. All data, assessments, and graphical representations are provided in Attachment 4.

12. ANOMALIES

No anomalies were noted.

13. CONCLUSION

Survey Unit 9520-0006 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison was not required.

All identified radionuclides of concern were used for statistical testing to determine the adequacy of the survey unit for FSS.

The sample data passed the Sign Test. The null hypothesis was rejected. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit is properly designated as Class 1.

The dose contribution from soil is 0.38 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

This survey area is affected by existing groundwater (reference CY memo ISC 06-024); therefore the dose contribution from existing groundwater is bounded at two (2) mrem/yr TEDE.

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no underground foundations or footings containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024); therefore, the dose contribution from future groundwater is zero (0) mrem/yr TEDE.

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 2.38 mrem/yr TEDE. Therefore, Survey Unit 9520-0006 is acceptable for unrestricted release.

14. ATTACHMENTS

14.1 Attachment 1 – Survey Unit Location Map

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

14.4 Attachment 4 – DQA Results

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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ATTACHMENT 1 (FIGURES)

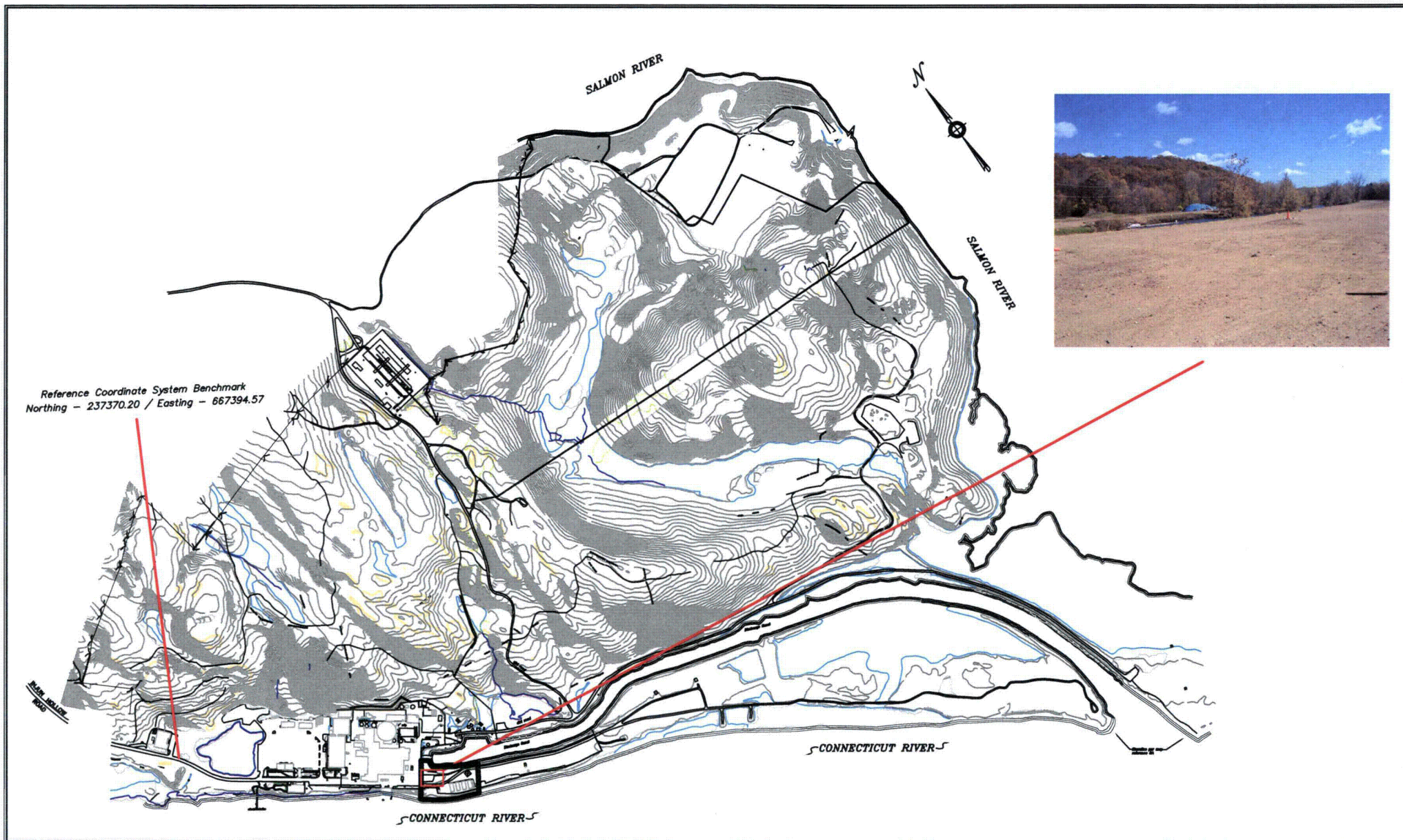
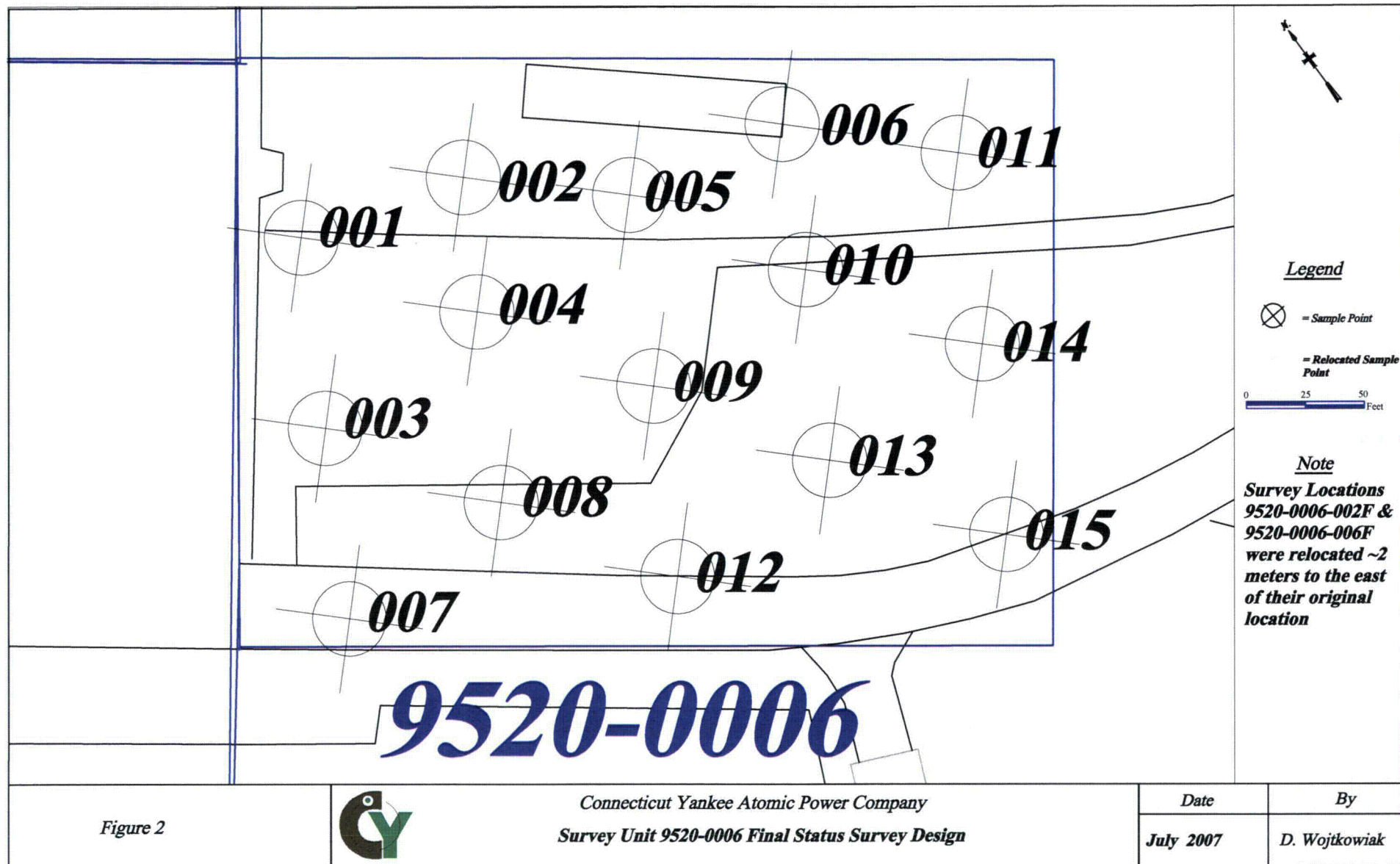


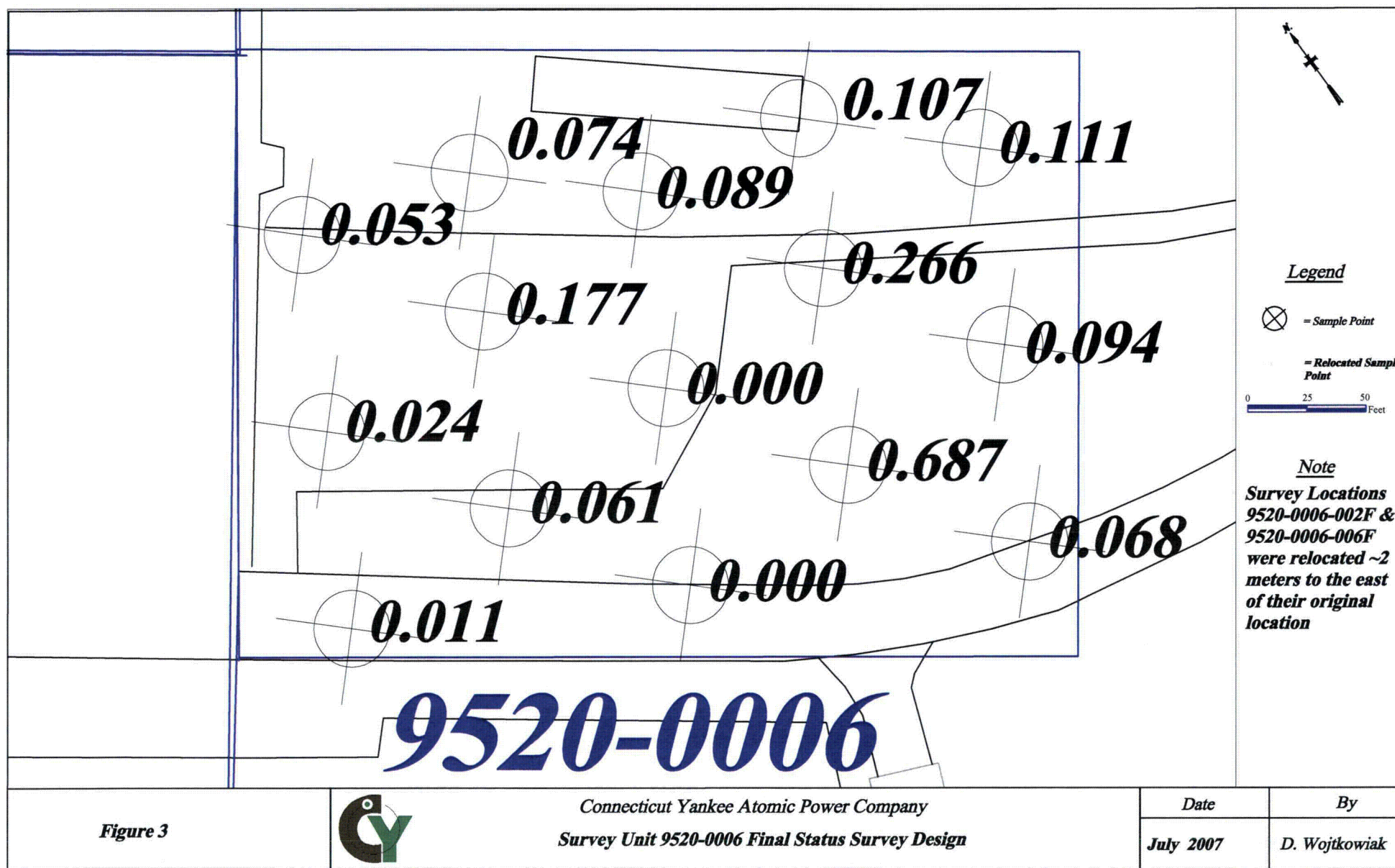
Figure 1

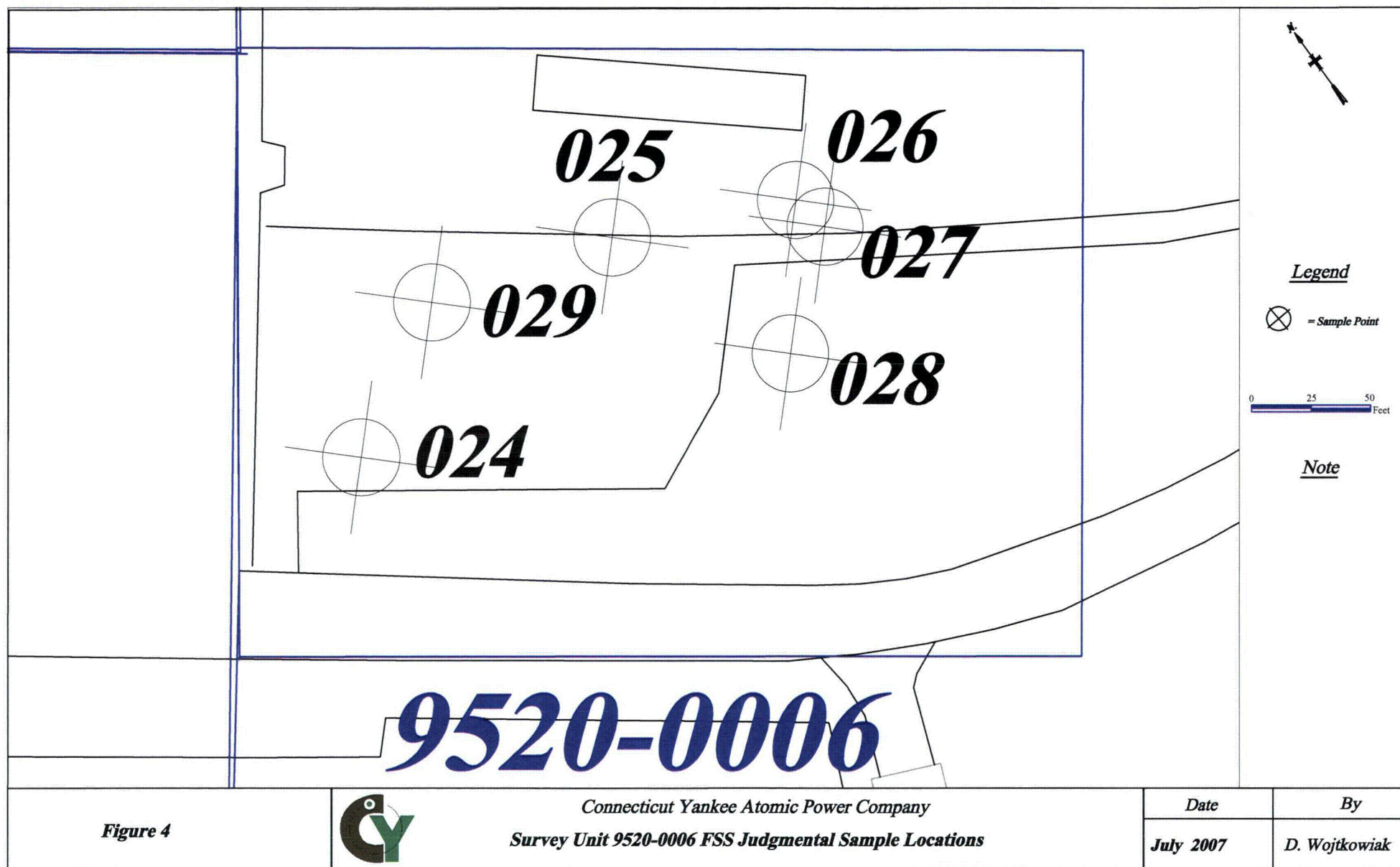


Connecticut Yankee Atomic Power Company
Site Map With Reference To Survey Unit 9520-0006

Date	By
July 2007	Wojo







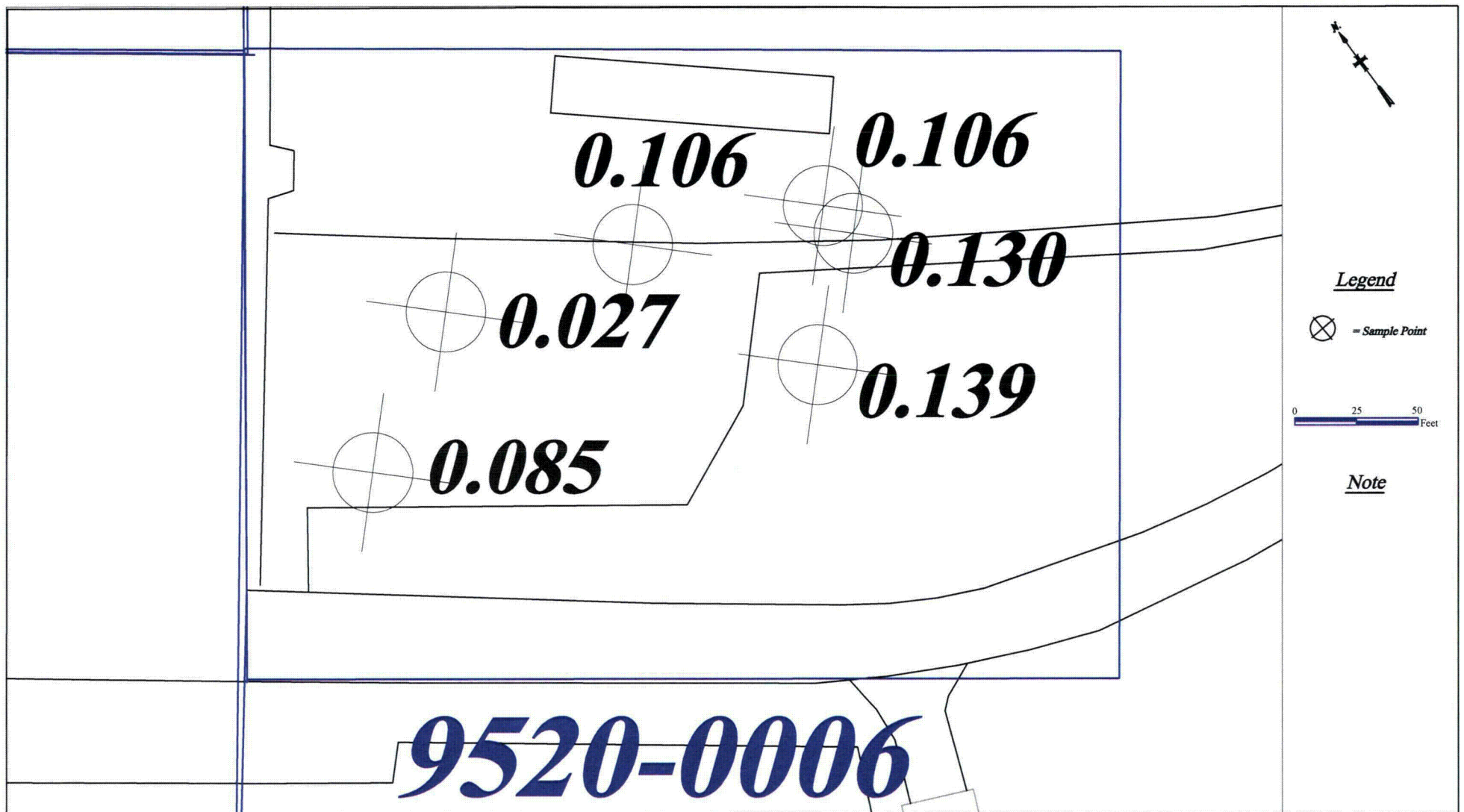


Figure 5



Connecticut Yankee Atomic Power Company
 9520-0006 FSS Judgmental Sample Cs-137 Results

