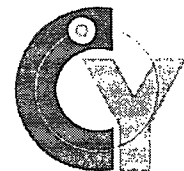





Final Status Survey Final Report Phase V

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

December 2006



CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
CENTRAL PENINSULA
SURVEY UNIT 9530-0001

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Date: 10/11/06

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1. **SURVEY UNIT DESCRIPTION**

Survey Unit 9530-0001 (Central Peninsula) is designated as Final Status Survey (FSS) Class 2 and consists of 5,753 m² (1.4 acres) of uninhabited open land located approximately 2,294 feet from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The survey unit is bounded by land Survey Unit 9530-0004. The survey unit is relatively level open space in the middle of the peninsula. The restoration of the peninsula for FSS has removed most surface interference in the survey unit; however, there are some trees and bushes remaining in the area.

The reference coordinates associated with this survey unit are E013 through E018 by S095 through S109 (refer to 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 historical information, scoping analyses and characterization results provided sufficient data to designate Survey Unit 9530-0001 as Class 2 in August 2006.

The "Classification Basis Summary" conducted for Survey Unit 9530-0001 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 "walkdown."

A review of the 10CFR50.75(g)(1) database report identified two documents associated with this survey unit.

- a) Event PIR 80-37: Contamination was documented to be present in an area outside the restricted area. Small areas of low-level contamination were found on the facility grounds through a routine survey in a normally non-radioactive area.
- b) Event PIR 89-35: Contamination was identified in the 115 kV switchyard moat (Structure 111, refer to Connecticut Yankee (CY) Drawing SK-16112-10032 sheet 2. The source of the contamination was the discharge of approximately fifty (50) gallons of radioactive liquid using an unmonitored, unmarked drain line in the Spent Fuel Building. Once identified, decontamination was performed in the

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switchyard moat and an outfall area outside the Radiologically Controlled Area (RCA). However, a plant survey performed on 2/28/89 shows that some of the radioactive material was deposited along the unpaved road in this survey unit. The survey also documents that the area was excavated and surveyed when the condition was identified. The survey documents that count rates using portable beta detection instrumentation were less than one hundred corrected counts per minute above background (100 ccpm).

A review of the *"Initial and Supplemental Characterization Reports"* as well as the previous *"Classification Basis Summaries"* provided no additional information pertinent to classification.

The survey unit had undergone FSS in the fall of 2004 and release records documenting the satisfactory completion of the FSS objectives were in preparation. In 2006, utilities were being removed as part of the decommissioning effort on the Upper Peninsula. Construction debris including Asbestos Containing Material (ACM) was identified and remediated. In addition to the ACM, several objects were also identified that had detectable radioactivity. Two pieces of angle iron were located in a water utility trench in adjacent Survey Unit 9530-0004. Most of the work involved two areas adjacent to Survey Unit 9530-0001. Some of the excavated spoils from these areas were temporarily stored in Survey Unit 9530-0001 during the investigation. Based on the potential to change the final radiological status of the survey unit, another FSS was considered prudent to define the as-left radiological condition.

Soil samples were collected in 2006 to establish the radiological condition of the surface and subsurface area following removal of soil. Cs-137 was the only gamma emitting radionuclide reported in concentrations with the potential for exceeding the screening criteria. Therefore, the previous FSS data and statistical parameters were used for the survey design. Statistical quantities from the previous FSS survey are provided in Table 1.

Table 1 – Basic Statistical Quantities for Cs-137 from the previous FSS Survey

Minimum Observed Concentration (pCi/g) :	6.39E-02
Maximum Observed Concentration (pCi/g) :	3.15E-01
Mean (pCi/g):	1.61E-01
Median (pCi/g):	1.15E-01
Standard Deviation (pCi/g):	9.16E-02

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The FSS Engineer performed a visual inspection and walk-down during August 2006 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.

Based upon the historical information and the results of radiological surveys performed during characterization, it was concluded that there was a low probability for residual radioactivity to be present in this survey unit in concentrations greater than the Operational Derived Concentration Guideline Levels (DCGLs) justifying a final survey unit classification of Class 2 (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 does 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 9530-0001 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

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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.

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 2.

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Table 2 - Radionuclide Specific Base Case Soil DCGL, Operational DCGLs and Required Minimum Detectable Concentrations			
Radionuclide⁽¹⁾	Base Case Soil DCGL (pCi/g)⁽²⁾	Operational DCGL (pCi/g)⁽³⁾	Required MDC (pCi/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
Pu-241	8.70E+02	5.92E+02	3.48E+01
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00
Cm-243/244	2.90E+01	1.74E+01	1.16E+00

(1) **Bold** indicates those radionuclides considered to be Hard-to-Detect (HTD)

(2) The Base Case Soil DCGLs for soil are specified by the LTP in Chapter 6 and are equivalent to 25 mrem/yr TEDE

(3) The Operational DCGL is equivalent to 17 mrem/yr TEDE

(4) The required MDC is equivalent to 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

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 the surface and subsurface area following removal of soil. Cs-137 was the only gamma emitting radionuclide reported in concentrations with the potential for exceeding the screening criteria. The previous FSS data and statistical parameters were used for the survey design and are provided in Table 1.

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

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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 radionuclide of concern in survey unit 9530-0001 (refer to Section 3). Other radionuclides identified during this FSS would be evaluated to ensure adequate survey design.

Surrogate DCGLs were not required for this survey unit based the previous FSS of this survey unit and via screening under LTP Section 5.4.7.2, "Gross Activity DCGLs". 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% for individual radionuclides and less than 10% for aggregates.

The Elevated Measurement Comparison (EMC) did not apply to this survey unit since it is a Class 2 area and discrete, elevated areas of contamination were not expected.

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 5.26 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 (10 CFR 20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design.

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The survey design specified fifteen (15) surface soil samples for non-parametric statistical testing and two (2) samples at biased locations.

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 2 area.

Judgmental sampling was included as a feature of this survey design to account for any anomalies potentially identified in the field.

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 3.

Table 3 - Sample Measurement Locations with Associated GPS Coordinates

Designation	Northing	Easting
9530-0001-001F	235541.75	670285.43
9530-0001-002F	235541.75	670353.87
9530-0001-003F	235541.75	670422.31
9530-0001-004F	235541.75	670490.75
9530-0001-005F	235482.48	670388.09
9530-0001-006F	235482.48	670456.53
9530-0001-007F	235482.48	670524.97
9530-0001-008F	235482.48	670593.41
9530-0001-009F	235423.21	670490.75
9530-0001-010F	235423.21	670559.19
9530-0001-011F	235423.21	670627.63
9530-0001-012F	235423.21	670696.07
9530-0001-013F	235423.21	670764.51
9530-0001-014F	235363.93	670661.85
9530-0001-015F	235363.93	670730.29
9530-0001-016F	235442.18	670580.76
9530-0001-017F	235463.77	670617.68

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

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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 2.

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 two (2) soil samples for "split sample" analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel "RANDBETWEEN" function. The number of quality control soil samples was about 10% of fifteen (15) samples.

The LTP specifies that scanning will be performed along with a combination of systematic and judgmental measurements (samples) for a Class 2 land area and should cover between 10% to 100% of the area. The fraction of scanning coverage was determined during the DQO process with the total amount and location(s) based on the likelihood of finding elevated activity during FSS.

Based on the historical site assessment, the characterization data available, and the use of the survey unit to store spoils from remediation, it was determined that scanning was required in three (3) separate areas. The total surface area to be scanned was approximately 15% of the survey unit. A map of the scan grid locations is provided in Attachment 1.

For this Class 2 survey unit, the "Investigation Level" for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8. Table 4 provides a synopsis of the survey design.

Table 4 - Synopsis of the Survey Design		
Feature	Design Criteria	Basis
Survey Unit Land Area	5,753 m ²	Based on AutoCAD-LT
Number of Measurements	17 (15 systematic grid) (2 biased)	Type 1 and Type 2 errors were 0.05, sigma was 0.092 pCi/g, the LBGR was adjusted to 5.2 to maintain Relative Shift in the range of 1 and 3
Grid Spacing	21.0 m	Based on triangular grid
Operational DCGL	5.38 pCi/g Cs-137	Administratively set to achieve 17 mrem/yr TEDE ⁽¹⁾
Soil Investigation Level	5.38 pCi/g Cs-137	The Operational DCGL meets the LTP criteria for a Class 2 survey unit

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Table 4 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Scan Survey Area Coverage	Approximately 15% of the area	The LTP requires >10% area coverage for Class 2 survey units
Scan Investigation Level	Detectable over background	Administratively set to achieve 17 mrem/yr TEDE ⁽¹⁾

(1) The allowable dose for soil in this survey unit is 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)

5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0038. The WP&IR 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.

Three (3) scan areas were established that constituted approximately 15% of the surface area of Survey Unit 9530-0001. Grid lines, one meter wide, were painted on the ground of each of the three (3) scan areas. A background survey was performed around the survey unit and it was determined that, using a Eberline E-600 with a SPA-3 sodium iodide detector, background ranged from 6,200 counts per minute (cpm) up to 8,100 cpm.

The scan areas were established and each area was 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 15% 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."

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Two (2) samples (9530-0001-003F and 9530-0001-008F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of two (2) samples (9530-0001-006F and 9530-0001-014F) for "split sample" analysis.

6. SURVEY RESULTS

All field survey activities were conducted between September 8, 2006 and September 15, 2006.

The sample locations identified in the FSS plan were scanned over approximately a one (1) meter radius for elevated radiation levels. Table 5 provides an overview of the scan results for sample measurement locations. Scan results are provided in Attachment 2.

Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
1	6.74	8.48	NO
2	7.06	10.4	NO
3	6.55	9.25	NO
4	8.62	8.70	NO
5	7.77	8.72	NO
6	7.53	8.63	NO
7	8.41	8.40	YES
8	7.87	9.60	NO
9	7.18	8.74	NO
10	7.87	8.93	NO
11	7.44	8.57	NO
12	7.47	8.81	NO
13	7.26	8.48	NO

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Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
14	7.17	8.88	NO
15	8.45	9.29	NO
16	8.27	8.70	NO
17	7.86	9.42	NO

(1) The action level is based on a measurement above ambient background in accordance with the FSS plan

(2) The FSS plan requires movement of the sample measurement location to the area within the 1 meter radius yielding the response above the action level

Three (3) areas, that comprised approximately 15% of the total surface area for the survey unit, were scanned for elevated radiation levels. The areas were scanned in accordance with the FSS plan on September 15, 2006. One (1) elevated measurement location was identified during scanning. A confirmatory sample was collected at the elevated measurement location. The sample collected at the elevated measurement location was denoted as 9530-0001-018F. A map identifying all of the sample locations is provided in Attachment 1. Table 6 provides an overview of the scan area survey. Scan results are provided in Attachment 2.

Table 6 - Scan Area Results

Scan Area	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification ⁽²⁾	Investigation Sample
1	7.38	8.93	None – no elevated areas identified	None
2	10.6	7.98	ER-02-01-1	9530-0001-018F
3	6.99	7.73	None – no elevated areas identified	None

(1) The action level is based on a measurement above 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, Charleston, South Carolina. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing, the associated field splits, the two (2) biased samples, and the one (1) confirmatory sample using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDCs. Gamma spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty).

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Cs-137 was identified in fourteen (14) of the fifteen (15) samples collected for non-parametric statistical testing. Cs-137 was the primary radionuclide confirming the DQOs. 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 7.

Table 7 - Summary of Soil Sample Results for the Statistical Sample Population		
Sample Number	Cs-137 pCi/g	Fraction of the Operational DCGL ⁽¹⁾
9530-0001-001F	1.30E-01	0.024
9530-0001-002F	1.27E-01	0.024
9530-0001-003F	2.59E-01	0.048
9530-0001-004F	1.31E-01	0.024
9530-0001-005F	4.85E-02	0.009
9530-0001-006F	1.21E-01	0.022
9530-0001-007F	1.34E-01	0.025
9530-0001-008F	1.33E-01	0.025
9530-0001-009F	6.41E-02	0.012
9530-0001-010F	1.34E-01	0.025
9530-0001-011F	1.06E-01	0.020
9530-0001-012F	8.50E-02	0.016
9530-0001-013F	7.29E-02	0.014
9530-0001-014F	5.47E-02	0.010
9530-0001-015F	4.15E-02	0.008

(1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 to achieve 17 mrem/yr TEDE

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.

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As previously stated in Section 4 of this report, the criteria for de-selection of a radionuclide is a concentration that is less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the Operational DCGLs for aggregates. Sr-90 and Pu-238 were the only HTDs, which by analysis, met the criteria for detection (i.e., a result greater than two standard deviations uncertainty). The highest result for both Sr-90 and Pu-238 was <1% of the Operational DCGL.

Table 8 - Hard-to-Detect Sample Results

Sample	Sr-90 (pCi/g)	Fraction of Operational DCGL ⁽¹⁾	Pu-238 (pCi/g)	Fraction of Operational DCGL ⁽¹⁾
9530-0001-003F	8.33E-03	0.008	-1.10E-01	-0.005
9530-0001-008F	2.67E-03	0.003	1.02E-01	0.005

(1) The Operational DCGL from Table 2 is 1.05 pCi/g for Sr-90 and 20.1 pCi/g for Pu-238 to achieve 17 mrem/yr TEDE

Two (2) biased samples were collected at locations selected by FSS Supervision based on professional judgment and observation. Gamma spectroscopy analysis was performed by the off-site laboratory to the required MDC.

Table 9 - Judgmental or Biased Sample Results

Sample Number	Cs-137 pCi/g	Fraction of the Operational DCGL ⁽¹⁾
9530-0001-016F	9.61E-02	0.018
9530-0001-017F	1.82E-01	0.034

(1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 to achieve 17 mrem/yr TEDE

7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Thirteen percent (13%) of the samples were 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." There was acceptable agreement between field split results for Cs-137 at location 9530-0001-006. However, Cs-137 was not detected in sufficient quantities in the field split results at location 9530-0001-014 to evaluate in accordance with procedure. Evaluation using the reported results for K-40 resulted in acceptable agreement between the field split results at location 9530-0001-014.

The sample analysis vendor, General Engineering Laboratories, LLC, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachment 4 for data and data quality analysis results.

CENTRAL PENINSULA
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8. INVESTIGATIONS AND RESULTS

One (1) confirmatory sample was collected in scan area 2 at a location exhibiting elevated scan readings. The sample is denoted as shown in Table 6, with the sample result shown in Table 10 below.

Table 10 - Confirmatory Sample Results		
Sample Number	Cs-137 pCi/g	Fraction of the Operational DCGL ⁽¹⁾
9530-0001-018F	1.67E-01	0.031

(1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 to achieve 17 mrem/yr TEDE

9. REMEDIATION AND RESULTS

Historically, no radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to or as a result of the FSS. 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 when used in conjunction with the unity rule. 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.

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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. The difference between the mean and median was -21% 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 1.3.

All data, assessments, and graphical representations are provided in Attachment 4.

12. ANOMALIES

No anomalies were noted.

13. CONCLUSION

Survey Unit 9530-0001 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 and remediation was not required.

Cs-137 was 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 2.

The dose contribution from soil is less than 1 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.

This survey unit is not considered impacted by future groundwater radioactive contamination, as there are underground structures, systems or components 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 3 mrem/yr TEDE. Therefore, Survey Unit 9530-0001 is acceptable for unrestricted release.

