



# **Final Status Survey Final Report Phase IV**

**Appendix A16  
Survey Unit Release Record  
9508-0000, Pond**

**November 2006**



CYAPCO  
FINAL STATUS SURVEY RELEASE RECORD  
POND  
SURVEY UNIT 9508-0000

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**1. SURVEY UNIT DESCRIPTION**

Survey Unit 9508-0000 (Pond) is designated as Final Status Survey (FSS) Class 3 and consists of approximately 10,831 m<sup>2</sup> ( 2.67 acres) of water covered sediment in an area located approximately 0.09 miles from the reference coordinate system benchmark used at the Haddam Neck Plant (HNP) (see Attachment 1, Figure 1). The Pond is man-made and served as a fire suppression reservoir. The pond receives run off from the East Mountain Side and from a trench that is located east of the Radiological Controlled Area (RCA). The trench was isolated prior to FSS activities. The Pond drains to the Connecticut River. The Pond survey unit is bounded as follows: land Survey Area 9506-0000 surrounds the entire pond. The following land surfaces areas are in close proximity to the pond: Survey Area 9504-0000 is to the east, Survey Area 9514-0000 is to the south and Survey Area 9512-0000 is to the west.

The soil (sediment) of this survey area meets the requirements for unrestricted release as a Class 3 survey unit under the criteria and requirements of the HNP License Termination Plan (LTP).

The reference coordinates associated with this survey area are E005 through E011 by S044 through S052 (refer to License Termination Plan Section 5.4.4, Figure 5-2). 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 area. The boundary of the survey area 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 9508-0000 as Class 3 in May 2006.

The "*Classification Basis Summary*" conducted for this survey unit 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 (HSA) Supplement*,"
- c) Historic and current survey records review,
- d) Visual inspections and a "walk-down."
- e) Formal or informal interviews with cognizant personnel.

A review of the 10CFR50.75 (g) (1) database report identified no significant events that may have impacted this survey unit.

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A review of the historical documents included the *"Results of Scoping Survey"*, (performed during late 1997) and the *"Historical Site Assessment"* which provided some additional information. One sample taken in 1997 indicated a positive Cs-137 detection at a concentration of 0.233pCi/g.

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

Final characterization was performed by Site Closure personnel in May of 2006 to obtain data of sufficient quality for Final Status Survey (FSS) planning purposes. Eight (8) 1-foot core sediment samples were taken from eight (8) locations. The 1-foot core sediment samples are considered conservative. Since any plant derived activity is presumed to be biased to the upper layers of the sediment core. Seven (7) of the samples were analyzed on-site using gamma spectroscopy. Hard-to-Detect analyses was conducted on one (1) of the eight (8) samples. The only plant-related dosimetrically significant radionuclide identified in the samples was Cesium-137 (refer to Table 1).

**Table 1 – Basic Statistical Quantities for Cs-137  
from the Characterization Survey**

Parameter	Cs-137 (pCi/g)
Minimum Value:	5.46E-04
Maximum Value:	5.80E-01
Mean:	9.32E-02
Median:	1.42E-02
Standard Deviation:	1.98E-01
Note: The Operational DCGL for Cs-137- 6.01 pCi/g is used in conjunction with the unity rule to achieve 19 mrem/yr TEDE.	

The FSS Engineer performed a visual inspection and walk-down during May 2006 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions.

The final designation was Class 3 based on historical information and the characterization survey data which provided sufficient data to conclude that FSS sample results will be a fraction of the Operational DCGL of 19 mrem/yr.

### 3. DATA QUALITY OBJECTIVES (DQO)

FSS design and planning is based on 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 is provided herein.

The DQO process incorporates 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

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an alternate condition. The baseline condition is defined 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 satisfy the release criteria objective of the FSS. Probabilistic sampling is a preferred method to select a sample so that each item in the population being studied has a known likelihood of being included in the sample. Probabilistic sampling may include simple random sampling where every sample has the same chance of being included, or systematic random sampling where samples are arranged in some order and a random starting point is selected.

The primary objective of the Final Status Survey Plan (FSSP) was to demonstrate that the level of residual radioactivity in Survey Unit 9508-0000 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 Derived Concentration Guideline Levels (DCGLs). The DCGLs represent average levels of radioactivity above background levels and are presented in terms of surface or mass activity concentrations. Chapter 6 of the LTP describes in detail the modeling used to develop the DCGLs for soil (called Base Case Soil DCGL), existing groundwater radioactivity and for future groundwater radioactivity that will be contributed by building foundations and footings.

As described in detail in the LTP, the dose model applied to the Pond presumes that the Pond sediments are dredged to a depth of three (3) feet and spread for the planting of crops per the Resident Farmer Scenario. Consequently, the soil DCGLs are directly applied to the Pond sediment media which are sampled by coring to a nominal depth of three (3) feet.

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:*

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

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

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Department of Environmental Protection (CTDEP) radiological remediation standard for Connecticut Yankee (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. (reference CY memo ISC 06-024)

This survey unit is not affected by existing or future groundwater. Therefore, the dose contribution from existing and future groundwater is zero (0) mrem/yr TEDE.

*Equation 2:*

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

The allowable dose for soil in this survey unit is nineteen (19) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in nineteen (19) mrem/yr TEDE is designated as the Operational DCGL, and has been established for the radionuclides of concern as provided in Table 2. Note: the survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 to conservatively account for the contribution to the total dose from existing and future groundwater which had not been established at the time of planning the FSS.

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**Table 2 – Radionuclide Specific Base Case Soil DCGLs, Operational DCGLs and Required Minimum Detectable Concentrations**

<b>Radionuclide <sup>(1)</sup></b>	<b>Base Case Soil DCGL (pCi/g) <sup>(2)</sup></b>	<b>Operational DCGL (pCi/g) <sup>(3)</sup></b>	<b>Required MDC (pCi/g) <sup>(4)</sup></b>
<b>H-3</b>	4.12E+02	3.13E+02	1.65E+01
<b>C-14</b>	5.66E+00	4.30E+01	2.26E-01
Mn-54	1.74E+01	1.32E+01	6.96E-01
<b>Fe-55</b>	2.74E+04	2.08E+04	1.10E+03
Co-60	3.81E+00	2.90E+00	1.52E-01
<b>Ni-63</b>	7.23E+02	5.49E+02	2.89E+01
<b>Sr-90</b>	1.55E+00	1.18E+00	6.20E-02
Nb-94	7.12E+00	5.41E+00	2.85E-01
<b>Tc-99</b>	1.26E+01	9.58E+00	5.04E-01
Ag-108m	7.14E+00	5.43E+00	2.86E-01
Cs-134	4.67E+00	3.55E+00	1.87E-01
Cs-137	7.91E+00	6.01E+00	3.16E-01
Eu-152	1.01E+01	7.68E+00	4.04E-01
Eu-154	9.29E+00	7.06E+00	3.72E-01
Eu-155	3.92E+02	2.98E+02	1.57E+01
<b>Pu-238</b>	2.96E+01	2.25E+01	1.18E+00
<b>Pu-239/240</b>	2.67E+01	2.03E+01	1.07E+00
<b>Pu-241</b>	8.70E+02	6.61E+02	3.48E+01
Am-241 <sup>(5)</sup>	2.58E+01	1.96E+01	1.03E+00
<b>Cm-243/244</b>	2.90E+01	2.20E+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 19 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. Characterization was performed in May of 2006 as discussed in Section 2. Cs-137 was found to be the only radionuclide of concern. The basic statistical quantities (i.e., mean, standard deviation, median) for Cs-137 are provided in Table 1.

Laboratory DQOs and analysis results were to be reported as actual calculated results. Results reported as less than Minimum Detectable Concentration (<MDC) would not be accepted for FSS. Sample report summaries were to include unique sample identification, analytical method, radionuclide, result,



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and uncertainty of two 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*". By design, the FSSP meets the ALARA criteria for soils as specified in Chapter 4 of the LTP.

This survey was initially designed to ten (10) mrem/yr TEDE. At the time when the survey was designed, the dose contribution for existing and future groundwater had not yet been determined. Subsequently, a conservative value was chosen for the Operational DCGL. This approach is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used in this survey area to demonstrate compliance with the LTP criteria is nineteen (19) mrem/yr TEDE, as discussed in Section 3 of this Release Record.

Characterization was performed by Site Closure personnel in May 2006 to determine existing conditions and obtain radiological data for Final Status Survey (FSS). The DQO process determined that Cs-137 would be the radionuclide of concern (refer to Section 3). Other radionuclides identified during FSS would be evaluated to ensure adequate survey design and compliance with the unity rule.

Surrogate DCGLs were not required for this survey unit based on process knowledge from FSS of nearby adjacent areas 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 aggregate 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 the survey unit is a Class 3 and discrete, elevated areas of contamination were not expected.

The Sign Test was selected as the non-parametric statistical test to demonstrate that the null hypothesis was rejected. The use of the Sign Test did not require the selection or use of a background reference area, which simplified survey design and implementation. In addition, 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 Samples for Final Status Survey*." The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 2.76 pCi/g Cs-137 to maintain the

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relative shift ( $\Delta/\sigma$ ) in the range of 1 and 3. The resulting relative shift was 2. 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 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. This indicates that the survey area has a high probability of rejecting the null hypothesis, assuming that the characterization data are representative of the FSS results. Survey design specified fifteen (15) soil samples for non-parametric statistical testing.

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 random grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 3 area.

Sample locations were identified using AutoCAD-LT, a commercially available plotting software package with coordinates consistent with the Connecticut State Plane System. These coordinates were integrated with a GPS to locate sample locations in the field. Sample Measurement Locations for the design are listed with the GPS coordinates in Table 3.

**Table 3 - Sample Measurement Locations with Associated GPS Coordinates.**

Designation	Northing	Easting
9508-0000-001F	237159.00	667889.93
9508-0000-002F	237254.58	667782.11
9508-0000-003F	237134.76	667709.89
9508-0000-004F	237130.66	667550.21
9508-0000-005F	237068.03	667726.34
9508-0000-006F	237131.77	667933.74
9508-0000-007F	237211.00	667880.48
9508-0000-009F	237322.96	667651.33
9508-0000-010F	237040.26	667830.43
9508-0000-011F	237167.86	667656.29
9508-0000-012F	237151.39	667859.20
9508-0000-013F	237232.27	667639.39
9508-0000-014F	237275.49	667698.17
9508-0000-015F	236983.93	667759.73
9508-0000-016F	237159.40	667891.35

The sample location designations of Table 3 are not sequentially inclusive because of the necessity to relocate a sample due to the inaccessibility of the original sample location. Sample location 9508-0000-008F was found to be on

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dry land. Consequently, it was randomly relocated using VSP software to one (1) new location designated as 9508-0000-016F.

There were two (2) sediment cores taken as judgmental samples. The locations were selected based on the proximity to the outfall of two (2) culverts one which drains from a trench, located at the base of the East Mountain Side and east of the RCA, into the pond and one which drains from the southwest section of the pond to the Connecticut River.

Although Procedure RPM 5.1-11 only specified that 5% of the samples be selected for HTD analysis, two (2) soil samples were analyzed for HTDs, exceeding the required percentage. The two (2) samples that were tested were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RAND" function. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in Table 2.

The implementation of survey specific 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 "RAND" function. The number of quality control samples exceeded the 5 % requirement.

The LTP specifies that scanning is not required for the FSS of the Pond. Table 4 provides a synopsis of the survey design.

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Table 4 – Synopsis of the Survey Design <sup>(1)</sup>		
Feature	Design Criteria	Basis
Survey Unit Land Area	10,831 m <sup>2</sup>	Based on AutoCAD-LT and Visual Sample Plan calculations
Number of Measurements	15	Type 1 and Type 2 errors were 0.05, sigma was 0.198 pCi/g Cs-137 the LBGR was adjusted to 2.76 pCi/g Cs-137 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 2
Grid Spacing	NA	Based on random grid
Design DCGL	3.16 pCi/g Cs-137	To achieve 10 mrem/yr TEDE
Operational DCGL	6.01 pCi/g Cs-137	To achieve 19 mrem/yr TEDE <sup>(2)</sup> to demonstrate compliance with Equation 2 of this Release Record
Scan Coverage	N/A	The LTP exempts this area
Sediment Investigation Level	6.01 pCi/g Cs-137	The Operational DCGL meets the LTP criteria for a Class 3 survey unit

(1) The survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 as the total dose from existing and future groundwater had not been established at the time of planning the FSS

(2) The allowable dose for soil in this survey unit is 19 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) 2006-0027. The WP&IR package included a detailed FSSP, 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.

Using GPS coordinates, sample measurement locations were identified in NAD 1927 coordinates that were supplied to the sampling vendor, Ocean Surveys Inc. (OSI) of Old Saybrook, Connecticut. Pond sampling was accomplished using direct push technology to collect composite samples of bottom and average high water mark sediments. Sediment cores from the Pond were obtained by OSI using a vibrating corer that was platform mounted on a sampling vessel. The core barrel was a three (3) inch diameter thin-

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walled aluminum tube which also served as a core liner (ten feet or less). A core catcher was available to prevent the sample from sliding out of the bottom of the tube. Vessel positioning and the determination of sample locations were accomplished using a global positioning system (GPS) interfaced with a navigation and data logging system. The FSS plan provided a map and GPS positions to Ocean Surveys, Inc. for the as-desired locations for core borings.

After extraction, the water was drained from above the sample by drilling holes above the sediment. The liner was cut, capped, sealed, labeled and turned over from the Ocean Surveys, Inc. to site personnel who processed and controlled the samples under Chain-of-Custody (COC). Rinsing of the barrel and associated equipment was performed between sampling events. New aluminum tubes were used for each sample to prevent cross-contamination of subsequent samples.

Seventeen (17) sediment samples were collected and packaged in accordance with Haddam Neck Plant (HNP) Procedure RPM 5.1-3, "*Collection of Sample Media for Final Status Survey*" and FSS design.

Samples were controlled, transported, stored, and transferred to the off-site laboratory using Chain-of-Custody (COC) protocol in accordance with Procedure RPM 5.1-5, "*Chain of Custody for Final Status Survey Samples.*"

Two (2) samples 9508-0000-002F and 9508-0000-014F were selected, at random, for HTD radionuclide analysis by the off-site laboratory.

Two (2) biased sediment samples 9508-0000-017F and 9508-0000-018F were collected and analyzed by the offsite laboratory for gamma spectroscopy.

The implementation of survey specific quality control measures included the collection of two (2) split samples at locations 9508-0000-006F and 9508-0000-012F for "split sample" analysis by the off-site laboratory.