Date
 July 2007

By
 D. Wojtkowiak

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
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ATTACHMENT 2 (SCAN RESULTS)

SOUTHWEST SITE STORAGE AREA
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RELEASE RECORD
Attachment 2

SCAN RESULTS @ SAMPLE LOCATIONS

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9520-06-BL-00-01-0	6/29/2007	7:15:00	7.87E+03			1107	1007
9520-06-SL-00-01-0	6/29/2007	7:16:00	7.55E+03	9.87E+03		1107	1007
9520-06-BL-00-02-0	6/29/2007	8:45:00	8.64E+03			1107	1007
9520-06-SL-00-02-0	6/29/2007	8:46:00	7.56E+03	1.06E+04		1107	1007
9520-06-BL-00-03-0	6/29/2007	7:22:00	8.64E+03			1107	1007
9520-06-SL-00-03-0	6/29/2007	7:23:00	8.81E+03	1.06E+04		1107	1007
9520-06-BL-00-04-0	6/29/2007	7:24:00	8.03E+03			1107	1007
9520-06-SL-00-04-0	6/29/2007	7:24:00	9.15E+03	1.00E+04		1107	1007
9520-06-BL-00-05-0	6/29/2007	7:25:00	7.54E+03			1107	1007
9520-06-SL-00-05-0	6/29/2007	7:26:00	8.40E+03	9.54E+03		1107	1007
9520-06-BL-00-06-0	6/29/2007	8:50:00	8.67E+03			1107	1007
9520-06-SL-00-06-0	6/29/2007	8:51:00	7.96E+03	1.07E+04		1107	1007
9520-06-BL-00-07-0	6/29/2007	7:30:00	8.67E+03			1107	1007
9520-06-SL-00-07-0	6/29/2007	7:31:00	9.18E+03	1.07E+04		1107	1007
9520-06-BL-00-08-0	6/29/2007	7:33:00	7.65E+03			1107	1007
9520-06-SL-00-08-0	6/29/2007	7:34:00	7.54E+03	9.65E+03		1107	1007
9520-06-BL-00-09-0	6/29/2007	7:35:00	8.66E+03			1107	1007
9520-06-SL-00-09-0	6/29/2007	7:35:00	8.42E+03	1.07E+04		1107	1007
9520-06-BL-00-10-0	6/29/2007	7:37:00	8.13E+03			1107	1007
9520-06-SL-00-10-0	6/29/2007	7:38:00	8.42E+03	1.01E+04		1107	1007
9520-06-BL-00-11-0	6/29/2007	7:40:00	8.20E+03			1107	1007
9520-03-SL-00-11-0	6/29/2007	7:41:00	8.40E+03	1.02E+04		1107	1007
9520-06-BL-00-12-0	6/29/2007	7:42:00	6.47E+03			1107	1007
9520-06-SL-00-12-0	6/29/2007	7:43:00	7.44E+03	8.47E+03		1107	1007
9520-06-BL-00-13-0	6/29/2007	7:43:00	7.89E+03			1107	1007
9520-06-SL-00-13-0	6/29/2007	7:44:00	7.84E+03	9.89E+03		1107	1007
9520-06-BL-00-14-0	6/29/2007	7:45:00	7.71E+03			1107	1007
9520-06-SL-00-14-0	6/29/2007	7:46:00	8.12E+03	9.71E+03		1107	1007
9520-06-BL-00-15-0	6/29/2007	7:47:00	7.79E+03			1107	1007
9520-06-SL-00-15-0	6/29/2007	7:48:00	8.17E+03	9.79E+03		1107	1007

SOUTHWEST SITE STORAGE AREA
SURVEY UNIT 9520-0006

Release Record
Attachment 2

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Lvl	E-600 S/N	Probe S/N
9520-06-BC-01-01-0	6/29/2007	10:37:00	7.88E+03			1107	1007
9520-06-SC-01-01-0	6/29/2007	10:49:00	8.31E+03	9.88E+03		1107	1007
9520-06-BC-01-02-0	6/29/2007	10:51:00	8.64E+03			1107	1007
9520-06-SC-01-02-0	6/29/2007	11:05:00	8.97E+03	1.06E+04		1107	1007
9520-06-BC-01-03-0	6/29/2007	11:08:00	8.79E+03			1107	1007
9520-06-SC-01-03-0	6/29/2007	11:16:00	9.08E+03	1.08E+04		1107	1007
9520-06-BC-01-04-0	6/29/2007	11:17:00	8.03E+03			1107	1007
9520-06-SC-01-04-0	6/29/2007	11:26:00	8.64E+03	1.00E+04		1107	1007
9520-06-BC-01-05-0	6/29/2007	11:29:00	7.54E+03			1107	1007
9520-06-SC-01-05-0	6/29/2007	11:40:00	7.58E+03	9.54E+03		1107	1007
9520-06-BC-01-06-0	6/29/2007	11:42:00	7.33E+03			1107	1007
9520-06-SC-01-06-0	6/29/2007	12:11:00	7.97E+03	9.33E+03		1107	1007
9520-06-BC-01-07-0	7/2/2007	7:37:00	8.68E+03			1107	1007
9520-06-SC-01-07-0	7/2/2007	7:45:00	8.45E+03	1.07E+04		1107	1007
9520-06-BC-01-08-0	7/2/2007	7:48:00	7.68E+03			1107	1007
9520-06-SC-01-08-0	7/2/2007	7:54:00	7.76E+03	9.68E+03		1107	1007
9520-06-BC-01-09-0	7/2/2007	7:56:00	8.66E+03			1107	1007
9520-06-SC-01-09-0	7/2/2007	8:07:00	8.96E+03	1.07E+04		1107	1007
9520-06-BC-01-10-0	7/2/2007	8:08:00	8.13E+03			1107	1007
9520-06-SC-01-10-0	7/2/2007	8:20:00	8.50E+03	1.01E+04		1107	1007
9520-06-BC-01-11-0	7/2/2007	8:21:00	8.00E+03			1107	1007
9520-06-SC-01-11-0	7/2/2007	8:30:00	7.99E+03	1.00E+04		1107	1007
9520-06-BC-01-12-0	7/2/2007	8:32:00	8.58E+03			1107	1007
9520-06-SC-01-12-0	7/2/2007	8:39:00	8.52E+03	1.06E+04		1107	1007
9520-06-BC-01-13-0	7/2/2007	8:40:00	7.99E+03			1107	1007
9520-06-SC-01-13-0	7/2/2007	8:49:00	8.43E+03	9.99E+03		1107	1007
9520-06-BC-01-14-0	7/2/2007	9:56:00	7.71E+03			1107	1007
9520-06-SC-01-14-0	7/2/2007	10:05:00	8.07E+03	9.71E+03		1107	1007
9520-06-BC-01-15-0	7/2/2007	10:06:00	8.35E+03			1107	1007
9520-06-SC-01-15-0	7/2/2007	10:16:00	8.25E+03	1.04E+04		1107	1007
9520-06-BC-01-16-0	7/2/2007	10:16:00	8.23E+03			1107	1007
9520-06-SC-01-16-0	7/2/2007	10:23:00	8.51E+03	1.02E+04		1107	1007
9520-06-BC-01-17-0	7/2/2007	10:24:00	8.28E+03			1107	1007
9520-06-SC-01-17-0	7/2/2007	10:31:00	8.60E+03	1.03E+04		1107	1007
9520-06-BC-01-18-0	7/2/2007	10:32:00	7.89E+03			1107	1007
9520-06-SC-01-18-0	7/2/2007	10:38:00	8.26E+03	9.89E+03		1107	1007
9520-06-BC-01-19-0	7/2/2007	10:41:00	7.99E+03			1107	1007
9520-06-SC-01-19-0	7/2/2007	10:46:00	8.61E+03	9.99E+03		1107	1007
9520-06-BC-01-20-0	7/2/2007	10:47:00	7.99E+03			1107	1007
9520-06-SC-01-20-0	7/2/2007	10:52:00	8.40E+03	9.99E+03		1107	1007
9520-06-BC-01-21-0	7/2/2007	10:54:00	8.58E+03			1107	1007
9520-06-SC-01-21-0	7/2/2007	11:01:00	8.43E+03	1.06E+04		1107	1007

SOUTHWEST SITE STORAGE AREA
SURVEY UNIT 9520-0006

Release Record
Attachment 2

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Lvl	E-600 S/N	Probe S/N
9520-06-BC-01-22-0	7/2/2007	11:02:00	7.95E+03			1107	1007
9520-06-SC-01-22-0	7/2/2007	11:08:00	8.98E+03	9.95E+03		1107	1007
9520-06-BC-01-23-0	7/2/2007	11:09:00	8.28E+03			1107	1007
9520-06-SC-01-23-0	7/2/2007	11:17:00	8.07E+03	1.03E+04		1107	1007
9520-06-BC-01-24-0	7/2/2007	11:17:00	7.46E+03			1107	1007
9520-06-SC-01-24-0	7/2/2007	11:24:00	8.24E+03	9.46E+03		1107	1007
9520-06-BC-01-25-0	7/2/2007	11:25:00	7.98E+03			1107	1007
9520-06-SC-01-25-0	7/2/2007	11:31:00	7.79E+03	9.98E+03		1107	1007
9520-06-BC-01-26-0	7/2/2007	11:32:00	7.86E+03			1107	1007
9520-06-SC-01-26-0	7/2/2007	11:38:00	8.20E+03	9.86E+03		1107	1007
9520-06-BC-01-27-0	7/2/2007	13:08:00	7.50E+03			1107	1007
9520-06-SC-01-27-0	7/2/2007	13:19:00	8.24E+03	9.50E+03		1107	1007
9520-06-BC-01-28-0	7/2/2007	13:20:00	7.71E+03			1107	1007
9520-06-SC-01-28-0	7/2/2007	13:28:00	8.20E+03	9.71E+03		1107	1007
9520-06-BC-01-29-0	7/2/2007	13:29:00	7.65E+03			1107	1007
9520-06-SC-01-29-0	7/2/2007	13:32:00	8.46E+03	9.65E+03		1107	1007
9520-06-BC-01-30-0	7/2/2007	13:34:00	7.85E+03			1107	1007
9520-06-SC-01-30-0	7/2/2007	13:38:00	7.97E+03	9.85E+03		1107	1007
9520-06-BC-01-31-0	7/2/2007	13:39:00	8.16E+03			1107	1007
9520-06-SC-01-31-0	7/2/2007	13:42:00	8.93E+03	1.02E+04		1107	1007
9520-06-BC-01-32-0	7/2/2007	13:42:00	7.96E+03			1107	1007
9520-06-SC-01-32-0	7/2/2007	13:47:00	8.27E+03	9.96E+03		1107	1007
9520-06-BC-01-33-0	7/2/2007	13:49:00	7.84E+03			1107	1007
9520-06-SC-01-33-0	7/2/2007	13:54:00	8.73E+03	9.84E+03		1107	1007
9520-06-BC-01-34-0	7/2/2007	13:55:00	7.74E+03			1107	1007
9520-06-SC-01-34-0	7/2/2007	14:03:00	8.02E+03	9.74E+03		1107	1007

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)

SURVEY UNIT 9520-0006

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)

General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 188898
SDG: MSR#07-0197**

July 06, 2007

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on June 30, 2007 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
188898001	9520-0006-001F
188898002	9520-0006-002F
188898003	9520-0006-003F
188898004	9520-0006-004F
188898005	9520-0006-005F
188898006	9520-0006-006F
188898007	9520-0006-007F
188898008	9520-0006-008F
188898009	9520-0006-009F
188898010	9520-0006-010F
188898011	9520-0006-011F
188898012	9520-0006-012F
188898013	9520-0006-013F
188898014	9520-0006-014F
188898015	9520-0006-015F
188898016	9520-0006-015FS

Items of Note

There are no items to note.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

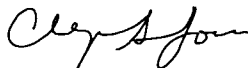
Analytical Request

Fourteen soil samples were analyzed for FSSGAM. Two soil samples were analyzed for FSSALL.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, Data Review Qualifier Definitions, and data from the following fractions: Radiochemistry.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



Cheryl Jones
Project Manager

List of current GEL Certifications as of 06 July 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Chain of Custody and Supporting Documentation

Chain of Custody Form

No. 2007-00156

362 Injun Hollow Road, East Hampton, CT 06424
860-267-2556

Project Name: Haddam Neck Decommissioning						Analyses Requested						Lab Use Only		
Contact Name & Phone: Clyde Newson 860-267- 3157						FSSGAM	FSSALL							Comments:
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size-&Type Code							Comment, Preservation	Lab Sample ID	
9520-0006-001F	6/29/07	0755	TS	G	BP	X								
9520-0006-002F	6/29/07	0920	TS	G	BP	X								
9520-0006-003F	6/29/07	0803	TS	G	BP	X								
9520-0006-004F	6/29/07	0805	TS	G	BP	X								
9520-0006-005F	6/29/07	0810	TS	G	BP	X								
9520-0006-006F	6/29/07	0915	TS	G	BP	X								
9520-0006-007F	6/29/07	0820	TS	G	BP		X							
9520-0006-008F	6/29/07	0825	TS	G	BP	X								
9520-0006-009F	6/29/07	0830	TS	G	BP	X								
9520-0006-010F	6/29/07	0835	TS	G	BP		X							
9520-0006-011F	6/29/07	0910	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07- 0197 SSWP FSSP 9520-0006 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other	Internal Container Temp.: ____ Deg. C Custody Sealed? Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By _____ Date/Time _____			2) Received By _____ Date/Time _____			Bill of Lading # _____								
3) Relinquished By _____ Date/Time _____			4) Received By _____ Date/Time _____											
5) Relinquished By _____ Date/Time _____			6) Received By _____ Date/Time _____											

No. 2007-00157

Chain of Custody Form

Chain of Custody Form

Figure 1. Sample Check-in List

Date/Time Received: 6/30/07 09:30.

SDG#: MSR # 07-0197

Work Order Number: 188898

Shipping Container ID: 7913 3329 8178 Chain of Custody #: 2007-00156
2007-00157

1. Custody Seals on shipping container intact? Yes ☒ No ☐
2. Custody Seals dated and signed? Yes ☒ No ☐
3. Chain-of-Custody record present? Yes ☒ No ☐
4. Cooler temperature 24°C
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 16
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

- ☒ tape ☐ hazard labels
☒ custody seals ☒ appropriate sample labels

9. Samples are:

- ☒ in good condition ☐ leaking
☐ broken ☐ have air bubbles

10. Were any anomalies identified in sample receipt? Yes ☐ No ☒
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Amesbury Date: 6/30/07

Telephoned to: _____ On _____ By _____



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>ANK</u>	SDG/ARCO/Work Order: <u>188898</u>
Received By: <u>ADR</u>	Date Received: <u>6/30/07</u>
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> *If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?	<input type="checkbox"/> <input checked="" type="checkbox"/> Maximum Counts Observed*: <u>66cpm</u>
Classified Radioactive II by RSO?	<input type="checkbox"/> <input checked="" type="checkbox"/>
COC/Samples marked containing PCBs?	<input type="checkbox"/> <input checked="" type="checkbox"/>
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/> Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input type="checkbox"/> <input checked="" type="checkbox"/>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preservation Method: ice bags blue ice dry ice none other (describe) <u>24°C</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected: <u>6/30/07</u>
7 Are Encore containers present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments:

Fed Ex 7913 3329 817890276

PM (or PMA) review: Initials

CAJ

Date

6/30/07

Subject: 9520-0006

From: "Rick E. Gault" <Gault@CYAPCO.com>

Date: Fri, 29 Jun 2007 14:59:37 -0400

To: "Cheryl Jones" <cj@gel.com>

Cheryl;

We're sending 16 samples under MSR 07-0197 to GEL today. All of the samples have a 7 day TAT request. It is acceptable for GEL to use the traced/untraced Tc-99 process for these quick TAT requests. See attached COC for requested analyses.