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

14.4 Attachment 4 – DQA Results

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 1 (FIGURES)

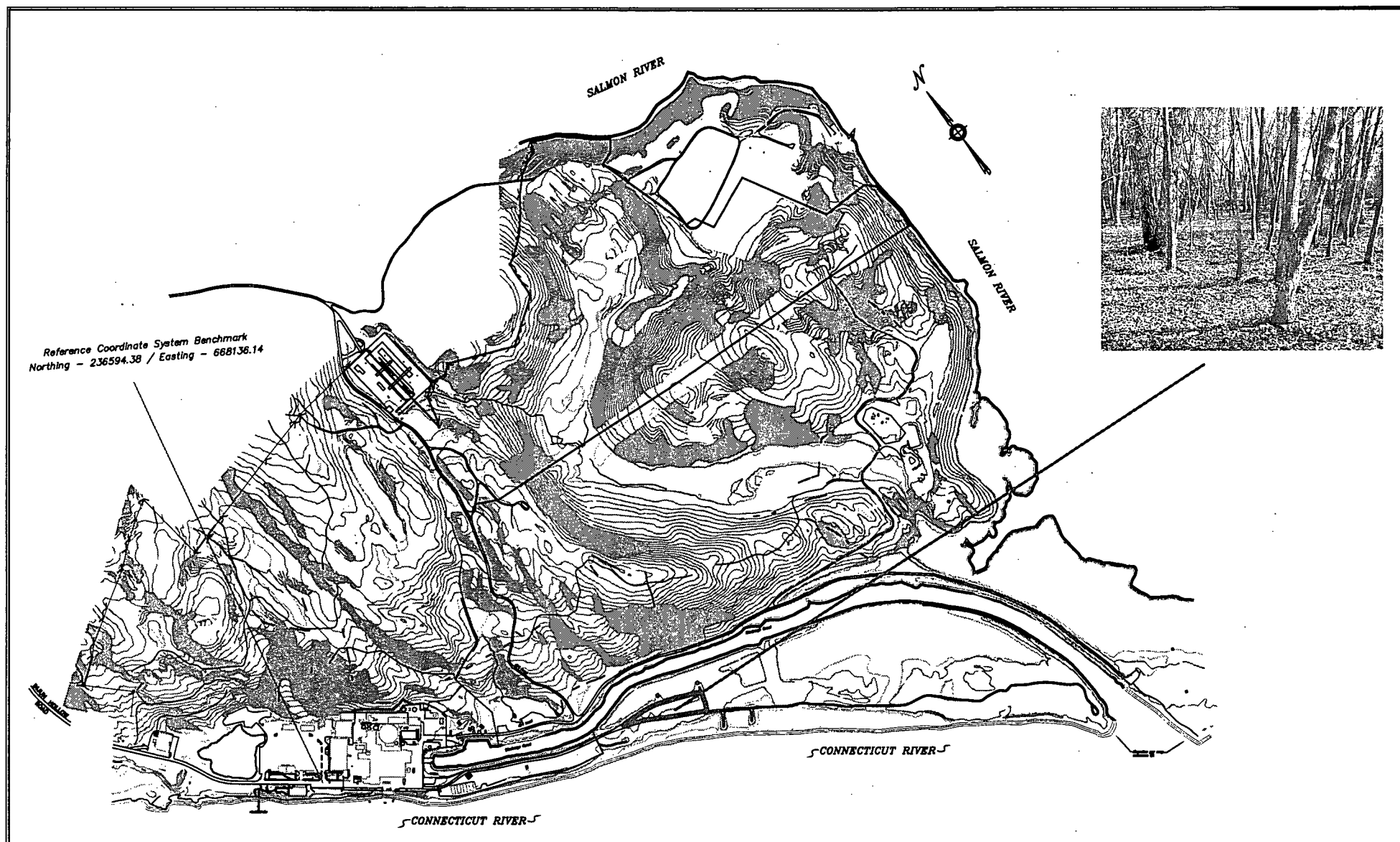


Figure 1



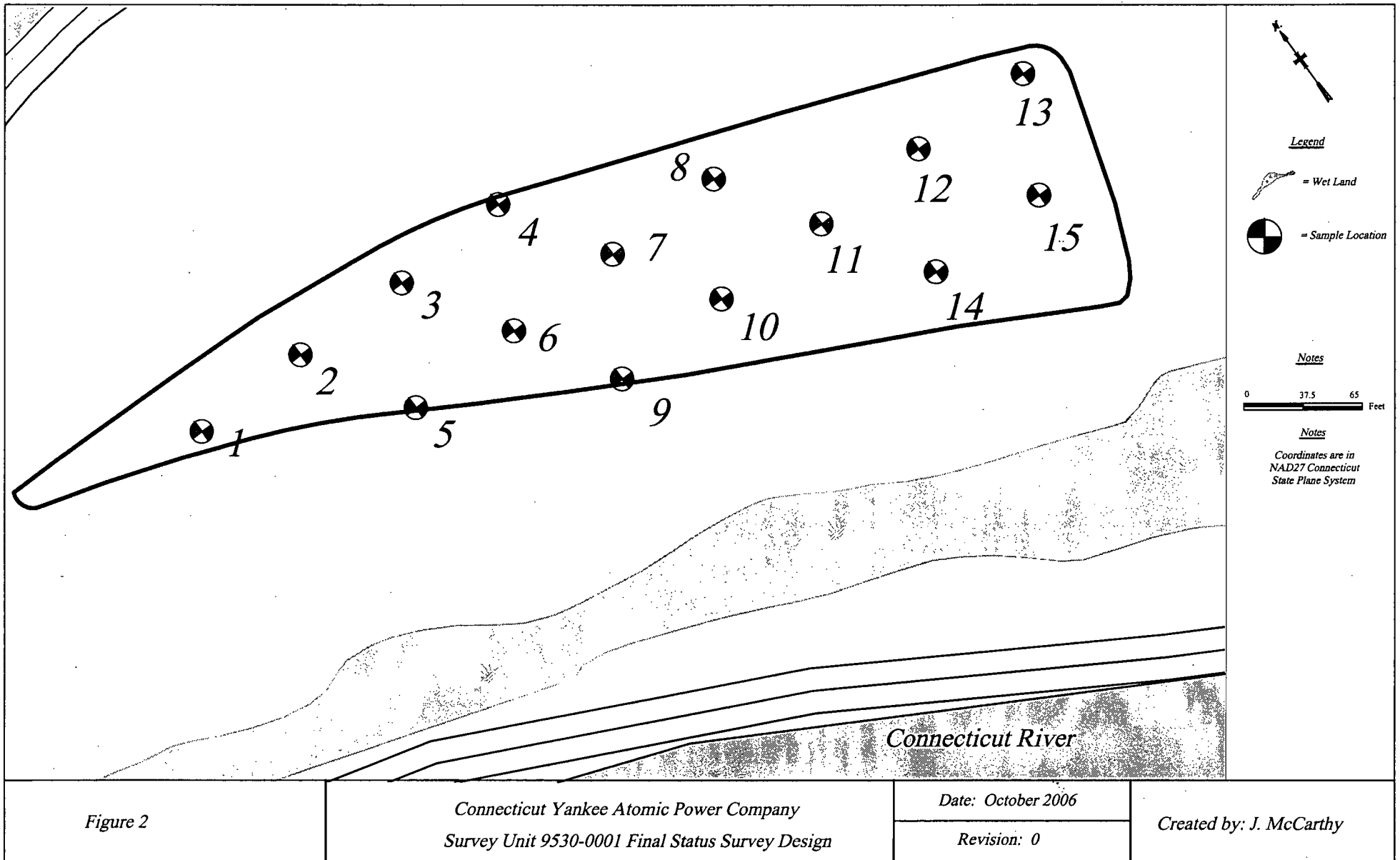
Connecticut Yankee Atomic Power Company
 Site Map With Reference To Survey Unit 9530-0001

Date

By

October 2006

J. McC.



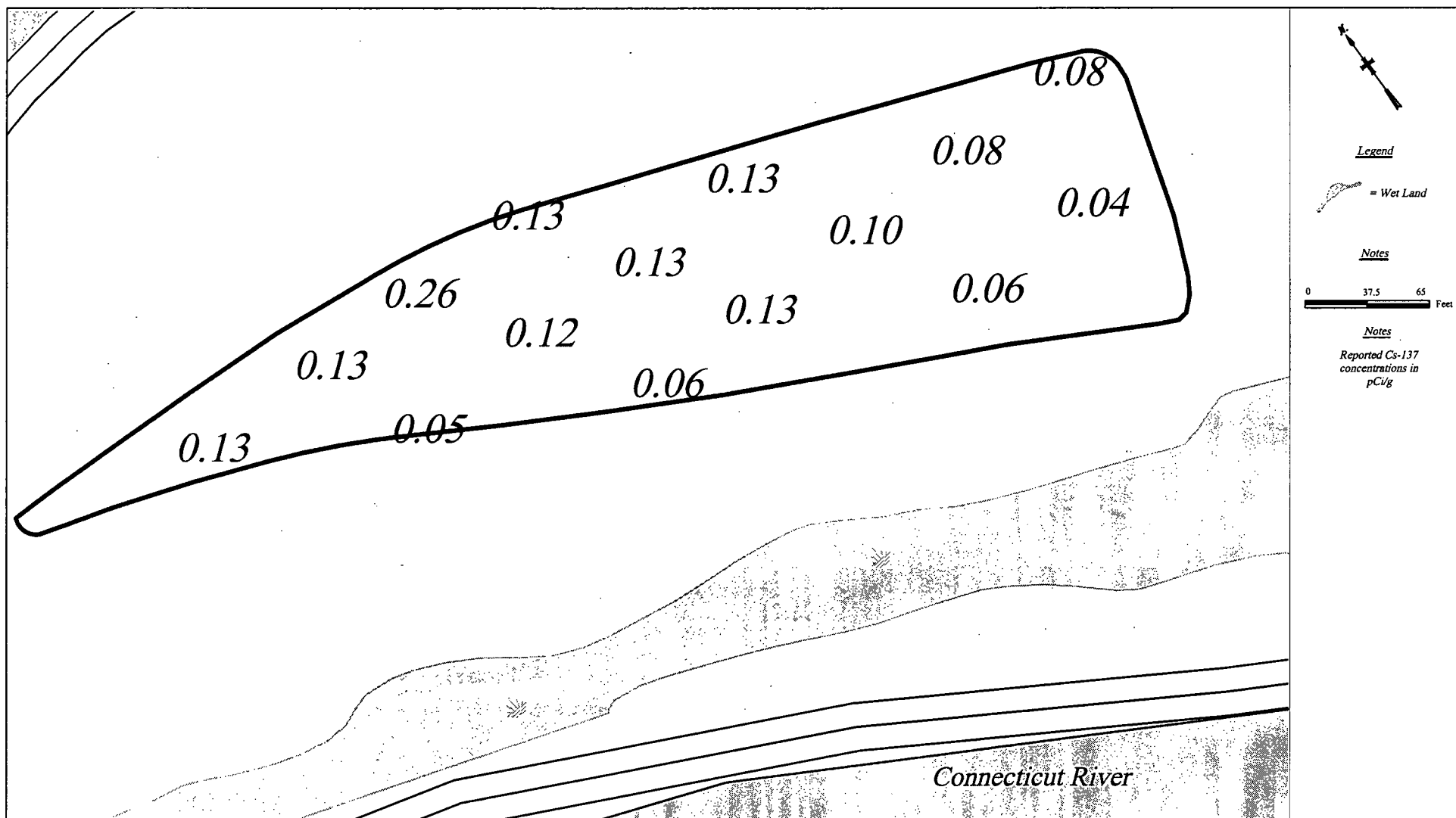


Figure 3

Connecticut Yankee Atomic Power Company
Survey Unit 9530-0001 Final Status Survey Cs-137 Posting Plot

Date: October 2006

Revision: 0

Created by: J. McCarthy

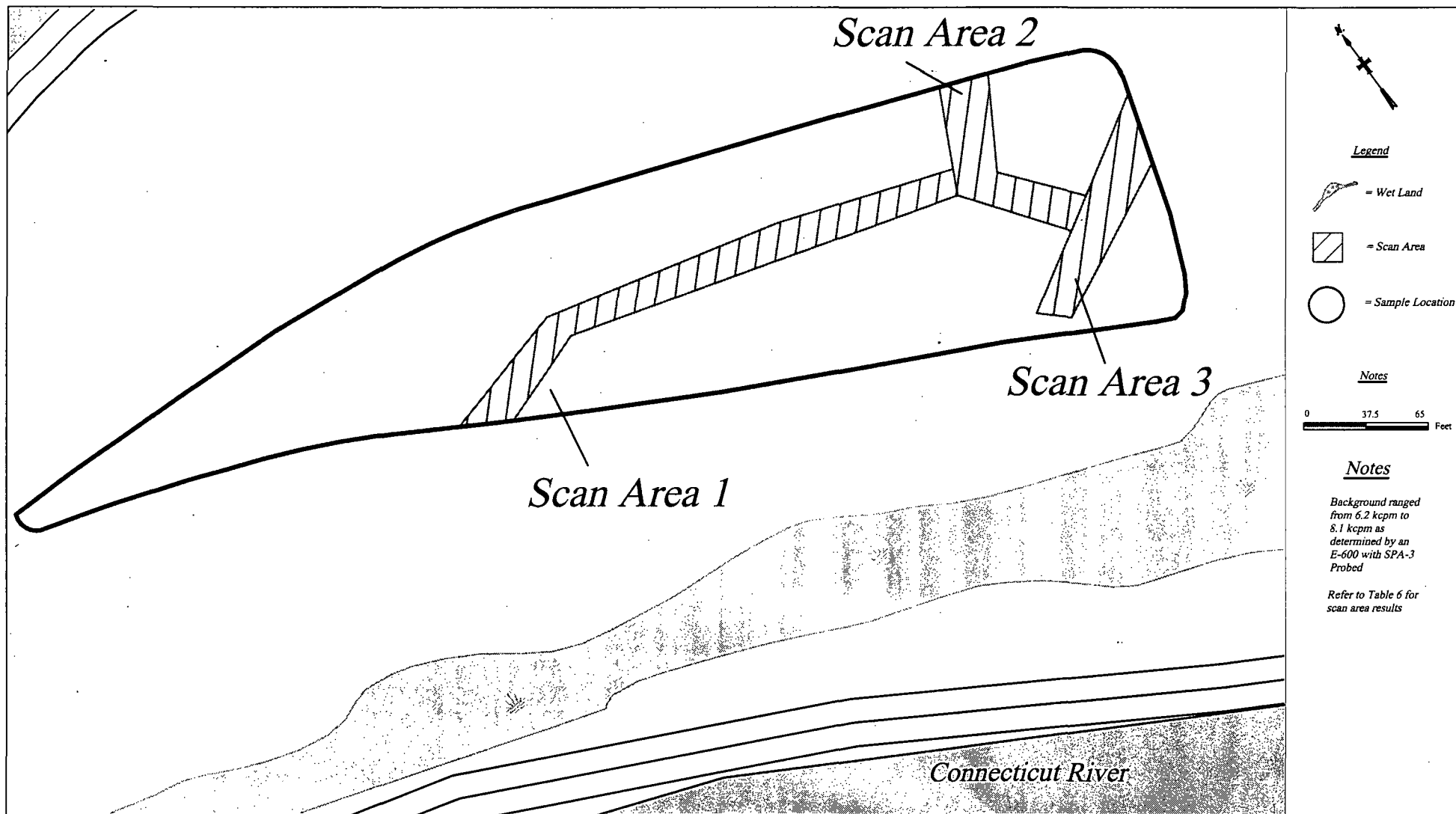


Figure 4

Connecticut Yankee Atomic Power Company
Survey Unit 9530-0001 Final Status Survey Scan Areas