## 6. SURVEY RESULTS

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories (GEL) – Charleston, South Carolina. The laboratory analyzed the fifteen (15) samples taken for non-parametric statistical testing and the associated duplicates using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDC. Gamma spectroscopy results identified some radionuclides meeting the acceptance criteria for detection (i.e., a result greater than two standard deviations uncertainty). All could be de-selected or excluded using the 5% and 10% rule described in Section 4.

Cesium-137 was identified in ten (10) of the fifteen (15) samples.

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None of the samples exceeded the Operational DCGL. Gamma spectroscopy sample analysis did not require further investigation. A summary of the sample results is provided in Table 5.

Table 5- Summary of Soil Sample Results		
Sample Number	Cs-137 pCi/g	Fraction of the Operational DCGL <sup>(1)</sup>
9508-0000-001F	-5.23E-03	-8.70E-04
9508-0000-002F	1.10E-02	1.80E-03
9508-0000-003F	1.76E-01	2.93E-02
9508-0000-004F	1.10E-02	1.83E-03
9508-0000-005F	9.76E-01	1.62E-01
9508-0000-006F	2.68E-02	4.46E-03
9508-0000-007F	1.16E-01	1.93E-02
9508-0000-009F	3.36E-02	5.59E-03
9508-0000-010F	2.03E-02	3.38E-03
9508-0000-011F	1.85E-01	3.08E-02
9508-0000-012F	4.79E-02	7.97E-03
9508-0000-013F	8.02E-02	1.33E-02
9508-0000-014F	2.23E-01	3.71E-02
9508-0000-015F	2.61E-02	4.34E-03
9508-0000-016F	-2.99E-04	-4.97E-05
<sup>(1)</sup> The Operational DCGLs from Table 2 is 6.01 pCi/g for Cs-137 these are used in conjunction with the unity rule to achieve 19 mrem/yr TEDE.		

The off-site laboratory also processed two (2) samples for HTD analyses 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. Gamma spectroscopy results identified some radionuclides meeting the acceptance criteria for detection (i.e., a result greater than two standard deviations uncertainty). All could be de-selected or excluded using the 5% and 10% rule described in Section 4. All analyses met the required MDC.

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. The samples were a very small fraction of the Operational DCGL. No further action or investigations were required. A summary of the sample results is provided in Table 6.

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Table 6 – Biased Sample Results		
Sample Number	Cs-137 pCi/g	Fraction of the Operational DCGL <sup>(1)</sup>
9508-0000-017F	1.14E-02	1.90E-03
9508-0000-018F	2.29E-02	4.10E-03
The Operational DCGLs from Table 2 is 6.01 pCi/g for Cs-137 these are used in conjunction with the unity rule to achieve 19 mrem/yr TEDE		

**7. QUALITY CONTROL**

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. The data was 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 the field split results for both of the "split sample" pairs tested.

The sample analysis vendor, General Engineering Laboratories (GEL) – Charleston, South Carolina, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachment 2 for data and data quality analysis results.

**8. INVESTIGATIONS AND RESULTS**

Sample investigation levels were not exceeded for this unit. Consequently, no investigations were performed.

**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 to be unnecessary and that the remaining residual radioactivity in soil was ALARA.

**10. CHANGES FROM THE FINAL STATUS SURVEY PLAN**

The survey was designed to ten (10) mrem/yr TEDE which was conservative and necessary at the time of FSS planning. It is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used to demonstrate compliance with the LTP criteria is nineteen (19) mrem/yr TEDE as discussed in Section 2 of this Release Record.

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**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 Sign Test shows that the survey unit passes FSS.

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 3.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation).

The sample standard deviation was slightly more than the value used for the survey design. This is represented by the shift in the retrospective power curve as shown in Attachment 2f. This would indicate a change to the original LBGR to maintain the number of samples at fifteen to meet the Operational DCGL. However, the value of LBGR is less of a critical issue as the survey unit has passed the statistical test, and 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 release criteria with adequate power as required by the DQOs.

The range of the data, about 3.99 standard deviations. The difference between the mean and median was 38.6% 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 shows some positive skewness as confirmed by the calculated skew of 3.32.

All data, assessments, and graphical representations are provided in Attachment 2.

**12. ANOMALIES**

No anomalies were noted in the performance of this FSS.

**13. CONCLUSION**

Survey Unit 9508-0000 has met the final DQOs of the FSS. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation were not required.

The sample data passed the Sign Test. The null hypothesis was rejected. Graphical representation of data indicates some positive skewness that is probably due to the differences in terrain and the collection of runoff. The



POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit was properly designated as Class 3.

The dose contribution from soil is 0.406 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

This survey unit is not affected by existing groundwater (reference CY memo ISC 06-024). The dose contribution from existing groundwater is zero (0) mrem/yr TEDE.

This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no 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.

The average total dose from residual radioactivity in this survey unit is 0.406 mrem/yr Total Effective Dose Equivalent (TEDE).

**14. ATTACHMENTS**

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Sample and Statistical Data

POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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Attachment 1  
Figures  
(3 pages)



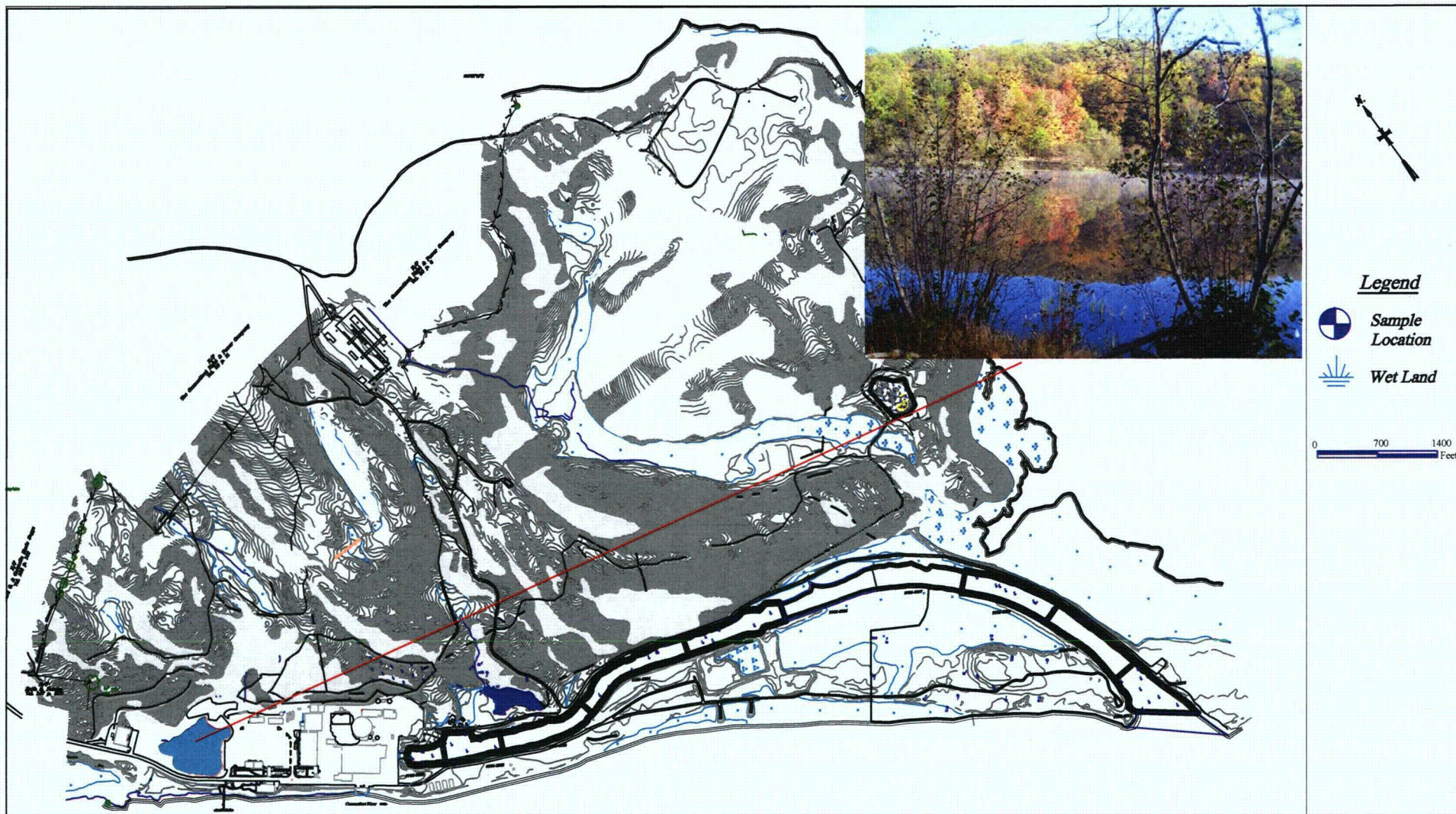


Figure 1

Connecticut Yankee Atomic Power Company  
9508-0000 Final Status Survey Design

Date  
October 2006

By  
A. Hammond



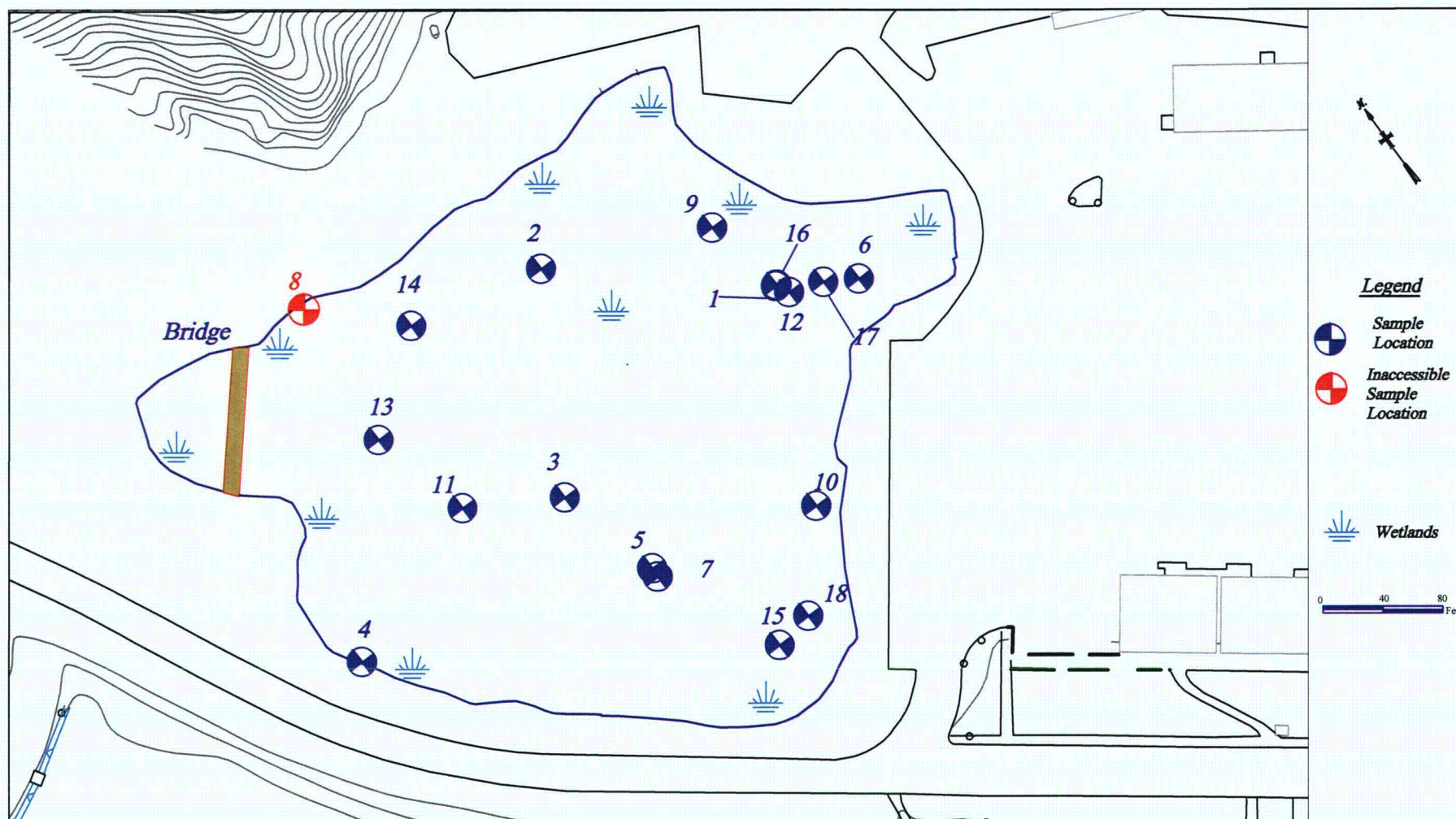
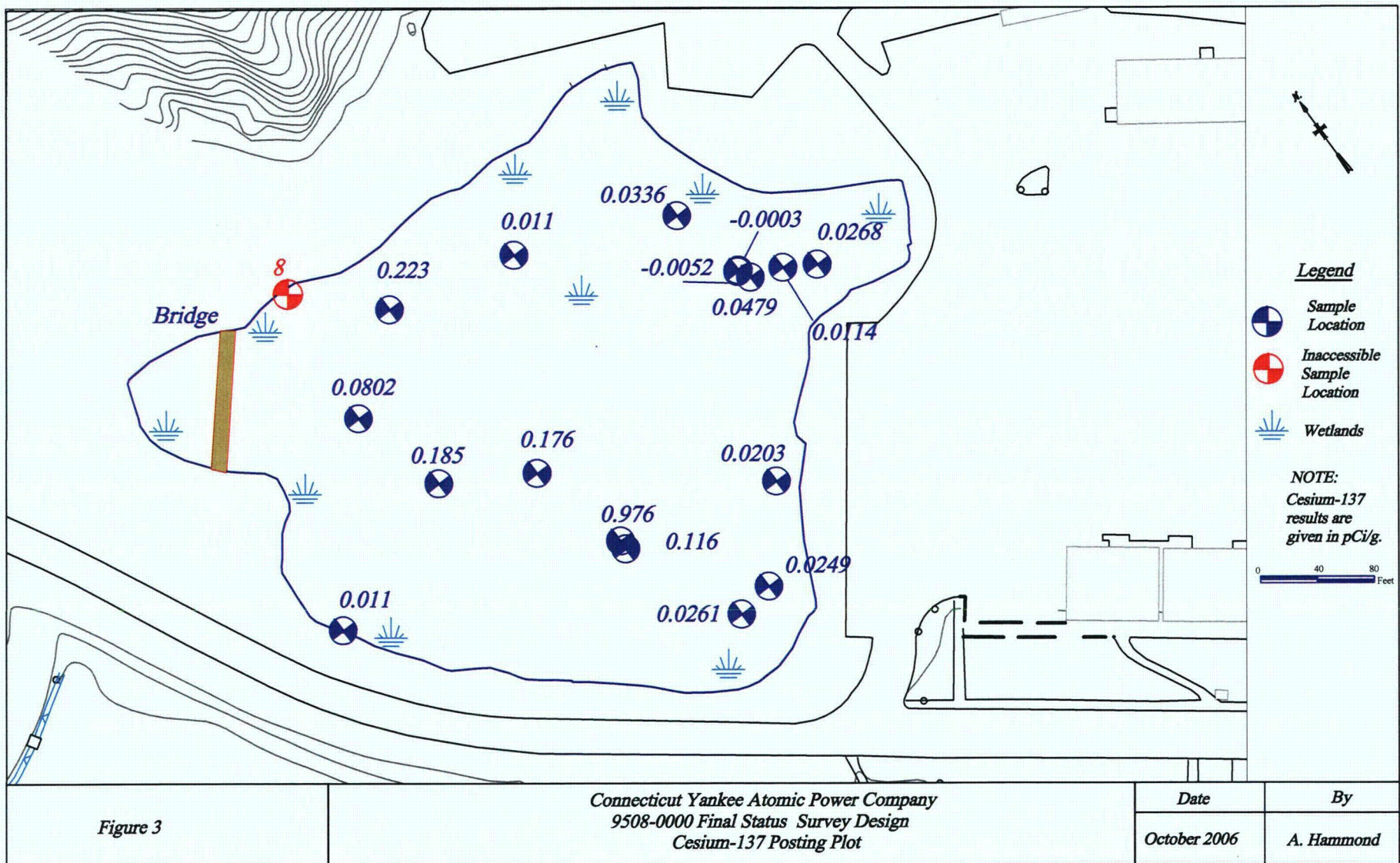