Rick Gault
CYAPCO
860-267-3903

COC_07_0156_0157.pdf	Content-Description: COC_07_0156_0157.pdf Content-Type: application/octet-stream Content-Encoding: base64
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Data Review Qualifier Definitions

Qualifier Explanation

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

A The TIC is a suspected aldol-condensation product

B Target analyte was detected in the associated blank

B Metals-Either presence of analyte detected in the associated blank, or
MDL/IDL < sample value < PQL

BD Results are either below the MDC or tracer recovery is low

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

d 5-day BOD-The 2:1 depletion requirement was not met for this sample

E Organics-Concentration of the target analyte exceeds the instrument calibration range

E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria

H Analytical holding time was exceeded

h Preparation or preservation holding time was exceeded

J Value is estimated

N Metals-The Matrix spike sample recovery is not within specified control limits

N Organics-Presumptive evidence based on mass spectral library search to make a tentative
identification of the analyte (TIC). Quantitation is based on nearest internal standard
response factor

N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration
by 4X or more

ND Analyte concentration is not detected above the reporting limit

UI Gamma Spectroscopy-Uncertain identification

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 188898**

Method/Analysis Information

Product:	Alphaspec Am241, Cm, Solid ALL FSS
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	648282
Prep Batch Number:	648281
Dry Soil Prep GL-RAD-A-021 Batch Number:	648116

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201369359	Method Blank (MB)
1201369360	188898007(9520-0006-007F) Sample Duplicate (DUP)
1201369361	188898007(9520-0006-007F) Matrix Spike (MS)
1201369362	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 15.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volumes in this batch.

Designated QC

The following sample was used for QC: 188898007 (9520-0006-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were recounted due to a zero critical level caused by their being counted on zero background detectors.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Alphaspec Pu, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	648283
Prep Batch Number:	648281
Dry Soil Prep GL-RAD-A-021 Batch Number:	648116

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201369363	Method Blank (MB)
1201369364	188898007(9520-0006-007F) Sample Duplicate (DUP)
1201369365	188898007(9520-0006-007F) Matrix Spike (MS)
1201369366	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 15.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volumes in this batch.

Designated QC

The following sample was used for QC: 188898007 (9520-0006-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples 1201369363 (MB), 1201369365 (9520-0006-007F) and 188898010 (9520-0006-010F) were recounted due to a zero critical level caused by being counted on zero background detectors.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Pu241, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	648286
Prep Batch Number:	648281
Dry Soil Prep GL-RAD-A-021 Batch Number:	648116

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201369372	Method Blank (MB)
1201369373	188898007(9520-0006-007F) Sample Duplicate (DUP)
1201369374	188898007(9520-0006-007F) Matrix Spike (MS)
1201369375	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 9.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898007 (9520-0006-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation

Nonconformance reports are generated to document any procedural anomalies that may deviate from

referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	648306
Prep Batch Number:	648116

Sample ID	Client ID
188898001	9520-0006-001F
188898002	9520-0006-002F
188898003	9520-0006-003F
188898004	9520-0006-004F
188898005	9520-0006-005F
188898006	9520-0006-006F
188898007	9520-0006-007F
188898008	9520-0006-008F
188898009	9520-0006-009F
188898010	9520-0006-010F
188898011	9520-0006-011F
188898012	9520-0006-012F
188898013	9520-0006-013F
188898014	9520-0006-014F
188898015	9520-0006-015F
188898016	9520-0006-015FS
1201369415	Method Blank (MB)
1201369416	188898001(9520-0006-001F) Sample Duplicate (DUP)
1201369417	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 14.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898001 (9520-0006-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

The sample and the duplicate, 1201369416 (9520-0006-001F) and 188898001 (9520-0006-001F), did not meet the relative percent difference requirement for Ac-228 and Cs-137, however they do meet the relative error ratio requirement with value of 1.228 for Ac-228 and 1.480 for Cs-137.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to a high counting uncertainty.	Bismuth-212	1201369416
UI	Data rejected due to high peak width.	Potassium-40	1201369415
UI	Data rejected due to low abundance.	Bismuth-212	188898001
			188898003
			188898004
			188898005
			188898008
			188898013
			188898016
		Cesium-134	188898002
			188898004
			188898008
			188898012
UI	Data rejected due to no valid peak.	Cesium-137	188898009
			188898012

Method/Analysis Information

Product:	GFPC, Sr90, solid-ALL FSS
Analytical Method:	EPA 905.0 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	648289
Prep Batch Number:	648281
Dry Soil Prep GL-RAD-A-021 Batch Number:	648116

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201369376	Method Blank (MB)
1201369377	188898010(9520-0006-010F) Sample Duplicate (DUP)
1201369378	188898010(9520-0006-010F) Matrix Spike (MS)
1201369379	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 12.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volumes in this batch.

Designated QC

The following sample was used for QC: 188898010 (9520-0006-010F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples 1201369376 (MB) and 1201369377 (9520-0006-010F) were recounted due to a negative result greater than three times the error.

Chemical Recoveries

All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint Tc99, Solid-ALL FSS
Analytical Method: DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number: 647974

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201368673	Method Blank (MB)
1201368674	188898007(9520-0006-007F) Sample Duplicate (DUP)
1201368675	188898007(9520-0006-007F) Matrix Spike (MS)
1201368676	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 14.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898007 (9520-0006-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Revised data is being reported for samples 1201368674 (9520-0006-007F), 188898007 (9520-0006-007F) and 188898010 (9520-0006-010F). After receiving fax data the client requested that the samples be recounted due to suspected false positives. Recounted samples had results less than the MDA.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Fe55, Solid-ALL FSS
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	648290
Prep Batch Number:	648281
Dry Soil Prep GL-RAD-A-021 Batch Number:	648116

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201369380	Method Blank (MB)
1201369381	188898010(9520-0006-010F) Sample Duplicate (DUP)
1201369382	188898010(9520-0006-010F) Matrix Spike (MS)
1201369383	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 4.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898010 (9520-0006-010F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Ni63, Solid-ALL FSS
Analytical Method:	DOE RESL Ni-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	649056
Prep Batch Number:	648281
Dry Soil Prep GL-RAD-A-021 Batch Number:	648116

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201370979	Method Blank (MB)
1201370980	188898010(9520-0006-010F) Sample Duplicate (DUP)
1201370981	188898010(9520-0006-010F) Matrix Spike (MS)
1201370982	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 9.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898010 (9520-0006-010F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were reprepared due to low/high recovery.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: LSC, Tritium Dist, Solid - 3 pCi/g
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 647976

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201368682	Method Blank (MB)
1201368683	188898010(9520-0006-010F) Sample Duplicate (DUP)
1201368684	188898010(9520-0006-010F) Matrix Spike (MS)
1201368685	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 15.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898010 (9520-0006-010F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

The batch was recounted due to a high background.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint C14, Solid All,FSS

Analytical Method: EPA EERF C-01 Modified

Analytical Batch Number: 647980

Sample ID	Client ID
188898007	9520-0006-007F
188898010	9520-0006-010F
1201368693	Method Blank (MB)
1201368694	188898007(9520-0006-007F) Sample Duplicate (DUP)
1201368695	188898007(9520-0006-007F) Matrix Spike (MS)
1201368696	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 9.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188898007 (9520-0006-007F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all

of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date: Barbara Williams 7/10/07

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co:

Client SDG: MSR#07-0197 GEL Work Order: 188898


The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by _____

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-001F
Sample ID: 188898001
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 1.47%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Rad Gamma Spec Analysis

*Gamma, Solid – FSS GAM & ALL FSS 226 Ingrowth
Waived*

Actinium-228		0.790	+/-0.181	0.0568	+/-0.181	0.114	pCi/g						
Americium-241	U	0.0695	+/-0.107	0.0882	+/-0.107	0.176	pCi/g						
Bismuth-212	UI	0.00	+/-0.252	0.191	+/-0.252	0.382	pCi/g						
Bismuth-214		0.605	+/-0.115	0.0324	+/-0.115	0.0647	pCi/g						
Cesium-134	U	0.028	+/-0.0325	0.0227	+/-0.0325	0.0454	pCi/g						
Cesium-137		0.053	+/-0.0415	0.0165	+/-0.0415	0.0329	pCi/g						
Cobalt-60	U	0.0365	+/-0.0236	0.020	+/-0.0236	0.040	pCi/g						
Europium-152	U	-0.0153	+/-0.0903	0.0529	+/-0.0903	0.106	pCi/g						
Europium-154	U	-0.0106	+/-0.0675	0.0578	+/-0.0675	0.116	pCi/g						
Europium-155	U	0.0515	+/-0.0609	0.0555	+/-0.0609	0.111	pCi/g						
Lead-212		0.703	+/-0.083	0.0284	+/-0.083	0.0568	pCi/g						
Lead-214		0.607	+/-0.0952	0.0346	+/-0.0952	0.0692	pCi/g						
Manganese-54	U	0.00726	+/-0.0251	0.0193	+/-0.0251	0.0385	pCi/g						
Niobium-94	U	-0.00582	+/-0.019	0.0163	+/-0.019	0.0325	pCi/g						
Potassium-40		10.4	+/-1.02	0.169	+/-1.02	0.338	pCi/g						
Radium-226		0.605	+/-0.115	0.0324	+/-0.115	0.0647	pCi/g						
Silver-108m	U	-0.000452	+/-0.0191	0.0166	+/-0.0191	0.0331	pCi/g						
Thallium-208		0.228	+/-0.0478	0.0176	+/-0.0478	0.0352	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-001F
Sample ID: 188898001

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-002F
Sample ID: 188898002
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 3.54%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.634	+/-0.159	0.0643	+/-0.159	0.129	pCi/g						
Americium-241	U	0.0473	+/-0.109	0.0947	+/-0.109	0.189	pCi/g						
Bismuth-212		0.463	+/-0.258	0.130	+/-0.258	0.261	pCi/g						
Bismuth-214		0.581	+/-0.0982	0.032	+/-0.0982	0.0639	pCi/g						
Cesium-134	UI	0.00	+/-0.0327	0.021	+/-0.0327	0.0419	pCi/g						
Cesium-137		0.0736	+/-0.0371	0.0182	+/-0.0371	0.0363	pCi/g						
Cobalt-60	U	-0.00111	+/-0.021	0.0177	+/-0.021	0.0353	pCi/g						
Europium-152	U	0.0325	+/-0.0547	0.0468	+/-0.0547	0.0935	pCi/g						
Europium-154	U	-0.00523	+/-0.0735	0.053	+/-0.0735	0.106	pCi/g						
Europium-155	U	-0.0131	+/-0.0574	0.0518	+/-0.0574	0.104	pCi/g						
Lead-212		0.656	+/-0.0718	0.0256	+/-0.0718	0.0511	pCi/g						
Lead-214		0.589	+/-0.0922	0.0342	+/-0.0922	0.0684	pCi/g						
Manganese-54	U	0.009	+/-0.0223	0.0196	+/-0.0223	0.0392	pCi/g						
Niobium-94	U	0.00444	+/-0.0182	0.0161	+/-0.0182	0.0322	pCi/g						
Potassium-40		10.7	+/-1.14	0.167	+/-1.14	0.334	pCi/g						
Radium-226		0.581	+/-0.0982	0.032	+/-0.0982	0.0639	pCi/g						
Silver-108m	U	-0.000543	+/-0.0181	0.0156	+/-0.0181	0.0312	pCi/g						
Thallium-208		0.181	+/-0.0438	0.0149	+/-0.0438	0.0298	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-002F
Sample ID: 188898002

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-003F
Sample ID: 188898003
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 1.59%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.858	+/-0.205	0.0697	+/-0.205	0.139	pCi/g		MJH1	07/03/07	1403	648306	1
Americium-241	U	0.013	+/-0.0977	0.0831	+/-0.0977	0.166	pCi/g						
Bismuth-212	UI	0.00	+/-0.247	0.177	+/-0.247	0.353	pCi/g						
Bismuth-214		0.661	+/-0.107	0.0339	+/-0.107	0.0678	pCi/g						
Cesium-134	U	0.0186	+/-0.0268	0.0246	+/-0.0268	0.0492	pCi/g						
Cesium-137	U	0.0235	+/-0.0249	0.0226	+/-0.0249	0.0451	pCi/g						
Cobalt-60	U	0.00067	+/-0.0258	0.0219	+/-0.0258	0.0438	pCi/g						
Europium-152	U	-0.0427	+/-0.0937	0.0525	+/-0.0937	0.105	pCi/g						
Europium-154	U	-0.0515	+/-0.0755	0.0603	+/-0.0755	0.121	pCi/g						
Europium-155	U	0.0869	+/-0.0671	0.0583	+/-0.0671	0.117	pCi/g						
Lead-212		0.707	+/-0.0791	0.0292	+/-0.0791	0.0583	pCi/g						
Lead-214		0.530	+/-0.0963	0.0391	+/-0.0963	0.0782	pCi/g						
Manganese-54	U	0.00211	+/-0.0223	0.0195	+/-0.0223	0.039	pCi/g						
Niobium-94	U	-0.0123	+/-0.0203	0.0173	+/-0.0203	0.0345	pCi/g						
Potassium-40		12.4	+/-1.13	0.153	+/-1.13	0.305	pCi/g						
Radium-226		0.661	+/-0.107	0.0339	+/-0.107	0.0678	pCi/g						
Silver-108m	U	-0.00953	+/-0.0186	0.0161	+/-0.0186	0.0322	pCi/g						
Thallium-208		0.229	+/-0.0462	0.0202	+/-0.0462	0.0404	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-003F
Sample ID: 188898003

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 ~ (843) 556-8171 ~ www.gel.com

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-004F
Sample ID: 188898004
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 3.19%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.802	+/-0.209	0.0808	+/-0.209	0.162	pCi/g						
Americium-241	U	0.0424	+/-0.0488	0.0422	+/-0.0488	0.0844	pCi/g						
Bismuth-212	UI	0.00	+/-0.369	0.278	+/-0.369	0.555	pCi/g						
Bismuth-214		0.507	+/-0.127	0.0476	+/-0.127	0.0952	pCi/g						
Cesium-134	UI	0.00	+/-0.0649	0.0339	+/-0.0649	0.0677	pCi/g						
Cesium-137		0.177	+/-0.0506	0.0297	+/-0.0506	0.0594	pCi/g						
Cobalt-60	U	-0.00523	+/-0.0324	0.0268	+/-0.0324	0.0536	pCi/g						
Europium-152	U	0.0251	+/-0.103	0.0643	+/-0.103	0.129	pCi/g						
Europium-154	U	0.0053	+/-0.109	0.0797	+/-0.109	0.159	pCi/g						
Europium-155	U	0.0966	+/-0.0832	0.0695	+/-0.0832	0.139	pCi/g						
Lead-212		0.711	+/-0.099	0.0378	+/-0.099	0.0755	pCi/g						
Lead-214		0.647	+/-0.135	0.0486	+/-0.135	0.0971	pCi/g						
Manganese-54	U	-0.000516	+/-0.0324	0.0277	+/-0.0324	0.0553	pCi/g						
Niobium-94	U	0.00727	+/-0.0317	0.027	+/-0.0317	0.054	pCi/g						
Potassium-40		10.1	+/-1.37	0.223	+/-1.37	0.445	pCi/g						
Radium-226		0.507	+/-0.127	0.0476	+/-0.127	0.0952	pCi/g						
Silver-108m	U	0.00166	+/-0.0282	0.0246	+/-0.0282	0.0491	pCi/g						
Thallium-208		0.250	+/-0.0566	0.024	+/-0.0566	0.048	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-004F
Sample ID: 188898004

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-005F
Sample ID: 188898005
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 4.12%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.683	+/-0.200	0.0591	+/-0.200	0.118	pCi/g						
Americium-241	U	-0.0213	+/-0.103	0.0851	+/-0.103	0.170	pCi/g						
Bismuth-212	UI	0.00	+/-0.247	0.196	+/-0.247	0.392	pCi/g						
Bismuth-214		0.574	+/-0.108	0.0368	+/-0.108	0.0736	pCi/g						
Cesium-134	U	0.030	+/-0.0382	0.0226	+/-0.0382	0.0451	pCi/g						
Cesium-137		0.0893	+/-0.0369	0.0204	+/-0.0369	0.0407	pCi/g						
Cobalt-60	U	-0.013	+/-0.0243	0.0192	+/-0.0243	0.0383	pCi/g						
Europium-152	U	-0.0455	+/-0.0818	0.0495	+/-0.0818	0.0989	pCi/g						
Europium-154	U	0.0705	+/-0.0689	0.0651	+/-0.0689	0.130	pCi/g						
Europium-155	U	-0.00174	+/-0.0585	0.0526	+/-0.0585	0.105	pCi/g						
Lead-212		0.721	+/-0.0831	0.0285	+/-0.0831	0.0569	pCi/g						
Lead-214		0.601	+/-0.0966	0.0349	+/-0.0966	0.0698	pCi/g						
Manganese-54	U	0.0167	+/-0.0214	0.0195	+/-0.0214	0.039	pCi/g						
Niobium-94	U	-0.00681	+/-0.0253	0.0184	+/-0.0253	0.0369	pCi/g						
Potassium-40		9.21	+/-1.00	0.199	+/-1.00	0.397	pCi/g						
Radium-226		0.574	+/-0.108	0.0368	+/-0.108	0.0736	pCi/g						
Silver-108m	U	-0.00324	+/-0.0194	0.0164	+/-0.0194	0.0329	pCi/g						
Thallium-208		0.244	+/-0.0425	0.018	+/-0.0425	0.036	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-005F
Sample ID: 188898005

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-006F
Sample ID: 188898006
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 2.05%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.595	+/-0.172	0.0627	+/-0.172	0.125	pCi/g						
Americium-241	U	-0.0199	+/-0.109	0.0899	+/-0.109	0.180	pCi/g						
Bismuth-212		0.506	+/-0.257	0.138	+/-0.257	0.276	pCi/g						
Bismuth-214		0.549	+/-0.101	0.0374	+/-0.101	0.0748	pCi/g						
Cesium-134	U	0.0337	+/-0.0228	0.0221	+/-0.0228	0.0441	pCi/g						
Cesium-137		0.107	+/-0.0308	0.0173	+/-0.0308	0.0346	pCi/g						
Cobalt-60	U	0.0146	+/-0.0304	0.0193	+/-0.0304	0.0386	pCi/g						
Europium-152	U	-0.0216	+/-0.0613	0.0467	+/-0.0613	0.0934	pCi/g						
Europium-154	U	0.0454	+/-0.0606	0.0554	+/-0.0606	0.111	pCi/g						
Europium-155	U	0.0246	+/-0.0608	0.0567	+/-0.0608	0.113	pCi/g						
Lead-212		0.597	+/-0.0695	0.0252	+/-0.0695	0.0504	pCi/g						
Lead-214		0.656	+/-0.0958	0.0353	+/-0.0958	0.0705	pCi/g						
Manganese-54	U	0.00639	+/-0.0202	0.0182	+/-0.0202	0.0363	pCi/g						
Niobium-94	U	0.017	+/-0.024	0.0173	+/-0.024	0.0346	pCi/g						
Potassium-40		10.7	+/-1.03	0.149	+/-1.03	0.298	pCi/g						
Radium-226		0.549	+/-0.101	0.0374	+/-0.101	0.0748	pCi/g						
Silver-108m	U	-0.0123	+/-0.0189	0.0161	+/-0.0189	0.0321	pCi/g						
Thallium-208		0.231	+/-0.0502	0.0172	+/-0.0502	0.0344	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-006F
Sample ID: 188898006