Date: October 2006

Revision: 0

Created by: J. McCarthy

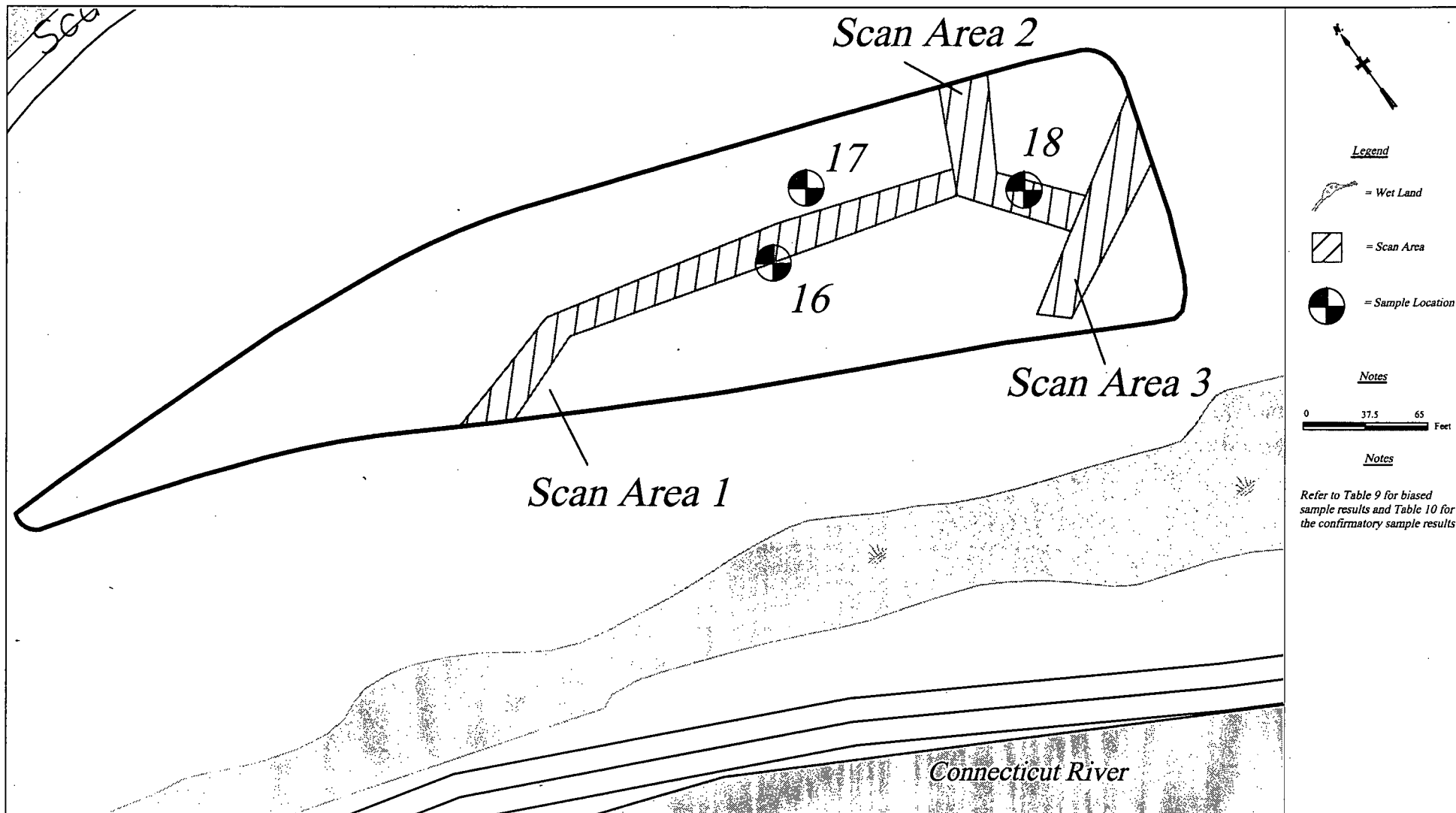


Figure 5

Connecticut Yankee Atomic Power Company
Survey Unit 9530-0001 Biased and Confirmatory Samples

Date: October 2006

Revision: 0

Created by: J. McCarthy

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 2 (SCAN RESULTS)

Survey Release Record Sample Location Scan Results

Survey Unit 9530-0001

<u>Sample Name</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
9530-01-SL-00-01-0	7270	8488	6740		9/8/2006	10:05:00	1116	1006
9530-01-SL-00-02-0	9080	10441	7060		9/8/2006	10:08:00	1116	1006
9530-01-SL-00-03-0	7980	9256	6550		9/8/2006	10:16:00	1116	1006
9530-01-SL-00-04-0	7470	8704	8620		9/8/2006	10:25:00	1116	1006
9530-01-SL-00-05-0	7490	8726	7770		9/8/2006	10:32:00	1116	1006
9530-01-SL-00-06-0	7410	8639	7530		9/8/2006	10:38:00	1116	1006
9530-01-SL-00-07-0	7190	8401	8410	+	9/8/2006	11:01:00	1116	1006
9530-01-SL-00-08-0	8300	9601	7870		9/12/2006	8:04:00	1116	1006
9530-01-SL-00-09-0	7510	8748	7180		9/14/2006	8:06:00	1105	1012
9530-01-SL-00-10-0	7680	8931	7870		9/12/2006	8:17:00	1116	1006
9530-01-SL-00-11-0	7350	8574	7440		9/12/2006	8:24:00	1116	1006
9530-01-SL-00-12-0	7570	8812	7470		9/12/2006	8:28:00	1116	1006
9530-01-SL-00-13-0	7270	8488	7260		9/14/2006	8:01:00	1105	1012
9530-01-SL-00-14-0	7640	8888	7170		9/14/2006	7:55:00	1105	1012
9530-01-SL-00-15-0	8020	9299	8450		9/14/2006	7:58:00	1105	1012
9530-01-SL-00-16-0	7470	8704	8270		9/12/2006	10:27:00	1116	1006
9530-01-SL-00-17-0	8140	9428	7860		9/12/2006	10:17:00	1116	1006
9530-01-ER-02-01-1 ⁽¹⁾	6800	7978	10600	+	9/15/2006	11:28 AM	1105	1012

(1) Elevated reading corresponds to confirmatory sample location 9530-0001-018

Survey Release Record Scan Area Results

Survey Unit 9530-0001

9530-0001 SCAN AREA 1

<u>Sample Name</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
9530-01-SC-01-01-0	6220	7346	6860		9/15/2006	8:20:00	1105	1012
9530-01-SC-01-02-0	7390	8618	7220		9/15/2006	8:26:00	1105	1012
9530-01-SC-01-03-0	7300	8520	7330		9/15/2006	8:32:00	1105	1012
9530-01-SC-01-04-0	7680	8931	7380		9/15/2006	8:37:00	1105	1012
9530-01-SC-01-05-0	7240	8455	6970		9/15/2006	8:43:00	1105	1012

9530-0001 SCAN AREA 2

9530-01-SC-02-01-0	6800	7978	6150		9/15/2006	9:57:00	1105	1012
9530-01-ER-02-01-1	6800	7978	10600	+	9/15/2006	11:28:00	1105	1012
9530-01-SC-02-02-0	7240	8455	6120		9/15/2006	10:09:00	1105	1012
9530-01-SC-02-03-0	7030	8227	6430		9/15/2006	10:16:00	1105	1012
9530-01-SC-02-04-0	8120	9407	6200		9/15/2006	10:20:00	1105	1012
9530-01-SC-02-05-0	7600	8845	7740		9/15/2006	10:24:00	1105	1012
9530-01-SC-02-06-0	7480	8715	6530		9/15/2006	10:28:00	1105	1012

9530-0001 SCAN AREA 3

9530-01-SC-03-01-0	6710	7880	6690		9/15/2006	10:48:00	1105	1012
9530-01-SC-03-02-0	6390	7532	6770		9/15/2006	10:51:00	1105	1012
9530-01-SC-03-03-0	6550	7706	6280		9/15/2006	10:54:00	1105	1012
9530-01-SC-03-04-0	6790	7967	6630		9/15/2006	10:56:00	1105	1012
9530-01-SC-03-05-0	6480	7630	6600		9/15/2006	10:58:00	1105	1012
9530-01-SC-03-06-0	6570	7727	6990		9/15/2006	11:01:00	1105	1012
9530-01-SC-03-07-0	6560	7717	6210		9/15/2006	11:03:00	1105	1012
9530-01-SC-03-08-0	6710	7880	6780		9/15/2006	11:06:00	1105	1012

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)

General Narrative

CASE NARRATIVE
For
CONNECTICUT YANKEE
RE: Soil
PO# 002332
Work Order: 172114
SDG: MSR#06-1276

September 27, 2006

Laboratory Identification:

General Engineering Laboratories, LLC

Mailing Address:

P.O. Box 30712

Charleston, South Carolina 29417

Express Mail Delivery and Shipping Address:

2040 Savage Road

Charleston, South Carolina 29407

Telephone Number:

(843) 556-8171

Summary:

Sample receipt

The sample(s) for this Project arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on September 20, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<u>Sample ID</u>	<u>Client Sample ID</u>
172114001	9530-0001-008F
172114002	9530-0001-010F
172114003	9530-0001-011F
172114004	9530-0001-012F
172114005	9530-0001-016F
172114006	9530-0001-017F
172114007	9530-0001-018F
172114008	9530-0001-001F
172114009	9530-0001-002F

172114010	9530-0001-003F
172114011	9530-0001-004F
172114012	9530-0001-005F
172114013	9530-0001-006F
172114014	9530-0001-006FS
172114015	9530-0001-007F
172114016	9530-0001-009F
172114017	9530-0001-013F
172114018	9530-0001-014F
172114019	9530-0001-014FS
172114020	9530-0001-015F

Items of Note:

There are no items of note.

Case Narrative:

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are listed below by analytical parameter.

Analytical Request:

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

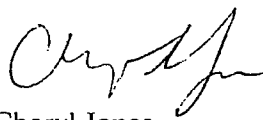
Internal Chain of Custody:

Custody was maintained for the sample(s).

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody and Supporting Documentation and all analytical fractions.

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 26 September 2006

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	TX213-2006A
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. 2006-00565			
Project Name: Haddam Neck Decommissioning							Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924							<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">FSSGAM</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">FSSALL</div> </div>					Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones												<div style="font-size: 2em; text-align: right;">1721141</div>			
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input 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		
9530-0001-008F	9-12-06	0810	TS	G	BP		X								
9530-0001-010F	9-12-06	0817	TS	G	BP	X									
9530-0001-011F	9-12-06	0826	TS	G	BP	X									
9530-0001-012F	9-12-06	0831	TS	G	BP	X									
9530-0001-016F	9-12-06	1002	TS	G	BP	X									
9530-0001-017F	9-12-06	1013	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 06-1276 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA															
1) Relinquished By <i>[Signature]</i> Date/Time <i>9/19/06 1334</i>						2) Received By <i>[Signature]</i> Date/Time <i>9-20-06 0900</i>						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? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
3) Relinquished By _____ Date/Time _____						4) Received By _____ Date/Time _____						Bill of Lading # _____			

Connecticut Yankee Atomic Power Company						Chain of Custody Form							No. 2006-572		
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556															
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size-Type & Type Code	Analyses Requested					Lab Use Only				
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM						Comments:			
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)															
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. Other:															
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID			
9530-0001-018F	9/15/06	1130	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 06-1276 <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.: 22 Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>		
1) Relinquished By [Signature]			Date/Time 9/15/06 / 1400			2) Received By [Signature]			Date/Time 9/15/06 / 1400			Bill of Lading #			
3) Relinquished By [Signature]			Date/Time 9/15/06 / 1305			4) Received By [Signature]			Date/Time 9-20-06 - 0700						
5) Relinquished By			Date/Time			6) Received By			Date/Time						

Connecticut Yankee Atomic Power Company362 Injun Hollow Road, East Hampton, CT 06424
860-267-2556**Chain of Custody Form**

No. 2006-00575

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- &Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						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 checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID		
9530-0001-001F	9/8/06	1006	TS	G	BP	X									
9530-0001-002F	9/8/06	1010	TS	G	BP	X									
9530-0001-003F	9/8/06	1016	TS	G	BP		X								
9530-0001-004F	9/8/06	1026	TS	G	BP	X									
9530-0001-005F	9/8/06	1033	TS	G	BP	X									
9530-0001-006F	9/8/06	1039	TS	G	BP	X									
9530-0001-006FS	9/8/06	1039	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 06-7276 SSWP# NA <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? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By <i>[Signature]</i>			Date/Time			2) Received By <i>[Signature]</i>			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						

Connecticut Yankee Atomic Power Company

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

Chain of Custody Form

No. 2006-00576

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						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 checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID		
9530-0001-007F	9/8/06	1101	TS	G	BP	X									
9530-0001-009F	9/8/06	1436	TS	G	BP	X									
9530-0001-013F	9/8/06	1413	TS	G	BP	X									
9530-0001-014F	9/8/06	1417	TS	G	BP	X									
9530-0001-014FS	9/8/06	1417	TS	G	BP	X									
9530-0001-015F	9/8/06	1402	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 06-1276 SSWP# NA <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.: 21 Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input 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						

Figure 1. Sample Check-in List

Date/Time Received: 7-20-06 09:00

SDG#: MSR# 06-1276

Work Order Number: 1721141

Shipping Container ID: 7985 0141 7391 Chain of Custody #: 2006-00575 - 2006-00565
2006-00576 - 2006-572

1. Custody Seals on shipping container intact? Yes [☒] No [☐] 2006-00572
4/2 7/21/06
2. Custody Seals dated and signed? Yes [☒] No [☐]
3. Chain-of-Custody record present? Yes [☒] No [☐]
4. Cooler temperature 21° - 22°
5. Vermiculite/packing materials is: Wet [☐] Dry [☒]
6. Number of samples in shipping container: 21
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: B. Zinner Date: 9-20-06

Telephoned to: _____ On _____ By _____

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 172114**

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: 572120
Prep Batch Number: 570846
Dry Soil Prep GL-RAD-A-021 Batch Number: 570843

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201191303	Method Blank (MB)
1201191304	172114001(9530-0001-008F) Sample Duplicate (DUP)
1201191305	172114001(9530-0001-008F) Matrix Spike (MS)
1201191306	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 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: 172114001 (9530-0001-008F).

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: 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: 572121
Prep Batch Number: 570846
Dry Soil Prep GL-RAD-A-021 Batch Number: 570843

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201191307	Method Blank (MB)
1201191308	172114001(9530-0001-008F) Sample Duplicate (DUP)
1201191309	172114001(9530-0001-008F) Matrix Spike (MS)
1201191310	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 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: 172114001 (9530-0001-008F).

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:**

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:

572122

Prep Batch Number:

570846

Dry Soil Prep GL-RAD-A-021 Batch Number:

570843

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201191311	Method Blank (MB)
1201191312	172114001(9530-0001-008F) Sample Duplicate (DUP)
1201191313	172114001(9530-0001-008F) Matrix Spike (MS)
1201191314	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

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: 172114001 (9530-0001-008F).