Figure 2

Connecticut Yankee Atomic Power Company  
9508-0000 Final Status Survey Design

Date	By
October 2006	A. Hammond





POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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Attachment 2  
Sample and Statistical Data

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SURVEY UNIT 9508-0000  
RELEASE RECORD

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Attachment 2a  
Sample Data  
(81 Pages)

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# **General Narrative**

**CASE NARRATIVE  
For  
CONNECTICUT YANKEE  
RE: Sediment  
PO# 002332  
Work Order: 166485  
SDG: MSR #06-0958**

**July 19, 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 July 6, 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):

<b><u>Sample ID</u></b>	<b><u>Client Sample ID</u></b>
166485001	9508-0000-014F
166485002	9508-0000-002F
166485003	9508-0000-016F
166485004	9508-0000-017F
166485005	9508-0000-018F
166485006	9508-0000-001F
166485007	9508-0000-009F
166485008	9508-0000-012F
166485009	9508-0000-013F
166485011	9508-0000-003F
166485012	9508-0000-004F

166485013	9508-0000-005F
166485014	9508-0000-006F
166485015	9508-0000-007F
166485016	9508-0000-010F
166485017	9508-0000-011F
166485018	9508-0000-015F
166485019	9508-0000-006FS

**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:**

Seventeen sediment samples were analyzed for FSSGAM.  
Two sediment 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

# **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. 2006-00445

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.														
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID		
9508-0000-014F	6/20/06	0817	SE	C	BP		X				Transferred from COC 2006-00428			
9508-0000-016F	6/20/06	0922	SE	C	BP	X					Transferred from COC 2006-00428			
9508-0000-017F	6/20/06	0904	SE	C	BP	X					Transferred from COC 2006-00428			
9508-0000-018F	6/20/06	0842	SE	C	BP	X					Transferred from COC 2006-00428			
9508-0000-002F	6/16/06	1507	SE	C	BP		X				Transferred from COC 2006-00410			
9508-0000-001F	6/19/06	1319	SE	C	BP	X					Transferred from COC 2006-00416			
9508-0000-009F	6/19/06	1300	SE	C	BP	X					Transferred from COC 2006-00416			
9508-0000-012F	6/19/06	1337	SE	C	BP	X					Transferred from COC 2006-00416			
9508-0000-013F	6/19/06	1402	SE	C	BP	X					Transferred from COC 2006-00416			
9508-0000-012FS	6/19/06	1337	SE	C	BP	X					Transferred from COC 2006-00416			
NOTES: PO #: 002332 MSR #: 06-0958 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 SAMME RUIARTE			Date/Time 7-05-06/1310		2) Received By AMC			Date/Time 7-6-06 0915						
3) Relinquished By			Date/Time		4) Received By			Date/Time		Bill of Lading # 7904 8721 7652				

Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						Chain of Custody Form					No. 2006-00446		
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-2556 Ext. 3024						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.													
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID	
9508-0000-003F	6/19/06	0846	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-004F	6/19/06	0810	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-005F	6/19/06	0912	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-006F	6/19/06	1057	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-007F	6/19/06	0931	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-010F	6/19/06	1025	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-011F	6/19/06	0745	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-015F	6/19/06	0955	SE	C	BP	X					Transferred from COC 2006-00415		
9508-0000-006FS	6/19/06	1057	SE	C	BP	X					Transferred from COC 2006-00415		
NOTES: PO #: 002332 MSR #: 06-0958 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 JAIME RICARTE			Date/Time 7-05-06 / 13 10			2) Received By <i>Adriana</i>			Date/Time 7-6-06 0915			Bill of Lading # 7904 8721 7641	
3) Relinquished By			Date/Time			4) Received By			Date/Time				

Figure 1. Sample Check-in List

Date/Time Received: 7-6-06 0915

SDG#: MSR# 06-0958

Work Order Number: 7041

Shipping Container ID: 7704-87217652 Chain of Custody #: 2006-00446  
2006-00445

1. Custody Seals on shipping container intact? Yes ☒ No ☐
2. Custody Seals dated and signed? Yes ☒ No ☐
3. Chain-of-Custody record present? Yes ☒ No ☐
4. Cooler temperature 23°C
5. Vermiculite/packing materials is: Wet ☐ Dry ☐ N/A ✓
6. Number of samples in shipping container: 9 / 10
7. Sample holding times exceeded? Yes ☒ No ☐

8. Samples have:

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

9. Samples are:

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

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

Sample Custodian/Laboratory: Ally Date: 7-6-06 0915

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

CPM = 40

# RADIOLOGICAL ANALYSIS



**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 166485**

**Method/Analysis Information**

<b>Product:</b>	<b>Alphaspec Am241, Cm, Solid ALL FSS</b>
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:	545706
Prep Batch Number:	545649
Dry Soil Prep GL-RAD-A-021 Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201129853	Method Blank (MB)
1201129854	166485001(9508-0000-014F) Sample Duplicate (DUP)
1201129855	166485001(9508-0000-014F) Matrix Spike (MS)
1201129856	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: 166485001 (9508-0000-014F).

**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**

<b>Product:</b>	<b>Alphaspec Pu, Solid-ALL FSS</b>
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:	545707
Prep Batch Number:	545649
Dry Soil Prep GL-RAD-A-021 Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201129857	Method Blank (MB)
1201129858	166485001(9508-0000-014F) Sample Duplicate (DUP)
1201129859	166485001(9508-0000-014F) Matrix Spike (MS)
1201129860	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: 166485001 (9508-0000-014F).

##### **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**

Sample 166485002 (9508-0000-002F) was recounted due to detector error.

**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**

<b>Product:</b>	<b>Liquid Scint Pu241, Solid-ALL FSS</b>
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:	545708
Prep Batch Number:	545649
Dry Soil Prep GL-RAD-A-021 Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201129861	Method Blank (MB)
1201129862	166485001(9508-0000-014F) Sample Duplicate (DUP)
1201129863	166485001(9508-0000-014F) Matrix Spike (MS)
1201129864	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: 166485001 (9508-0000-014F).

##### **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**

<b>Product:</b>	<b>Gamma,Solid-FSS GAM &amp; ALL FSS 226 Ingrowth Waived</b>
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	546509
Prep Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
166485003	9508-0000-016F
166485004	9508-0000-017F
166485005	9508-0000-018F
166485006	9508-0000-001F
166485007	9508-0000-009F
166485008	9508-0000-012F
166485009	9508-0000-013F
166485010	9508-0000-012FS
166485011	9508-0000-003F
166485012	9508-0000-004F
166485013	9508-0000-005F
166485014	9508-0000-006F
166485015	9508-0000-007F
166485016	9508-0000-010F
166485017	9508-0000-011F
166485018	9508-0000-015F
166485019	9508-0000-006FS
1201131760	Method Blank (MB)
1201131761	166485001(9508-0000-014F) Sample Duplicate (DUP)
1201131762	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# 11.

#### **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: 166485001 (9508-0000-014F).

##### **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. The following NCR was generated for this SDG:  
NCR 336011 was generated due to Failed RPD for DUP. 1. The relative percent difference for Pb-212 does not meet the requirements at 34%. The relative error ratio does not meet the requirements at 6.75.  
1. Pb-212 is a naturally occurring isotope in soils. Reporting results.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**



Qualifier	Reason	Analyte	Sample
UI	Data rejected due to interference.	Europium-155	166485001
			166485011
			166485018
			1201131761
		Manganese-54	166485017
UI	Data rejected due to low abundance.	Cesium-134	166485001
			166485006
			166485008
			166485011
			166485012
			166485013
			166485015
			166485016
			166485017
			166485018
			166485019
		Europium-154	166485010

#### **Method/Analysis Information**

<b>Product:</b>	<b>GFPC, Sr90, solid-ALL FSS</b>
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:	545960
Prep Batch Number:	545649
Dry Soil Prep GL-RAD-A-021 Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201130462	Method Blank (MB)
1201130463	166485002(9508-0000-002F) Sample Duplicate (DUP)
1201130464	166485002(9508-0000-002F) Matrix Spike (MS)
1201130465	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: 166485002 (9508-0000-002F).

##### **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**

Samples 1201130462 (MB), 1201130463 (9508-0000-002F), 1201130464 (9508-0000-002F), 1201130465 (LCS), 166485001 (9508-0000-014F) and 166485002 (9508-0000-002F) were dried and reweighed due to low matrix spike recovery.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Liquid Scint Tc99, Solid-ALL FSS</b>
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	545863

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201130239	Method Blank (MB)
1201130240	166485002(9508-0000-002F) Sample Duplicate (DUP)
1201130241	166485002(9508-0000-002F) Matrix Spike (MS)
1201130242	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 volume in this batch.

**Designated QC**

The following sample was used for QC: 166485002 (9508-0000-002F).

**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 1201130240 (9508-0000-002F) and 166485001 (9508-0000-014F) were recounted due to high MDAs.

**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**

<b>Product:</b>	<b>Liquid Scint Fe55, Solid-ALL FSS</b>
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:	545967
Prep Batch Number:	545649
Dry Soil Prep GL-RAD-A-021 Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201130484	Method Blank (MB)
1201130485	166485001(9508-0000-014F) Sample Duplicate (DUP)
1201130486	166485001(9508-0000-014F) Matrix Spike (MS)
1201130487	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 volume in this batch.

##### **Designated QC**

The following sample was used for QC: 166485001 (9508-0000-014F).

##### **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**

<b>Product:</b>	<b>Liquid Scint Ni63, Solid-ALL FSS</b>
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:	545969
Prep Batch Number:	545649
Dry Soil Prep GL-RAD-A-021 Batch Number:	545648

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201130488	Method Blank (MB)
1201130489	166485001(9508-0000-014F) Sample Duplicate (DUP)
1201130490	166485001(9508-0000-014F) Matrix Spike (MS)
1201130491	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: 166485001 (9508-0000-014F).

**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:** 545859

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201130223	Method Blank (MB)
1201130224	164553003(06-SS-06-016(11E2)) Sample Duplicate (DUP)
1201130225	164553003(06-SS-06-016(11E2)) Matrix Spike (MS)
1201130226	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# 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: 164553003 (06-SS-06-016(11E2)).

#### **QC Information**

All of the QC samples met the required acceptance limits.



**Technical Information:****Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples were reprepared due to low/high recovery.

**Miscellaneous Information:****NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS  
**Analytical Method:** EPA EERF C-01 Modified  
**Analytical Batch Number:** 547646

<b>Sample ID</b>	<b>Client ID</b>
166485001	9508-0000-014F
166485002	9508-0000-002F
1201134169	Method Blank (MB)
1201134170	166485002(9508-0000-002F) Sample Duplicate (DUP)
1201134171	166485002(9508-0000-002F) Matrix Spike (MS)
1201134172	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: 166485002 (9508-0000-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

**Sample Re-prep/Re-analysis**

Samples were reprepared due to low/high recovery.

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**


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

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

**Review Validation:**

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

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

Reviewer/Date:  7/20/06

COMPANY - WIDE NONCONFORMANCE REPORT			
<b>Mo. Day Yr.</b> 18-JUL-06	<b>Division:</b> Radiochemistry	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Material
<b>Instrument Type:</b> GAMMA SPECTROMETER	<b>Test / Method:</b> GCSGAMMS	<b>Matrix Type:</b> Solid	<b>Client Code:</b> YANK001
<b>Batch ID:</b> 546509	<b>Sample Numbers:</b> 166485001, 1201131761		
<b>Potentially affected work order(s)(SDG): 166485(MSR#06-0958)</b> <b>Application Issues:</b> Failed RPD for DUP			
<b>Specification and Requirements</b> <b>Nonconformance Description:</b>		<b>NRG Disposition:</b>	
1. The relative percent difference for Pb-212 does not meet the requirements at 34%. The relative error ratio does not meet the requirements at 6.75.		1. Pb-212 is a naturally occurring isotope in soils. Reporting results.	