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
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362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-007F
Sample ID: 188898007
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 1.71%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.110	+/-0.294	0.207	+/-0.295	0.580	pCi/g		DXH2	07/06/07	0815	648282	1
Curium-242	U	-0.0152	+/-0.128	0.0569	+/-0.128	0.286	pCi/g						
Curium-243/244	U	-0.219	+/-0.175	0.241	+/-0.177	0.648	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0275	+/-0.119	0.0727	+/-0.119	0.301	pCi/g		DXH2	07/05/07	0809	648283	3
Plutonium-239/240	U	0.0435	+/-0.115	0.0514	+/-0.116	0.258	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-11.2	+/-15.6	13.4	+/-15.6	27.4	pCi/g		DXH2	07/06/07	0825	648286	4
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.733	+/-0.166	0.0599	+/-0.166	0.120	pCi/g		MJH1	07/03/07	1405	648306	5
Americium-241	U	-0.0102	+/-0.0999	0.0799	+/-0.0999	0.160	pCi/g						
Bismuth-212		0.392	+/-0.283	0.130	+/-0.283	0.261	pCi/g						
Bismuth-214		0.559	+/-0.0944	0.0308	+/-0.0944	0.0615	pCi/g						
Cesium-134	U	0.023	+/-0.0218	0.020	+/-0.0218	0.0399	pCi/g						
Cesium-137	U	0.0111	+/-0.021	0.0173	+/-0.021	0.0346	pCi/g						
Cobalt-60	U	0.0141	+/-0.0239	0.0212	+/-0.0239	0.0425	pCi/g						
Europium-152	U	0.0119	+/-0.0594	0.0453	+/-0.0594	0.0905	pCi/g						
Europium-154	U	-0.0886	+/-0.0724	0.053	+/-0.0724	0.106	pCi/g						
Europium-155	U	0.0502	+/-0.0586	0.0528	+/-0.0586	0.106	pCi/g						
Lead-212		0.685	+/-0.0772	0.0256	+/-0.0772	0.0512	pCi/g						
Lead-214		0.618	+/-0.0854	0.0329	+/-0.0854	0.0658	pCi/g						
Manganese-54	U	-0.00285	+/-0.0196	0.0163	+/-0.0196	0.0325	pCi/g						
Niobium-94	U	0.00445	+/-0.0189	0.0164	+/-0.0189	0.0328	pCi/g						
Potassium-40		11.9	+/-1.29	0.163	+/-1.29	0.326	pCi/g						
Radium-226		0.559	+/-0.0944	0.0308	+/-0.0944	0.0615	pCi/g						
Silver-108m	U	0.000619	+/-0.0188	0.0146	+/-0.0188	0.0292	pCi/g						
Thallium-208		0.232	+/-0.0446	0.0155	+/-0.0446	0.031	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00685	+/-0.0121	0.0108	+/-0.0121	0.0242	pCi/g		NXL3	07/05/07	1144	648289	6
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	-0.534	+/-1.23	1.06	+/-1.23	2.21	pCi/g		SLN1	07/03/07	1331	647976	7

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Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-007F
Sample ID: 188898007

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i> Carbon-14	U	-0.0484	+/-0.114	0.0965	+/-0.114	0.197	pCi/g		AXD2	07/03/07	1600	647980	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i> Iron-55	U	-8.94	+/-23.6	16.8	+/-23.6	35.4	pCi/g		MXP1	07/05/07	1929	648290	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i> Nickel-63	U	4.78	+/-7.22	5.83	+/-7.27	12.3	pCi/g		MXP1	07/09/07	0850	649056	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i> Technetium-99	U	-0.0314	+/-0.0758	0.0641	+/-0.0758	0.130	pCi/g		MXP1	07/10/07	0959	647974	13

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	EML HASL 300, 4.5.2.3
6	EPA 905.0 Modified
7	EPA 906.0 Modified
8	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE RESL Ni-1, Modified
12	DOE RESL Ni-1, Modified
13	DOE EML HASL-300, Tc-02-RC Modified
14	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	81	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	86	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	98	(25%-125%)
Strontium Carrier	GFPC, Sr90, solid-ALL FSS	86	(25%-125%)
Iron-59 Tracer	Liquid Scint Fe55, Solid-ALL FS	92	(15%-125%)
Nickel Carrier	Liquid Scint Ni63, Solid-ALL FS	89	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid-ALL FS	83	(15%-125%)

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Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-007F
Sample ID: 188898007

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
 - BD Results are either below the MDC or tracer recovery is low
 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A RPD or %Recovery limits do not apply.
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-008F
Sample ID: 188898008
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 3.21%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.729	+/-0.170	0.0546	+/-0.170	0.109	pCi/g						
Americium-241	U	-0.00083	+/-0.066	0.0542	+/-0.066	0.108	pCi/g						
Bismuth-212	UI	0.00	+/-0.234	0.168	+/-0.234	0.336	pCi/g						
Bismuth-214		0.543	+/-0.0901	0.0291	+/-0.0901	0.0581	pCi/g						
Cesium-134	UI	0.00	+/-0.0442	0.0238	+/-0.0442	0.0475	pCi/g						
Cesium-137		0.0605	+/-0.0322	0.0162	+/-0.0322	0.0323	pCi/g						
Cobalt-60	U	-0.00721	+/-0.0204	0.0164	+/-0.0204	0.0327	pCi/g						
Europium-152	U	-0.0158	+/-0.0601	0.0457	+/-0.0601	0.0914	pCi/g						
Europium-154	U	-0.0245	+/-0.0671	0.0513	+/-0.0671	0.103	pCi/g						
Europium-155	U	0.0148	+/-0.0694	0.050	+/-0.0694	0.100	pCi/g						
Lead-212		0.663	+/-0.0735	0.026	+/-0.0735	0.052	pCi/g						
Lead-214		0.530	+/-0.0938	0.0314	+/-0.0938	0.0628	pCi/g						
Manganese-54	U	0.014	+/-0.0191	0.0176	+/-0.0191	0.0351	pCi/g						
Niobium-94	U	-0.00409	+/-0.0188	0.0156	+/-0.0188	0.0313	pCi/g						
Potassium-40		10.2	+/-0.960	0.150	+/-0.960	0.299	pCi/g						
Radium-226		0.543	+/-0.0901	0.0291	+/-0.0901	0.0581	pCi/g						
Silver-108m	U	-0.0133	+/-0.0178	0.0148	+/-0.0178	0.0297	pCi/g						
Thallium-208		0.202	+/-0.0464	0.0166	+/-0.0464	0.0331	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-008F
Sample ID: 188898008

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-009F
Sample ID: 188898009
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 1.72%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Rad Gamma Spec Analysis

*Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth
Waived*

Actinium-228		0.727	+/-0.225	0.0974	+/-0.225	0.195	pCi/g						
Americium-241	U	-0.0287	+/-0.0374	0.0324	+/-0.0374	0.0647	pCi/g						
Bismuth-212	U	0.328	+/-0.428	0.228	+/-0.428	0.455	pCi/g						
Bismuth-214		0.571	+/-0.125	0.0505	+/-0.125	0.101	pCi/g						
Cesium-134	U	0.0565	+/-0.0475	0.0331	+/-0.0475	0.0662	pCi/g						
Cesium-137	UI	0.00	+/-0.0546	0.027	+/-0.0546	0.0539	pCi/g						
Cobalt-60	U	0.0317	+/-0.0303	0.0298	+/-0.0303	0.0596	pCi/g						
Europium-152	U	-0.0128	+/-0.0765	0.0629	+/-0.0765	0.126	pCi/g						
Europium-154	U	0.0036	+/-0.105	0.0883	+/-0.105	0.177	pCi/g						
Europium-155	U	0.0864	+/-0.094	0.0507	+/-0.094	0.101	pCi/g						
Lead-212		0.578	+/-0.0791	0.0345	+/-0.0791	0.069	pCi/g						
Lead-214		0.515	+/-0.114	0.0455	+/-0.114	0.0909	pCi/g						
Manganese-54	U	-0.00452	+/-0.0302	0.0253	+/-0.0302	0.0506	pCi/g						
Niobium-94	U	-0.00593	+/-0.0301	0.0258	+/-0.0301	0.0515	pCi/g						
Potassium-40		9.31	+/-1.12	0.276	+/-1.12	0.551	pCi/g						
Radium-226		0.571	+/-0.125	0.0505	+/-0.125	0.101	pCi/g						
Silver-108m	U	-0.0118	+/-0.0265	0.0224	+/-0.0265	0.0447	pCi/g						
Thallium-208		0.191	+/-0.0578	0.0252	+/-0.0578	0.0504	pCi/g						

MJH1 07/03/07 1405 648306 1

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-009F
Sample ID: 188898009

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
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Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-010F
Sample ID: 188898010
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 4.76%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.122	+/-0.211	0.090	+/-0.212	0.372	pCi/g		DXH2	07/06/07	0815	648282	1
Curium-242	U	-0.0351	+/-0.151	0.0929	+/-0.152	0.384	pCi/g						
Curium-243/244	U	0.0482	+/-0.342	0.270	+/-0.342	0.732	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.176	+/-0.181	0.236	+/-0.183	0.655	pCi/g		DXH2	07/06/07	0815	648283	3
Plutonium-239/240	U	0.0353	+/-0.140	0.0861	+/-0.140	0.356	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-10.4	+/-16.9	14.4	+/-16.9	29.5	pCi/g		DXH2	07/06/07	0902	648286	5
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth Waived</i>													
Actinium-228		0.732	+/-0.147	0.0606	+/-0.147	0.121	pCi/g		MJH1	07/03/07	1406	648306	6
Americium-241	U	0.0157	+/-0.0802	0.0627	+/-0.0802	0.125	pCi/g						
Bismuth-212		0.705	+/-0.267	0.101	+/-0.267	0.201	pCi/g						
Bismuth-214		0.622	+/-0.106	0.031	+/-0.106	0.0619	pCi/g						
Cesium-134	U	0.0262	+/-0.0308	0.0233	+/-0.0308	0.0466	pCi/g						
Cesium-137		0.266	+/-0.0512	0.018	+/-0.0512	0.0359	pCi/g						
Cobalt-60	U	0.000289	+/-0.025	0.0202	+/-0.025	0.0404	pCi/g						
Europium-152	U	-0.0311	+/-0.0835	0.0479	+/-0.0835	0.0957	pCi/g						
Europium-154	U	0.00883	+/-0.0614	0.0526	+/-0.0614	0.105	pCi/g						
Europium-155	U	0.091	+/-0.155	0.0523	+/-0.155	0.105	pCi/g						
Lead-212		0.787	+/-0.0842	0.0274	+/-0.0842	0.0548	pCi/g						
Lead-214		0.681	+/-0.101	0.034	+/-0.101	0.068	pCi/g						
Manganese-54	U	-0.00529	+/-0.0204	0.0174	+/-0.0204	0.0347	pCi/g						
Niobium-94	U	0.0162	+/-0.0198	0.0157	+/-0.0198	0.0314	pCi/g						
Potassium-40		11.4	+/-1.07	0.156	+/-1.07	0.311	pCi/g						
Radium-226		0.622	+/-0.106	0.031	+/-0.106	0.0619	pCi/g						
Silver-108m	U	-0.00889	+/-0.0216	0.0162	+/-0.0216	0.0323	pCi/g						
Thallium-208		0.231	+/-0.0488	0.0172	+/-0.0488	0.0345	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00877	+/-0.0111	0.0103	+/-0.0111	0.0231	pCi/g		NXL3	07/05/07	1144	648289	7
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	0.401	+/-1.29	1.07	+/-1.30	2.24	pCi/g		SLN1	07/03/07	1433	647976	8

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Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-010F
Sample ID: 188898010

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	-0.154	+/-0.111	0.0955	+/-0.111	0.195	pCi/g		AXD2	07/03/07	1705	647980	9
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	10.6	+/-27.7	19.3	+/-27.8	40.9	pCi/g		MXP1	07/05/07	1945	648290	10
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	2.47	+/-7.02	5.77	+/-7.03	12.2	pCi/g		MXP1	07/09/07	0906	649056	11
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0331	+/-0.0982	0.0815	+/-0.0983	0.168	pCi/g		MXP1	07/10/07	1202	647974	14

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, Pu-11-RC Modified
6	EML HASL 300, 4.5.2.3
7	EPA 905.0 Modified
8	EPA 906.0 Modified
9	EPA EERF C-01 Modified
10	DOE RESL Fe-1, Modified
11	DOE RESL Ni-1, Modified
12	DOE RESL Ni-1, Modified
13	DOE RESL Ni-1, Modified
14	DOE EML HASL-300, Tc-02-RC Modified
15	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241, Cm, Solid ALL	79	(15%-125%)
Plutonium-242 Tracer	Alphaspec Pu, Solid-ALL FSS	93	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid-ALL FS	89	(25%-125%)
Strontium Carrier	GFPC, Sr90, solid-ALL FSS	86	(25%-125%)
Iron-59 Tracer	Liquid Scint Fe55, Solid-ALL FS	72	(15%-125%)
Nickel Carrier	Liquid Scint Ni63, Solid-ALL FS	90	(25%-125%)

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Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-010F
Sample ID: 188898010

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Technetium-99m Tracer		Liquid Scint Tc99, Solid-ALL FS			81		(15%-125%)						

Notes:

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 - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
 - BD Results are either below the MDC or tracer recovery is low
 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A RPD or %Recovery limits do not apply.
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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Address : Haddam Neck Plant
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Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-011F
Sample ID: 188898011
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 1.69%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.643	+/-0.192	0.0704	+/-0.192	0.141	pCi/g						
Americium-241	U	0.0465	+/-0.0388	0.0343	+/-0.0388	0.0685	pCi/g						
Bismuth-212	U	0.167	+/-0.216	0.195	+/-0.216	0.391	pCi/g						
Bismuth-214		0.495	+/-0.101	0.0391	+/-0.101	0.0781	pCi/g						
Cesium-134	U	0.0283	+/-0.0279	0.0262	+/-0.0279	0.0523	pCi/g						
Cesium-137		0.111	+/-0.0473	0.0193	+/-0.0473	0.0386	pCi/g						
Cobalt-60	U	0.0395	+/-0.0326	0.0277	+/-0.0326	0.0553	pCi/g						
Europium-152	U	-0.0208	+/-0.0668	0.051	+/-0.0668	0.102	pCi/g						
Europium-154	U	0.0261	+/-0.087	0.076	+/-0.087	0.152	pCi/g						
Europium-155	U	0.0471	+/-0.0621	0.0494	+/-0.0621	0.0988	pCi/g						
Lead-212		0.699	+/-0.0941	0.0291	+/-0.0941	0.0582	pCi/g						
Lead-214		0.671	+/-0.0971	0.0376	+/-0.0971	0.0751	pCi/g						
Manganese-54	U	0.0216	+/-0.0268	0.0224	+/-0.0268	0.0448	pCi/g						
Niobium-94	U	-0.0112	+/-0.0221	0.0179	+/-0.0221	0.0357	pCi/g						
Potassium-40		10.3	+/-1.17	0.137	+/-1.17	0.273	pCi/g						
Radium-226		0.495	+/-0.101	0.0391	+/-0.101	0.0781	pCi/g						
Silver-108m	U	0.0179	+/-0.0191	0.0182	+/-0.0191	0.0363	pCi/g						
Thallium-208		0.211	+/-0.0473	0.0173	+/-0.0473	0.0345	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

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Certificate of Analysis

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362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-011F
Sample ID: 188898011

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-012F
Sample ID: 188898012
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 2.52%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.677	+/-0.169	0.0538	+/-0.169	0.108	pCi/g						
Americium-241	U	0.0399	+/-0.0671	0.0573	+/-0.0671	0.115	pCi/g						
Bismuth-212		0.457	+/-0.217	0.128	+/-0.217	0.255	pCi/g						
Bismuth-214		0.433	+/-0.0808	0.0301	+/-0.0808	0.0601	pCi/g						
Cesium-134	UI	0.00	+/-0.0245	0.0199	+/-0.0245	0.0397	pCi/g						
Cesium-137	UI	0.00	+/-0.0311	0.0149	+/-0.0311	0.0298	pCi/g						
Cobalt-60	U	0.000659	+/-0.0234	0.0171	+/-0.0234	0.0342	pCi/g						
Europium-152	U	0.00972	+/-0.0569	0.0426	+/-0.0569	0.0852	pCi/g						
Europium-154	U	-0.0294	+/-0.0674	0.0453	+/-0.0674	0.0904	pCi/g						
Europium-155	U	0.0667	+/-0.0511	0.0488	+/-0.0511	0.0976	pCi/g						
Lead-212		0.638	+/-0.0683	0.023	+/-0.0683	0.0459	pCi/g						
Lead-214		0.511	+/-0.0873	0.0303	+/-0.0873	0.0606	pCi/g						
Manganese-54	U	-0.00451	+/-0.0179	0.0154	+/-0.0179	0.0307	pCi/g						
Niobium-94	U	0.00523	+/-0.0172	0.0149	+/-0.0172	0.0298	pCi/g						
Potassium-40		9.02	+/-0.892	0.137	+/-0.892	0.273	pCi/g						
Radium-226		0.433	+/-0.0808	0.0301	+/-0.0808	0.0601	pCi/g						
Silver-108m	U	0.00657	+/-0.0182	0.0144	+/-0.0182	0.0289	pCi/g						
Thallium-208		0.190	+/-0.044	0.016	+/-0.044	0.0321	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
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- BD Results are either below the MDC or tracer recovery is low

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Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-012F
Sample ID: 188898012

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
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Y QC Samples were not spiked with this compound
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The above sample is reported on a dry weight basis.