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:	574334
Prep Batch Number:	570843

Sample ID	Client ID
172114001	9530-0001-008F
172114002	9530-0001-010F
172114003	9530-0001-011F
172114004	9530-0001-012F
172114005	9530-0001-016F
172114006	9530-0001-017F
172114007	9530-0001-018F
172114008	9530-0001-001F
172114009	9530-0001-002F
172114010	9530-0001-003F
172114011	9530-0001-004F
172114012	9530-0001-005F
172114013	9530-0001-006F
172114014	9530-0001-006FS
172114015	9530-0001-007F
172114016	9530-0001-009F
172114017	9530-0001-013F
172114018	9530-0001-014F
172114019	9530-0001-014FS
172114020	9530-0001-015F
1201196533	Method Blank (MB)
1201196534	172114006(9530-0001-017F) Sample Duplicate (DUP)
1201196535	Laboratory Control Sample (LCS)

SOP Reference

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

Designated QC

The following sample was used for QC: 172114006 (9530-0001-017F).

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

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to interference.	Manganese-54	172114013
UI	Data rejected due to low abundance.	Cesium-134	172114001
			172114002
			172114006
			172114012
			172114013
			172114015
			172114019
		Cobalt-60	172114017
		Niobium-94	1201196534
UI	Data rejected due to no valid peak.	Bismuth-212	172114005

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: 571177
Prep Batch Number: 570846
Dry Soil Prep GL-RAD-A-021 Batch Number: 570843

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201189312	Method Blank (MB)
1201189313	172114001(9530-0001-008F) Sample Duplicate (DUP)
1201189314	172114001(9530-0001-008F) Matrix Spike (MS)
1201189315	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

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: 172114001 (9530-0001-008F).

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.

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: 570932

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201188784	Method Blank (MB)
1201188785	172114001(9530-0001-008F) Sample Duplicate (DUP)
1201188786	172114001(9530-0001-008F) Matrix Spike (MS)
1201188787	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

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: 172114001 (9530-0001-008F).

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 suspected blank false positive.

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:	570929
Prep Batch Number:	570846
Dry Soil Prep GL-RAD-A-021 Batch Number:	570843

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201188775	Method Blank (MB)
1201188776	172114010(9530-0001-003F) Sample Duplicate (DUP)
1201188777	172114010(9530-0001-003F) Matrix Spike (MS)
1201188778	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

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: 172114010 (9530-0001-003F).

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 1201188775 (MB) and 172114001 (9530-0001-008F) were recounted due to the quench number being outside the calibration range.

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:	570930
Prep Batch Number:	570846
Dry Soil Prep GL-RAD-A-021 Batch Number:	570843

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201188780	Method Blank (MB)
1201188781	172114010(9530-0001-003F) Sample Duplicate (DUP)
1201188782	172114010(9530-0001-003F) Matrix Spike (MS)
1201188783	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

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: 172114010 (9530-0001-003F).

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: LSC, Tritium Dist, Solid-HTD2,ALL FSS
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 570933

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201188788	Method Blank (MB)
1201188789	172114001(9530-0001-008F) Sample Duplicate (DUP)
1201188790	172114001(9530-0001-008F) Matrix Spike (MS)
1201188791	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 13.

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: 172114001 (9530-0001-008F).

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 C14, Solid All,FSS
Analytical Method: EPA EERF C-01 Modified
Analytical Batch Number: 570934

Sample ID	Client ID
172114001	9530-0001-008F
172114010	9530-0001-003F
1201188792	Method Blank (MB)
1201188793	172114010(9530-0001-003F) Sample Duplicate (DUP)
1201188794	172114010(9530-0001-003F) Matrix Spike (MS)
1201188795	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

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: 172114010 (9530-0001-003F).

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: _____

 10/4/06

SAMPLE DATA SUMMARY

GENERAL ENGINEERING 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#06-1276 GEL Work Order: 172114

The Qualifiers in this report are defined as follows:

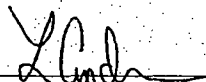
- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- ND The analyte concentration is not detected above the 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 General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by



GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-008F
Sample ID: 172114001
Matrix: TS
Collect Date: 12-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 17.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Alpha Spec Analysis													
<i>Alphaspec Ain241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0864	+/-0.105	0.0409	+/-0.106	0.153	pCi/g	TCI	09/28/06	1156	572120		
Curium-242	U	0.00	+/-0.0553	0.00	+/-0.0553	0.0765	pCi/g						
Curium-243/244	U	0.0664	+/-0.0911	0.0334	+/-0.0915	0.138	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.102	+/-0.0996	0.0285	+/-0.100	0.118	pCi/g	TCI	09/28/06	0935	572121		
Plutonium-239/240	U	0.062	+/-0.077	0.0202	+/-0.0773	0.101	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	6.10	+/-8.99	7.27	+/-9.01	15.3	pCi/g	TCI	09/29/06	2158	572122		
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.837	+/-0.199	0.0592	+/-0.199	0.129	pCi/g	MJH	10/02/06	0545	574334		
Americium-241	U	-0.0043	+/-0.117	0.0646	+/-0.117	0.133	pCi/g						
Bismuth-212		0.605	+/-0.281	0.150	+/-0.281	0.319	pCi/g						
Bismuth-214		0.635	+/-0.114	0.0342	+/-0.114	0.0727	pCi/g						
Cesium-134	UI	0.00	+/-0.0308	0.0246	+/-0.0308	0.0522	pCi/g						
Cesium-137		0.133	+/-0.0359	0.0188	+/-0.0359	0.0401	pCi/g						
Cobalt-60	U	0.0125	+/-0.0201	0.0184	+/-0.0201	0.0407	pCi/g						
Europium-152	U	-0.0255	+/-0.0596	0.0506	+/-0.0596	0.106	pCi/g						
Europium-154	U	-0.0496	+/-0.0802	0.0523	+/-0.0802	0.115	pCi/g						
Europium-155	U	0.0653	+/-0.0758	0.0553	+/-0.0758	0.114	pCi/g						
Lead-212		0.816	+/-0.0879	0.0301	+/-0.0879	0.0625	pCi/g						
Lead-214		0.666	+/-0.104	0.0355	+/-0.104	0.0746	pCi/g						
Manganese-54	U	0.0204	+/-0.0255	0.0225	+/-0.0255	0.0478	pCi/g						
Niobium-94	U	0.00376	+/-0.0207	0.0176	+/-0.0207	0.0375	pCi/g						
Potassium-40		12.7	+/-1.23	0.159	+/-1.23	0.357	pCi/g						
Radium-226		0.635	+/-0.114	0.0342	+/-0.114	0.0727	pCi/g						
Silver-108m	U	0.000126	+/-0.0199	0.0171	+/-0.0199	0.0362	pCi/g						
Thallium-208		0.238	+/-0.0479	0.0198	+/-0.0479	0.0419	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00276	+/-0.00637	0.00516	+/-0.00637	0.0111	pCi/g	KSDI	09/29/06	2335	571177		
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	-5.59	+/-7.85	6.93	+/-7.85	14.8	pCi/g	DFAI	09/25/06	0210	570933		

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Certificate of Analysis

Company: Connecticut Yankee Atomic Power
Address: 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-008F
Sample ID: 172114001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.00533	+/-0.0803	0.0671	+/-0.0803	0.142	pCi/g		AXD2	09/23/06	1427	570934	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	3.66	+/-45.4	31.9	+/-45.4	66.3	pCi/g		MXPI	10/03/06	0521	570929	8
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	4.44	+/-10.8	8.84	+/-10.8	18.6	pCi/g		MXPI	09/25/06	1618	570930	1
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.0384	+/-0.285	0.238	+/-0.285	0.491	pCi/g		KXR1	09/29/06	1617	570932	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1528	570843

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	92	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	102	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	96	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	89	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	74	(15%-125%)

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East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-008F
Sample ID: 172114001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			73		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Te99, Solid-ALL FS			75		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-010F
Sample ID: 172114002
Matrix: TS
Collect Date: 12-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 20.6%

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		0.708	+/-0.178	0.0507	+/-0.178	0.108	pCi/g		MJH1	10/02/06	0545	574334	1
Americium-241	U	-0.027	+/-0.125	0.0897	+/-0.125	0.185	pCi/g						
Bismuth-212		0.501	+/-0.263	0.114	+/-0.263	0.242	pCi/g						
Bismuth-214		0.637	+/-0.0916	0.0323	+/-0.0916	0.0675	pCi/g						
Cesium-134	UI	0.00	+/-0.0379	0.0214	+/-0.0379	0.0447	pCi/g						
Cesium-137		0.134	+/-0.0319	0.0163	+/-0.0319	0.0343	pCi/g						
Cobalt-60	U	-0.00423	+/-0.0199	0.0165	+/-0.0199	0.0356	pCi/g						
Europium-152	U	0.00262	+/-0.0477	0.0407	+/-0.0477	0.0849	pCi/g						
Europium-154	U	-0.00925	+/-0.0555	0.0463	+/-0.0555	0.0997	pCi/g						
Europium-155	U	0.0469	+/-0.0598	0.0524	+/-0.0598	0.108	pCi/g						
Lead-212		0.825	+/-0.0608	0.0233	+/-0.0608	0.0484	pCi/g						
Lead-214		0.745	+/-0.0721	0.0279	+/-0.0721	0.0584	pCi/g						
Manganese-54	U	0.00196	+/-0.0197	0.0166	+/-0.0197	0.0351	pCi/g						
Niobium-94	U	-0.004	+/-0.0166	0.0139	+/-0.0166	0.0294	pCi/g						
Potassium-40		13.4	+/-0.858	0.155	+/-0.858	0.336	pCi/g						
Radium-226		0.637	+/-0.0916	0.0323	+/-0.0916	0.0675	pCi/g						
Silver-108m	U	0.000472	+/-0.0173	0.0145	+/-0.0173	0.0303	pCi/g						
Thallium-208		0.258	+/-0.0406	0.0165	+/-0.0406	0.0347	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
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East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-010F
Sample ID: 172114002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-011F
Sample ID: 172114003
Matrix: TS
Collect Date: 12-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 11.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.816	+/-0.157	0.0536	+/-0.157	0.115	pCi/g		MJH1	10/02/06	0545	574334	1
Americium-241	U	-0.0165	+/-0.0808	0.0626	+/-0.0808	0.129	pCi/g						
Bismuth-212		0.561	+/-0.285	0.109	+/-0.285	0.234	pCi/g						
Bismuth-214		0.596	+/-0.0795	0.0286	+/-0.0795	0.0604	pCi/g						
Cesium-134	U	0.0341	+/-0.0241	0.0202	+/-0.0241	0.0426	pCi/g						
Cesium-137		0.106	+/-0.0332	0.0155	+/-0.0332	0.033	pCi/g						
Cobalt-60	U	0.0186	+/-0.019	0.0171	+/-0.019	0.037	pCi/g						
Europium-152	U	-0.0191	+/-0.0484	0.0406	+/-0.0484	0.0851	pCi/g						
Europium-154	U	0.00749	+/-0.0603	0.0501	+/-0.0603	0.108	pCi/g						
Europium-155	U	0.0765	+/-0.0734	0.0456	+/-0.0734	0.0946	pCi/g						
Lead-212		0.826	+/-0.0624	0.0286	+/-0.0624	0.0591	pCi/g						
Lead-214		0.717	+/-0.0882	0.0295	+/-0.0882	0.0618	pCi/g						
Manganese-54	U	0.00106	+/-0.0198	0.0169	+/-0.0198	0.0358	pCi/g						
Niobium-94	U	0.0268	+/-0.0248	0.0157	+/-0.0248	0.0332	pCi/g						
Potassium-40		13.1	+/-0.809	0.110	+/-0.809	0.249	pCi/g						
Radium-226		0.596	+/-0.0795	0.0286	+/-0.0795	0.0604	pCi/g						
Silver-108m	U	-0.00573	+/-0.0161	0.0133	+/-0.0161	0.0281	pCi/g						
Thallium-208		0.259	+/-0.0534	0.0162	+/-0.0534	0.0341	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company: Connecticut Yankee Atomic Power
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-011F
Sample ID: 172114003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-012F
Sample ID: 172114004
Matrix: TS
Collect Date: 12-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 14.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.917	+/-0.182	0.0648	+/-0.182	0.140	pCi/g		MJH1	10/02/06	0649	574334	1
Americium-241	U	-0.308	+/-0.126	0.0856	+/-0.126	0.176	pCi/g						
Bismuth-212		0.617	+/-0.267	0.151	+/-0.267	0.322	pCi/g						
Bismuth-214		0.567	+/-0.117	0.0376	+/-0.117	0.0796	pCi/g						
Cesium-134	U	0.0476	+/-0.0403	0.0263	+/-0.0403	0.0557	pCi/g						
Cesium-137		0.085	+/-0.0526	0.0245	+/-0.0526	0.0515	pCi/g						
Cobalt-60	U	0.00907	+/-0.0268	0.0227	+/-0.0268	0.0495	pCi/g						
Europium-152	U	-0.108	+/-0.0688	0.0511	+/-0.0688	0.107	pCi/g						
Europium-154	U	-0.0462	+/-0.0829	0.0521	+/-0.0829	0.116	pCi/g						
Europium-155	U	0.00678	+/-0.0727	0.062	+/-0.0727	0.128	pCi/g						
Lead-212		0.841	+/-0.0715	0.0325	+/-0.0715	0.0672	pCi/g						
Lead-214		0.603	+/-0.0938	0.0388	+/-0.0938	0.0811	pCi/g						
Manganese-54	U	0.0123	+/-0.026	0.0225	+/-0.026	0.0478	pCi/g						
Niobium-94	U	-0.0179	+/-0.0268	0.0182	+/-0.0268	0.0387	pCi/g						
Potassium-40		13.2	+/-1.05	0.184	+/-1.05	0.409	pCi/g						
Radium-226		0.567	+/-0.117	0.0376	+/-0.117	0.0796	pCi/g						
Silver-108m	U	-0.0113	+/-0.0237	0.0186	+/-0.0237	0.0391	pCi/g						
Thallium-208		0.280	+/-0.0515	0.0206	+/-0.0515	0.0435	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