**Originator's Name:**  
Jodi Cummings      18-JUL-06

**Data Validator/Group Leader:**  
Melanie Aycock      20-JUL-06

**Quality Review:**

**Director:**

# 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#06-0958 GEL Work Order: 166485

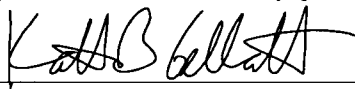
**The Qualifiers in this report are defined as follows:**

- \* 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

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

Report Date: July 20, 2006

Client Sample ID: 9508-0000-014F  
Sample ID: 166485001  
Matrix: Soil  
Collect Date: 20-JUN-06  
Receive Date: 06-JUL-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	Mtd						
Rad Alpha Spec Analysis																			
Alphaspec Am241, Cm, Solid ALL FSS																			
Americium-241	U	0.0102	+/-0.0848	0.0833	+/-0.0848	0.241	pCi/g	LCW1	07/13/06	1320	545706	1							
Curium-242	U	0.0611	+/-0.0846	0.00	+/-0.0849	0.0827	pCi/g												
Curium-243/244	U	0.00775	+/-0.0588	0.0546	+/-0.0588	0.184	pCi/g												
Alphaspec Pu, Solid-ALL FSS																			
Plutonium-238	U	-0.0113	+/-0.0489	0.0381	+/-0.0489	0.140	pCi/g	LCW1	07/12/06	1816	545707	2							
Plutonium-239/240	U	-0.00566	+/-0.0476	0.0269	+/-0.0476	0.118	pCi/g												
Liquid Scint Pu241, Solid-ALL FSS																			
Plutonium-241	U	-5.45	+/-10.3	8.88	+/-10.3	18.5	pCi/g	LCW1	07/14/06	2216	545708	3							
Rad Gamma Spec Analysis																			
Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth																			
Waived																			
Actinium-228		1.51	+/-0.163	0.0448	+/-0.163	0.093	pCi/g	MJH1	07/13/06	2341	546509	4							
Americium-241	U	-0.0142	+/-0.105	0.0732	+/-0.105	0.149	pCi/g												
Bismuth-212		0.725	+/-0.230	0.0997	+/-0.230	0.206	pCi/g												
Bismuth-214		0.961	+/-0.0798	0.0262	+/-0.0798	0.0539	pCi/g												
Cesium-134	UI	0.00	+/-0.028	0.0174	+/-0.028	0.0358	pCi/g												
Cesium-137		0.223	+/-0.0279	0.015	+/-0.0279	0.0308	pCi/g												
Cobalt-60	U	0.00603	+/-0.0175	0.0143	+/-0.0175	0.0299	pCi/g												
Europium-152	U	0.030	+/-0.0417	0.0355	+/-0.0417	0.0728	pCi/g												
Europium-154	U	0.00872	+/-0.0555	0.0451	+/-0.0555	0.0937	pCi/g												
Europium-155	UI	0.00	+/-0.0665	0.0416	+/-0.0665	0.0848	pCi/g												
Lead-212		1.47	+/-0.0585	0.022	+/-0.0585	0.0449	pCi/g												
Lead-214		1.25	+/-0.0869	0.0247	+/-0.0869	0.0507	pCi/g												
Manganese-54		0.0411	+/-0.0211	0.0121	+/-0.0211	0.0252	pCi/g												
Niobium-94	U	0.00425	+/-0.0156	0.0126	+/-0.0156	0.0258	pCi/g												
Potassium-40		24.5	+/-0.783	0.114	+/-0.783	0.241	pCi/g												
Radium-226		0.961	+/-0.0798	0.0262	+/-0.0798	0.0539	pCi/g												
Silver-108m	U	-5.020E-06	+/-0.0142	0.0117	+/-0.0142	0.024	pCi/g												
Thallium-208		0.416	+/-0.0436	0.0134	+/-0.0436	0.0275	pCi/g												
Rad Gas Flow Proportional Counting																			
GFPC, Sr90, solid-ALL FSS																			
Strontium-90	U	0.0238	+/-0.0197	0.0173	+/-0.0197	0.039	pCi/g	BXF1	07/13/06	1852	545960	5							
Rad Liquid Scintillation Analysis																			
LSC, Tritium Dist, Solid-HTD2,ALL FSS																			

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-014F  
Sample ID: 166485001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	0.00	+/-0.562	0.471	+/-0.562	0.972	pCi/g		NXP1	07/16/06	0152	545859	6
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.000721	+/-0.112	0.094	+/-0.112	0.191	pCi/g		ATH2	07/17/06	1931	547646	7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-13.4	+/-15.9	13.1	+/-16.0	27.1	pCi/g		SLN1	07/15/06	0122	545967	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63		16.2	+/-7.96	6.28	+/-7.98	12.9	pCi/g		SLN1	07/18/06	1211	545969	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.148	+/-0.236	0.201	+/-0.236	0.409	pCi/g		EGD1	07/19/06	0628	545863	11

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	JMB1	07/07/06	0900	545649
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	SXW2	07/06/06	1741	545648

### 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	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	93	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	91	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	61	(25%-125%)



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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: July 20, 2006

Client Sample ID: 9508-0000-014F  
Sample ID: 166485001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			77		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Fe55, Solid-ALL FS			79		(15%-125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			81		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			68		(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: July 20, 2006

Client Sample ID: 9508-0000-002F  
Sample ID: 166485002  
Matrix: Soil  
Collect Date: 16-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 11.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd						
Rad Alpha Spec Analysis																			
Alphaspec Am241, Cm, Solid ALL FSS																			
Americium-241	U	-0.0266	+/-0.060	0.0944	+/-0.0601	0.301	pCi/g	LCW1	07/13/06	1320	545706	1							
Curium-242	U	0.0465	+/-0.0912	0.00	+/-0.0914	0.126	pCi/g												
Curium-243/244	U	0.0315	+/-0.0836	0.0473	+/-0.0837	0.207	pCi/g												
Alphaspec Pu, Solid-ALL FSS																			
Plutonium-238	U	-0.0547	+/-0.0405	0.0982	+/-0.0409	0.284	pCi/g	LCW1	07/12/06	2303	545707	2							
Plutonium-239/240	U	-0.10	+/-0.0897	0.153	+/-0.0903	0.394	pCi/g												
Liquid Scint Pu241, Solid-ALL FSS																			
Plutonium-241	U	0.218	+/-8.95	7.50	+/-8.95	15.7	pCi/g	LCW1	07/14/06	2232	545708	3							
Rad Gamma Spec Analysis																			
Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth																			
Waived																			
Actinium-228		0.503	+/-0.116	0.0381	+/-0.116	0.0807	pCi/g	MJH1	07/14/06	0753	546509	4							
Americium-241	U	0.0366	+/-0.0846	0.0597	+/-0.0846	0.123	pCi/g												
Bismuth-212		0.373	+/-0.201	0.0803	+/-0.201	0.169	pCi/g												
Bismuth-214		0.308	+/-0.0565	0.0183	+/-0.0565	0.0384	pCi/g												
Cesium-134	U	0.0207	+/-0.0177	0.0137	+/-0.0177	0.0287	pCi/g												
Cesium-137	U	0.011	+/-0.0186	0.0113	+/-0.0186	0.0237	pCi/g												
Cobalt-60	U	-0.00388	+/-0.0142	0.0115	+/-0.0142	0.0248	pCi/g												
Europium-152	U	0.00242	+/-0.030	0.0272	+/-0.030	0.0565	pCi/g												
Europium-154	U	0.0149	+/-0.0431	0.0372	+/-0.0431	0.0792	pCi/g												
Europium-155	U	0.0161	+/-0.0326	0.0305	+/-0.0326	0.0627	pCi/g												
Lead-212		0.471	+/-0.0514	0.0153	+/-0.0514	0.0317	pCi/g												
Lead-214		0.357	+/-0.059	0.0186	+/-0.059	0.0387	pCi/g												
Manganese-54	U	-0.0038	+/-0.013	0.0112	+/-0.013	0.0237	pCi/g												
Niobium-94	U	0.007	+/-0.0112	0.00984	+/-0.0112	0.0207	pCi/g												
Potassium-40		11.3	+/-0.941	0.0969	+/-0.941	0.211	pCi/g												
Radium-226		0.308	+/-0.0565	0.0183	+/-0.0565	0.0384	pCi/g												
Silver-108m	U	-0.00316	+/-0.0107	0.00934	+/-0.0107	0.0195	pCi/g												
Thallium-208		0.178	+/-0.0334	0.00863	+/-0.0334	0.0183	pCi/g												
Rad Gas Flow Proportional Counting																			
GFPC, Sr90, solid-ALL FSS																			
Strontium-90	U	-0.000179	+/-0.0163	0.0184	+/-0.0163	0.0413	pCi/g	BXF1	07/13/06	1852	545960	5							
Rad Liquid Scintillation Analysis																			
LSC, Tritium Dist, Solid-HTD2,ALL FSS																			
Tritium	U	0.00	+/-0.456	0.382	+/-0.456	0.788	pCi/g	NXP1	07/16/06	0323	545859	6							

# 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: July 20, 2006

Client Sample ID: 9508-0000-002F  
Sample ID: 166485002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Liquid Scintillation Analysis</b>													
<i>Liquid Scint C14, Solid ALL FSS</i> Carbon-14	U	0.0147	+/-0.115	0.096	+/-0.115	0.195	pCi/g		ATH2	07/17/06	2033	547646	7
<i>Liquid Scint Fe55, Solid-ALL FSS</i> Iron-55	U	-9.04	+/-14.9	12.2	+/-15.0	25.3	pCi/g		SLN1	07/15/06	0154	545967	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i> Nickel-63		15.7	+/-7.81	6.17	+/-7.83	12.6	pCi/g		SLN1	07/18/06	1243	545969	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i> Technetium-99	U	0.372	+/-0.297	0.239	+/-0.297	0.491	pCi/g		EGD1	07/16/06	0639	545863	11

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	JMB1	07/07/06	0900	545649
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	SXW2	07/06/06	1741	545648

### 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	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	62	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	89	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	81	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	76	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	77	(15%-125%)

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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: July 20, 2006

Client Sample ID: 9508-0000-002F  
Sample ID: 166485002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			84		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			78		(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.

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-016F  
Sample ID: 166485003  
Matrix: Soil  
Collect Date: 20-JUN-06  
Receive Date: 06-JUL-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	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.501	+/-0.0944	0.0313	+/-0.0944	0.0627	pCi/g						
Americium-241	U	0.00947	+/-0.0475	0.0396	+/-0.0475	0.0791	pCi/g						
Bismuth-212		0.352	+/-0.161	0.0828	+/-0.161	0.166	pCi/g						
Bismuth-214		0.286	+/-0.0495	0.0203	+/-0.0495	0.0405	pCi/g						
Cesium-134	U	0.0182	+/-0.0197	0.0132	+/-0.0197	0.0263	pCi/g						
Cesium-137	U-0.000299		+/-0.0133	0.0114	+/-0.0133	0.0228	pCi/g						
Cobalt-60	U	-0.0032	+/-0.0134	0.0111	+/-0.0134	0.0223	pCi/g						
Europium-152	U	-0.0133	+/-0.0352	0.027	+/-0.0352	0.0539	pCi/g						
Europium-154	U	0.0116	+/-0.0418	0.0363	+/-0.0418	0.0726	pCi/g						
Europium-155	U	-0.00318	+/-0.0329	0.030	+/-0.0329	0.060	pCi/g						
Lead-212		0.385	+/-0.046	0.0169	+/-0.046	0.0338	pCi/g						
Lead-214		0.281	+/-0.0546	0.020	+/-0.0546	0.0399	pCi/g						
Manganese-54	U	0.00167	+/-0.0119	0.0106	+/-0.0119	0.0211	pCi/g						
Niobium-94	U	0.00341	+/-0.0113	0.00984	+/-0.0113	0.0197	pCi/g						
Potassium-40		11.2	+/-0.877	0.0913	+/-0.877	0.182	pCi/g						
Radium-226		0.286	+/-0.0495	0.0203	+/-0.0495	0.0405	pCi/g						
Silver-108m	U	-0.00637	+/-0.0108	0.00932	+/-0.0108	0.0186	pCi/g						
Thallium-208		0.120	+/-0.027	0.00993	+/-0.027	0.0199	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	SXW2	07/06/06	1741	545648

### 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: July 20, 2006

Client Sample ID: 9508-0000-016F  
Sample ID: 166485003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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: July 20, 2006

Client Sample ID: 9508-0000-017F  
Sample ID: 166485004  
Matrix: Soil  
Collect Date: 20-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 17%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.417	+/-0.0838	0.033	+/-0.0838	0.0707	pCi/g						
Americium-241	U	-0.0787	+/-0.0757	0.0581	+/-0.0757	0.120	pCi/g						
Bismuth-212		0.309	+/-0.186	0.0728	+/-0.186	0.155	pCi/g						
Bismuth-214		0.304	+/-0.056	0.018	+/-0.056	0.038	pCi/g						
Cesium-134	U	0.0155	+/-0.0228	0.0128	+/-0.0228	0.027	pCi/g						
Cesium-137	U	0.0114	+/-0.0228	0.00952	+/-0.0228	0.0202	pCi/g						
Cobalt-60	U	0.00323	+/-0.0138	0.012	+/-0.0138	0.0258	pCi/g						
Europium-152	U	-0.0123	+/-0.0311	0.026	+/-0.0311	0.0543	pCi/g						
Europium-154	U	-0.0154	+/-0.0442	0.0365	+/-0.0442	0.078	pCi/g						
Europium-155	U	0.00632	+/-0.0341	0.0323	+/-0.0341	0.0665	pCi/g						
Lead-212		0.406	+/-0.0331	0.0163	+/-0.0331	0.0336	pCi/g						
Lead-214		0.342	+/-0.0443	0.0185	+/-0.0443	0.0387	pCi/g						
Manganese-54	U	-0.00676	+/-0.0127	0.0102	+/-0.0127	0.0217	pCi/g						
Niobium-94	U	0.00652	+/-0.0109	0.00976	+/-0.0109	0.0206	pCi/g						
Potassium-40		11.2	+/-0.618	0.0913	+/-0.618	0.201	pCi/g						
Radium-226		0.304	+/-0.056	0.018	+/-0.056	0.038	pCi/g						
Silver-108m	U	0.00793	+/-0.00974	0.00915	+/-0.00974	0.0192	pCi/g						
Thallium-208		0.131	+/-0.0289	0.00999	+/-0.0289	0.021	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	SXW2	07/06/06	1741	545648

### 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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-017F  
Sample ID: 166485004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.