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Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-013F
Sample ID: 188898013
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 2.33%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.686	+/-0.169	0.0601	+/-0.169	0.120	pCi/g		MJH1	07/03/07	1407	648306	1
Americium-241	U	0.119	+/-0.0903	0.0784	+/-0.0903	0.157	pCi/g						
Bismuth-212	UI	0.00	+/-0.249	0.176	+/-0.249	0.353	pCi/g						
Bismuth-214		0.521	+/-0.104	0.0329	+/-0.104	0.0657	pCi/g						
Cesium-134	U	0.0278	+/-0.0322	0.0225	+/-0.0322	0.0449	pCi/g						
Cesium-137		0.687	+/-0.0779	0.0213	+/-0.0779	0.0426	pCi/g						
Cobalt-60	U	0.0168	+/-0.0201	0.0173	+/-0.0201	0.0345	pCi/g						
Europium-152	U	-0.0138	+/-0.0852	0.0518	+/-0.0852	0.104	pCi/g						
Europium-154	U	0.0343	+/-0.0587	0.0533	+/-0.0587	0.107	pCi/g						
Europium-155	U	0.0232	+/-0.0614	0.0565	+/-0.0614	0.113	pCi/g						
Lead-212		0.809	+/-0.0878	0.0283	+/-0.0878	0.0566	pCi/g						
Lead-214		0.656	+/-0.115	0.0369	+/-0.115	0.0737	pCi/g						
Manganese-54	U	0.0111	+/-0.0213	0.0187	+/-0.0213	0.0374	pCi/g						
Niobium-94	U	-0.00564	+/-0.0185	0.0154	+/-0.0185	0.0308	pCi/g						
Potassium-40		9.41	+/-0.973	0.137	+/-0.973	0.273	pCi/g						
Radium-226		0.521	+/-0.104	0.0329	+/-0.104	0.0657	pCi/g						
Silver-108m	U	-0.00773	+/-0.0191	0.0165	+/-0.0191	0.0331	pCi/g						
Thallium-208		0.210	+/-0.0429	0.0186	+/-0.0429	0.0372	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-013F
Sample ID: 188898013

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-014F
Sample ID: 188898014
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 4.4%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.781	+/-0.207	0.0885	+/-0.207	0.177	pCi/g						
Americium-241	U	0.0187	+/-0.0468	0.0377	+/-0.0468	0.0753	pCi/g						
Bismuth-212	U	0.491	+/-0.311	0.303	+/-0.311	0.605	pCi/g						
Bismuth-214		0.573	+/-0.141	0.0584	+/-0.141	0.117	pCi/g						
Cesium-134	U	0.0466	+/-0.0421	0.0401	+/-0.0421	0.0801	pCi/g						
Cesium-137		0.0944	+/-0.0503	0.028	+/-0.0503	0.0559	pCi/g						
Cobalt-60	U	-0.00858	+/-0.0388	0.0311	+/-0.0388	0.0622	pCi/g						
Europium-152	U	-0.000936	+/-0.0927	0.0662	+/-0.0927	0.132	pCi/g						
Europium-154	U	0.129	+/-0.113	0.110	+/-0.113	0.219	pCi/g						
Europium-155	U	0.0816	+/-0.0701	0.0579	+/-0.0701	0.116	pCi/g						
Lead-212		0.707	+/-0.0934	0.0354	+/-0.0934	0.0707	pCi/g						
Lead-214		0.491	+/-0.126	0.0508	+/-0.126	0.102	pCi/g						
Manganese-54	U	-0.0101	+/-0.0318	0.0264	+/-0.0318	0.0528	pCi/g						
Niobium-94	U	0.0064	+/-0.0308	0.0274	+/-0.0308	0.0548	pCi/g						
Potassium-40		10.1	+/-1.34	0.296	+/-1.34	0.591	pCi/g						
Radium-226		0.573	+/-0.141	0.0584	+/-0.141	0.117	pCi/g						
Silver-108m	U	-0.00166	+/-0.0301	0.0257	+/-0.0301	0.0513	pCi/g						
Thallium-208		0.190	+/-0.0641	0.0279	+/-0.0641	0.0558	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-014F
Sample ID: 188898014

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-015F
Sample ID: 188898015
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 2.51%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.644	+/-0.127	0.0453	+/-0.127	0.0905	pCi/g						
Americium-241	U	0.0356	+/-0.0639	0.053	+/-0.0639	0.106	pCi/g						
Bismuth-212		0.308	+/-0.215	0.0998	+/-0.215	0.200	pCi/g						
Bismuth-214		0.526	+/-0.0802	0.0205	+/-0.0802	0.0409	pCi/g						
Cesium-134	U	0.0255	+/-0.0205	0.0136	+/-0.0205	0.0273	pCi/g						
Cesium-137		0.068	+/-0.0314	0.0125	+/-0.0314	0.025	pCi/g						
Cobalt-60	U	0.00867	+/-0.0181	0.0141	+/-0.0181	0.0281	pCi/g						
Europium-152	U	0.00881	+/-0.0532	0.0362	+/-0.0532	0.0724	pCi/g						
Europium-154	U	-0.0339	+/-0.0438	0.0352	+/-0.0438	0.0704	pCi/g						
Europium-155	U	0.0656	+/-0.0587	0.0432	+/-0.0587	0.0863	pCi/g						
Lead-212		0.637	+/-0.0652	0.0213	+/-0.0652	0.0426	pCi/g						
Lead-214		0.479	+/-0.0708	0.026	+/-0.0708	0.0521	pCi/g						
Manganese-54	U	0.0198	+/-0.0174	0.013	+/-0.0174	0.0259	pCi/g						
Niobium-94	U	-0.00331	+/-0.0147	0.0125	+/-0.0147	0.0249	pCi/g						
Potassium-40		10.4	+/-0.887	0.114	+/-0.887	0.228	pCi/g						
Radium-226		0.526	+/-0.0802	0.0205	+/-0.0802	0.0409	pCi/g						
Silver-108m	U	-0.0107	+/-0.0138	0.0115	+/-0.0138	0.0229	pCi/g						
Thallium-208		0.172	+/-0.0352	0.0135	+/-0.0352	0.0269	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
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- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-015F
Sample ID: 188898015

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-015FS
Sample ID: 188898016
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 30-JUN-07
Collector: Client
Moisture: 2.33%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.652	+/-0.167	0.0628	+/-0.167	0.126	pCi/g						
Americium-241	U	0.0291	+/-0.0928	0.0773	+/-0.0928	0.155	pCi/g						
Bismuth-212	UI	0.00	+/-0.221	0.173	+/-0.221	0.347	pCi/g						
Bismuth-214		0.455	+/-0.0881	0.0383	+/-0.0881	0.0766	pCi/g						
Cesium-134	U	0.0293	+/-0.0356	0.0231	+/-0.0356	0.0463	pCi/g						
Cesium-137		0.0708	+/-0.0385	0.0186	+/-0.0385	0.0371	pCi/g						
Cobalt-60	U	0.00865	+/-0.0227	0.018	+/-0.0227	0.0359	pCi/g						
Europium-152	U	-0.0404	+/-0.0498	0.0405	+/-0.0498	0.0809	pCi/g						
Europium-154	U	-0.00271	+/-0.0777	0.0657	+/-0.0777	0.131	pCi/g						
Europium-155	U	0.0203	+/-0.0487	0.0463	+/-0.0487	0.0926	pCi/g						
Lead-212		0.583	+/-0.0678	0.0256	+/-0.0678	0.0512	pCi/g						
Lead-214		0.487	+/-0.0933	0.0324	+/-0.0933	0.0647	pCi/g						
Manganese-54	U	0.0146	+/-0.0392	0.0191	+/-0.0392	0.0381	pCi/g						
Niobium-94	U	0.00972	+/-0.0209	0.0188	+/-0.0209	0.0376	pCi/g						
Potassium-40		9.86	+/-1.08	0.146	+/-1.08	0.293	pCi/g						
Radium-226		0.455	+/-0.0881	0.0383	+/-0.0881	0.0766	pCi/g						
Silver-108m	U	0.00776	+/-0.0186	0.0167	+/-0.0186	0.0333	pCi/g						
Thallium-208		0.172	+/-0.0429	0.0188	+/-0.0429	0.0376	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 10, 2007

Client Sample ID: 9520-0006-015FS
Sample ID: 188898016

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: July 10, 2007

Page 1 of 9

Client : Connecticut Yankee Atomic Power Company

Haddam Neck Plant

362 Injun Hollow Road

Haddam Neck, Connecticut

Contact: Mr. Rick Gault

Workorder: 188898

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch	648282									
QC1201369360	188898007	DUP								
Americium-241		U	0.110	U	0.0718	pCi/g	42		N/ADXH2	07/06/0708:15
		Uncert:	+/-0.294		+/-0.183					
		TPU:	+/-0.295		+/-0.183					
Curium-242		U	-0.0152	U	-0.12	pCi/g	155		N/A	
		Uncert:	+/-0.128		+/-0.148					
		TPU:	+/-0.128		+/-0.148					
Curium-243/244		U	-0.219	U	-0.245	pCi/g	11		N/A	
		Uncert:	+/-0.175		+/-0.177					
		TPU:	+/-0.177		+/-0.180					
QC1201369362	LCS									
Americium-241		24.7			25.9	pCi/g		105	(75%-125%)	
		Uncert:			+/-2.30					
		TPU:			+/-4.29					
Curium-242				U	-0.039	pCi/g				
		Uncert:			+/-0.115					
		TPU:			+/-0.115					
Curium-243/244		29.3			29.7	pCi/g		101	(75%-125%)	
		Uncert:			+/-2.48					
		TPU:			+/-4.83					
QC1201369359	MB									
Americium-241				U	-0.0936	pCi/g				07/06/0708:15
		Uncert:			+/-0.089					
		TPU:			+/-0.090					
Curium-242				U	-0.0598	pCi/g				
		Uncert:			+/-0.135					
		TPU:			+/-0.135					
Curium-243/244				U	-0.022	pCi/g				
		Uncert:			+/-0.234					
		TPU:			+/-0.234					
QC1201369361	188898007	MS								
Americium-241		24.7	U	0.110	27.4	pCi/g		110	(75%-125%)	07/06/0708:15
		Uncert:			+/-2.45					
		TPU:			+/-4.57					
Curium-242			U	-0.0152	-0.0419	pCi/g				
		Uncert:			+/-0.124					
		TPU:			+/-0.124					
Curium-243/244		29.3	U	-0.219	29.8	pCi/g		102	(75%-125%)	
		Uncert:			+/-2.55					
		TPU:			+/-4.92					
Batch	648283									
QC1201369364	188898007	DUP								

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QC Summary

Workorder: 188898

Page 2 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	648283										
Plutonium-238	U	-0.0275	U	-0.0149	pCi/g	59			N/ADXH2	07/05/0708:09	
	Uncert:	+/-0.119		+/-0.125							
	TPU:	+/-0.119		+/-0.125							
Plutonium-239/240	U	0.0435	U	0.0323	pCi/g	30			N/A		
	Uncert:	+/-0.115		+/-0.128							
	TPU:	+/-0.116		+/-0.129							
QC1201369366 LCS											
Plutonium-238			U	0.157	pCi/g			(75%-125%)			
	Uncert:			+/-0.195							
	TPU:			+/-0.196							
Plutonium-239/240	24.6			25.1	pCi/g		102	(75%-125%)			
	Uncert:			+/-2.35							
	TPU:			+/-3.92							
QC1201369363 MB											
Plutonium-238			U	-0.054	pCi/g					07/06/0708:15	
	Uncert:			+/-0.197							
	TPU:			+/-0.197							
Plutonium-239/240			U	0.0786	pCi/g						
	Uncert:			+/-0.177							
	TPU:			+/-0.178							
QC1201369365 188898007 MS											
Plutonium-238	U	-0.0275	U	-0.0647	pCi/g			(75%-125%)			
	Uncert:	+/-0.119		+/-0.188							
	TPU:	+/-0.119		+/-0.188							
Plutonium-239/240	24.6 U	0.0435		23.8	pCi/g		97	(75%-125%)			
	Uncert:	+/-0.115		+/-2.30							
	TPU:	+/-0.116		+/-3.77							
Batch	648286										
QC1201369373 188898007 DUP											
Plutonium-241	U	-11.2	U	-3.22	pCi/g	0			N/ADXH2	07/06/0710:15	
	Uncert:	+/-15.6		+/-14.8							
	TPU:	+/-15.6		+/-14.8							
QC1201369375 LCS											
Plutonium-241	34400			34700	pCi/g		101	(75%-125%)		07/06/0711:29	
	Uncert:			+/-176							
	TPU:			+/-6690							
QC1201369372 MB											
Plutonium-241			U	-1.64	pCi/g					07/06/0709:39	
	Uncert:			+/-16.3							
	TPU:			+/-16.3							
QC1201369374 188898007 MS											
Plutonium-241	34400 U	-11.2		34400	pCi/g		100	(75%-125%)		07/06/0710:52	
	Uncert:	+/-15.6		+/-175							
	TPU:	+/-15.6		+/-6690							
Rad Gamma Spec											
Batch	648306										
QC1201369416 188898001 DUP											
Actinium-228		0.790		0.597	pCi/g	28		(0% - 100%)	MJH1	07/03/0716:10	

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QC Summary

Workorder: 188898

Page 3 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	648306										
Americium-241	Uncert:	+/-0.181		+/-0.250							
	TPU:	+/-0.181		+/-0.250							
	U	0.0695	U	0.023	pCi/g	101		N/A			
Bismuth-212	Uncert:	+/-0.107		+/-0.0418							
	TPU:	+/-0.107		+/-0.0418							
	UI	0.00	UI	0.00	pCi/g	28		N/A			
Bismuth-214	Uncert:	+/-0.252		+/-0.392							
	TPU:	+/-0.252		+/-0.392							
		0.605		0.699	pCi/g	14		(0% - 20%)			
Cesium-134	Uncert:	+/-0.115		+/-0.144							
	TPU:	+/-0.115		+/-0.144							
	U	0.028	U	0.0469	pCi/g	51		N/A			
Cesium-137	Uncert:	+/-0.0325		+/-0.0395							
	TPU:	+/-0.0325		+/-0.0395							
		0.053	U	0.0106	pCi/g	133*		(0% - 100%)			
Cobalt-60	Uncert:	+/-0.0415		+/-0.0379							
	TPU:	+/-0.0415		+/-0.0379							
	U	0.0365	U	-0.0191	pCi/g	637		N/A			
Europium-152	Uncert:	+/-0.0236		+/-0.0318							
	TPU:	+/-0.0236		+/-0.0318							
	U	-0.0153	U	-0.038	pCi/g	85		N/A			
Europium-154	Uncert:	+/-0.0903		+/-0.0789							
	TPU:	+/-0.0903		+/-0.0789							
	U	-0.0106	U	0.126	pCi/g	236		N/A			
Europium-155	Uncert:	+/-0.0675		+/-0.177							
	TPU:	+/-0.0675		+/-0.177							
	U	0.0515	U	0.0681	pCi/g	28		N/A			
Lead-212	Uncert:	+/-0.0609		+/-0.0623							
	TPU:	+/-0.0609		+/-0.0623							
		0.703		0.669	pCi/g	5		(0% - 20%)			
Lead-214	Uncert:	+/-0.083		+/-0.0855							
	TPU:	+/-0.083		+/-0.0855							
		0.607		0.581	pCi/g	4		(0% - 20%)			
Manganese-54	Uncert:	+/-0.0952		+/-0.123							
	TPU:	+/-0.0952		+/-0.123							
	U	0.00726	U	-0.00933	pCi/g	1600		N/A			
Niobium-94	Uncert:	+/-0.0251		+/-0.0328							
	TPU:	+/-0.0251		+/-0.0328							
	U	-0.00582	U	0.00105	pCi/g	288		N/A			
Potassium-40	Uncert:	+/-0.019		+/-0.0316							
	TPU:	+/-0.019		+/-0.0316							
		10.4		10.7	pCi/g	3		(0% - 20%)			
Radium-226	Uncert:	+/-1.02		+/-1.16							
	TPU:	+/-1.02		+/-1.16							
		0.605		0.699	pCi/g	14		(0% - 20%)			
Silver-108m	Uncert:	+/-0.115		+/-0.144							
	TPU:	+/-0.115		+/-0.144							
	U	-0.000452	U	0.00161	pCi/g	356		N/A			

GEL LABORATORIES LLC

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	648306										
		Uncert:	+/-0.0191	+/-0.0269							
		TPU:	+/-0.0191	+/-0.0269							
Thallium-208			0.228	0.220	pCi/g	4		(0% - 100%)			
		Uncert:	+/-0.0478	+/-0.0607							
		TPU:	+/-0.0478	+/-0.0607							
QC1201369417 LCS											
Actinium-228				0.728	pCi/g					07/03/0716:11	
		Uncert:		+/-0.734							
		TPU:		+/-0.734							
Americium-241	16.0			13.6	pCi/g		85	(75%-125%)			
		Uncert:		+/-1.03							
		TPU:		+/-1.03							
Bismuth-212			U	0.743	pCi/g						
		Uncert:		+/-0.731							
		TPU:		+/-0.731							
Bismuth-214				0.650	pCi/g						
		Uncert:		+/-0.285							
		TPU:		+/-0.285							
Cesium-134			U	0.0651	pCi/g						
		Uncert:		+/-0.101							
		TPU:		+/-0.101							
Cesium-137	6.16			5.97	pCi/g		97	(75%-125%)			
		Uncert:		+/-0.587							
		TPU:		+/-0.587							
Cobalt-60	9.01			9.15	pCi/g		102	(75%-125%)			
		Uncert:		+/-0.660							
		TPU:		+/-0.660							
Europium-152			U	0.050	pCi/g						
		Uncert:		+/-0.237							
		TPU:		+/-0.237							
Europium-154			U	0.035	pCi/g						
		Uncert:		+/-0.226							
		TPU:		+/-0.226							
Europium-155			U	0.0619	pCi/g						
		Uncert:		+/-0.184							
		TPU:		+/-0.184							
Lead-212				0.961	pCi/g						
		Uncert:		+/-0.162							
		TPU:		+/-0.162							
Lead-214				0.710	pCi/g						
		Uncert:		+/-0.242							
		TPU:		+/-0.242							
Manganese-54			U	0.0353	pCi/g						
		Uncert:		+/-0.090							
		TPU:		+/-0.090							
Niobium-94			U	-0.0707	pCi/g						
		Uncert:		+/-0.0831							
		TPU:		+/-0.0831							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch 648306									
Potassium-40			1.64	pCi/g					
	Uncert:		+/-1.13						
	TPU:		+/-1.13						
Radium-226			0.650	pCi/g			(75%-125%)		
	Uncert:		+/-0.285						
	TPU:		+/-0.285						
Silver-108m		U	-0.0417	pCi/g					
	Uncert:		+/-0.0749						
	TPU:		+/-0.0749						
Thallium-208			0.284	pCi/g					
	Uncert:		+/-0.134						
	TPU:		+/-0.134						
QC1201369415 MB									
Actinium-228		U	0.0777	pCi/g					07/03/0716:10
	Uncert:		+/-0.106						
	TPU:		+/-0.106						
Americium-241		U	-0.0338	pCi/g					
	Uncert:		+/-0.0219						
	TPU:		+/-0.0219						
Bismuth-212		U	0.0494	pCi/g					
	Uncert:		+/-0.157						
	TPU:		+/-0.157						
Bismuth-214		U	0.0357	pCi/g					
	Uncert:		+/-0.0478						
	TPU:		+/-0.0478						
Cesium-134		U	0.0176	pCi/g					
	Uncert:		+/-0.0198						
	TPU:		+/-0.0198						
Cesium-137		U	-0.00771	pCi/g					
	Uncert:		+/-0.0188						
	TPU:		+/-0.0188						
Cobalt-60		U	0.018	pCi/g					
	Uncert:		+/-0.0205						
	TPU:		+/-0.0205						
Europium-152		U	0.042	pCi/g					
	Uncert:		+/-0.0531						
	TPU:		+/-0.0531						
Europium-154		U	-0.0422	pCi/g					
	Uncert:		+/-0.0551						
	TPU:		+/-0.0551						
Europium-155		U	-0.00751	pCi/g					
	Uncert:		+/-0.0409						
	TPU:		+/-0.0409						
Lead-212		U	0.0239	pCi/g					
	Uncert:		+/-0.0399						
	TPU:		+/-0.0399						
Lead-214		U	0.0168	pCi/g					
	Uncert:		+/-0.0625						