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East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-012F
Sample ID: 172114004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mo
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-016F
Sample ID: 172114005
Matrix: TS
Collect Date: 12-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 12.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.839	+/-0.188	0.0649	+/-0.188	0.142	pCi/g		MJH1	10/02/06	0650	574334	1
Americium-241	U	0.0204	+/-0.0268	0.0234	+/-0.0268	0.0484	pCi/g						
Bismuth-212	UI	0.00	+/-0.472	0.148	+/-0.472	0.320	pCi/g						
Bismuth-214		0.588	+/-0.106	0.0347	+/-0.106	0.0744	pCi/g						
Cesium-134	U	0.0533	+/-0.0306	0.0266	+/-0.0306	0.0566	pCi/g						
Cesium-137		0.0961	+/-0.0563	0.0226	+/-0.0563	0.0481	pCi/g						
Cobalt-60	U	0.00495	+/-0.0235	0.0201	+/-0.0235	0.0448	pCi/g						
Europium-152	U	-0.00205	+/-0.0566	0.0466	+/-0.0566	0.0983	pCi/g						
Europium-154	U	-0.0049	+/-0.0823	0.0681	+/-0.0823	0.149	pCi/g						
Europium-155	U	0.0338	+/-0.0444	0.0411	+/-0.0444	0.0854	pCi/g						
Lead-212		0.808	+/-0.0642	0.0262	+/-0.0642	0.0546	pCi/g						
Lead-214		0.539	+/-0.0909	0.0347	+/-0.0909	0.0731	pCi/g						
Manganese-54	U	-0.00139	+/-0.023	0.0188	+/-0.023	0.0407	pCi/g						
Niobium-94	U	-0.0112	+/-0.0237	0.019	+/-0.0237	0.0406	pCi/g						
Potassium-40		11.8	+/-1.02	0.184	+/-1.02	0.414	pCi/g						
Radium-226		0.588	+/-0.106	0.0347	+/-0.106	0.0744	pCi/g						
Silver-108m	U	0.00216	+/-0.0185	0.0162	+/-0.0185	0.0345	pCi/g						
Thallium-208		0.276	+/-0.0541	0.0174	+/-0.0541	0.0375	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-016F
Sample ID: 172114005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply.. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-017F
Sample ID: 172114006
Matrix: TS
Collect Date: 12-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 14.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.828	+/-0.191	0.0683	+/-0.191	0.149	pCi/g		MJH1	10/02/06	0650	574334	
Americium-241	U	-0.0107	+/-0.0746	0.0601	+/-0.0746	0.125	pCi/g						
Bismuth-212		0.881	+/-0.459	0.126	+/-0.459	0.276	pCi/g						
Bismuth-214		0.612	+/-0.130	0.0327	+/-0.130	0.0707	pCi/g						
Cesium-134	UI	0.00	+/-0.0376	0.028	+/-0.0376	0.0597	pCi/g						
Cesium-137		0.182	+/-0.0483	0.021	+/-0.0483	0.0451	pCi/g						
Cobalt-60	U	-0.00988	+/-0.0263	0.0211	+/-0.0263	0.0471	pCi/g						
Europium-152	U	0.0683	+/-0.0624	0.055	+/-0.0624	0.116	pCi/g						
Europium-154	U	0.104	+/-0.0885	0.0671	+/-0.0885	0.148	pCi/g						
Europium-155	U	0.0308	+/-0.0643	0.0522	+/-0.0643	0.109	pCi/g						
Lead-212		0.882	+/-0.0991	0.0264	+/-0.0991	0.0555	pCi/g						
Lead-214		0.857	+/-0.131	0.0339	+/-0.131	0.0721	pCi/g						
Manganese-54	U	0.000152	+/-0.0265	0.022	+/-0.0265	0.0474	pCi/g						
Niobium-94	U	0.0279	+/-0.0215	0.0199	+/-0.0215	0.0426	pCi/g						
Potassium-40		13.3	+/-1.37	0.229	+/-1.37	0.507	pCi/g						
Radium-226		0.612	+/-0.130	0.0327	+/-0.130	0.0707	pCi/g						
Silver-108m	U	-0.00885	+/-0.0202	0.0156	+/-0.0202	0.0335	pCi/g						
Thallium-208		0.282	+/-0.0618	0.022	+/-0.0618	0.0469	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-017F
Sample ID: 172114006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-018F
Sample ID: 172114007
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 14.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.945	+/-0.238	0.0832	+/-0.238	0.166	pCi/g						
Americium-241	U	0.0923	+/-0.096	0.0737	+/-0.096	0.147	pCi/g						
Bismuth-212		0.675	+/-0.431	0.165	+/-0.431	0.330	pCi/g						
Bismuth-214		0.732	+/-0.138	0.0413	+/-0.138	0.0825	pCi/g						
Cesium-134	U	0.0349	+/-0.0373	0.0288	+/-0.0373	0.0575	pCi/g						
Cesium-137		0.167	+/-0.0399	0.0254	+/-0.0399	0.0507	pCi/g						
Cobalt-60	U	-0.00764	+/-0.0307	0.0244	+/-0.0307	0.0488	pCi/g						
Europium-152	U	-0.0133	+/-0.0753	0.0589	+/-0.0753	0.118	pCi/g						
Europium-154	U	-0.00119	+/-0.0954	0.0784	+/-0.0954	0.157	pCi/g						
Europium-155	U	0.063	+/-0.0773	0.0658	+/-0.0773	0.132	pCi/g						
Lead-212		0.991	+/-0.113	0.0356	+/-0.113	0.0712	pCi/g						
Lead-214		0.806	+/-0.124	0.042	+/-0.124	0.084	pCi/g						
Manganese-54	U	-0.0134	+/-0.0253	0.0203	+/-0.0253	0.0405	pCi/g						
Niobium-94	U	-0.0159	+/-0.0516	0.0222	+/-0.0516	0.0443	pCi/g						
Potassium-40		13.2	+/-1.34	0.214	+/-1.34	0.428	pCi/g						
Radium-226		0.732	+/-0.138	0.0413	+/-0.138	0.0825	pCi/g						
Silver-108m	U	0.0122	+/-0.0263	0.0225	+/-0.0263	0.045	pCi/g						
Thallium-208		0.272	+/-0.0551	0.023	+/-0.0551	0.046	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

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

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd.

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-018F
Sample ID: 172114007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
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 - D Results are reported from a diluted aliquot of the sample
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 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-001F
Sample ID: 172114008
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 12.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.738	+/-0.227	0.0713	+/-0.227	0.143	pCi/g		MJH1	10/02/06	0700	574334	
Americium-241	U	-0.015	+/-0.104	0.0784	+/-0.104	0.157	pCi/g						
Bismuth-212		0.645	+/-0.283	0.170	+/-0.283	0.340	pCi/g						
Bismuth-214		0.502	+/-0.108	0.0376	+/-0.108	0.0751	pCi/g						
Cesium-134	U	0.0168	+/-0.0257	0.0246	+/-0.0257	0.0492	pCi/g						
Cesium-137		0.130	+/-0.0406	0.0215	+/-0.0406	0.0429	pCi/g						
Cobalt-60	U	0.0131	+/-0.025	0.0215	+/-0.025	0.0429	pCi/g						
Europium-152	U	0.0626	+/-0.0822	0.0536	+/-0.0822	0.107	pCi/g						
Europium-154	U	0.0345	+/-0.0817	0.0713	+/-0.0817	0.143	pCi/g						
Europium-155	U	0.0739	+/-0.0872	0.0598	+/-0.0872	0.120	pCi/g						
Lead-212		0.685	+/-0.0908	0.0323	+/-0.0908	0.0646	pCi/g						
Lead-214		0.624	+/-0.109	0.0365	+/-0.109	0.0729	pCi/g						
Manganese-54	U	0.00591	+/-0.0242	0.0212	+/-0.0242	0.0423	pCi/g						
Niobium-94	U	0.000794	+/-0.0233	0.0194	+/-0.0233	0.0388	pCi/g						
Potassium-40		11.8	+/-1.22	0.190	+/-1.22	0.379	pCi/g						
Radium-226		0.502	+/-0.108	0.0376	+/-0.108	0.0751	pCi/g						
Silver-108m	U	0.0163	+/-0.022	0.0196	+/-0.022	0.0392	pCi/g						
Thallium-208		0.217	+/-0.0523	0.0203	+/-0.0523	0.0407	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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Certificate of Analysis

Company: Connecticut Yankee Atomic Power
Address: 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-001F
Sample ID: 172114008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
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 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
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 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-002F
Sample ID: 172114009
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 8.53%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.696	+/-0.268	0.114	+/-0.268	0.227	pCi/g						
Americium-241	U	-0.00484	+/-0.0496	0.0407	+/-0.0496	0.0813	pCi/g						
Bismuth-212		0.561	+/-0.449	0.204	+/-0.449	0.407	pCi/g						
Bismuth-214		0.653	+/-0.137	0.0605	+/-0.137	0.121	pCi/g						
Cesium-134	U	0.00964	+/-0.0411	0.0364	+/-0.0411	0.0727	pCi/g						
Cesium-137		0.127	+/-0.0449	0.0255	+/-0.0449	0.0509	pCi/g						
Cobalt-60	U	-0.0357	+/-0.0455	0.0329	+/-0.0455	0.0658	pCi/g						
Europium-152	U	-0.0113	+/-0.0985	0.069	+/-0.0985	0.138	pCi/g						
Europium-154	U	0.0778	+/-0.218	0.112	+/-0.218	0.225	pCi/g						
Europium-155	U	0.0536	+/-0.0919	0.0584	+/-0.0919	0.117	pCi/g						
Lead-212		0.696	+/-0.0999	0.0395	+/-0.0999	0.0789	pCi/g						
Lead-214		0.578	+/-0.122	0.0501	+/-0.122	0.100	pCi/g						
Manganese-54	U	-0.0312	+/-0.0368	0.0284	+/-0.0368	0.0567	pCi/g						
Niobium-94	U	-0.0259	+/-0.0337	0.0271	+/-0.0337	0.0541	pCi/g						
Potassium-40		9.66	+/-1.29	0.190	+/-1.29	0.380	pCi/g						
Radium-226		0.653	+/-0.137	0.0605	+/-0.137	0.121	pCi/g						
Silver-108m	U	0.0283	+/-0.0287	0.0266	+/-0.0287	0.0531	pCi/g						
Thallium-208		0.277	+/-0.0706	0.0276	+/-0.0706	0.0552	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-002F
Sample ID: 172114009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B Target analyte was detected in the associated blank
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 - D Results are reported from a diluted aliquot of the sample
 - H Analytical holding time was exceeded
 - J Value is estimated
 - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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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 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
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- The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-003F
Sample ID: 172114010
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 14.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0467	+/-0.0757	0.0244	+/-0.0759	0.123	pCi/g	TCI	09/28/06	11:56	572120	1	
Curium-242	U	0.00	+/-0.0582	0.00	+/-0.0582	0.0804	pCi/g						
Curium-243/244	U	-0.0131	+/-0.0564	0.0346	+/-0.0564	0.143	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.11	+/-0.141	0.148	+/-0.141	0.369	pCi/g	TCI	09/28/06	09:35	572121	2	
Plutonium-239/240	U	0.0343	+/-0.0774	0.0416	+/-0.0775	0.156	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	0.294	+/-9.99	8.37	+/-9.99	17.6	pCi/g	TCI	09/29/06	22:14	572122	3	
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.714	+/-0.158	0.0691	+/-0.158	0.150	pCi/g	MJH	10/02/06	09:18	574334	4	
Americium-241	U	-0.0786	+/-0.119	0.0887	+/-0.119	0.185	pCi/g						
Bismuth-212		0.614	+/-0.320	0.151	+/-0.320	0.325	pCi/g						
Bismuth-214		0.576	+/-0.109	0.0354	+/-0.109	0.0757	pCi/g						
Cesium-134	U	0.0352	+/-0.0251	0.0238	+/-0.0251	0.0511	pCi/g						
Cesium-137		0.259	+/-0.0505	0.0182	+/-0.0505	0.0392	pCi/g						
Cobalt-60	U	-0.000206	+/-0.0228	0.0191	+/-0.0228	0.0429	pCi/g						
Europium-152	U	-0.021	+/-0.0606	0.0493	+/-0.0606	0.104	pCi/g						
Europium-154	U	0.00953	+/-0.0662	0.0569	+/-0.0662	0.126	pCi/g						
Europium-155	U	0.0328	+/-0.0592	0.055	+/-0.0592	0.114	pCi/g						
Lead-212		0.849	+/-0.0694	0.0292	+/-0.0694	0.061	pCi/g						
Lead-214		0.582	+/-0.102	0.0344	+/-0.102	0.0727	pCi/g						
Manganese-54	U	0.00343	+/-0.0221	0.0186	+/-0.0221	0.0404	pCi/g						
Niobium-94	U	0.012	+/-0.0206	0.0183	+/-0.0206	0.0391	pCi/g						
Potassium-40		12.6	+/-0.952	0.143	+/-0.952	0.334	pCi/g						
Radium-226		-0.576	+/-0.109	0.0354	+/-0.109	0.0757	pCi/g						
Silver-108m	U	0.00762	+/-0.0187	0.017	+/-0.0187	0.0361	pCi/g						
Thallium-208		0.275	+/-0.0532	0.0172	+/-0.0532	0.0371	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00833	+/-0.00781	0.00603	+/-0.00781	0.0129	pCi/g	KSDI	09/29/06	23:35	571177	5	
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	-1.52	+/-6.64	5.67	+/-6.64	12.1	pCi/g	DFAI	09/25/06	02:26	570933	6	

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Certificate of Analysis

Company: Connecticut Yankee Atomic Power
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-003F
Sample ID: 172114010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	MI
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.00	+/-0.0813	0.0682	+/-0.0813	0.145	pCi/g		AXD2	09/23/06	1509	570934	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	12.2	+/-25.2	17.2	+/-25.2	36.0	pCi/g		MXPI	09/27/06	1330	570929	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-5.95	+/-10.8	9.34	+/-10.8	19.6	pCi/g		MXPI	09/25/06	1634	570930	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.0782	+/-0.274	0.232	+/-0.274	0.478	pCi/g		KXR1	09/29/06	1634	570932	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	96	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	87	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	84	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	79	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	70	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	74	(25%-125%)