**GENERAL ENGINEERING LABORATORIES, LLC**  
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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: July 20, 2006

Client Sample ID: 9508-0000-018F  
Sample ID: 166485005  
Matrix: Soil  
Collect Date: 20-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 13.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.435	+/-0.119	0.0422	+/-0.119	0.0895	pCi/g		MJH1	07/14/06	0856	546509	1
Americium-241	U	0.0046	+/-0.0178	0.0153	+/-0.0178	0.0314	pCi/g						
Bismuth-212		0.351	+/-0.194	0.0888	+/-0.194	0.188	pCi/g						
Bismuth-214		0.286	+/-0.0607	0.0211	+/-0.0607	0.0443	pCi/g						
Cesium-134	U	0.0286	+/-0.0216	0.015	+/-0.0216	0.0314	pCi/g						
Cesium-137		0.0249	+/-0.0131	0.0113	+/-0.0131	0.0238	pCi/g						
Cobalt-60	U	0.00521	+/-0.0144	0.0125	+/-0.0144	0.0269	pCi/g						
Europium-152	U	-0.0149	+/-0.0372	0.0289	+/-0.0372	0.060	pCi/g						
Europium-154	U	0.0393	+/-0.0443	0.0386	+/-0.0443	0.0824	pCi/g						
Europium-155	U	0.0318	+/-0.041	0.0254	+/-0.041	0.0522	pCi/g						
Lead-212		0.464	+/-0.0618	0.0153	+/-0.0618	0.0315	pCi/g						
Lead-214		0.333	+/-0.0595	0.0223	+/-0.0595	0.0462	pCi/g						
Manganese-54	U	-0.00817	+/-0.0143	0.0121	+/-0.0143	0.0256	pCi/g						
Niobium-94	U	0.0095	+/-0.0125	0.0111	+/-0.0125	0.0233	pCi/g						
Potassium-40		11.2	+/-0.896	0.0954	+/-0.896	0.210	pCi/g						
Radium-226		0.286	+/-0.0607	0.0211	+/-0.0607	0.0443	pCi/g						
Silver-108m	U	0.00164	+/-0.0112	0.00997	+/-0.0112	0.0208	pCi/g						
Thallium-208		0.153	+/-0.0301	0.0114	+/-0.0301	0.024	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	SXW2	07/06/06	1741	545648

**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

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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: July 20, 2006

Client Sample ID: 9508-0000-018F  
Sample ID: 166485005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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> 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: July 20, 2006

Client Sample ID: 9508-0000-001F  
Sample ID: 166485006  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 13%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.376	+/-0.0951	0.0334	+/-0.0951	0.0712	pCi/g						
Americium-241	U	-0.0129	+/-0.0501	0.0425	+/-0.0501	0.0873	pCi/g						
Bismuth-212		0.282	+/-0.133	0.0776	+/-0.133	0.164	pCi/g						
Bismuth-214		0.229	+/-0.0479	0.019	+/-0.0479	0.0399	pCi/g						
Cesium-134	UI	0.00	+/-0.0265	0.0131	+/-0.0265	0.0274	pCi/g						
Cesium-137	U	-0.00523	+/-0.013	0.00928	+/-0.013	0.0196	pCi/g						
Cobalt-60	U	-0.0019	+/-0.0132	0.011	+/-0.0132	0.0236	pCi/g						
Europium-152	U	0.000227	+/-0.0304	0.0243	+/-0.0304	0.0507	pCi/g						
Europium-154	U	0.00218	+/-0.0443	0.0325	+/-0.0443	0.0696	pCi/g						
Europium-155	U	0.0407	+/-0.033	0.0273	+/-0.033	0.0562	pCi/g						
Lead-212		0.323	+/-0.0364	0.016	+/-0.0364	0.0329	pCi/g						
Lead-214		0.332	+/-0.0532	0.0174	+/-0.0532	0.0364	pCi/g						
Manganese-54	U	0.013	+/-0.012	0.0113	+/-0.012	0.0237	pCi/g						
Niobium-94	U	0.00812	+/-0.0105	0.00934	+/-0.0105	0.0196	pCi/g						
Potassium-40		11.1	+/-0.562	0.0852	+/-0.562	0.187	pCi/g						
Radium-226		0.229	+/-0.0479	0.019	+/-0.0479	0.0399	pCi/g						
Silver-108m	U	-0.00228	+/-0.0098	0.0086	+/-0.0098	0.018	pCi/g						
Thallium-208		0.141	+/-0.028	0.00976	+/-0.028	0.0205	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	SXW2	07/06/06	1741	545648

### 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

# 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: July 20, 2006

Client Sample ID: 9508-0000-001F  
Sample ID: 166485006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.

# 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: July 20, 2006

Client Sample ID: 9508-0000-009F  
Sample ID: 166485007  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-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	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.501	+/-0.148	0.0558	+/-0.148	0.119	pCi/g						
Americium-241	U	0.013	+/-0.0405	0.0332	+/-0.0405	0.0684	pCi/g						
Bismuth-212		0.403	+/-0.380	0.118	+/-0.380	0.249	pCi/g						
Bismuth-214		0.310	+/-0.0906	0.0324	+/-0.0906	0.0678	pCi/g						
Cesium-134	U	0.0307	+/-0.0222	0.0201	+/-0.0222	0.0422	pCi/g						
Cesium-137		0.0336	+/-0.0249	0.0151	+/-0.0249	0.032	pCi/g						
Cobalt-60	U	-0.00638	+/-0.0177	0.0136	+/-0.0177	0.0299	pCi/g						
Europium-152	U	0.00412	+/-0.0462	0.0383	+/-0.0462	0.0799	pCi/g						
Europium-154	U	0.0122	+/-0.0585	0.0483	+/-0.0585	0.104	pCi/g						
Europium-155	U	0.0149	+/-0.0475	0.0373	+/-0.0475	0.0767	pCi/g						
Lead-212		0.396	+/-0.072	0.0259	+/-0.072	0.0533	pCi/g						
Lead-214		0.364	+/-0.0752	0.0301	+/-0.0752	0.0626	pCi/g						
Manganese-54	U	0.0199	+/-0.023	0.0162	+/-0.023	0.0344	pCi/g						
Niobium-94	U	0.00192	+/-0.0165	0.0141	+/-0.0165	0.0297	pCi/g						
Potassium-40		13.2	+/-1.10	0.130	+/-1.10	0.288	pCi/g						
Radium-226		0.310	+/-0.0906	0.0324	+/-0.0906	0.0678	pCi/g						
Silver-108m	U	0.0115	+/-0.017	0.0144	+/-0.017	0.030	pCi/g						
Thallium-208		0.182	+/-0.0415	0.0147	+/-0.0415	0.031	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	SXW2	07/06/06	1741	545648

### 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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-009F  
Sample ID: 166485007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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> 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: July 20, 2006

Client Sample ID: 9508-0000-012F  
Sample ID: 166485008  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 16.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.503	+/-0.121	0.0381	+/-0.121	0.0812	pCi/g						
Americium-241	U	0.0836	+/-0.115	0.0695	+/-0.115	0.144	pCi/g						
Bismuth-212		0.226	+/-0.163	0.0909	+/-0.163	0.192	pCi/g						
Bismuth-214		0.291	+/-0.0625	0.0202	+/-0.0625	0.0425	pCi/g						
Cesium-134	UI	0.00	+/-0.0191	0.0141	+/-0.0191	0.0296	pCi/g						
Cesium-137		0.0479	+/-0.0253	0.0118	+/-0.0253	0.0248	pCi/g						
Cobalt-60	U	0.00267	+/-0.0168	0.0144	+/-0.0168	0.0307	pCi/g						
Europium-152	U	-0.014	+/-0.0347	0.0286	+/-0.0347	0.0596	pCi/g						
Europium-154	U	0.0148	+/-0.0439	0.0383	+/-0.0439	0.0818	pCi/g						
Europium-155	U	0.0141	+/-0.0363	0.0338	+/-0.0363	0.0697	pCi/g						
Lead-212		0.527	+/-0.0633	0.0174	+/-0.0633	0.0361	pCi/g						
Lead-214		0.354	+/-0.0685	0.0214	+/-0.0685	0.0445	pCi/g						
Manganese-54	U	0.00694	+/-0.0137	0.0119	+/-0.0137	0.0251	pCi/g						
Niobium-94	U	0.00233	+/-0.0127	0.011	+/-0.0127	0.023	pCi/g						
Potassium-40		11.1	+/-0.942	0.107	+/-0.942	0.234	pCi/g						
Radium-226		0.291	+/-0.0625	0.0202	+/-0.0625	0.0425	pCi/g						
Silver-108m	U	-0.00518	+/-0.0112	0.00973	+/-0.0112	0.0204	pCi/g						
Thallium-208		0.141	+/-0.0321	0.0112	+/-0.0321	0.0236	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	SXW2	07/06/06	1741	545648

**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

# 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: July 20, 2006

Client Sample ID: 9508-0000-012F  
Sample ID: 166485008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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: July 20, 2006

Client Sample ID: 9508-0000-013F  
Sample ID: 166485009  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-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
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.25	+/-0.238	0.072	+/-0.238	0.144	pCi/g						
Americium-241	U	0.0774	+/-0.085	0.0619	+/-0.085	0.124	pCi/g		MJH1	07/13/06	2351	546509	1
Bismuth-212		0.861	+/-0.379	0.160	+/-0.379	0.320	pCi/g						
Bismuth-214		0.875	+/-0.130	0.036	+/-0.130	0.0719	pCi/g						
Cesium-134	U	0.0255	+/-0.0292	0.0254	+/-0.0292	0.0509	pCi/g						
Cesium-137		0.0802	+/-0.0403	0.0205	+/-0.0403	0.0409	pCi/g						
Cobalt-60	U	-0.00255	+/-0.0268	0.0217	+/-0.0268	0.0433	pCi/g						
Europium-152	U	-0.0347	+/-0.0841	0.0515	+/-0.0841	0.103	pCi/g						
Europium-154	U	0.0266	+/-0.0752	0.0633	+/-0.0752	0.126	pCi/g						
Europium-155	U	0.029	+/-0.0726	0.0544	+/-0.0726	0.109	pCi/g						
Lead-212		1.25	+/-0.124	0.0303	+/-0.124	0.0605	pCi/g						
Lead-214		0.990	+/-0.125	0.0368	+/-0.125	0.0736	pCi/g						
Manganese-54	U	-0.00404	+/-0.0253	0.0208	+/-0.0253	0.0417	pCi/g						
Niobium-94	U	0.00914	+/-0.0224	0.0192	+/-0.0224	0.0384	pCi/g						
Potassium-40		18.6	+/-1.50	0.190	+/-1.50	0.379	pCi/g						
Radium-226		0.875	+/-0.130	0.036	+/-0.130	0.0719	pCi/g						
Silver-108m	U	-0.0271	+/-0.0239	0.0171	+/-0.0239	0.0341	pCi/g						
Thallium-208		0.382	+/-0.0602	0.0184	+/-0.0602	0.0367	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	SXW2	07/06/06	1741	545648

### 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

# 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: July 20, 2006

Client Sample ID: 9508-0000-013F  
Sample ID: 166485009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-012FS  
Sample ID: 166485010  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 15.8%

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													
Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth													
Waived													
Actinium-228		0.566	+/-0.0992	0.0305	+/-0.0992	0.0641	pCi/g		MJH1	07/14/06	0857	546509	1
Americium-241	U	-0.0464	+/-0.0691	0.0543	+/-0.0691	0.112	pCi/g						
Bismuth-212		0.274	+/-0.152	0.0692	+/-0.152	0.145	pCi/g						
Bismuth-214		0.330	+/-0.0471	0.0182	+/-0.0471	0.0377	pCi/g						
Cesium-134	U	0.0144	+/-0.0122	0.0114	+/-0.0122	0.0237	pCi/g						
Cesium-137		0.0268	+/-0.0149	0.00922	+/-0.0149	0.0192	pCi/g						
Cobalt-60	U	0.000336	+/-0.011	0.00915	+/-0.011	0.0195	pCi/g						
Europium-152	U	-0.0197	+/-0.0269	0.0237	+/-0.0269	0.0491	pCi/g						
Europium-154	UI	0.00	+/-0.083	0.0295	+/-0.083	0.0622	pCi/g						
Europium-155	U	0.0423	+/-0.0336	0.0325	+/-0.0336	0.0667	pCi/g						
Lead-212		0.511	+/-0.0339	0.0149	+/-0.0339	0.0306	pCi/g						
Lead-214		0.338	+/-0.0467	0.0179	+/-0.0467	0.037	pCi/g						
Manganese-54	U	0.000988	+/-0.0111	0.00971	+/-0.0111	0.0203	pCi/g						
Niobium-94	U	-0.0103	+/-0.00964	0.00762	+/-0.00964	0.016	pCi/g						
Potassium-40		12.5	+/-0.518	0.0805	+/-0.518	0.173	pCi/g						
Radium-226		0.330	+/-0.0471	0.0182	+/-0.0471	0.0377	pCi/g						
Silver-108m	U	-0.00424	+/-0.00923	0.00801	+/-0.00923	0.0167	pCi/g						
Thallium-208		0.148	+/-0.022	0.00927	+/-0.022	0.0193	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	SXW2	07/06/06	1741	545648

### 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

# 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: July 20, 2006

Client Sample ID: 9508-0000-012FS  
Sample ID: 166485010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.

# 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: July 20, 2006

Client Sample ID: 9508-0000-003F  
Sample ID: 166485011  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 23.7%

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

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

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

Actinium-228		1.53	+/-0.264	0.0903	+/-0.264	0.180	pCi/g						
Americium-241	U	0.0707	+/-0.125	0.0887	+/-0.125	0.177	pCi/g						
Bismuth-212		1.23	+/-0.375	0.190	+/-0.375	0.379	pCi/g						
Bismuth-214		0.992	+/-0.145	0.0455	+/-0.145	0.0909	pCi/g						
Cesium-134	UI	0.00	+/-0.0573	0.0326	+/-0.0573	0.0652	pCi/g						
Cesium-137		0.176	+/-0.0527	0.0253	+/-0.0527	0.0505	pCi/g						
Cobalt-60	U	0.0323	+/-0.0346	0.0304	+/-0.0346	0.0607	pCi/g						
Europium-152	U	-0.0424	+/-0.106	0.0639	+/-0.106	0.128	pCi/g						
Europium-154	U	0.065	+/-0.114	0.0854	+/-0.114	0.171	pCi/g						
Europium-155	UI	0.00	+/-0.106	0.065	+/-0.106	0.130	pCi/g						
Lead-212		1.58	+/-0.159	0.0355	+/-0.159	0.071	pCi/g						
Lead-214		1.17	+/-0.162	0.0452	+/-0.162	0.0903	pCi/g						
Manganese-54	U	-0.0124	+/-0.0309	0.0252	+/-0.0309	0.0503	pCi/g						
Niobium-94	U	0.00725	+/-0.0283	0.0231	+/-0.0283	0.0461	pCi/g						
Potassium-40		26.4	+/-2.06	0.216	+/-2.06	0.431	pCi/g						
Radium-226		0.992	+/-0.145	0.0455	+/-0.145	0.0909	pCi/g						
Silver-108m	U	0.00558	+/-0.0269	0.0222	+/-0.0269	0.0443	pCi/g						
Thallium-208		0.473	+/-0.0875	0.0243	+/-0.0875	0.0486	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	SXW2	07/06/06	1741	545648

### 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

**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: July 20, 2006

Client Sample ID: 9508-0000-003F  
Sample ID: 166485011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.