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	648306										
Manganese-54	TPU:			+/-0.0625							
			U	-0.00455	pCi/g						
	Uncert:			+/-0.0178							
Niobium-94	TPU:			+/-0.0178							
			U	-0.00628	pCi/g						
	Uncert:			+/-0.0208							
Potassium-40	TPU:			+/-0.0208							
			UI	0.00	pCi/g						
	Uncert:			+/-0.231							
Radium-226	TPU:			+/-0.231							
			U	0.0357	pCi/g						
	Uncert:			+/-0.0478							
Silver-108m	TPU:			+/-0.0478							
			U	0.00689	pCi/g						
	Uncert:			+/-0.0191							
Thallium-208	TPU:			+/-0.0191							
			U	0.000286	pCi/g						
	Uncert:			+/-0.0209							
	TPU:			+/-0.0209							
Rad Gas Flow											
Batch	648289										
QC1201369377	188898010	DUP									
Strontium-90			U	-0.00877	U	0.013	pCi/g	0	N/ANXL3	07/06/0710:37	
			Uncert:	+/-0.0111		+/-0.0246					
			TPU:	+/-0.0111		+/-0.0248					
QC1201369379	LCS										
Strontium-90			1.64			1.39	pCi/g	85	(75%-125%)	07/05/0711:45	
			Uncert:			+/-0.0934					
			TPU:			+/-0.291					
QC1201369376	MB										
Strontium-90					U	0.00725	pCi/g			07/06/0710:37	
			Uncert:			+/-0.0154					
			TPU:			+/-0.0155					
QC1201369378	188898010	MS									
Strontium-90			1.64	U	-0.00877	1.53	pCi/g	93	(75%-125%)	07/05/0711:45	
			Uncert:		+/-0.0111	+/-0.105					
			TPU:		+/-0.0111	+/-0.320					
Rad Liquid Scintillation											
Batch	647974										
QC1201368674	188898007	DUP									
Technetium-99			U	-0.0314	U	0.163	pCi/g	0	N/AMXP1	07/10/0712:59	
			Uncert:	+/-0.0758		+/-0.142					
			TPU:	+/-0.0758		+/-0.144					
QC1201368676	LCS										
Technetium-99			14.7			13.0	pCi/g	89	(75%-125%)	07/03/0723:28	
			Uncert:			+/-0.427					
			TPU:			+/-1.56					
QC1201368673	MB										

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	647974										
Technetium-99			U	0.235	pCi/g						
		Uncert:		+/-0.171							
		TPU:		+/-0.173							
QC1201368675	188898007	MS									
Technetium-99		14.8	U	-0.0314	14.7	pCi/g		99 (75%-125%)		07/03/0723:01	
		Uncert:		+/-0.0758	+/-0.473						
		TPU:		+/-0.0758	+/-1.76						
Batch	647976										
QC1201368683	188898010	DUP									
Tritium			U	0.401	U	0.407	pCi/g	0	N/A SLN1	07/03/0716:38	
		Uncert:		+/-1.29	+/-1.31						
		TPU:		+/-1.30	+/-1.32						
QC1201368685	LCS										
Tritium		11.2			13.9	pCi/g		124 (75%-125%)		07/03/0718:43	
		Uncert:			+/-1.81						
		TPU:			+/-3.64						
QC1201368682	MB										
Tritium			U	-0.0975	pCi/g					07/03/0715:36	
		Uncert:		+/-1.23							
		TPU:		+/-1.23							
QC1201368684	188898010	MS									
Tritium		11.6	U	0.401	12.1	pCi/g		104 (75%-125%)		07/03/0717:40	
		Uncert:		+/-1.29	+/-1.84						
		TPU:		+/-1.30	+/-3.31						
Batch	647980										
QC1201368694	188898007	DUP									
Carbon-14			U	-0.0484	U	-0.121	pCi/g	0	N/A AXD2	07/03/0719:13	
		Uncert:		+/-0.114	+/-0.115						
		TPU:		+/-0.114	+/-0.115						
QC1201368696	LCS										
Carbon-14		7.05			6.59	pCi/g		94 (75%-125%)		07/03/0721:21	
		Uncert:			+/-0.208						
		TPU:			+/-0.523						
QC1201368693	MB										
Carbon-14			U	-0.109	pCi/g					07/03/0718:09	
		Uncert:		+/-0.112							
		TPU:		+/-0.112							
QC1201368695	188898007	MS									
Carbon-14		7.05	U	-0.0484	6.26	pCi/g		89 (75%-125%)		07/03/0720:17	
		Uncert:		+/-0.114	+/-0.204						
		TPU:		+/-0.114	+/-0.499						
Batch	648290										
QC1201369381	188898010	DUP									
Iron-55			U	10.6	U	3.45	pCi/g	0	N/A MXP1	07/05/0720:18	
		Uncert:		+/-27.7	+/-24.3						
		TPU:		+/-27.8	+/-24.3						
QC1201369383	LCS										
Iron-55		543			538	pCi/g		99 (75%-125%)		07/05/0720:51	

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	648290										
				Uncert:							
				TPU:							
QC1201369380	MB										
Iron-55			U	-2.5	pCi/g					07/05/0720:01	
				Uncert:							
				TPU:							
QC1201369382	188898010	MS									
Iron-55			573 U	10.6	520	pCi/g		91 (75%-125%)		07/05/0720:34	
				Uncert:							
				TPU:							
Batch	649056										
QC1201370980	188898010	DUP									
Nickel-63			U	2.47	U	-1.17	pCi/g	0	N/AMXPI	07/09/0709:38	
				Uncert:							
				TPU:							
QC1201370982	LCS										
Nickel-63			481		372	pCi/g		77 (75%-125%)		07/09/0710:10	
				Uncert:							
				TPU:							
QC1201370979	MB										
Nickel-63			U	-0.897	pCi/g					07/09/0709:22	
				Uncert:							
				TPU:							
QC1201370981	188898010	MS									
Nickel-63			484 U	2.47	415	pCi/g		86 (75%-125%)		07/09/0709:54	
				Uncert:							
				TPU:							

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification

GEL LABORATORIES LLC

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y	QC Samples were not spiked with this compound									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
h	Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

** Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 188968
SDG: MSR#07-0198**

July 06, 2007

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on July 03, 2007 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
188968001	9520-0006-024I
188968002	9520-0006-025I
188968003	9520-0006-026I
188968004	9520-0006-027I
188968005	9520-0006-028I
188968006	9520-0006-029I

Items of Note

There are no items to note.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

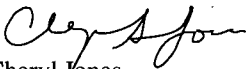
Analytical Request

Eight soils were analyzed for FSSGAM.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, Data Review Qualifier Definitions, and data from the following fractions: Radiochemistry.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Cheryl Jones
Project Manager

List of current GEL Certifications as of 06 July 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Chain of Custody and Supporting Documentation

Connecticut Yankee Atomic Power Company

362 Injun Hollow Road, East Hampton, CT 06424
860-267-2556

Chain of Custody Form

No. 2007-00158

[illegible]

Figure 1. Sample Check-in List

Date/Time Received: 7/3/07
SDG#: MSR # 07-0198
Work Order Number: 188968
Shipping Container ID: 7423 71680483 Chain of Custody # 2007-00158

1. Custody Seals on shipping container intact? Yes ☒ No ☐
2. Custody Seals dated and signed? Yes ☒ No ☐
3. Chain-of-Custody record present? Yes ☒ No ☐
4. Cooler temperature 22°C
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 6
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

☒ tape ☐ hazard labels
☒ custody seals ☒ appropriate sample labels

9. Samples are:

☒ in good condition ☐ leaking
☐ broken ☐ have air bubbles

10. Were any anomalies identified in sample receipt? Yes ☐ No ☒
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Amesbury Date: 7/3/07

Telephoned to: _____ On _____ By _____



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: YANK		SDG/ARCOC/Work Order: 188968	
Received By: ADR		Date Received: 7/3/07	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Counts Observed*: 80 cpm
Classified Radioactive II by RSO?		<input checked="" type="checkbox"/>	
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)?			<input checked="" type="checkbox"/>	Preservation Method: ice bags blue ice dry ice none other (describe) 22°C
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?			<input checked="" type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?			<input checked="" type="checkbox"/>	Sample ID's and containers affected:
7 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Fed Ex 7423 7168 0483

PM (or PMA) review: Initials

CAJ
8

Date

7/3/07

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Figure 1. Sample Check-in List

Date/Time Received: 7/3/07
SDG# MSR # 07-0198
Work Order Number: 188968
Shipping Container ID: 7423 71680483 Chain of Custody # 2007-00158
1. Destody Seals on shipping container intact? Yes ☒ No ☐
2. Destody Seals dated and signed? Yes ☒ No ☐
3. Chain-of-Custody record present? Yes ☒ No ☐
4. Cooler temperature 22°C
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 6
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes ☐ No ☒
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Andrew Brown Date: 7/3/07
Telephoned to: _____ On _____ By _____



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>YANK</u>		SDG/ARCO/Work Order: <u>188968</u>	
Received By: <u>ADR</u>		Date Received: <u>7/3/07</u>	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Counts Observed*: <u>80 cpm</u>
Classified Radioactive II by RSO?		<input checked="" type="checkbox"/>	
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)?		<input checked="" type="checkbox"/>		Preservation Method: ice bags blue ice dry ice none other (describe) <u>22°C</u>
3	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4	Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7	Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Fed ex 7423 7168 0483

Data Review Qualifier Definitions

Data Review Qualifier Definitions

Qualifier Explanation

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or
MDL/IDL < sample value < PQL
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative
identification of the analyte (TIC). Quantitation is based on nearest internal standard
response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration
by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 188968**

Method/Analysis Information

Product: Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived
Analytical Method: EML HASL 300, 4.5.2.3
Prep Method: Dry Soil Prep
Analytical Batch Number: 648541
Prep Batch Number: 648478

Sample ID	Client ID
188968001	9520-0006-024I
188968002	9520-0006-025I
188968003	9520-0006-026I
188968004	9520-0006-027I
188968005	9520-0006-028I
188968006	9520-0006-029I
1201369953	Method Blank (MB)
1201369954	188968001(9520-0006-024I) Sample Duplicate (DUP)
1201369955	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 14.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:**Blank Information**

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 188968001 (9520-0006-024I).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

The duplicate and sample 1201369954 (9520-0006-024I) and 188968001 (9520-0006-024I) did not meet the relative percent difference requirement for TI-208, however they do meet the relative error ratio requirement with a value of 1.7828.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance	Bismuth-212	188968003
UI	Data rejected due to low abundance	Cesium-134	188968002
UI	Data rejected due to low abundance.	Americium-241	188968001
		Cesium-134	188968001
			188968005
		Niobium-94	188968006
UI	Data rejected due to no valid peak	Bismuth-212	1201369954
UI	Data rejected due to no valid peak.		188968005
			188968006

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date: _____

 7/9/07

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#07-0198 GEL Work Order: 188968

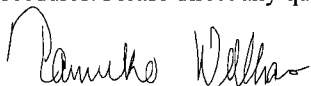
The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-024I
Sample ID: 188968001
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 03-JUL-07
Collector: Client
Moisture: 6.02%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.959	+/-0.194	0.0592	+/-0.194	0.118	pCi/g						
Americium-241	UI	0.00	+/-0.0973	0.078	+/-0.0973	0.156	pCi/g						
Bismuth-212		0.564	+/-0.242	0.124	+/-0.242	0.249	pCi/g						
Bismuth-214		0.646	+/-0.108	0.0308	+/-0.108	0.0616	pCi/g						
Cesium-134	UI	0.00	+/-0.0341	0.0228	+/-0.0341	0.0456	pCi/g						
Cesium-137		0.0854	+/-0.0327	0.0169	+/-0.0327	0.0338	pCi/g						
Cobalt-60	U	-0.00273	+/-0.0203	0.0172	+/-0.0203	0.0343	pCi/g						
Europium-152	U	-0.0444	+/-0.0673	0.0447	+/-0.0673	0.0893	pCi/g						
Europium-154	U	-0.025	+/-0.0633	0.0526	+/-0.0633	0.105	pCi/g						
Europium-155	U	0.0368	+/-0.056	0.0513	+/-0.056	0.103	pCi/g						
Lead-212		0.839	+/-0.0871	0.025	+/-0.0871	0.0499	pCi/g						
Lead-214		0.759	+/-0.108	0.032	+/-0.108	0.0641	pCi/g						
Manganese-54	U	-0.00784	+/-0.0204	0.0169	+/-0.0204	0.0339	pCi/g						
Niobium-94	U	0.00556	+/-0.0218	0.0164	+/-0.0218	0.0329	pCi/g						
Potassium-40		11.9	+/-1.03	0.144	+/-1.03	0.287	pCi/g						
Radium-226		0.646	+/-0.108	0.0308	+/-0.108	0.0616	pCi/g						
Silver-108m	U	0.00537	+/-0.0174	0.0149	+/-0.0174	0.0298	pCi/g						
Thallium-208		0.292	+/-0.0521	0.0155	+/-0.0521	0.031	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-024I
Sample ID: 188968001

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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BD Results are either below the MDC or tracer recovery is low
C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-025I
Sample ID: 188968002
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 03-JUL-07
Collector: Client
Moisture: 6.62%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.812	+/-0.159	0.0568	+/-0.159	0.114	pCi/g						
Americium-241	U	0.00186	+/-0.106	0.0854	+/-0.106	0.171	pCi/g						
Bismuth-212		0.782	+/-0.297	0.124	+/-0.297	0.247	pCi/g						
Bismuth-214		0.702	+/-0.103	0.0334	+/-0.103	0.0668	pCi/g						
Cesium-134	UI	0.00	+/-0.035	0.023	+/-0.035	0.046	pCi/g						
Cesium-137		0.106	+/-0.0325	0.0185	+/-0.0325	0.037	pCi/g						
Cobalt-60	U	0.0105	+/-0.0235	0.0196	+/-0.0235	0.0392	pCi/g						
Europium-152	U	-0.0046	+/-0.0589	0.0438	+/-0.0589	0.0876	pCi/g						
Europium-154	U	-0.0469	+/-0.0657	0.0514	+/-0.0657	0.103	pCi/g						
Europium-155	U	0.0888	+/-0.079	0.0476	+/-0.079	0.0952	pCi/g						
Lead-212		0.868	+/-0.0828	0.0242	+/-0.0828	0.0483	pCi/g						
Lead-214		0.836	+/-0.105	0.0322	+/-0.105	0.0644	pCi/g						
Manganese-54	U	0.0212	+/-0.0223	0.0176	+/-0.0223	0.0352	pCi/g						
Niobium-94	U	0.015	+/-0.019	0.0168	+/-0.019	0.0336	pCi/g						
Potassium-40		12.0	+/-1.20	0.158	+/-1.20	0.316	pCi/g						
Radium-226		0.702	+/-0.103	0.0334	+/-0.103	0.0668	pCi/g						
Silver-108m	U	-0.0102	+/-0.0181	0.0146	+/-0.0181	0.0292	pCi/g						
Thallium-208		0.255	+/-0.0478	0.0164	+/-0.0478	0.0328	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-025I
Sample ID: 188968002

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-0261
Sample ID: 188968003
Matrix: TS
Collect Date: 29-JUN-07
Receive Date: 03-JUL-07
Collector: Client
Moisture: 3.92%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.00	+/-0.218	0.0696	+/-0.218	0.139	pCi/g						
Americium-241	U	0.0672	+/-0.110	0.0884	+/-0.110	0.177	pCi/g						
Bismuth-212	UI	0.00	+/-0.332	0.213	+/-0.332	0.425	pCi/g						
Bismuth-214		0.892	+/-0.131	0.0375	+/-0.131	0.0749	pCi/g						
Cesium-134	U	0.0373	+/-0.032	0.0246	+/-0.032	0.0491	pCi/g						
Cesium-137		0.106	+/-0.036	0.0225	+/-0.036	0.045	pCi/g						
Cobalt-60	U	-0.00581	+/-0.022	0.0179	+/-0.022	0.0357	pCi/g						
Europium-152	U	0.0511	+/-0.0697	0.0542	+/-0.0697	0.108	pCi/g						
Europium-154	U	-0.0164	+/-0.0877	0.0617	+/-0.0877	0.123	pCi/g						
Europium-155	U	0.0263	+/-0.0643	0.0555	+/-0.0643	0.111	pCi/g						
Lead-212		1.11	+/-0.111	0.0313	+/-0.111	0.0625	pCi/g						
Lead-214		0.947	+/-0.128	0.0382	+/-0.128	0.0763	pCi/g						
Manganese-54	U	0.0174	+/-0.0234	0.0205	+/-0.0234	0.041	pCi/g						
Niobium-94	U	-0.0109	+/-0.0216	0.0177	+/-0.0216	0.0354	pCi/g						
Potassium-40		12.9	+/-1.28	0.185	+/-1.28	0.369	pCi/g						
Radium-226		0.892	+/-0.131	0.0375	+/-0.131	0.0749	pCi/g						
Silver-108m	U	0.00041	+/-0.0213	0.0178	+/-0.0213	0.0355	pCi/g						
Thallium-208		0.391	+/-0.0613	0.0191	+/-0.0613	0.0381	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-026I
Sample ID: 188968003