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-003F
Sample ID: 172114010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			76		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-004F
Sample ID: 172114011
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 15.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt.
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.02	+/-0.178	0.0716	+/-0.178	0.156	pCi/g		MJH1	10/02/06	0919	574334	1
Americium-241	U	0.000195	+/-0.036	0.0292	+/-0.036	0.0602	pCi/g						
Bismuth-212		0.578	+/-0.394	0.171	+/-0.394	0.366	pCi/g						
Bismuth-214		0.622	+/-0.121	0.0425	+/-0.121	0.0903	pCi/g						
Cesium-134	U	0.0251	+/-0.0353	0.0279	+/-0.0353	0.0596	pCi/g						
Cesium-137		0.131	+/-0.0653	0.0215	+/-0.0653	0.0462	pCi/g						
Cobalt-60	U	0.0147	+/-0.0291	0.026	+/-0.0291	0.057	pCi/g						
Europium-152	U	-0.0169	+/-0.0581	0.0504	+/-0.0581	0.106	pCi/g						
Europium-154	U	0.00939	+/-0.0825	0.0707	+/-0.0825	0.155	pCi/g						
Europium-155	U	0.0221	+/-0.0577	0.0515	+/-0.0577	0.107	pCi/g						
Lead-212		0.985	+/-0.0757	0.0308	+/-0.0757	0.0642	pCi/g						
Lead-214		0.689	+/-0.108	0.0375	+/-0.108	0.079	pCi/g						
Manganese-54	U	0.0214	+/-0.0294	0.0259	+/-0.0294	0.0553	pCi/g						
Niobium-94	U	-0.00774	+/-0.0236	0.0193	+/-0.0236	0.0414	pCi/g						
Potassium-40		14.8	+/-1.12	0.186	+/-1.12	0.421	pCi/g						
Radium-226		0.622	+/-0.121	0.0425	+/-0.121	0.0903	pCi/g						
Silver-108m	U	-0.0104	+/-0.0227	0.0191	+/-0.0227	0.0405	pCi/g						
Thallium-208		0.264	+/-0.0635	0.0208	+/-0.0635	0.0446	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-004F
Sample ID: 172114011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-005F
Sample ID: 172114012
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 7.95%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	MI
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.486	+/-0.139	0.0523	+/-0.139	0.114	pCi/g						
Americium-241	U	-0.0773	+/-0.0839	0.0672	+/-0.0839	0.139	pCi/g						
Bismuth-212		0.380	+/-0.185	0.125	+/-0.185	0.268	pCi/g						
Bismuth-214		0.475	+/-0.0791	0.0275	+/-0.0791	0.0589	pCi/g						
Cesium-134	UI	0.00	+/-0.0296	0.021	+/-0.0296	0.0446	pCi/g						
Cesium-137		0.0485	+/-0.024	0.0172	+/-0.024	0.0367	pCi/g						
Cobalt-60	U	-0.0011	+/-0.0185	0.0154	+/-0.0185	0.0343	pCi/g						
Europium-152	U	-0.0439	+/-0.0462	0.039	+/-0.0462	0.0824	pCi/g						
Europium-154	U	0.00551	+/-0.0535	0.0457	+/-0.0535	0.101	pCi/g						
Europium-155	U	0.0377	+/-0.0494	0.0463	+/-0.0494	0.096	pCi/g						
Lead-212		0.626	+/-0.0591	0.023	+/-0.0591	0.0481	pCi/g						
Lead-214		0.462	+/-0.0792	0.0295	+/-0.0792	0.0622	pCi/g						
Manganese-54	U	-0.00439	+/-0.0218	0.0163	+/-0.0218	0.035	pCi/g						
Niobium-94	U	-0.00642	+/-0.0165	0.0134	+/-0.0165	0.0289	pCi/g						
Potassium-40		11.2	+/-0.824	0.153	+/-0.824	0.341	pCi/g						
Radium-226		0.475	+/-0.0791	0.0275	+/-0.0791	0.0589	pCi/g						
Silver-108m	U	-0.00535	+/-0.0152	0.013	+/-0.0152	0.0278	pCi/g						
Thallium-208		0.225	+/-0.042	0.0121	+/-0.042	0.0262	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company: Connecticut Yankee Atomic Power
Address: 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-005F
Sample ID: 172114012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-006F
Sample ID: 172114013
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 11.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.680	+/-0.162	0.0598	+/-0.162	0.129	pCi/g						
Americium-241	U	0.014	+/-0.0793	0.0622	+/-0.0793	0.128	pCi/g						
Bismuth-212		0.558	+/-0.261	0.139	+/-0.261	0.298	pCi/g						
Bismuth-214		0.573	+/-0.0981	0.0327	+/-0.0981	0.0696	pCi/g						
Cesium-134	UI	0.00	+/-0.0311	0.0234	+/-0.0311	0.0496	pCi/g						
Cesium-137		0.121	+/-0.0276	0.0199	+/-0.0276	0.0423	pCi/g						
Cobalt-60	U	0.00766	+/-0.0243	0.0187	+/-0.0243	0.0413	pCi/g						
Europium-152	U	0.0263	+/-0.0669	0.0524	+/-0.0669	0.109	pCi/g						
Europium-154	U	-0.00581	+/-0.0716	0.0516	+/-0.0716	0.114	pCi/g						
Europium-155	U	0.00914	+/-0.0614	0.0537	+/-0.0614	0.111	pCi/g						
Lead-212		0.803	+/-0.0853	0.0278	+/-0.0853	0.0578	pCi/g						
Lead-214		0.584	+/-0.120	0.0342	+/-0.120	0.0718	pCi/g						
Manganese-54	UI	0.00	+/-0.0294	0.0184	+/-0.0294	0.0394	pCi/g						
Niobium-94	U	-0.0003	+/-0.0202	0.017	+/-0.0202	0.0362	pCi/g						
Potassium-40		12.7	+/-1.14	0.118	+/-1.14	0.275	pCi/g						
Radium-226		0.573	+/-0.0981	0.0327	+/-0.0981	0.0696	pCi/g						
Silver-108m	U	-0.00575	+/-0.0199	0.0169	+/-0.0199	0.0357	pCi/g						
Thallium-208		0.215	+/-0.0463	0.0168	+/-0.0463	0.0358	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-006F
Sample ID: 172114013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-006FS
Sample ID: 172114014
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 11.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid - FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.926	+/-0.246	0.104	+/-0.246	0.221	pCi/g		MJH1	10/02/06	0920	574334	
Americium-241	U	-0.0132	+/-0.0396	0.0331	+/-0.0396	0.0683	pCi/g						
Bismuth-212		0.646	+/-0.345	0.196	+/-0.345	0.418	pCi/g						
Bismuth-214		0.585	+/-0.128	0.052	+/-0.128	0.110	pCi/g						
Cesium-134	U	0.0555	+/-0.0388	0.0355	+/-0.0388	0.0749	pCi/g						
Cesium-137		0.124	+/-0.0454	0.0307	+/-0.0454	0.0647	pCi/g						
Cobalt-60	U	0.0178	+/-0.0345	0.0302	+/-0.0345	0.0655	pCi/g						
Europium-152	U	-0.00696	+/-0.076	0.0627	+/-0.076	0.131	pCi/g						
Europium-154	U	-0.0305	+/-0.0976	0.0786	+/-0.0976	0.171	pCi/g						
Europium-155	U	0.0424	+/-0.0757	0.0551	+/-0.0757	0.114	pCi/g						
Lead-212		0.684	+/-0.0847	0.0486	+/-0.0847	0.100	pCi/g						
Lead-214		0.642	+/-0.132	0.0463	+/-0.132	0.097	pCi/g						
Manganese-54	U	0.0102	+/-0.0367	0.0272	+/-0.0367	0.0581	pCi/g						
Niobium-94	U	0.0207	+/-0.0303	0.0265	+/-0.0303	0.056	pCi/g						
Potassium-40		12.7	+/-1.11	0.250	+/-1.11	0.551	pCi/g						
Radium-226		0.585	+/-0.128	0.052	+/-0.128	0.110	pCi/g						
Silver-108m	U-0.000565		+/-0.026	0.0227	+/-0.026	0.0477	pCi/g						
Thallium-208		0.241	+/-0.0641	0.0271	+/-0.0641	0.0573	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-006FS
Sample ID: 172114014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-007F
Sample ID: 172114015
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 14.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.645	+/-0.261	0.0854	+/-0.261	0.187	pCi/g						
Americium-241	U	0.0595	+/-0.0378	0.0357	+/-0.0378	0.0737	pCi/g						
Bismuth-212		0.977	+/-0.392	0.207	+/-0.392	0.446	pCi/g						
Bismuth-214		0.605	+/-0.123	0.0471	+/-0.123	0.101	pCi/g						
Cesium-134	UI	0.00	+/-0.046	0.0365	+/-0.046	0.0777	pCi/g						
Cesium-137		0.134	+/-0.0553	0.0297	+/-0.0553	0.0634	pCi/g						
Cobalt-60	U	0.0203	+/-0.0343	0.0308	+/-0.0343	0.068	pCi/g						
Europium-152	U	-0.0415	+/-0.0688	0.0578	+/-0.0688	0.123	pCi/g						
Europium-154	U	-0.0289	+/-0.104	0.0839	+/-0.104	0.185	pCi/g						
Europium-155	U	0.0877	+/-0.0987	0.0524	+/-0.0987	0.109	pCi/g						
Lead-212		0.881	+/-0.0767	0.0318	+/-0.0767	0.0668	pCi/g						
Lead-214		0.585	+/-0.111	0.0434	+/-0.111	0.0917	pCi/g						
Manganese-54	U	0.0176	+/-0.0315	0.0274	+/-0.0315	0.0592	pCi/g						
Niobium-94	U	-0.015	+/-0.0302	0.024	+/-0.0302	0.0515	pCi/g						
Potassium-40		13.4	+/-1.18	0.185	+/-1.18	0.434	pCi/g						
Radium-226		0.605	+/-0.123	0.0471	+/-0.123	0.101	pCi/g						
Silver-108m	U	0.00285	+/-0.0254	0.0221	+/-0.0254	0.0469	pCi/g						
Thallium-208		0.274	+/-0.051	0.024	+/-0.051	0.0517	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-007F
Sample ID: 172114015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-009F
Sample ID: 172114016
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 12.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.853	+/-0.145	0.0559	+/-0.145	0.120	pCi/g						
Americium-241	U	0.0188	+/-0.113	0.0925	+/-0.113	0.192	pCi/g						
Bismuth-212		0.391	+/-0.278	0.121	+/-0.278	0.257	pCi/g						
Bismuth-214		0.511	+/-0.0924	0.0314	+/-0.0924	0.0663	pCi/g						
Cesium-134	U	0.0232	+/-0.0242	0.0185	+/-0.0242	0.0394	pCi/g						
Cesium-137		0.0641	+/-0.0413	0.0188	+/-0.0413	0.0395	pCi/g						
Cobalt-60	U	0.00129	+/-0.0198	0.0169	+/-0.0198	0.0368	pCi/g						
Europium-152	U	0.0365	+/-0.0526	0.0423	+/-0.0526	0.0888	pCi/g						
Europium-154	U	-0.00251	+/-0.0619	0.0452	+/-0.0619	0.0987	pCi/g						
Europium-155	U	0.0286	+/-0.0599	0.0534	+/-0.0599	0.111	pCi/g						
Lead-212		0.667	+/-0.0687	0.0337	+/-0.0687	0.0695	pCi/g						
Lead-214		0.626	+/-0.0869	0.0313	+/-0.0869	0.0656	pCi/g						
Manganese-54	U	0.0317	+/-0.0253	0.0153	+/-0.0253	0.0328	pCi/g						
Niobium-94	U	-0.0013	+/-0.0177	0.0152	+/-0.0177	0.0321	pCi/g						
Potassium-40		13.0	+/-0.831	0.143	+/-0.831	0.315	pCi/g						
Radium-226		0.511	+/-0.0924	0.0314	+/-0.0924	0.0663	pCi/g						
Silver-108m	U	0.0146	+/-0.0167	0.015	+/-0.0167	0.0315	pCi/g						
Thallium-208		0.217	+/-0.0483	0.0146	+/-0.0483	0.0311	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-009F
Sample ID: 172114016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-013F
Sample ID: 172114017
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 16.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.740	+/-0.127	0.0409	+/-0.127	0.0882	pCi/g						
Americium-241	U	0.00362	+/-0.0583	0.053	+/-0.0583	0.109	pCi/g						
Bismuth-212		0.387	+/-0.189	0.0995	+/-0.189	0.212	pCi/g						
Bismuth-214		0.525	+/-0.0781	0.0268	+/-0.0781	0.0564	pCi/g						
Cesium-134	U	0.023	+/-0.022	0.017	+/-0.022	0.036	pCi/g						
Cesium-137		0.0729	+/-0.0276	0.0153	+/-0.0276	0.0322	pCi/g						
Cobalt-60	UI	0.00	+/-0.0373	0.0138	+/-0.0373	0.0301	pCi/g						
Europium-152	U	-0.0476	+/-0.0396	0.0323	+/-0.0396	0.0679	pCi/g						
Europium-154	U	0.000881	+/-0.0505	0.0419	+/-0.0505	0.0903	pCi/g						
Europium-155	U	0.016	+/-0.0515	0.0458	+/-0.0515	0.0945	pCi/g						
Lead-212		0.589	+/-0.0732	0.0307	+/-0.0732	0.0629	pCi/g						
Lead-214		0.570	+/-0.065	0.027	+/-0.065	0.0564	pCi/g						
Manganese-54	U	0.0012	+/-0.0157	0.0136	+/-0.0157	0.029	pCi/g						
Niobium-94	U	-0.00299	+/-0.0143	0.0123	+/-0.0143	0.026	pCi/g						
Potassium-40		12.4	+/-0.724	0.106	+/-0.724	0.235	pCi/g						
Radium-226		0.525	+/-0.0781	0.0268	+/-0.0781	0.0564	pCi/g						
Silver-108m	U	0.00791	+/-0.0139	0.0123	+/-0.0139	0.0259	pCi/g						
Thallium-208		0.218	+/-0.0361	0.0143	+/-0.0361	0.0301	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-013F
Sample ID: 172114017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-014F
Sample ID: 172114018
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 13.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	MI
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.770	+/-0.212	0.0859	+/-0.212	0.172	pCi/g		MJH1	10/02/06	1023	574334	
Americium-241	U	0.035	+/-0.040	0.0324	+/-0.040	0.0648	pCi/g						
Bismuth-212		0.700	+/-0.298	0.205	+/-0.298	0.411	pCi/g						
Bismuth-214		0.596	+/-0.126	0.0446	+/-0.126	0.0892	pCi/g						
Cesium-134	U	0.0156	+/-0.0351	0.0314	+/-0.0351	0.0628	pCi/g						
Cesium-137		0.0547	+/-0.0528	0.0254	+/-0.0528	0.0507	pCi/g						
Cobalt-60	U	0.00268	+/-0.0347	0.0291	+/-0.0347	0.0582	pCi/g						
Europium-152	U	-0.0696	+/-0.0936	0.0564	+/-0.0936	0.113	pCi/g						
Europium-154	U	-0.0999	+/-0.101	0.0729	+/-0.101	0.146	pCi/g						
Europium-155	U	0.00172	+/-0.0565	0.0492	+/-0.0565	0.0982	pCi/g						
Lead-212		0.657	+/-0.086	0.0312	+/-0.086	0.0623	pCi/g						
Lead-214		0.609	+/-0.107	0.0404	+/-0.107	0.0808	pCi/g						
Manganese-54	U	-0.0127	+/-0.0309	0.0214	+/-0.0309	0.0428	pCi/g						
Niobium-94	U	-0.0162	+/-0.0257	0.0211	+/-0.0257	0.0423	pCi/g						
Potassium-40		12.5	+/-1.31	0.251	+/-1.31	0.501	pCi/g						
Radium-226		0.596	+/-0.126	0.0446	+/-0.126	0.0892	pCi/g						
Silver-108m	U	-0.017	+/-0.0234	0.0189	+/-0.0234	0.0378	pCi/g						
Thallium-208		0.202	+/-0.051	0.0228	+/-0.051	0.0456	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-014F
Sample ID: 172114018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	----

- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address: 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-014FS
Sample ID: 172114019
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 13.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid - FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.724	+/-0.183	0.0614	+/-0.183	0.135	pCi/g						
Americium-241	U	-0.0361	+/-0.0949	0.0756	+/-0.0949	0.157	pCi/g						
Bismuth-212		0.449	+/-0.308	0.153	+/-0.308	0.330	pCi/g						
Bismuth-214		0.511	+/-0.103	0.0328	+/-0.103	0.0708	pCi/g						
Cesium-134	UI	0.00	+/-0.0439	0.0268	+/-0.0439	0.0572	pCi/g						
Cesium-137		0.0729	+/-0.0406	0.0199	+/-0.0406	0.0428	pCi/g						
Cobalt-60	U	0.00586	+/-0.0236	0.0208	+/-0.0236	0.0465	pCi/g						
Europium-152	U	-0.0409	+/-0.0665	0.0458	+/-0.0665	0.0973	pCi/g						
Europium-154	U	-0.0391	+/-0.0666	0.0524	+/-0.0666	0.118	pCi/g						
Europium-155	U	0.0598	+/-0.0586	0.0541	+/-0.0586	0.112	pCi/g						
Lead-212		0.781	+/-0.070	0.0285	+/-0.070	0.0597	pCi/g						
Lead-214		0.632	+/-0.0979	0.0363	+/-0.0979	0.0768	pCi/g						
Manganese-54	U	0.00384	+/-0.0213	0.0182	+/-0.0213	0.0397	pCi/g						
Niobium-94	U	0.0031	+/-0.0192	0.0165	+/-0.0192	0.0358	pCi/g						
Potassium-40		12.2	+/-1.08	0.139	+/-1.08	0.327	pCi/g						
Radium-226		0.511	+/-0.103	0.0328	+/-0.103	0.0708	pCi/g						
Silver-108m	U	0.0222	+/-0.0184	0.0175	+/-0.0184	0.0373	pCi/g						
Thallium-208		0.294	+/-0.0515	0.0166	+/-0.0515	0.0359	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