**GENERAL ENGINEERING LABORATORIES, LLC**  
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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: July 20, 2006

Client Sample ID: 9508-0000-004F  
Sample ID: 166485012  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-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	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.665	+/-0.0859	0.0283	+/-0.0859	0.0591	pCi/g						
Americium-241	U	0.00435	+/-0.0355	0.0343	+/-0.0355	0.0699	pCi/g						
Bismuth-212		0.603	+/-0.154	0.0581	+/-0.154	0.121	pCi/g						
Bismuth-214		0.396	+/-0.040	0.0153	+/-0.040	0.0318	pCi/g						
Cesium-134	UI	0.00	+/-0.0163	0.0109	+/-0.0163	0.0226	pCi/g						
Cesium-137	U	0.011	+/-0.014	0.0089	+/-0.014	0.0184	pCi/g						
Cobalt-60	U	0.000136	+/-0.0101	0.00841	+/-0.0101	0.0178	pCi/g						
Europium-152	U	0.00032	+/-0.0236	0.0214	+/-0.0236	0.0442	pCi/g						
Europium-154	U	-0.0151	+/-0.030	0.0244	+/-0.030	0.0514	pCi/g						
Europium-155	U	0.0321	+/-0.030	0.0285	+/-0.030	0.0582	pCi/g						
Lead-212		0.674	+/-0.0312	0.0131	+/-0.0312	0.0269	pCi/g						
Lead-214		0.504	+/-0.041	0.0156	+/-0.041	0.0321	pCi/g						
Manganese-54	U	-0.00808	+/-0.00971	0.00821	+/-0.00971	0.0171	pCi/g						
Niobium-94	U	-7.390E-05	+/-0.0083	0.00742	+/-0.0083	0.0154	pCi/g						
Potassium-40		12.2	+/-0.460	0.0669	+/-0.460	0.143	pCi/g						
Radium-226		0.396	+/-0.040	0.0153	+/-0.040	0.0318	pCi/g						
Silver-108m	U	-0.00206	+/-0.0085	0.00748	+/-0.0085	0.0155	pCi/g						
Thallium-208		0.209	+/-0.0232	0.00785	+/-0.0232	0.0163	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	SXW2	07/06/06	1741	545648

**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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-004F  
Sample ID: 166485012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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: July 20, 2006

Client Sample ID: 9508-0000-005F  
Sample ID: 166485013  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 28.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.37	+/-0.221	0.0641	+/-0.221	0.135	pCi/g						
Americium-241	U	-0.00378	+/-0.109	0.0748	+/-0.109	0.153	pCi/g						
Bismuth-212		1.01	+/-0.383	0.151	+/-0.383	0.314	pCi/g						
Bismuth-214		0.891	+/-0.134	0.0355	+/-0.134	0.0737	pCi/g						
Cesium-134	UI	0.00	+/-0.0524	0.026	+/-0.0524	0.0538	pCi/g						
Cesium-137		0.976	+/-0.0656	0.0207	+/-0.0656	0.0429	pCi/g						
Cobalt-60	U	-0.00143	+/-0.0264	0.0219	+/-0.0264	0.0464	pCi/g						
Europium-152	U	-0.00812	+/-0.0687	0.0538	+/-0.0687	0.111	pCi/g						
Europium-154	U	-0.0101	+/-0.0789	0.0652	+/-0.0789	0.138	pCi/g						
Europium-155	U	0.0746	+/-0.0844	0.0493	+/-0.0844	0.101	pCi/g						
Lead-212		1.51	+/-0.0829	0.0289	+/-0.0829	0.0591	pCi/g						
Lead-214		0.906	+/-0.125	0.0391	+/-0.125	0.0804	pCi/g						
Manganese-54	U	-0.00614	+/-0.0259	0.0207	+/-0.0259	0.0431	pCi/g						
Niobium-94	U	0.0106	+/-0.0228	0.019	+/-0.0228	0.0394	pCi/g						
Potassium-40		22.4	+/-1.16	0.183	+/-1.16	0.391	pCi/g						
Radium-226		0.891	+/-0.134	0.0355	+/-0.134	0.0737	pCi/g						
Silver-108m	U	6.330E-05	+/-0.0237	0.0185	+/-0.0237	0.0381	pCi/g						
Thallium-208		0.446	+/-0.0667	0.0201	+/-0.0667	0.0417	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	SXW2	07/06/06	1741	545648

### 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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-005F  
Sample ID: 166485013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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: July 20, 2006

Client Sample ID: 9508-0000-006F  
Sample ID: 166485014  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 13.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.593	+/-0.144	0.0561	+/-0.144	0.118	pCi/g						
Americium-241	U	0.00451	+/-0.0219	0.0197	+/-0.0219	0.0403	pCi/g						
Bismuth-212		0.477	+/-0.222	0.110	+/-0.222	0.230	pCi/g						
Bismuth-214		0.393	+/-0.0646	0.0283	+/-0.0646	0.0588	pCi/g						
Cesium-134	U	0.0145	+/-0.0299	0.0197	+/-0.0299	0.041	pCi/g						
Cesium-137	U	0.0268	+/-0.0234	0.0164	+/-0.0234	0.0341	pCi/g						
Cobalt-60	U	0.0151	+/-0.0254	0.0173	+/-0.0254	0.0367	pCi/g						
Europium-152	U	-0.025	+/-0.0426	0.0354	+/-0.0426	0.0733	pCi/g						
Europium-154	U	0.015	+/-0.0528	0.0455	+/-0.0528	0.0965	pCi/g						
Europium-155	U	0.0276	+/-0.0501	0.0347	+/-0.0501	0.0709	pCi/g						
Lead-212		0.466	+/-0.050	0.0221	+/-0.050	0.0454	pCi/g						
Lead-214		0.408	+/-0.069	0.0253	+/-0.069	0.0525	pCi/g						
Manganese-54	U	0.0247	+/-0.0199	0.0178	+/-0.0199	0.0371	pCi/g						
Niobium-94	U	-0.0012	+/-0.0162	0.0137	+/-0.0162	0.0287	pCi/g						
Potassium-40		10.8	+/-0.632	0.129	+/-0.632	0.278	pCi/g						
Radium-226		0.393	+/-0.0646	0.0283	+/-0.0646	0.0588	pCi/g						
Silver-108m	U	-0.00661	+/-0.0147	0.0129	+/-0.0147	0.0268	pCi/g						
Thallium-208		0.169	+/-0.0343	0.0154	+/-0.0343	0.0321	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	SXW2	07/06/06	1741	545648

**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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-006F  
Sample ID: 166485014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-007F  
Sample ID: 166485015  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 19.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.36	+/-0.295	0.111	+/-0.295	0.234	pCi/g						
Americium-241	U	-0.0148	+/-0.0402	0.0316	+/-0.0402	0.0649	pCi/g						
Bismuth-212		0.852	+/-0.701	0.212	+/-0.701	0.449	pCi/g						
Bismuth-214		0.892	+/-0.172	0.0511	+/-0.172	0.107	pCi/g						
Cesium-134	UI	0.00	+/-0.0563	0.038	+/-0.0563	0.0795	pCi/g						
Cesium-137		0.116	+/-0.0486	0.0297	+/-0.0486	0.0624	pCi/g						
Cobalt-60	U	0.0105	+/-0.0391	0.0325	+/-0.0391	0.0699	pCi/g						
Europium-152	U	-0.0344	+/-0.0909	0.064	+/-0.0909	0.133	pCi/g						
Europium-154	U	0.0866	+/-0.117	0.101	+/-0.117	0.215	pCi/g						
Europium-155	U	0.117	+/-0.0758	0.0621	+/-0.0758	0.127	pCi/g						
Lead-212		1.55	+/-0.197	0.0345	+/-0.197	0.0713	pCi/g						
Lead-214		1.08	+/-0.170	0.0502	+/-0.170	0.104	pCi/g						
Manganese-54	U	-0.0326	+/-0.0363	0.0284	+/-0.0363	0.060	pCi/g						
Niobium-94	U	0.00186	+/-0.0354	0.0282	+/-0.0354	0.059	pCi/g						
Potassium-40		24.4	+/-2.01	0.223	+/-2.01	0.494	pCi/g						
Radium-226		0.892	+/-0.172	0.0511	+/-0.172	0.107	pCi/g						
Silver-108m	U	-0.0185	+/-0.0314	0.0213	+/-0.0314	0.0448	pCi/g						
Thallium-208		0.493	+/-0.0924	0.0282	+/-0.0924	0.0591	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	SXW2	07/06/06	1741	545648

### 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

# 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: July 20, 2006

Client Sample ID: 9508-0000-007F  
Sample ID: 166485015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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.

# 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: July 20, 2006

Client Sample ID: 9508-0000-010F  
Sample ID: 166485016  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 16.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.605	+/-0.110	0.031	+/-0.110	0.0658	pCi/g						
Americium-241	U	-0.0244	+/-0.0266	0.0238	+/-0.0266	0.0488	pCi/g						
Bismuth-212		0.373	+/-0.169	0.0748	+/-0.169	0.157	pCi/g						
Bismuth-214		0.430	+/-0.0613	0.0183	+/-0.0613	0.0383	pCi/g						
Cesium-134	UI	0.00	+/-0.0154	0.0124	+/-0.0154	0.0259	pCi/g						
Cesium-137		0.0203	+/-0.014	0.00966	+/-0.014	0.0203	pCi/g						
Cobalt-60	U	-0.00107	+/-0.011	0.00899	+/-0.011	0.0195	pCi/g						
Europium-152	U	0.0117	+/-0.029	0.0262	+/-0.029	0.0543	pCi/g						
Europium-154	U	0.015	+/-0.0351	0.0303	+/-0.0351	0.0646	pCi/g						
Europium-155	U	0.0327	+/-0.0296	0.0271	+/-0.0296	0.0556	pCi/g						
Lead-212		0.439	+/-0.0561	0.0188	+/-0.0561	0.0385	pCi/g						
Lead-214		0.431	+/-0.0597	0.018	+/-0.0597	0.0373	pCi/g						
Manganese-54	U	0.00698	+/-0.0205	0.0104	+/-0.0205	0.0218	pCi/g						
Niobium-94	U	0.0103	+/-0.0156	0.00921	+/-0.0156	0.0193	pCi/g						
Potassium-40		10.9	+/-0.801	0.0763	+/-0.801	0.167	pCi/g						
Radium-226		0.430	+/-0.0613	0.0183	+/-0.0613	0.0383	pCi/g						
Silver-108m	U	0.00369	+/-0.0102	0.00904	+/-0.0102	0.0188	pCi/g						
Thallium-208		0.178	+/-0.0301	0.00996	+/-0.0301	0.0208	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	SXW2	07/06/06	1741	545648

### 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

# 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: July 20, 2006

Client Sample ID: 9508-0000-010F  
Sample ID: 166485016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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> 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.



# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-011F  
Sample ID: 166485017  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 26.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.32	+/-0.245	0.0887	+/-0.245	0.188	pCi/g						
Americium-241	U	-0.0687	+/-0.111	0.0878	+/-0.111	0.180	pCi/g						
Bismuth-212		0.841	+/-0.409	0.186	+/-0.409	0.392	pCi/g						
Bismuth-214		0.995	+/-0.133	0.0452	+/-0.133	0.0946	pCi/g						
Cesium-134	UI	0.00	+/-0.0521	0.0332	+/-0.0521	0.0693	pCi/g						
Cesium-137		0.185	+/-0.0523	0.0231	+/-0.0523	0.0487	pCi/g						
Cobalt-60	U	-0.0277	+/-0.0327	0.0247	+/-0.0327	0.0535	pCi/g						
Europium-152	U	0.0195	+/-0.0724	0.0594	+/-0.0724	0.123	pCi/g						
Europium-154	U	0.0374	+/-0.0996	0.0845	+/-0.0996	0.180	pCi/g						
Europium-155	U	0.0589	+/-0.0991	0.0614	+/-0.0991	0.126	pCi/g						
Lead-212		1.40	+/-0.0888	0.0335	+/-0.0888	0.069	pCi/g						
Lead-214		0.943	+/-0.127	0.0404	+/-0.127	0.0841	pCi/g						
Manganese-54	UI	0.00	+/-0.0329	0.0255	+/-0.0329	0.0536	pCi/g						
Niobium-94	U	0.0218	+/-0.0269	0.0232	+/-0.0269	0.0485	pCi/g						
Potassium-40		20.9	+/-1.31	0.198	+/-1.31	0.438	pCi/g						
Radium-226		0.995	+/-0.133	0.0452	+/-0.133	0.0946	pCi/g						
Silver-108m	U	0.00578	+/-0.0252	0.0204	+/-0.0252	0.0426	pCi/g						
Thallium-208		0.427	+/-0.0742	0.0228	+/-0.0742	0.0479	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	SXW2	07/06/06	1741	545648

### 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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-011F  
Sample ID: 166485017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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: July 20, 2006

Client Sample ID: 9508-0000-015F  
Sample ID: 166485018  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-06  
Collector: Client  
Moisture: 13.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.965	+/-0.150	0.0424	+/-0.150	0.090	pCi/g						
Americium-241	U	0.0246	+/-0.075	0.0665	+/-0.075	0.136	pCi/g						
Bismuth-212		0.674	+/-0.210	0.100	+/-0.210	0.210	pCi/g						
Bismuth-214		0.568	+/-0.0637	0.0246	+/-0.0637	0.0514	pCi/g						
Cesium-134	UI	0.00	+/-0.0311	0.0185	+/-0.0311	0.0386	pCi/g						
Cesium-137	U	0.0261	+/-0.0232	0.0129	+/-0.0232	0.0271	pCi/g						
Cobalt-60	U	0.00063	+/-0.0155	0.0131	+/-0.0155	0.0283	pCi/g						
Europium-152	U	0.001	+/-0.0394	0.0336	+/-0.0394	0.0696	pCi/g						
Europium-154	U	0.0398	+/-0.0529	0.0473	+/-0.0529	0.100	pCi/g						
Europium-155	UI	0.00	+/-0.0681	0.0404	+/-0.0681	0.0826	pCi/g						
Lead-212		0.948	+/-0.0493	0.0191	+/-0.0493	0.0393	pCi/g						
Lead-214		0.666	+/-0.0729	0.0254	+/-0.0729	0.0526	pCi/g						
Manganese-54	U	0.00191	+/-0.0315	0.0138	+/-0.0315	0.0289	pCi/g						
Niobium-94	U	0.00175	+/-0.0143	0.0123	+/-0.0143	0.0257	pCi/g						
Potassium-40		16.5	+/-0.769	0.123	+/-0.769	0.267	pCi/g						
Radium-226		0.568	+/-0.0637	0.0246	+/-0.0637	0.0514	pCi/g						
Silver-108m	U	-0.00293	+/-0.0125	0.0111	+/-0.0125	0.0231	pCi/g						
Thallium-208		0.267	+/-0.0339	0.0123	+/-0.0339	0.0258	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	SXW2	07/06/06	1741	545648

### 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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-015F  
Sample ID: 166485018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- > 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: July 20, 2006