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-027I
Sample ID: 188968004
Matrix: TS
Collect Date: 02-JUL-07
Receive Date: 03-JUL-07
Collector: Client
Moisture: 11%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.08	+/-0.216	0.0706	+/-0.216	0.141	pCi/g		MJH1	07/05/07	1554	648541	1
Americium-241	U	-0.0263	+/-0.113	0.0874	+/-0.113	0.175	pCi/g						
Bismuth-212		0.826	+/-0.263	0.133	+/-0.263	0.267	pCi/g						
Bismuth-214		0.815	+/-0.130	0.0379	+/-0.130	0.0757	pCi/g						
Cesium-134	U	0.0467	+/-0.036	0.0252	+/-0.036	0.0504	pCi/g						
Cesium-137		0.130	+/-0.0387	0.0191	+/-0.0387	0.0381	pCi/g						
Cobalt-60	U	-0.0135	+/-0.0221	0.0171	+/-0.0221	0.0342	pCi/g						
Europium-152	U	0.0315	+/-0.0656	0.0506	+/-0.0656	0.101	pCi/g						
Europium-154	U	-0.0463	+/-0.0706	0.0552	+/-0.0706	0.110	pCi/g						
Europium-155	U	0.0949	+/-0.0718	0.0549	+/-0.0718	0.110	pCi/g						
Lead-212		1.05	+/-0.101	0.0268	+/-0.101	0.0536	pCi/g						
Lead-214		0.853	+/-0.114	0.0347	+/-0.114	0.0694	pCi/g						
Manganese-54	U	-0.00527	+/-0.0208	0.0175	+/-0.0208	0.035	pCi/g						
Niobium-94	U	0.00847	+/-0.0211	0.0179	+/-0.0211	0.0358	pCi/g						
Potassium-40		12.6	+/-1.15	0.182	+/-1.15	0.364	pCi/g						
Radium-226		0.815	+/-0.130	0.0379	+/-0.130	0.0757	pCi/g						
Silver-108m	U	-0.00538	+/-0.0192	0.0161	+/-0.0192	0.0322	pCi/g						
Thallium-208		0.387	+/-0.059	0.0172	+/-0.059	0.0345	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company

Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424

Contact: Mr. Rick Gault

Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-027I
Sample ID: 188968004

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-028I
Sample ID: 188968005
Matrix: TS
Collect Date: 02-JUL-07
Receive Date: 03-JUL-07
Collector: Client
Moisture: 10.3%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.23	+/-0.236	0.0783	+/-0.236	0.157	pCi/g		MJH1	07/05/07	1554	648541	1
Americium-241	U	0.190	+/-0.158	0.0998	+/-0.158	0.200	pCi/g						
Bismuth-212	UI	0.00	+/-0.316	0.167	+/-0.316	0.334	pCi/g						
Bismuth-214		0.901	+/-0.139	0.0371	+/-0.139	0.0742	pCi/g						
Cesium-134	UI	0.00	+/-0.0374	0.0263	+/-0.0374	0.0525	pCi/g						
Cesium-137		0.139	+/-0.037	0.0206	+/-0.037	0.0412	pCi/g						
Cobalt-60	U	-0.0105	+/-0.0344	0.0231	+/-0.0344	0.0461	pCi/g						
Europium-152	U	0.0347	+/-0.0866	0.0552	+/-0.0866	0.110	pCi/g						
Europium-154	U	-0.059	+/-0.0865	0.0665	+/-0.0865	0.133	pCi/g						
Europium-155	U	0.0316	+/-0.0764	0.0643	+/-0.0764	0.129	pCi/g						
Lead-212		1.16	+/-0.119	0.0336	+/-0.119	0.0671	pCi/g						
Lead-214		0.955	+/-0.143	0.0398	+/-0.143	0.0795	pCi/g						
Manganese-54	U	-0.00307	+/-0.0284	0.0231	+/-0.0284	0.0462	pCi/g						
Niobium-94	U	0.00666	+/-0.0248	0.0211	+/-0.0248	0.0422	pCi/g						
Potassium-40		12.2	+/-1.37	0.219	+/-1.37	0.437	pCi/g						
Radium-226		0.901	+/-0.139	0.0371	+/-0.139	0.0742	pCi/g						
Silver-108m	U	-0.00951	+/-0.0221	0.0185	+/-0.0221	0.0371	pCi/g						
Thallium-208		0.350	+/-0.0642	0.0217	+/-0.0642	0.0434	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-028I
Sample ID: 188968005

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis
D Results are reported from a diluted aliquot of the sample
H Analytical holding time was exceeded
J Value is estimated
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y QC Samples were not spiked with this compound
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company
Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424
Contact: Mr. Rick Gault
Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-029I
Sample ID: 188968006
Matrix: TS
Collect Date: 02-JUL-07
Receive Date: 03-JUL-07
Collector: Client
Moisture: 2.67%

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.666	+/-0.156	0.0579	+/-0.156	0.116	pCi/g		MJH1	07/05/07	1554	648541	1
Americium-241	U	0.0708	+/-0.0676	0.058	+/-0.0676	0.116	pCi/g						
Bismuth-212	UI	0.00	+/-0.230	0.115	+/-0.230	0.230	pCi/g						
Bismuth-214		0.482	+/-0.087	0.0301	+/-0.087	0.0602	pCi/g						
Cesium-134	U	0.0261	+/-0.0205	0.020	+/-0.0205	0.0401	pCi/g						
Cesium-137	U	0.0271	+/-0.0268	0.0164	+/-0.0268	0.0327	pCi/g						
Cobalt-60	U	0.000731	+/-0.021	0.0177	+/-0.021	0.0353	pCi/g						
Europium-152	U	0.0272	+/-0.058	0.0466	+/-0.058	0.0931	pCi/g						
Europium-154	U	-0.0169	+/-0.0686	0.0563	+/-0.0686	0.112	pCi/g						
Europium-155	U	0.040	+/-0.0613	0.0439	+/-0.0613	0.0877	pCi/g						
Lead-212		0.634	+/-0.0697	0.0252	+/-0.0697	0.0504	pCi/g						
Lead-214		0.563	+/-0.0841	0.0309	+/-0.0841	0.0618	pCi/g						
Manganese-54	U	-0.00577	+/-0.0222	0.0162	+/-0.0222	0.0324	pCi/g						
Niobium-94	UI	0.00	+/-0.0303	0.0163	+/-0.0303	0.0326	pCi/g						
Potassium-40		10.2	+/-0.981	0.133	+/-0.981	0.266	pCi/g						
Radium-226		0.482	+/-0.087	0.0301	+/-0.087	0.0602	pCi/g						
Silver-108m	U	-0.00703	+/-0.0173	0.0148	+/-0.0173	0.0296	pCi/g						
Thallium-208		0.198	+/-0.0409	0.0153	+/-0.0409	0.0306	pCi/g						

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Company

Address : Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut 06424

Contact: Mr. Rick Gault

Project: Soils PO# 002332

Report Date: July 9, 2007

Client Sample ID: 9520-0006-029I
Sample ID: 188968006

Project: YANK01204
Client ID: YANK001
Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

H Analytical holding time was exceeded

J Value is estimated

N/A RPD or %Recovery limits do not apply.

ND Analyte concentration is not detected above the detection limit

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: July 9, 2007
Page 1 of 5

Client : Connecticut Yankee Atomic Power
Company
Haddam Neck Plant
362 Injun Hollow Road
Haddam Neck, Connecticut
Contact: Mr. Rick Gault
Workorder: 188968

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	648541										
QC1201369954	188968001	DUP									
Actinium-228		0.959		1.00	pCi/g	14		(0% - 20%)	MJH1	07/05/07	15:56
	Uncert:	+/-0.194		+/-0.208							
	TPU:	+/-0.194		+/-0.208							
Americium-241	UI	0.00	U	-0.011	pCi/g	149		N/A			
	Uncert:	+/-0.0973		+/-0.088							
	TPU:	+/-0.0973		+/-0.088							
Bismuth-212		0.564	UI	0.00	pCi/g	13		(0% - 100%)			
	Uncert:	+/-0.242		+/-0.257							
	TPU:	+/-0.242		+/-0.257							
Bismuth-214		0.646		0.732	pCi/g	13		(0% - 20%)			
	Uncert:	+/-0.108		+/-0.106							
	TPU:	+/-0.108		+/-0.106							
Cesium-134	UI	0.00	U	0.0242	pCi/g	69		N/A			
	Uncert:	+/-0.0341		+/-0.0434							
	TPU:	+/-0.0341		+/-0.0434							
Cesium-137		0.0854		0.0952	pCi/g	24		(0% - 100%)			
	Uncert:	+/-0.0327		+/-0.0523							
	TPU:	+/-0.0327		+/-0.0523							
Cobalt-60	U	-0.00273	U	0.00491	pCi/g	23		N/A			
	Uncert:	+/-0.0203		+/-0.0247							
	TPU:	+/-0.0203		+/-0.0247							
Europium-152	U	-0.0444	U	-0.0293	pCi/g	32		N/A			
	Uncert:	+/-0.0673		+/-0.0871							
	TPU:	+/-0.0673		+/-0.0871							
Europium-154	U	-0.025	U	-0.0488	pCi/g	10		N/A			
	Uncert:	+/-0.0633		+/-0.0684							
	TPU:	+/-0.0633		+/-0.0684							
Europium-155	U	0.0368	U	0.00311	pCi/g	125		N/A			
	Uncert:	+/-0.056		+/-0.0866							
	TPU:	+/-0.056		+/-0.0866							
Lead-212		0.839		0.933	pCi/g	11		(0% - 20%)			
	Uncert:	+/-0.0871		+/-0.0961							
	TPU:	+/-0.0871		+/-0.0961							
Lead-214		0.759		0.850	pCi/g	15		(0% - 20%)			
	Uncert:	+/-0.108		+/-0.121							
	TPU:	+/-0.108		+/-0.121							
Manganese-54	U	-0.00784	U	-0.00807	pCi/g	62		N/A			
	Uncert:	+/-0.0204		+/-0.0273							
	TPU:	+/-0.0204		+/-0.0273							
Niobium-94	U	0.00556	U	0.000732	pCi/g	326		N/A			
	Uncert:	+/-0.0218		+/-0.0217							

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QC Summary

Workorder: 188968

Page 2 of 5

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	648541										
Potassium-40	TPU:	+/-0.0218		+/-0.0217							
		11.9		12.1	pCi/g	0		(0% - 20%)			
	Uncert:	+/-1.03		+/-1.12							
Radium-226	TPU:	+/-1.03		+/-1.12							
		0.646		0.732	pCi/g	13		(0% - 20%)			
	Uncert:	+/-0.108		+/-0.106							
Silver-108m	TPU:	+/-0.108		+/-0.106							
	U	0.00537	U	-0.0127	pCi/g	905		N/A			
	Uncert:	+/-0.0174		+/-0.0201							
Thallium-208	TPU:	+/-0.0174		+/-0.0201							
		0.292		0.249	pCi/g	26*		(0% - 20%)			
	Uncert:	+/-0.0521		+/-0.0509							
	TPU:	+/-0.0521		+/-0.0509							
QC1201369955	LCS										
Actinium-228				1.38	pCi/g					07/05/07	15:56
	Uncert:			+/-0.379							
	TPU:			+/-0.379							
Americium-241	16.4			13.8	pCi/g		84	(75%-125%)			
	Uncert:			+/-0.998							
	TPU:			+/-0.998							
Bismuth-212				1.61	pCi/g						
	Uncert:			+/-0.661							
	TPU:			+/-0.661							
Bismuth-214				0.913	pCi/g						
	Uncert:			+/-0.181							
	TPU:			+/-0.181							
Cesium-134			U	0.00147	pCi/g						
	Uncert:			+/-0.0606							
	TPU:			+/-0.0606							
Cesium-137	6.31			6.28	pCi/g		100	(75%-125%)			
	Uncert:			+/-0.578							
	TPU:			+/-0.578							
Cobalt-60	9.23			9.72	pCi/g		105	(75%-125%)			
	Uncert:			+/-0.605							
	TPU:			+/-0.605							
Europium-152			U	0.0292	pCi/g						
	Uncert:			+/-0.143							
	TPU:			+/-0.143							
Europium-154			U	-0.042	pCi/g						
	Uncert:			+/-0.118							
	TPU:			+/-0.118							
Europium-155			U	0.0589	pCi/g						
	Uncert:			+/-0.111							
	TPU:			+/-0.111							
Lead-212				1.40	pCi/g						
	Uncert:			+/-0.170							
	TPU:			+/-0.170							
Lead-214				1.01	pCi/g						

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QC Summary

Workorder: 188968

Page 3 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	648541									
Manganese-54			Uncert: +/-0.184 TPU: +/-0.184 0.0378	pCi/g						
Niobium-94		U	Uncert: +/-0.0558 TPU: +/-0.0558 0.0156	pCi/g						
Potassium-40		U	Uncert: +/-0.0563 TPU: +/-0.0563 0.370	pCi/g						
Radium-226			Uncert: +/-0.521 TPU: +/-0.521 0.913	pCi/g			(75%-125%)			
Silver-108m		U	Uncert: +/-0.181 TPU: +/-0.181 0.000614	pCi/g						
Thallium-208			Uncert: +/-0.046 TPU: +/-0.046 0.441	pCi/g						
QC1201369953 MB			Uncert: +/-0.0881 TPU: +/-0.0881							
Actinium-228		U	Uncert: +/-0.0805 TPU: +/-0.0627 0.0353	pCi/g					07/05/07	15:55
Americium-241		U	Uncert: +/-0.0558 TPU: +/-0.0558 0.0205	pCi/g						
Bismuth-212		U	Uncert: +/-0.108 TPU: +/-0.108 0.0458	pCi/g						
Bismuth-214		U	Uncert: +/-0.0578 TPU: +/-0.0578 0.0073	pCi/g						
Cesium-134		U	Uncert: +/-0.0151 TPU: +/-0.0151 0.0179	pCi/g						
Cesium-137		U	Uncert: +/-0.0159 TPU: +/-0.0159 -0.00382	pCi/g						
Cobalt-60		U	Uncert: +/-0.016 TPU: +/-0.016 0.016	pCi/g						
Europium-152		U	Uncert: +/-0.0371 TPU: +/-0.0371 -0.0202	pCi/g						
Europium-154		U	Uncert: +/-0.0471 TPU: +/-0.0471	pCi/g						

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QC Summary

Workorder: 188968

Page 4 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	648541									
Europium-155		U	-0.000141	pCi/g						
	Uncert:		+/-0.0361							
	TPU:		+/-0.0361							
Lead-212		U	-0.000586	pCi/g						
	Uncert:		+/-0.0255							
	TPU:		+/-0.0255							
Lead-214		U	0.00588	pCi/g						
	Uncert:		+/-0.0337							
	TPU:		+/-0.0337							
Manganese-54		U	0.00548	pCi/g						
	Uncert:		+/-0.0142							
	TPU:		+/-0.0142							
Niobium-94		U	-0.0038	pCi/g						
	Uncert:		+/-0.014							
	TPU:		+/-0.014							
Potassium-40		U	0.0544	pCi/g						
	Uncert:		+/-0.198							
	TPU:		+/-0.198							
Radium-226		U	0.0458	pCi/g						
	Uncert:		+/-0.0578							
	TPU:		+/-0.0578							
Silver-108m		U	-0.0145	pCi/g						
	Uncert:		+/-0.014							
	TPU:		+/-0.014							
Thallium-208		U	0.0176	pCi/g						
	Uncert:		+/-0.0215							
	TPU:		+/-0.0215							

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
 - BD Results are either below the MDC or tracer recovery is low
 - C Analyte has been confirmed by GC/MS analysis
 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A RPD or %Recovery limits do not apply.
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- Gamma Spectroscopy--Uncertain identification

GEL LABORATORIES LLC

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QC Summary

Workorder: 188968

Page 5 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y	QC Samples were not spiked with this compound									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
h	Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

** Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)

SURVEY UNIT 9520-0006

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)

SURVEY UNIT 9520-0006

RELEASE RECORD

**ATTACHMENT 4A
(PRELIMINARY DATA REVIEW)**

SOUTHWEST SITE STORAGE AREA
(NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

PRELIMINARY DATA REVIEW

RELEASE RECORD
Attachment 4

Survey Unit: 9520-0006
Area Description Southwest Site Storage Area
Classification 1
Survey Media Surface Soils
Type of Survey Final Status Survey
Number of Measurements 15 Static, 6 Judgmental

**STATISTICS on NON-
PARAMETRIC POPULATION**

Cs-137

DCGL_{op} (pCi/g): 5.38E+00
Minimum Value: 0.00E+00
Maximum Value: 6.87E-01
Mean: 1.21E-01
Median: 7.36E-02
Standard Deviation: 1.71E-01