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 :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-014FS
Sample ID: 172114019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - 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
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-015F
Sample ID: 172114020
Matrix: TS
Collect Date: 08-SEP-06
Receive Date: 20-SEP-06
Collector: Client
Moisture: 11.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.644	+/-0.161	0.0631	+/-0.161	0.138	pCi/g						
Americium-241	U	-0.0336	+/-0.109	0.0844	+/-0.109	0.176	pCi/g		MJH	10/02/06	1345	574334	
Bismuth-212		0.569	+/-0.273	0.122	+/-0.273	0.266	pCi/g						
Bismuth-214		0.449	+/-0.0867	0.0328	+/-0.0867	0.0703	pCi/g						
Cesium-134	U	0.0226	+/-0.0592	0.0218	+/-0.0592	0.0468	pCi/g						
Cesium-137		0.0415	+/-0.0554	0.0185	+/-0.0554	0.0397	pCi/g						
Cobalt-60	U	0.00214	+/-0.021	0.0179	+/-0.021	0.0403	pCi/g						
Europium-152	U	-0.0102	+/-0.0545	0.0452	+/-0.0545	0.0957	pCi/g						
Europium-154	U	-0.0195	+/-0.0706	0.0576	+/-0.0706	0.127	pCi/g						
Europium-155	U	0.0685	+/-0.0967	0.0485	+/-0.0967	0.101	pCi/g						
Lead-212		0.695	+/-0.065	0.0273	+/-0.065	0.0571	pCi/g						
Lead-214		0.496	+/-0.0794	0.0352	+/-0.0794	0.0743	pCi/g						
Manganese-54	U	0.0025	+/-0.0231	0.0194	+/-0.0231	0.042	pCi/g						
Niobium-94	U	0.00735	+/-0.0205	0.0179	+/-0.0205	0.0383	pCi/g						
Potassium-40		12.0	+/-0.924	0.137	+/-0.924	0.318	pCi/g						
Radium-226		0.449	+/-0.0867	0.0328	+/-0.0867	0.0703	pCi/g						
Silver-108m	U	-0.0174	+/-0.0168	0.0136	+/-0.0168	0.0293	pCi/g						
Thallium-208		0.218	+/-0.0517	0.0177	+/-0.0517	0.0379	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LXM2	09/20/06	1536	570843

The following Analytical Methods were performed

Method	Description
I	EML HASL 300.4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

Company : Connecticut Yankee Atomic Power
Address : 362 Injun Hollow Rd

Contact: East Hampton, Connecticut 06424
Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: October 4, 2006

Client Sample ID: 9530-0001-015F
Sample ID: 172114020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
-----------	-----------	--------	-------------	----	-----	-----	-------	----	---------	------	------	-------	----

- > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GENERAL ENGINEERING LABORATORIES, LLC

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

QC Summary

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Report Date: October 4, 2006
Page 1 of 9

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 172114

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 572120											
QC1201191304 172114001 DUP											
Americium-241	U	0.0864	U	0.0286	pCi/g	101		(0% - 100%)	TC1	09/28/06	11:56
	Uncert:	+/-0.105		+/-0.0554							
	TPU:	+/-0.106		+/-0.0555							
Curium-242	U	0.00	U	-0.0072	pCi/g	200		(0% - 100%)			
	Uncert:	+/-0.0553		+/-0.0141							
	TPU:	+/-0.0553		+/-0.0141							
Curium-243/244	U	0.0664	U	-0.00672	pCi/g	245		(0% - 100%)			
	Uncert:	+/-0.0911		+/-0.0132							
	TPU:	+/-0.0915		+/-0.0132							
QC1201191306 LCS											
Americium-241	11.4			12.6	pCi/g		111	(75%-125%)			
	Uncert:			+/-1.20							
	TPU:			+/-1.96							
Curium-242			U	0.0299	pCi/g						
	Uncert:			+/-0.0586							
	TPU:			+/-0.0588							
Curium-243/244	13.7			14.4	pCi/g		105	(75%-125%)			
	Uncert:			+/-1.28							
	TPU:			+/-2.18							
QC1201191303 MB											
Americium-241			U	0.00455	pCi/g						
	Uncert:			+/-0.0226							
	TPU:			+/-0.0227							
Curium-242			U	0.00	pCi/g						
	Uncert:			+/-0.0581							
	TPU:			+/-0.0581							
Curium-243/244			U	-0.0704	pCi/g						
	Uncert:			+/-0.0436							
	TPU:			+/-0.0445							
QC1201191305 172114001 MS											
Americium-241	12.0 U	0.0864		12.9	pCi/g		108	(75%-125%)			
	Uncert:	+/-0.105		+/-1.10							
	TPU:	+/-0.106		+/-1.85							
Curium-242	U	0.00	U	-0.0126	pCi/g						
	Uncert:	+/-0.0553		+/-0.0175							
	TPU:	+/-0.0553		+/-0.0175							
Curium-243/244	14.5 U	0.0664		14.4	pCi/g		99	(75%-125%)			
	Uncert:	+/-0.0911		+/-1.16							
	TPU:	+/-0.0915		+/-2.03							
Batch 572121											
QC1201191308 172114001 DUP											
Plutonium-238	U	0.102	U	0.0358	pCi/g	96		(0% - 100%)	TC1	09/28/06	11:56

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QC Summary

Workorder: 172114

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 572121											
		Uncert:		+/-0.0996							
		TPU:		+/-0.100							
Plutonium-239/240		U	0.062	U	-0.0313	pCi/g	608	(0% - 100%)			
		Uncert:		+/-0.077							
		TPU:		+/-0.0773							
QC1201191310 LCS											
Plutonium-238				U	0.0404	pCi/g		(75%-125%)			
		Uncert:		+/-0.0758							
		TPU:		+/-0.0759							
Plutonium-239/240	10.5				11.2	pCi/g		107 (75%-125%)			
		Uncert:		+/-1.07							
		TPU:		+/-1.73							
QC1201191307 MB											
Plutonium-238				U	0.00363	pCi/g				09/28/06	11:56
		Uncert:		+/-0.114							
		TPU:		+/-0.114							
Plutonium-239/240				U	0.0618	pCi/g					
		Uncert:		+/-0.107							
		TPU:		+/-0.107							
QC1201191309 172114001 MS											
Plutonium-238		U	0.102	U	0.0976	pCi/g		(75%-125%)		09/28/06	11:56
		Uncert:		+/-0.0996							
		TPU:		+/-0.100							
Plutonium-239/240	11.1	U	0.062		11.9	pCi/g		107 (75%-125%)			
		Uncert:		+/-0.077							
		TPU:		+/-0.0773							
Batch 572122											
QC1201191312 172114001 DUP											
Plutonium-241		U	6.10	U	4.20	pCi/g	0	(0% - 100%)	TCI	09/29/06	23:34
		Uncert:		+/-8.99							
		TPU:		+/-9.01							
QC1201191314 LCS											
Plutonium-241	132				112	pCi/g		85 (75%-125%)		09/30/06	00:06
		Uncert:			+/-12.9						
		TPU:			+/-17.0						
QC1201191311 MB											
Plutonium-241				U	2.21	pCi/g				09/29/06	23:18
		Uncert:			+/-8.86						
		TPU:			+/-8.86						
QC1201191313 172114001 MS											
Plutonium-241	144	U	6.10		141	pCi/g		98 (75%-125%)		09/29/06	23:50
		Uncert:		+/-8.99							
		TPU:		+/-9.01							
Rad Gamma Spec											
Batch 574334											
QC1201196534 172114006 DUP											
Actinium-228			0.828		0.724	pCi/g	13	(0% - 100%)	MJH	10/02/06	13:46
		Uncert:		+/-0.191							
					+/-0.264						
					+/-0.264						

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

QC Summary

Workorder: 172114

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec Batch 574334											
Americium-241	TPU: +/-0.191 U -0.0107 Uncert: +/-0.0746	U	0.00921	pCi/g	2710		(0% - 100%)				
Bismuth-212	TPU: +/-0.0746 0.881 Uncert: +/-0.459		+/-0.0404 0.621	pCi/g	35		(0% - 100%)				
Bismuth-214	TPU: +/-0.459 0.612 Uncert: +/-0.130		+/-0.284 0.719	pCi/g	16		(0% - 100%)				
Cesium-134	TPU: +/-0.130 UI 0.00 Uncert: +/-0.0376	U	+/-0.131 0.00367	pCi/g	184		(0% - 100%)				
Cesium-137	TPU: +/-0.0376 0.182 Uncert: +/-0.0483		+/-0.0364 0.227	pCi/g	22		(0% - 100%)				
Cobalt-60	TPU: +/-0.0483 U -0.00988 Uncert: +/-0.0263	U	+/-0.0551 -0.00503	pCi/g	65		(0% - 100%)				
Europium-152	TPU: +/-0.0263 U 0.0683 Uncert: +/-0.0624	U	+/-0.0277 -0.112	pCi/g	825		(0% - 100%)				
Europium-154	TPU: +/-0.0624 U 0.104 Uncert: +/-0.0885	U	+/-0.0713 0.0469	pCi/g	76		(0% - 100%)				
Europium-155	TPU: +/-0.0885 U 0.0308 Uncert: +/-0.0643	U	+/-0.0793 0.046	pCi/g	40		(0% - 100%)				
Lead-212	TPU: +/-0.0643 0.882 Uncert: +/-0.0991		+/-0.0633 0.876	pCi/g	1		(0% - 20%)				
Lead-214	TPU: +/-0.0991 0.857 Uncert: +/-0.131		+/-0.0812 0.790	pCi/g	8		(0% - 20%)				
Manganese-54	TPU: +/-0.131 U 0.000152 Uncert: +/-0.0265	U	+/-0.136 0.0209	pCi/g	197		(0% - 100%)				
Niobium-94	TPU: +/-0.0265 U 0.0279 Uncert: +/-0.0215	UI	+/-0.0328 0.00	pCi/g	132		(0% - 100%)				
Potassium-40	TPU: +/-0.0215 13.3 Uncert: +/-1.37		+/-0.0533 14.6	pCi/g	10		(0% - 20%)				
Radium-226	TPU: +/-1.37 0.612 Uncert: +/-0.130		+/-1.19 0.319	pCi/g	16		(0% - 100%)				
Silver-108m	TPU: +/-0.130 U -0.00885 Uncert: +/-0.0202	U	+/-0.131 -0.0074	pCi/g	18		(0% - 100%)				

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QC Summary

Workorder: 172114

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	574334										
Thallium-208	TPU: +/-0.0202	0.282		+/-0.0243	pCi/g	8		(0% - 100%)			
	Uncert: +/-0.0618			+/-0.0691							
	TPU: +/-0.0618			+/-0.0691							
QC1201196535 LCS											
Actinium-228			U	-0.0425	pCi/g					10/02/06	13:46
	Uncert: +/-0.520			+/-0.520							
Americium-241	23.4			23.8	pCi/g		102	(75%-125%)			
	Uncert: +/-1.09			+/-1.09							
	TPU: +/-1.09			+/-1.09							
Bismuth-212			U	-0.416	pCi/g						
	Uncert: +/-0.904			+/-0.904							
	TPU: +/-0.904			+/-0.904							
Bismuth-214			U	-0.0594	pCi/g						
	Uncert: +/-0.221			+/-0.221							
	TPU: +/-0.221			+/-0.221							
Cesium-134			U	0.0337	pCi/g						
	Uncert: +/-0.137			+/-0.137							
	TPU: +/-0.137			+/-0.137							
Cesium-137	9.56			10.2	pCi/g		107	(75%-125%)			
	Uncert: +/-0.440			+/-0.440							
	TPU: +/-0.440			+/-0.440							
Cobalt-60	14.4			15.0	pCi/g		104	(75%-125%)			
	Uncert: +/-0.617			+/-0.617							
	TPU: +/-0.617			+/-0.617							
Europium-152			U	-0.0589	pCi/g						
	Uncert: +/-0.260			+/-0.260							
	TPU: +/-0.260			+/-0.260							
Europium-154			U	0.123	pCi/g						
	Uncert: +/-0.253			+/-0.253							
	TPU: +/-0.253			+/-0.253							
Europium-155			U	0.0288	pCi/g						
	Uncert: +/-0.280			+/-0.280							
	TPU: +/-0.280			+/-0.280							
Lead-212			U	0.0247	pCi/g						
	Uncert: +/-0.147			+/-0.147							
	TPU: +/-0.147			+/-0.147							
Lead-214			U	0.126	pCi/g						
	Uncert: +/-0.190			+/-0.190							
	TPU: +/-0.190			+/-0.190							
Manganese-54			U	-0.137	pCi/g						
	Uncert: +/-0.120			+/-0.120							
	TPU: +/-0.120			+/-0.120							
Niobium-94			U	0.00618	pCi/g						
	Uncert: +/-0.112			+/-0.112							
	TPU: +/-0.112			+/-0.112							
Potassium-40			U	0.273	pCi/g						

GENERAL ENGINEERING LABORATORIES, LLC

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QC Summary

Workorder: 172114

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Parname	NOM	Sample Qual	QC	Units	RPD %	REC %	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch 574334										
			Uncert:							
			TPU:							
Radium-226		U	-0.0594	pCi/g			(75%-125%)			
			Uncert:							
			TPU:							
Silver-108m		U	0.0133	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	-0.0156	pCi/g						
			Uncert:							
			TPU:							
QC1201196533 MB										
Actinium-228		U	0.0198	pCi/g					10/02/06	13:45
			Uncert:							
			TPU:							
Americium-241		U	0.0304	pCi/g						
			Uncert:							
			TPU:							
Bismuth-212		U	-0.0547	pCi/g						
			Uncert:							
			TPU:							
Bismuth-214		U	0.0089	pCi/g						
			Uncert:							
			TPU:							
Cesium-134		U	0.0013	pCi/g						
			Uncert:							
			TPU:							
Cesium-137		U	-0.00185	pCi/g						
			Uncert:							
			TPU:							
Cobalt-60		U	0.00854	pCi/g						
			Uncert:							
			TPU:							
Europium-152		U	0.0369	pCi/g						
			Uncert:							
			TPU:							
Europium-154		U	0.00458	pCi/g						
			Uncert:							
			TPU:							
Europium-155		U	-0.00598	pCi/g						
			Uncert:							
			TPU:							
Lead-212		U	0.0149	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.00865	pCi/g						
			Uncert:							
			TPU:							