Client Sample ID: 9508-0000-006FS  
Sample ID: 166485019  
Matrix: Soil  
Collect Date: 19-JUN-06  
Receive Date: 06-JUL-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	Mtd
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid- FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.455	+/-0.0933	0.0345	+/-0.0933	0.0736	pCi/g						
Americium-241	U	0.0329	+/-0.0495	0.044	+/-0.0495	0.0905	pCi/g						
Bismuth-212		0.292	+/-0.145	0.075	+/-0.145	0.159	pCi/g						
Bismuth-214		0.257	+/-0.0489	0.0193	+/-0.0489	0.0406	pCi/g						
Cesium-134	UI	0.00	+/-0.0258	0.0143	+/-0.0258	0.0299	pCi/g						
Cesium-137		0.0253	+/-0.0204	0.00969	+/-0.0204	0.0205	pCi/g						
Cobalt-60	U	0.00689	+/-0.0116	0.0105	+/-0.0116	0.0229	pCi/g						
Europium-152	U	0.00774	+/-0.029	0.0269	+/-0.029	0.0559	pCi/g						
Europium-154	U	0.0045	+/-0.038	0.0329	+/-0.038	0.0705	pCi/g						
Europium-155	U	0.0124	+/-0.0314	0.0296	+/-0.0314	0.0607	pCi/g						
Lead-212		0.414	+/-0.0339	0.0156	+/-0.0339	0.0323	pCi/g						
Lead-214		0.352	+/-0.0534	0.0188	+/-0.0534	0.0392	pCi/g						
Manganese-54	U	0.00312	+/-0.0117	0.0101	+/-0.0117	0.0214	pCi/g						
Niobium-94	U	0.011	+/-0.0103	0.00952	+/-0.0103	0.0201	pCi/g						
Potassium-40		11.0	+/-0.584	0.0975	+/-0.584	0.213	pCi/g						
Radium-226		0.257	+/-0.0489	0.0193	+/-0.0489	0.0406	pCi/g						
Silver-108m	U	0.00474	+/-0.00969	0.00894	+/-0.00969	0.0187	pCi/g						
Thallium-208		0.130	+/-0.0219	0.0099	+/-0.0219	0.0209	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	SXW2	07/06/06	1741	545648

**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

# GENERAL ENGINEERING LABORATORIES, LLC

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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: July 20, 2006

Client Sample ID: 9508-0000-006FS  
Sample ID: 166485019

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

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

# 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: July 20, 2006  
Page 1 of 9

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 166485

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	545706										
QC1201129854	166485001	DUP									
Americium-241	U	0.0102	U	0.063	pCi/g	144		(0% - 100%)	LCW1	07/13/06	13:20
	Uncert:	+/-0.0848		+/-0.104							
	TPU:	+/-0.0848		+/-0.104							
Curium-242	U	0.0611	U	0.00	pCi/g	0		(0% - 100%)			
	Uncert:	+/-0.0846		+/-0.096							
	TPU:	+/-0.0849		+/-0.096							
Curium-243/244	U	0.00775	U	-0.0107	pCi/g	1250		(0% - 100%)			
	Uncert:	+/-0.0588		+/-0.0895							
	TPU:	+/-0.0588		+/-0.0896							
QC1201129856	LCS										
Americium-241	11.5			12.8	pCi/g		111	(75%-125%)			
	Uncert:			+/-1.70							
	TPU:			+/-2.57							
Curium-242			U	0.0591	pCi/g						
	Uncert:			+/-0.116							
	TPU:			+/-0.116							
Curium-243/244	14.0			17.2	pCi/g		123	(75%-125%)			
	Uncert:			+/-1.97							
	TPU:			+/-3.25							
QC1201129853	MB										
Americium-241			U	-0.017	pCi/g						
	Uncert:			+/-0.0319							
	TPU:			+/-0.0319							
Curium-242			U	0.0519	pCi/g						
	Uncert:			+/-0.0829							
	TPU:			+/-0.0832							
Curium-243/244			U	0.0222	pCi/g						
	Uncert:			+/-0.0588							
	TPU:			+/-0.0589							
QC1201129855	166485001	MS									
Americium-241	11.5	U	0.0102		11.3	pCi/g		98	(75%-125%)		
	Uncert:		+/-0.0848		+/-1.20						
	TPU:		+/-0.0848		+/-1.86						
Curium-242		U	0.0611	U	0.0466	pCi/g					
	Uncert:		+/-0.0846		+/-0.105						
	TPU:		+/-0.0849		+/-0.105						
Curium-243/244	14.0	U	0.00775		14.2	pCi/g		101	(75%-125%)		
	Uncert:		+/-0.0588		+/-1.34						
	TPU:		+/-0.0588		+/-2.24						
Batch	545707										
QC1201129858	166485001	DUP									
Plutonium-238	U	-0.0113	U	0.0242	pCi/g	550		(0% - 100%)	LCW1	07/12/06	18:16

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## QC Summary

Workorder: 166485

Page 2 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time								
Rad Alpha Spec																			
Batch	545707																		
Plutonium-239/240	U	Uncert:	+/-0.0489	+/-0.0474	pCi/g	200	(0% - 100%)												
		TPU:	+/-0.0489	+/-0.0475															
			-0.00566	0.00															
		Uncert:	+/-0.0476	+/-0.0474															
		TPU:	+/-0.0476	+/-0.0474															
QC1201129860	LCS																		
Plutonium-238			U	0.0919	pCi/g		(75%-125%)			07/12/06	18:16								
Plutonium-239/240	10.7	Uncert:		+/-0.0965	pCi/g		92	(75%-125%)											
		TPU:		+/-0.097															
				9.81															
		Uncert:		+/-0.960															
		TPU:		+/-1.46															
QC1201129857	MB																		
Plutonium-238			U	-0.0464	pCi/g					07/12/06	18:20								
Plutonium-239/240		Uncert:		+/-0.258	pCi/g														
		TPU:		+/-0.258															
				-0.193															
		Uncert:		+/-0.162															
		TPU:		+/-0.164															
QC1201129859	166485001	MS																	
Plutonium-238		U	-0.0113	U	0.0391	pCi/g		(75%-125%)		07/12/06	18:16								
Plutonium-239/240	10.7	Uncert:	+/-0.0489	+/-0.0624	pCi/g		94	(75%-125%)											
		TPU:	+/-0.0489	+/-0.0625															
			-0.00566	10.1															
		Uncert:	+/-0.0476	+/-0.927															
		TPU:	+/-0.0476	+/-1.45															
Batch	545708																		
QC1201129862	166485001	DUP																	
Plutonium-241		U	-5.45	U	-2.56	pCi/g	0	(0% - 100%)	LCW1	07/14/06	23:04								
Plutonium-241		Uncert:	+/-10.3	+/-7.77	pCi/g		85	(75%-125%)											
		TPU:	+/-10.3	+/-7.77															
		123		104															
		Uncert:		+/-12.4															
QC1201129864	LCS																		
Plutonium-241										07/14/06	23:36								
Plutonium-241		TPU:		+/-16.0	pCi/g														
		QC1201129861	MB																
		Plutonium-241		U								-4.25					07/14/06	22:48	
		Uncert:		+/-15.4															
QC1201129863	166485001	MS																	
Plutonium-241		123	U	-5.45	106	pCi/g		87	(75%-125%)		07/14/06 23:20								
Plutonium-241		Uncert:	+/-10.3	+/-12.3	pCi/g														
		TPU:	+/-10.3	+/-16.5															
Rad Gamma Spec																			
Batch	546509																		
QC1201131761	166485001	DUP																	
Actinium-228			1.51	1.39	pCi/g	3	(0% - 100%)	MJH1		07/13/06	23:52								
Actinium-228		Uncert:	+/-0.163	+/-0.281	pCi/g														
				+/-0.281															

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## QC Summary

Workorder: 166485

Page 3 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 546509											
Americium-241	U	TPU:	+/-0.163								
			-0.0142	U	0.0362	pCi/g	339	(0% - 100%)			
		Uncert:	+/-0.105		+/-0.0522						
Bismuth-212		TPU:	+/-0.105		+/-0.0522						
			0.725		0.481	pCi/g	47	(0% - 100%)			
		Uncert:	+/-0.230		+/-0.470						
Bismuth-214		TPU:	+/-0.230		+/-0.470						
			0.961		0.840	pCi/g	15	(0% - 100%)			
		Uncert:	+/-0.0798		+/-0.144						
Cesium-134	UI	TPU:	+/-0.0798		+/-0.144						
			0.00	U	0.0617	pCi/g	47	(0% - 100%)			
		Uncert:	+/-0.028		+/-0.0645						
Cesium-137		TPU:	+/-0.028		+/-0.0645						
			0.223		0.0954	pCi/g	86	(0% - 100%)			
		Uncert:	+/-0.0279		+/-0.0621						
Cobalt-60	U	TPU:	+/-0.0279		+/-0.0621						
			0.00603	U	0.0072	pCi/g	10	(0% - 100%)			
		Uncert:	+/-0.0175		+/-0.0364						
Europium-152	U	TPU:	+/-0.0175		+/-0.0364						
			0.030	U	-0.0713	pCi/g	1280	(0% - 100%)			
		Uncert:	+/-0.0417		+/-0.0795						
Europium-154	U	TPU:	+/-0.0417		+/-0.0795						
			0.00872	U	0.0312	pCi/g	94	(0% - 100%)			
		Uncert:	+/-0.0555		+/-0.108						
Europium-155	UI	TPU:	+/-0.0555		+/-0.108						
			0.00	UI	0.00	pCi/g	47	(0% - 100%)			
		Uncert:	+/-0.0665		+/-0.118						
Lead-212		TPU:	+/-0.0665		+/-0.118						
			1.47		1.03	pCi/g	35	(0% - 20%)			
		Uncert:	+/-0.0585		+/-0.0981						
Lead-214		TPU:	+/-0.0585		+/-0.0981						
			1.25		1.04	pCi/g	8	(0% - 20%)			
		Uncert:	+/-0.0869		+/-0.142						
Manganese-54		TPU:	+/-0.0869		+/-0.142						
			0.0411	U	0.0411	pCi/g	23	(0% - 100%)			
		Uncert:	+/-0.0211		+/-0.0459						
Niobium-94	U	TPU:	+/-0.0211		+/-0.0459						
			0.00425	U	0.0313	pCi/g	165	(0% - 100%)			
		Uncert:	+/-0.0156		+/-0.0299						
Potassium-40		TPU:	+/-0.0156		+/-0.0299						
			24.5		21.6	pCi/g	13	(0% - 20%)			
		Uncert:	+/-0.783		+/-1.28						
Radium-226		TPU:	+/-0.783		+/-1.28						
			0.961		0.840	pCi/g	15	(0% - 100%)			
		Uncert:	+/-0.0798		+/-0.144						
Silver-108m	U	TPU:	+/-0.0798		+/-0.144						
			-5.020E-06	U	-0.0299	pCi/g	192	(0% - 100%)			
		Uncert:	+/-0.0142		+/-0.0266						

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 166485

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	546509										
Thallium-208	TPU:	+/-0.0142		+/-0.0266							
		0.416		0.431	pCi/g	10		(0% - 20%)			
	Uncert:	+/-0.0436		+/-0.0708							
	TPU:	+/-0.0436		+/-0.0708							
QC1201131762 LCS											
Actinium-228			U	-0.118	pCi/g					07/14/06	09:33
	Uncert:			+/-0.552							
	TPU:			+/-0.552							
Americium-241	23.4			25.0	pCi/g		107	(75%-125%)			
	Uncert:			+/-0.596							
	TPU:			+/-0.596							
Bismuth-212			U	0.311	pCi/g						
	Uncert:			+/-1.14							
	TPU:			+/-1.14							
Bismuth-214			U	0.0606	pCi/g						
	Uncert:			+/-0.228							
	TPU:			+/-0.228							
Cesium-134			U	-0.0983	pCi/g						
	Uncert:			+/-0.152							
	TPU:			+/-0.152							
Cesium-137	9.61			10.6	pCi/g		110	(75%-125%)			
	Uncert:			+/-0.449							
	TPU:			+/-0.449							
Cobalt-60	14.8			15.4	pCi/g		104	(75%-125%)			
	Uncert:			+/-0.668							
	TPU:			+/-0.668							
Europium-152			U	0.117	pCi/g						
	Uncert:			+/-0.263							
	TPU:			+/-0.263							
Europium-154			U	0.135	pCi/g						
	Uncert:			+/-0.316							
	TPU:			+/-0.316							
Europium-155			U	-0.171	pCi/g						
	Uncert:			+/-0.234							
	TPU:			+/-0.234							
Lead-212			U	0.031	pCi/g						
	Uncert:			+/-0.143							
	TPU:			+/-0.143							
Lead-214			U	-0.0322	pCi/g						
	Uncert:			+/-0.198							
	TPU:			+/-0.198							
Manganese-54			U	-0.0542	pCi/g						
	Uncert:			+/-0.142							
	TPU:			+/-0.142							
Niobium-94			U	-0.0255	pCi/g						
	Uncert:			+/-0.122							
	TPU:			+/-0.122							
Potassium-40			U	-0.328	pCi/g						

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**QC Summary**

Workorder: 166485

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	546509									
			Uncert:							
			TPU:							
Radium-226		U	0.0606	pCi/g			(75%-125%)			
			Uncert:							
			TPU:							
Silver-108m		U	-0.0692	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	-0.0338	pCi/g						
			Uncert:							
			TPU:							
QC1201131760 MB										
Actinium-228		U	0.0192	pCi/g					07/13/06	20:49
			Uncert:							
			TPU:							
Americium-241		U	-0.0257	pCi/g						
			Uncert:							
			TPU:							
Bismuth-212		U	0.0418	pCi/g						
			Uncert:							
			TPU:							
Bismuth-214		U	-0.01	pCi/g						
			Uncert:							
			TPU:							
Cesium-134		U	0.00565	pCi/g						
			Uncert:							
			TPU:							
Cesium-137		U	0.00311	pCi/g						
			Uncert:							
			TPU:							
Cobalt-60		U	0.00966	pCi/g						
			Uncert:							
			TPU:							
Europium-152		U	-0.00476	pCi/g						
			Uncert:							
			TPU:							
Europium-154		U	-0.0449	pCi/g						
			Uncert:							
			TPU:							
Europium-155		U	-0.0177	pCi/g						
			Uncert:							
			TPU:							
Lead-212		U	0.0255	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.0151	pCi/g						
			Uncert:							
			TPU:							