Sample ID	GPS Coordinates		Cs-137				Fraction of DCGL
	North	East	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	
9520-0006-001F	236169.0	668761.2	5.30E-02	0.042	3.29E-02	+	0.010
9520-0006-002F	236169.0	668799.8	7.36E-02	0.037	3.63E-02	+	0.014
9520-0006-003F	236135.5	668741.9	2.35E-02	0.025	4.51E-02		0.004
9520-0006-004F	236135.5	668780.5	1.77E-01	0.051	5.94E-02	+	0.033
9520-0006-005F	236135.5	668819.2	8.93E-02	0.037	4.07E-02	+	0.017
9520-0006-006F	236135.5	668857.8	1.07E-01	0.031	3.46E-02	+	0.020
9520-0006-007F	236102.0	668722.5	1.11E-02	0.021	3.46E-02		0.002
9520-0006-008F	236102.0	668761.2	6.05E-02	0.032	3.23E-02	+	0.011
9520-0006-009F	236102.0	668799.8	0.00E+00	0.055	5.39E-02		0.000
9520-0006-010F	236102.0	668838.5	2.66E-01	0.051	3.59E-02	+	0.049
9520-0006-011F	236102.0	668877.2	1.11E-01	0.047	3.86E-02	+	0.021
9520-0006-012F	236068.5	668780.5	0.00E+00	0.031	2.98E-02		0.000
9520-0006-013F	236068.5	668819.2	6.87E-01	0.078	4.26E-02	+	0.128
9520-0006-014F	236068.5	668857.8	9.44E-02	0.050	5.59E-02	+	0.018
9520-0006-015F	236035.1	668838.5	6.80E-02	0.031	2.50E-02	+	0.013
9520-0006-015FS	236035.1	668838.5	7.08E-02	0.039	3.71E-02	+	0.013

SOUTHWEST SITE STORAGE AREA
(NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

PRELIMINARY DATA REVIEW

RELEASE RECORD
Attachment 4

Sample ID	GPS Coordinates		Cs-137				Fraction of DCGL
	North	East	Result (pCi/g)	2 σ	MDA (pCi/g)	Identified	
9520-0006-024I	236127.59	668743.92	8.54E-02	0.033	3.38E-02	+	0.016
9520-0006-025I	236108.41	668843.20	1.06E-01	0.033	3.92E-02	+	0.020
9520-0006-026I	236131.87	668808.84	1.06E-01	0.036	4.50E-02	+	0.020
9520-0006-027I	236115.99	668841.76	1.30E-01	0.039	3.81E-02	+	0.024
9520-0006-028I	236092.90	668822.91	1.39E-01	0.037	4.12E-02	+	0.026
9520-0006-029I	236143.26	668773.04	2.71E-02	0.027	3.27E-02	+	0.005

OTHER RADIONUCLIDES

Sample ID	Isotope	Result (pCi/g)	2 σ	MDA (pCi/g)	Identified	DCGL _{op} (pCi/g)	Fraction of DCGL
9520-0006-001F	Co-60	3.65E-02	0.024	4.00E-02	+	2.6E+00	0.01
9520-0006-003F	Eu-155	8.69E-02	0.067	1.17E-01	+	2.7E+02	0.00
9520-0006-004F	Eu-155	9.66E-02	0.083	1.39E-01	+	2.7E+02	0.00
9520-0006-005F	Eu-154	7.05E-02	0.069	1.30E-01	+	6.3E+00	0.01
9520-0006-006F	Cs-134	3.37E-02	0.023	4.41E-02	+	3.2E+00	0.01
9520-0006-007F	Cs-134	2.30E-02	0.022	3.99E-02	+	3.2E+00	0.01
9520-0006-009F	Cs-134	5.65E-02	0.048	6.62E-02	+	3.2E+00	0.02
9520-0006-009F	Co-60	3.17E-02	0.030	5.96E-02	+	2.6E+00	0.01
9520-0006-011F	Am-241	4.65E-02	0.039	6.85E-02	+	1.8E+01	0.00
9520-0006-011F	Cs-134	2.83E-02	0.028	5.23E-02	+	3.2E+00	0.01
9520-0006-011F	Co-60	3.95E-02	0.033	5.53E-02	+	2.6E+00	0.02
9520-0006-012F	Eu-155	6.67E-02	0.051	9.76E-02	+	2.7E+02	0.00
9520-0006-013F	Am-241	1.19E-01	0.090	1.57E-01	+	1.8E+01	0.01
9520-0006-014F	Cs-134	4.66E-02	0.042	8.01E-02	+	3.2E+00	0.01
9520-0006-014F	Eu-154	1.29E-01	0.113	2.19E-01	+	6.3E+00	0.02
9520-0006-014F	Eu-155	8.16E-02	0.070	1.16E-01	+	2.7E+02	0.00
9520-0006-015F	Cs-134	2.55E-02	0.021	2.73E-02	+	3.2E+00	0.01
9520-0006-015F	Eu-155	6.56E-02	0.059	8.63E-02	+	2.7E+02	0.00
9520-0006-015F	Mn-54	1.98E-02	0.017	2.59E-02	+	1.2E+01	0.00
9520-0006-025I	Eu-155	8.88E-02	0.079	9.52E-02	+	2.7E+02	0.00
9520-0006-026I	Cs-134	3.73E-02	0.032	4.91E-02	+	3.2E+00	0.01

SOUTHWEST SITE STORAGE AREA
(NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

PRELIMINARY DATA REVIEW

RELEASE RECORD
Attachment 4

Sample ID	Isotope	Result (pCi/g)	2 σ	MDA (pCi/g)	Identified	DCGL _{op} (pCi/g)	Fraction of DCGL
9520-0006-027I	Cs-134	4.67E-02	0.036	5.04E-02	+	3.2E+00	0.01
9520-0006-027I	Eu-155	9.49E-02	0.072	1.10E-01	+	2.7E+02	0.00
9520-0006-028I	Am-241	1.90E-01	0.158	2.00E-01	+	1.8E+01	0.01
9520-0006-029I	Am-241	7.08E-02	0.068	1.16E-01	+	1.8E+01	0.00
9520-0006-029I	Cs-134	2.61E-02	0.021	4.01E-02	+	3.2E+00	0.01

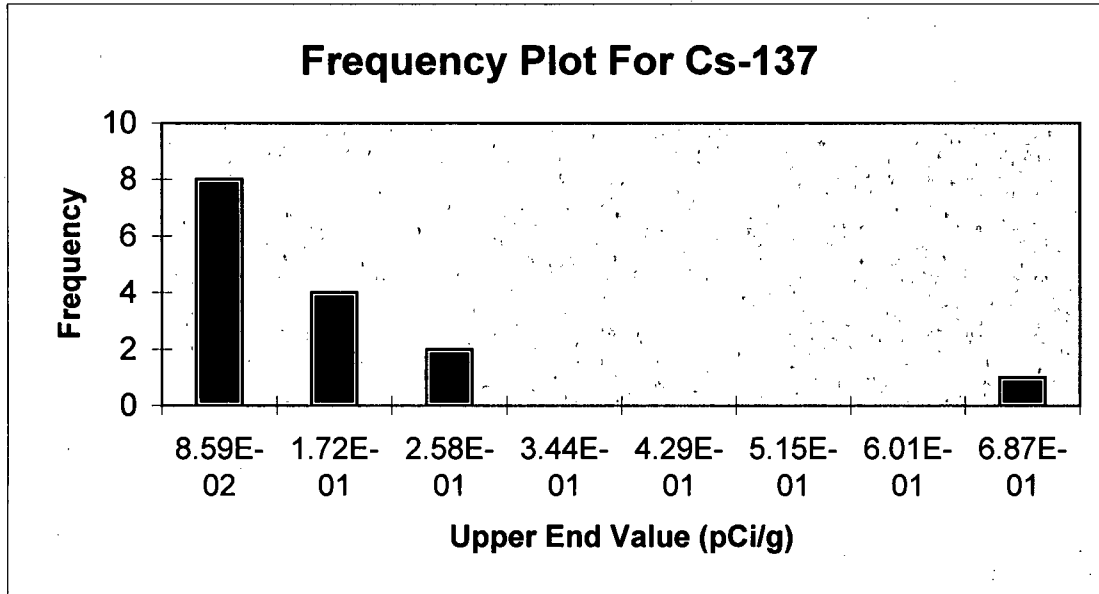
SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

RELEASE RECORD

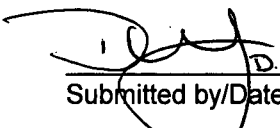
**ATTACHMENT 4B
(GRAPHICAL REPRESENTATION OF
DATA)**

FREQUENCY PLOT FOR CESIUM-137

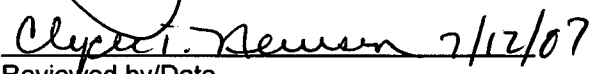
Survey Unit: 9520-0006
Survey Unit Name: Southwest Site Storage Area
Mean: 1.21E-01 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
8.59E-02	8	53%
1.72E-01	4	27%
2.58E-01	2	13%
3.44E-01	0	0%
4.29E-01	0	0%
5.15E-01	0	0%
6.01E-01	0	0%
6.87E-01	1	7%
Total:	15	100%


Submitted by/Date

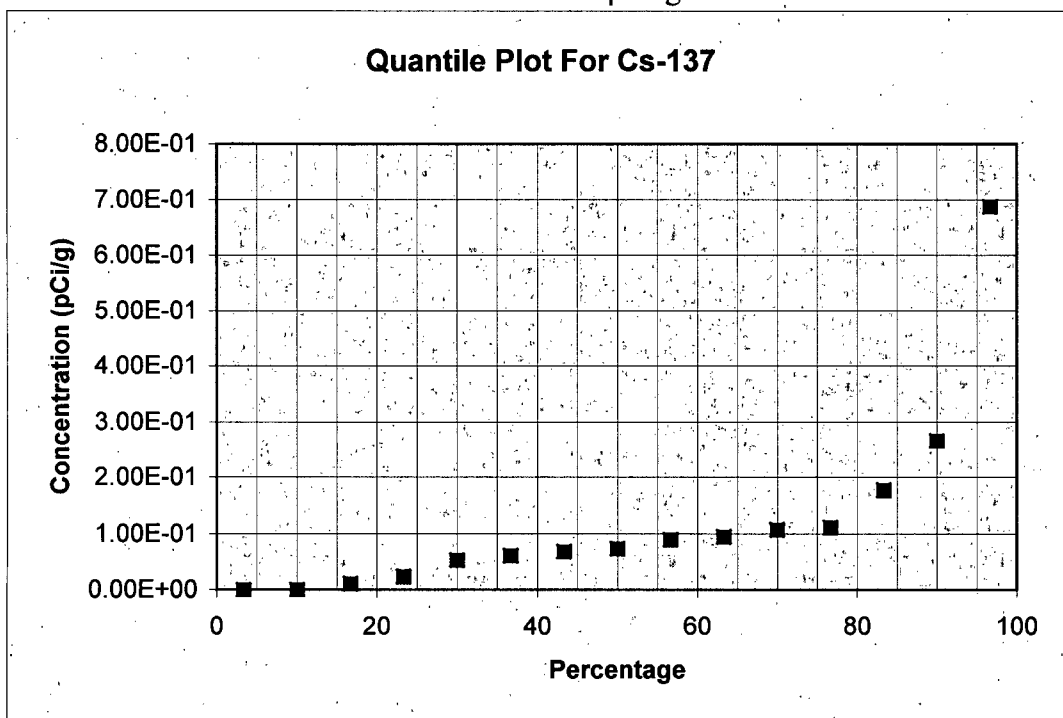
D. WOJTKOWIAK 7/12/07


Reviewed by/Date

7/12/07

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9520-0006
 Survey Unit Name: Southwest Site Storage Area
 Mean: 1.21E-01 pCi/g



Cs-137	Rank	Percentage
0.00E+00	1	3.3%
0.00E+00	2	10.0%
1.11E-02	3	16.7%
2.35E-02	4	23.3%
5.30E-02	5	30.0%
6.05E-02	6	36.7%
6.80E-02	7	43.3%
7.36E-02	8	50.0%
8.93E-02	9	56.7%
9.44E-02	10	63.3%
1.07E-01	11	70.0%
1.11E-01	12	76.7%
1.77E-01	13	83.3%
2.66E-01	14	90.0%
6.87E-01	15	96.7%

D. WOSTKOWIAK 7/12/07
 Submitted by/Date

Clyde T. Jensen 7/12/07
 Reviewed by/Date

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet for Single Radionuclide

Survey Area Number: 9520		Survey Unit Number: 0006		WPIR #: N/A		
Survey Area Name: Southwest Site Storage Area		Classification: 2	TYPE I (α error): 0.05	N: 15		
Radionuclides:	1 st Radionuclide Cs-137					
DCGL:	5.38E+00					
Results 1 st Radionuclide (pCi/g)				Weighted Sum (W _s)	1-W _s	Sign
5.30E-02				0.01	0.99	+1
7.36E-02				0.01	0.99	+1
2.35E-02				0.00	1.00	+1
1.77E-01				0.03	0.97	+1
8.93E-02				0.02	0.98	+1
1.07E-01				0.02	0.98	+1
1.11E-02				0.00	1.00	+1
6.05E-02				0.01	0.99	+1
0.00E+00				0.00	1.00	+1
2.66E-01				0.05	0.95	+1
1.11E-01				0.02	0.98	+1
0.00E+00				0.00	1.00	+1
6.87E-01				0.13	0.87	+1
9.44E-02				0.02	0.98	+1
6.80E-02				0.01	0.99	+1
Number of positive differences (S+)					15	

Critical Value 11

Survey Unit Meets the Acceptance Criteria

Performed by: David Wojtkowiak

Date: 7/10/2007

Independent Review by: Clyde T. Newson

Date: 7/12/07

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

Split Sample Assessment Form

Survey Area #: 9520		Survey Unit #: 0006		Survey Unit Name: Southwest Site Storage Area (non-protected area)																
Sample Plan or WPIR#: N/A						SML#: 9520-0006-015F														
Sample Description: Comparison of split samples collected from sample measurement location #15 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9520-0006-015F, the comparison sample was 9520-0006-015FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	6.80E-02	0.016	4	0.5 - 2.0	7.08E-02	0.019	1.04	Y												
Comments/Corrective Actions: None					Table is provided to show acceptance criteria used to assess split samples. <table> <tr> <th><u>Resolution</u></th> <th><u>Agreement Range</u></th> </tr> <tr> <td>4 - 7</td> <td>0.5 - 2.0</td> </tr> <tr> <td>8 - 15</td> <td>0.6 - 1.66</td> </tr> <tr> <td>16 - 50</td> <td>0.75 - 1.33</td> </tr> <tr> <td>51 - 200</td> <td>0.80 - 1.25</td> </tr> <tr> <td>>200</td> <td>0.85 - 1.18</td> </tr> </table>				<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
									<u>Resolution</u>	<u>Agreement Range</u>										
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed by: D. Wojtkowiak					Date: 7/9/2007		Reveiwed by: Clyce T. Henson													
							Date: 7/12/07													

SOUTHWEST SITE STORAGE AREA (NON-PROTECTED AREA)
SURVEY UNIT 9520-0006

RELEASE RECORD

ATTACHMENT 4E
(COMPASS DQA WITH POWER CURVE)

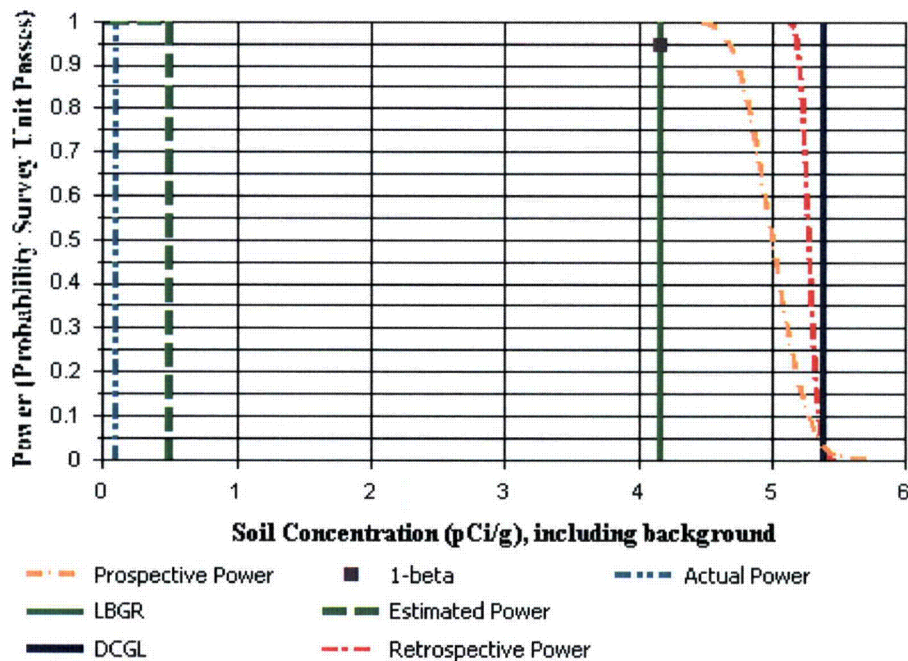


DQA Surface Soil Report

Assessment Summary

Site:	9520		
Planner(s):	Wojo		
Survey Unit Name:	9520-0006		
Report Number:	2		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	<i>Reject Null Hypothesis (Survey Unit PASSES)</i>		

Retrospective Power Curve





Final Status Survey Final Report Phase V

**Appendix A2
Survey Unit Release Record
9520-0002, Southwest Site Storage Area**

December 2006





Final Status Survey Final Report Phase V

**Appendix A3
Survey Unit Release Record
9520-0003, Southwest Site Storage Area**

December 2006





Final Status Survey Final Report Phase V

**Appendix A4
Survey Unit Release Record
9520-0004, Southwest Site Storage Area**

December 2006





Final Status Survey Final Report Phase V

**Appendix A5
Survey Unit Release Record
9520-0005, Southwest Site Storage Area**

December 2006





Final Status Survey Final Report Phase V

**Appendix A6
Survey Unit Release Record
9530-0001, Central Peninsula**

December 2006





Final Status Survey Final Report Phase V

**Appendix A7
Survey Unit Release Record
9530-0002, Central Peninsula**

December 2006





Final Status Survey Final Report Phase V

**Appendix A8
Survey Unit Release Record
9530-0003, Central Peninsula**

December 2006





Final Status Survey Final Report Phase V

**Appendix A9
Survey Unit Release Record
9530-0004, Central Peninsula**

December 2006





Final Status Survey Final Report Phase V

**Appendix A10
Survey Unit Release Record
9805-0000, Subsurface Area Associated
with the Peninsula (Excluding Survey
Area 9531)**

December 2006





Final Status Survey Final Report Phase V

**Appendix A11
Survey Unit Release Record
9807-0000, Subsurface Area Associated
with the Southwest Site Storage Area**

December 2006