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QC Summary

Workorder: 172114

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Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analst	Date	Time
Rad Gamma Spec											
Batch	574334										
Manganese-54			U	0.00522	pCi/g						
		Uncert:		+/-0.0132							
		TPU:		+/-0.0132							
Niobium-94			U	0.0114	pCi/g						
		Uncert:		+/-0.00966							
		TPU:		+/-0.00966							
Potassium-40			U	0.0292	pCi/g						
		Uncert:		+/-0.282							
		TPU:		+/-0.282							
Radium-226			U	0.0089	pCi/g						
		Uncert:		+/-0.0274							
		TPU:		+/-0.0274							
Silver-108m			U	0.00301	pCi/g						
		Uncert:		+/-0.0115							
		TPU:		+/-0.0115							
Thallium-208			U	0.0143	pCi/g						
		Uncert:		+/-0.0139							
		TPU:		+/-0.0139							
Rad Gas Flow											
Batch	571177										
QC1201189313	172114001	DUP									
Strontium-90			U	0.00276	pCi/g	0		(0% - 100%) KSDI		09/29/06	23:36
		Uncert:		+/-0.00637							
		TPU:		+/-0.00637							
QC1201189315	LCS										
Strontium-90			1.74	1.61	pCi/g		93	(75%-125%)		09/30/06	08:48
		Uncert:		+/-0.0822							
		TPU:		+/-0.0946							
QC1201189312	MB										
Strontium-90			U	0.000716	pCi/g					09/29/06	23:36
		Uncert:		+/-0.00594							
		TPU:		+/-0.00594							
QC1201189314	172114001	MS									
Strontium-90			1.74 U	0.00276	pCi/g		94	(75%-125%)		09/30/06	08:48
		Uncert:		+/-0.00637							
		TPU:		+/-0.00637							
Rad Liquid Scintillation											
Batch	570929										
QC1201188776	172114010	DUP									
Iron-55			U	12.2	pCi/g	0		(0% - 100%) VIXPI		09/27/06	14:03
		Uncert:		+/-25.2							
		TPU:		+/-25.2							
QC1201188778	LCS										
Iron-55			621	537	pCi/g		86	(75%-125%)		09/27/06	14:36
		Uncert:		+/-45.3							
		TPU:		+/-59.7							
QC1201188775	MB										
Iron-55			U	22.8	pCi/g					10/03/06	05:37

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	570929										
		Uncert:		+/-41.7							
		TPU:		+/-41.7							
QC1201188777	172114010	MS									
Iron-55		699	U	12.2	667	pCi/g	95	(75%-125%)		09/27/06	14:19
		Uncert:		+/-25.2	+/-45.8						
		TPU:		+/-25.2	+/-64.5						
Batch	570930										
QC1201188781	172114010	DUP									
Nickel-63			U	-5.95	2.04	pCi/g	0	(0% - 100%)	MXPI	09/25/06	17:07
		Uncert:		+/-10.8	+/-8.19						
		TPU:		+/-10.8	+/-8.19						
QC1201188783	LCS										
Nickel-63		512			427	pCi/g	83	(75%-125%)		09/25/06	17:40
		Uncert:			+/-21.0						
		TPU:			+/-25.0						
QC1201188780	MB										
Nickel-63			U		4.54	pCi/g				09/25/06	16:50
		Uncert:			+/-10.3						
		TPU:			+/-10.3						
QC1201188782	172114010	MS									
Nickel-63		571	U	-5.95	467	pCi/g	82	(75%-125%)		09/25/06	17:23
		Uncert:		+/-10.8	+/-24.9						
		TPU:		+/-10.8	+/-29.5						
Batch	570932										
QC1201188785	172114001	DUP									
Technetium-99			U	0.0384	0.0669	pCi/g	0	(0% - 100%)	KXRI	09/29/06	17:06
		Uncert:		+/-0.285	+/-0.286						
		TPU:		+/-0.285	+/-0.286						
QC1201188787	LCS										
Technetium-99		12.7			13.8	pCi/g	109	(75%-125%)		09/29/06	17:39
		Uncert:			+/-0.523						
		TPU:			+/-0.610						
QC1201188784	MB										
Technetium-99			U		0.0777	pCi/g				09/29/06	16:50
		Uncert:			+/-0.247						
		TPU:			+/-0.247						
QC1201188786	172114001	MS									
Technetium-99		13.1	U	0.0384	13.4	pCi/g	103	(75%-125%)		09/29/06	17:23
		Uncert:		+/-0.285	+/-0.575						
		TPU:		+/-0.285	+/-0.651						
Batch	570933										
QC1201188789	172114001	DUP									
Tritium			U	-5.59	-2.23	pCi/g	0	(0% - 100%)	DFAI	09/25/06	02:59
		Uncert:		+/-7.85	+/-7.28						
		TPU:		+/-7.85	+/-7.28						
QC1201188791	LCS										
Tritium		54.5			49.4	pCi/g	91	(75%-125%)		09/25/06	03:31
		Uncert:			+/-9.21						
		TPU:			+/-9.25						

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	570933										
QC1201188788	MB										
Tritium			U	1.22	pCi/g					09/25/06	02:42
		Uncert:		+/-6.42							
		TPU:		+/-6.42							
QC1201188790	172114001	MS									
Tritium		54.5	U	-5.59	pCi/g		75	(75%-125%)		09/25/06	03:15
		Uncert:		+/-7.85							
		TPU:		+/-7.85							
Batch	570934										
QC1201188793	172114010	DUP									
Carbon-14			U	0.00	pCi/g	0		(0% - 100%)	AXD2	09/23/06	16:34
		Uncert:		+/-0.0813							
		TPU:		+/-0.0813							
QC1201188795	LCS										
Carbon-14		6.57		6.32	pCi/g		96	(75%-125%)		09/23/06	17:34
		Uncert:		+/-0.448							
		TPU:		+/-0.458							
QC1201188792	MB										
Carbon-14			U	-0.0391	pCi/g					09/23/06	15:52
		Uncert:		+/-0.0746							
		TPU:		+/-0.0746							
QC1201188794	172114010	MS									
Carbon-14		7.05	U	0.00	pCi/g		95	(75%-125%)		09/23/06	17:17
		Uncert:		+/-0.0813							
		TPU:		+/-0.0813							

Notes:

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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 Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
 - 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

GENERAL ENGINEERING LABORATORIES, LLC

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

QC Summary

Workorder: 172114

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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^

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.

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 4A (PRELIMINARY DATA REVIEW)

PRELIMINARY DATA REVIEW FORM

Survey Unit : 9530-0001
 Survey Unit Name : Central Peninsula
 Classification : 2
 Survey Media : Soil
 Type of Survey : Final Status Survey
 Type of Measurement : Radionuclide Specific
 Number of Measurements : 15

BASIC STATISTICAL QUANTITIES

Cs-137
 Target Level (pCi/g) : 5.38E+00
 Minimum Value : 4.15E-02
 Maximum Value : 2.59E-01
 Mean : 1.09E-01
 Median : 1.21E-01
 Standard Deviation : 5.40E-02

Reported Results

Sample Identification	Cs-137 Concentration (pCi/g)	Detect?	Fraction of Target Level
9530-0001-001F	1.30E-01	+	0.024
9530-0001-002F	1.27E-01	+	0.024
9530-0001-003F	2.59E-01	+	0.048
9530-0001-004F	1.31E-01	+	0.024
9530-0001-005F	4.85E-02	+	0.009
9530-0001-006F	1.21E-01	+	0.022
9530-0001-007F	1.34E-01	+	0.025
9530-0001-008F	1.33E-01	+	0.025
9530-0001-009F	6.41E-02	+	0.012
9530-0001-010F	1.34E-01	+	0.025
9530-0001-011F	1.06E-01	+	0.020
9530-0001-012F	8.50E-02	+	0.016
9530-0001-013F	7.29E-02	+	0.014
9530-0001-014F	5.47E-02	+	0.010
9530-0001-015F	4.15E-02		0.008

Jack W. Clark

Submitted by/Date

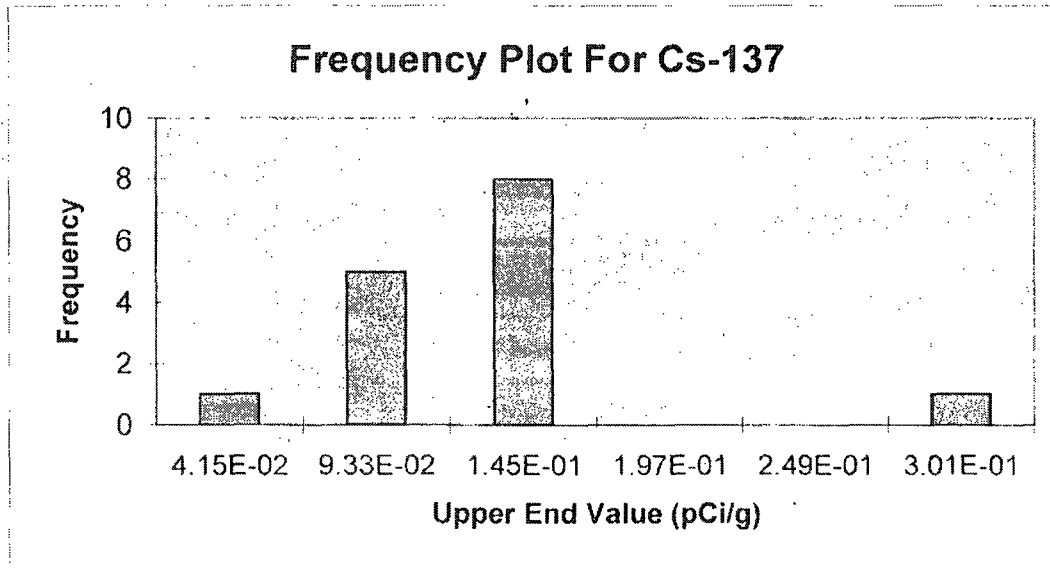
10/19/06

CENTRAL PENINSULA
SURVEY UNIT 9530-0001
RELEASE RECORD

ATTACHMENT 4B (GRAPHICAL REPRESENTATION OF DATA)

FREQUENCY PLOT FOR CESIUM-137

Survey Unit: 9530-0001
 Survey Unit Name: Central Peninsula
 Mean: 1.09E-01 pCi/g



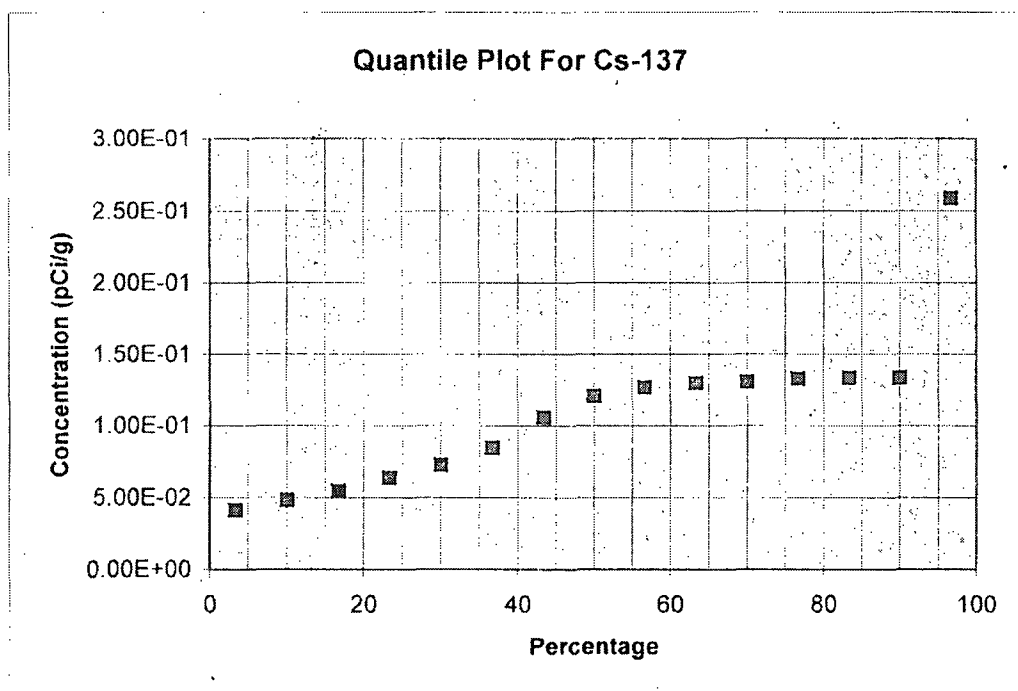
Upper End Value	Observation Frequency	Observation Frequency
4.15E-02	1	7%
9.33E-02	5	33%
1.45E-01	8	53%
1.97E-01	0	0%
2.49E-01	0	0%
3.01E-01	1	7%
Total:	15	100%

Submitted by/Date: 10/23/06

Reviewed by/Date: 10/23/06

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9530-0001
 Survey Unit Name: Central Peninsula
 Mean: 1.09E-01 pCi/g



Cs-137	Rank	Percentage
4.15E-02	1	3%
4.85E-02	2	10%
5.47E-02	3	17%
6.41E-02	4	23%
7.29E-02	5	30%
8.50E-02	6	37%
1.06E-01	7	43%
1.21E-01	8	50%
1.27E-01	9	57%
1.30E-01	10	63%
1.31E-01	11	70%
1.33E-01	12	77%
1.34E-01	13	83%
1.34E-01	14	90%
2.59E-01	15	97%

Submitted by/Date

Reviewed by/Date

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

[illegible]

Survey Unit Meets Acceptance Criterion

Date: 10/23/06

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

Split Sample Assessment Form

Survey Area#: 9530		Survey Unit #: 0001		Survey Unit name: Central Peninsula																
Sample Plan or WPIR#: 2005-0038						SML#: 9530-0001-006														
Sample Description: Comparison of split samples collected from sample measurement location #6 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9530-0001-006F, the comparison sample was 9530-0001-006FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	1.21E-1	1.38E-2	9	0.6 - 1.66	1.24E-1	2.27E-2	1.02	Y												
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples. <table border="1"> <thead> <tr> <th>Resolution</th> <th>Agreement Range</th> </tr> </thead> <tbody> <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> </tbody> </table>				Resolution	Agreement Range	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
									Resolution	Agreement Range										
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: <i>Sack McIntyre</i>					Date: <i>10/19/06</i>		Reviewed By: <i>[Signature]</i>													
					Date: <i>10/23/06</i>															

Split Sample Assessment Form

Survey Area#: 9530		Survey Unit #: 0001		Survey Unit name: Central Peninsula																
Sample Plan or WPIR#: 2005-0038						SML#: 9530-0001-014														
Sample Description: Comparison of split samples collected from sample measurement location #14 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9530-0001-014F, the comparison sample was 9530-0001-014FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
K-40	1.25E1	6.55E-1	191	0.8 - 1.25	1.22E1	5.40E-1	0.98	Y												
Comments/Corrective Actions: Cs-137 was not detected in sufficient quantities to evaluate in accordance with procedure					Table is provided to show acceptance criteria used to assess split samples. <table border="1"> <thead> <tr> <th>Resolution</th> <th>Agreement Range</th> </tr> </thead> <tbody> <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> </tbody> </table>				Resolution	Agreement Range	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
									Resolution	Agreement Range										
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: <i>Sick McCaffery</i>					Reviewed By: <i>[Signature]</i>															
Date: 10/15/06					Date: 10/23/06															

CENTRAL PENINSULA
SURVEY UNIT 9530-0001

RELEASE RECORD

ATTACHMENT 4E (COMPASS DQA WITH POWER CURVE)



DQA Surface Soil Report

Assessment Summary

Site:	9530-0001 FSS		
Planner(s):	McCarthy	<i>Curry</i>	<i>10/19/06</i>
Survey Unit Name:	Central Peninsula		
Report Number:	1		
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