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**QC Summary**

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	546509										
Manganese-54			U	-0.00548	pCi/g						
	Uncert:			+/-0.0108							
	TPU:			+/-0.0108							
Niobium-94			U	-7.880E-05	pCi/g						
	Uncert:			+/-0.011							
	TPU:			+/-0.011							
Potassium-40			U	0.157	pCi/g						
	Uncert:			+/-0.137							
	TPU:			+/-0.137							
Radium-226			U	-0.01	pCi/g						
	Uncert:			+/-0.0232							
	TPU:			+/-0.0232							
Silver-108m			U	0.00652	pCi/g						
	Uncert:			+/-0.0107							
	TPU:			+/-0.0107							
Thallium-208			U	0.00721	pCi/g						
	Uncert:			+/-0.0109							
	TPU:			+/-0.0109							
<b>Rad Gas Flow</b>											
Batch	545960										
QC1201130463	166485002	DUP									
Strontium-90		U	-0.000179	U	-0.00245	pCi/g	0	(0% - 100%)	BXF1	07/13/06	18:52
	Uncert:		+/-0.0163		+/-0.0146						
	TPU:		+/-0.0163		+/-0.0146						
QC1201130465	LCS										
Strontium-90		1.43			1.48	pCi/g	103	(75%-125%)		07/13/06	18:52
	Uncert:				+/-0.101						
	TPU:				+/-0.108						
QC1201130462	MB										
Strontium-90				U	-0.00474	pCi/g				07/13/06	18:52
	Uncert:				+/-0.0146						
	TPU:				+/-0.0146						
QC1201130464	166485002	MS									
Strontium-90		1.48	U	-0.000179	1.16	pCi/g	78	(75%-125%)		07/13/06	18:52
	Uncert:			+/-0.0163	+/-0.0878						
	TPU:			+/-0.0163	+/-0.093						
<b>Rad Liquid Scintillation</b>											
Batch	545859										
QC1201130224	164553003	DUP									
Tritium		U	0.0984	U	0.189	pCi/g	0	(0% - 100%)	NXP1	07/16/06	06:25
	Uncert:		+/-0.579		+/-0.559						
	TPU:		+/-0.579		+/-0.559						
QC1201130226	LCS										
Tritium		4.57			4.39	pCi/g	96	(75%-125%)		07/16/06	09:26
	Uncert:				+/-0.405						
	TPU:				+/-0.412						
QC1201130223	MB										
Tritium				U	0.403	pCi/g				07/16/06	04:54

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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		545859											
		Uncert:				+/-0.309							
		TPU:				+/-0.309							
QC1201130225	164553003	MS											
Tritium		4.48	U	0.0984		4.73	pCi/g		106	(75%-125%)		07/16/06	07:56
		Uncert:		+/-0.579		+/-0.617							
		TPU:		+/-0.579		+/-0.623							
Batch		545863											
QC1201130240	166485002	DUP											
Technetium-99			U	0.372	U	0.100	pCi/g	0		(0% - 100%)	EGD1	07/19/06	07:00
		Uncert:		+/-0.297		+/-0.249							
		TPU:		+/-0.297		+/-0.249							
QC1201130242	LCS												
Technetium-99		12.9				10.5	pCi/g		81	(75%-125%)		07/16/06	07:45
		Uncert:				+/-0.480							
		TPU:				+/-0.536							
QC1201130239	MB												
Technetium-99			U	0.165		pCi/g						07/16/06	06:56
		Uncert:				+/-0.265							
		TPU:				+/-0.265							
QC1201130241	166485002	MS											
Technetium-99		13.0	U	0.372		9.85	pCi/g		76	(75%-125%)		07/16/06	07:28
		Uncert:		+/-0.297		+/-0.531							
		TPU:		+/-0.297		+/-0.577							
Batch		545967											
QC1201130485	166485001	DUP											
Iron-55			U	-13.4	U	-10.2	pCi/g	0		(0% - 100%)	SLN1	07/15/06	02:57
		Uncert:		+/-15.9		+/-15.2							
		TPU:		+/-16.0		+/-15.3							
QC1201130487	LCS												
Iron-55		571				580	pCi/g		102	(75%-125%)		07/15/06	04:00
		Uncert:				+/-39.5							
		TPU:				+/-82.9							
QC1201130484	MB												
Iron-55			U	-20.9		pCi/g						07/15/06	02:26
		Uncert:		+/-21.9		+/-21.9							
		TPU:		+/-22.1		+/-22.1							
QC1201130486	166485001	MS											
Iron-55		579	U	-13.4		632	pCi/g		109	(75%-125%)		07/15/06	03:29
		Uncert:		+/-15.9		+/-33.0							
		TPU:		+/-16.0		+/-90.8							
Batch		545969											
QC1201130489	166485001	DUP											
Nickel-63		16.2	U	13.1		pCi/g	21		(0% - 100%)	SLN1		07/18/06	13:47
		Uncert:		+/-7.96		+/-8.14							
		TPU:		+/-7.98		+/-8.15							
QC1201130491	LCS												
Nickel-63		565				477	pCi/g		84	(75%-125%)		07/18/06	14:50
		Uncert:				+/-16.4							
		TPU:				+/-22.7							

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	545969										
QC1201130488	MB										
Nickel-63			U	6.25	pCi/g					07/18/06	13:15
		Uncert:		+/-7.57							
		TPU:		+/-7.57							
QC1201130490	166485001 MS										
Nickel-63		592	16.2	543	pCi/g		89 (75%-125%)			07/18/06	14:18
		Uncert:	+/-7.96	+/-17.9							
		TPU:	+/-7.98	+/-25.6							
Batch	547646										
QC1201134170	166485002 DUP										
Carbon-14		U	0.0147	U	-0.0833	pCi/g	0	(0% - 100%) ATH2		07/17/06	22:38
		Uncert:	+/-0.115	+/-0.108							
		TPU:	+/-0.115	+/-0.108							
QC1201134172	LCS										
Carbon-14		7.27		7.16	pCi/g		99 (75%-125%)			07/18/06	00:43
		Uncert:		+/-0.210							
		TPU:		+/-0.237							
QC1201134169	MB										
Carbon-14			U	-0.0396	pCi/g					07/17/06	21:35
		Uncert:		+/-0.122							
		TPU:		+/-0.122							
QC1201134171	166485002 MS										
Carbon-14		15.2 U	0.0147	15.4	pCi/g		101 (75%-125%)			07/17/06	23:40
		Uncert:	+/-0.115	+/-0.443							
		TPU:	+/-0.115	+/-0.504							

### 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



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## QC Summary

Workorder: 166485

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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.


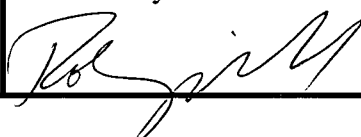
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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Attachment 2b  
Split Sample Assessment Forms  
(2 Pages)


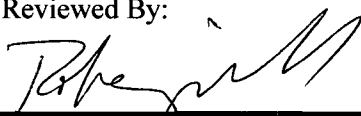
### Split Sample Assessment Form

Survey Area #: 9508	Survey Unit #: 0000	Survey Unit Name: Pond																														
Sample Plan or WPIR#: 2006-027		SML #: 9508-0000-006FS																														
<p>Sample Description: Comparison of split samples collected from sample measurement location #06 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9508-0000-006F</u> the comparison sample was <u>9508-0000-006FS</u>.</p>																																
STANDARD					COMPARISON																											
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)																								
Cs-137	2.68E-02	1.17E-02	2	NONE -	2.53E-02	1.02E-02	0.94	NA																								
K-40	1.08E+01	3.16E-01	34	0.75 - 1.33	1.10E+01	2.92E-01	1.02	Y																								
<p>Comments/Corrective Actions: In consideration of Cs-137 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. The agreement level for K-40 was found to be acceptable, no further actions are warranted.</p>					<p>Table is provided to show acceptance criteria used to assess split samples.</p>																											
									<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Resolution</th> <th colspan="2">Agreement Range</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>7</td> <td>0.50</td> <td>2.00</td> </tr> <tr> <td>8</td> <td>15</td> <td>0.60</td> <td>1.66</td> </tr> <tr> <td>16</td> <td>50</td> <td>0.75</td> <td>1.33</td> </tr> <tr> <td>51</td> <td>200</td> <td>0.80</td> <td>1.25</td> </tr> <tr> <td colspan="2">&gt; 200</td> <td>0.85</td> <td>1.18</td> </tr> </tbody> </table>				Resolution		Agreement Range		4	7	0.50	2.00	8	15	0.60	1.66	16	50	0.75	1.33	51	200	0.80	1.25
					Resolution		Agreement Range																									
					4	7	0.50	2.00																								
					8	15	0.60	1.66																								
16	50	0.75	1.33																													
51	200	0.80	1.25																													
> 200		0.85	1.18																													
Performed By:			Date:		Reviewed By:		Date:																									
			11/13/06				11/13/06																									

WPIR – Work Plan and Inspection Record

SML – Sample Measurement Location designation

### Split Sample Assessment Form

Survey Area#:	9508	Survey Unit #:	0000	Survey Unit Name:	Pond			
Sample Plan or WPIR#:					2006-0027			
					SML #: 9508-0000-012FS			
<p>Sample Description: Comparison of split samples collected from sample measurement location #12 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was <u>9508-0000-012F</u>, the comparison sample was <u>9508-0000-012FS</u>.</p>								
STANDARD					COMPARISON			
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	4.79E-02	1.25E-02	4	0.5 2	2.68E-02	7.45E-03	0.56	Y
K-40	1.11E+01	4.71E-01	24	0.75 1.33	1.25E+01	2.59E-01	1.13	Y
<p>Comments/Corrective Actions: The agreement level for Cs-137 and K-40 were found to be acceptable, no further actions are warranted.</p>					<p>Table is provided to show acceptance criteria used to assess split samples.</p>			
					4	7	0.50	2.00
					8	15	0.60	1.66
					16	50	0.75	1.33
51	200	0.80	1.25					
> 200		0.85	1.18					
Performed By:					Date:		Reviewed By:	
					11/13/06			
							11/13/06	

WPIR – Work Plan and Inspection Record

SML – Sample Measurement Location designation

POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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Attachment 2c  
Preliminary Data Forms  
(1 Page)

**Preliminary Data Review Form - Samples for the Sign Test**

Survey Unit: 9508- 0000  
Survey Unit Name: Pond

Classification: 3  
Survey Media: Soil  
Type of Survey: Final Status Survey  
Type of Measurement: Radionuclide Specific  
Number of Measurements: 15  
Operational DCGL (pCi/g) 6.01E+00

**BASIC STATISTICAL QUANTITIES**

Cs-137  
Minimum Value: -5.23E-03  
Maximum Value: 9.76E-01  
Mean: 1.28E-01  
Median: 3.36E-02  
Standard Deviation: 2.46E-01

**RADIONUCLIDE CONCENTRATION (pCi/g)**

NUMBER	Cs-137	Identified?
9508-0000-001F	-5.23E-03	N
9508-0000-002F	1.10E-02	N
9508-0000-003F	1.76E-01	Y
9508-0000-004F	1.10E-02	N
9508-0000-005F	9.76E-01	Y
9508-0000-006F	2.68E-02	Y
9508-0000-007F	1.16E-01	Y
9508-0000-009F	3.36E-02	Y
9508-0000-010F	2.03E-02	Y
9508-0000-011F	1.85E-01	N
9508-0000-012F	4.790E-02	Y
9508-0000-013F	8.02E-02	Y
9508-0000-014F	2.23E-01	Y
9508-0000-015F	2.61E-02	Y
9508-0000-016F	-2.99E-04	N

Performed By: 

Date: 4/13/06

Independent Review: 

Date: 11/13/08

POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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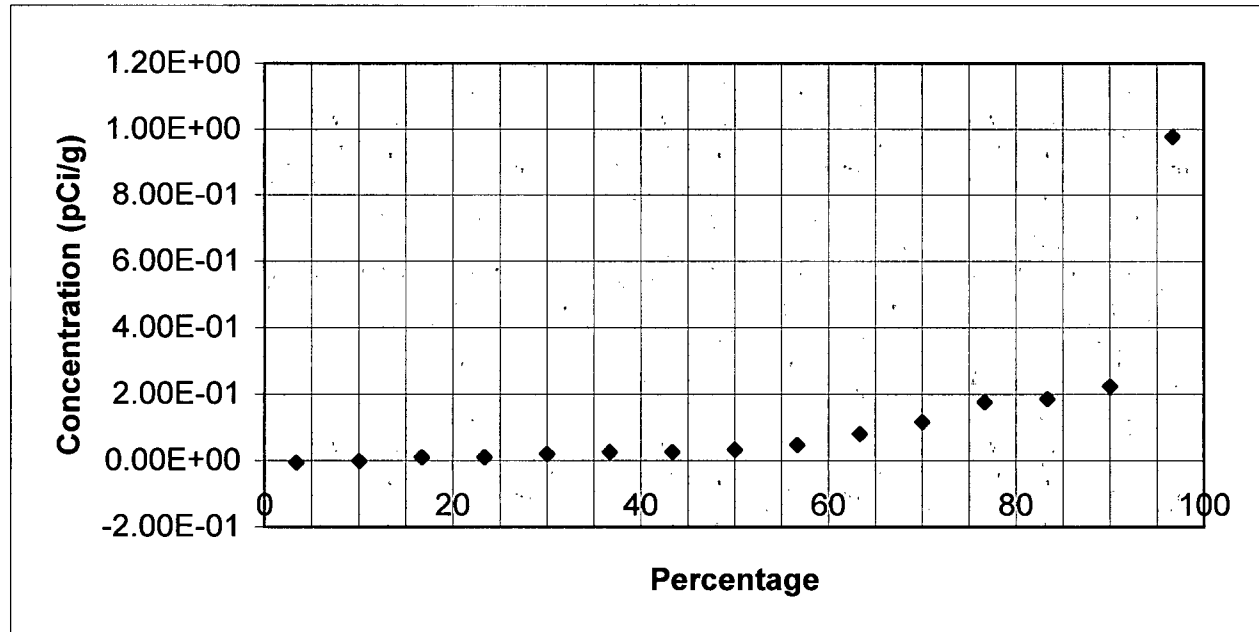
Attachment 2d  
Graphical Representation of Data  
(2 Pages)

**Quantile Plot For Cesium - 137**

Survey Unit: 9508-0000

Survey Unit Name: Pond

Mean: 1.28E-01 pCi/g



Cs-137	Rank	Percentage
-5.23E-03	1	3 %
-2.99E-04	2	10 %
1.10E-02	3	17 %
1.10E-02	4	23 %
2.03E-02	5	30 %
2.61E-02	6	37 %
2.68E-02	7	43 %
3.36E-02	8	50 %
4.79E-02	9	57 %
8.02E-02	10	63 %
1.16E-01	11	70 %
1.76E-01	12	77 %
1.85E-01	13	83 %
2.23E-01	14	90 %
9.76E-01	15	97 %

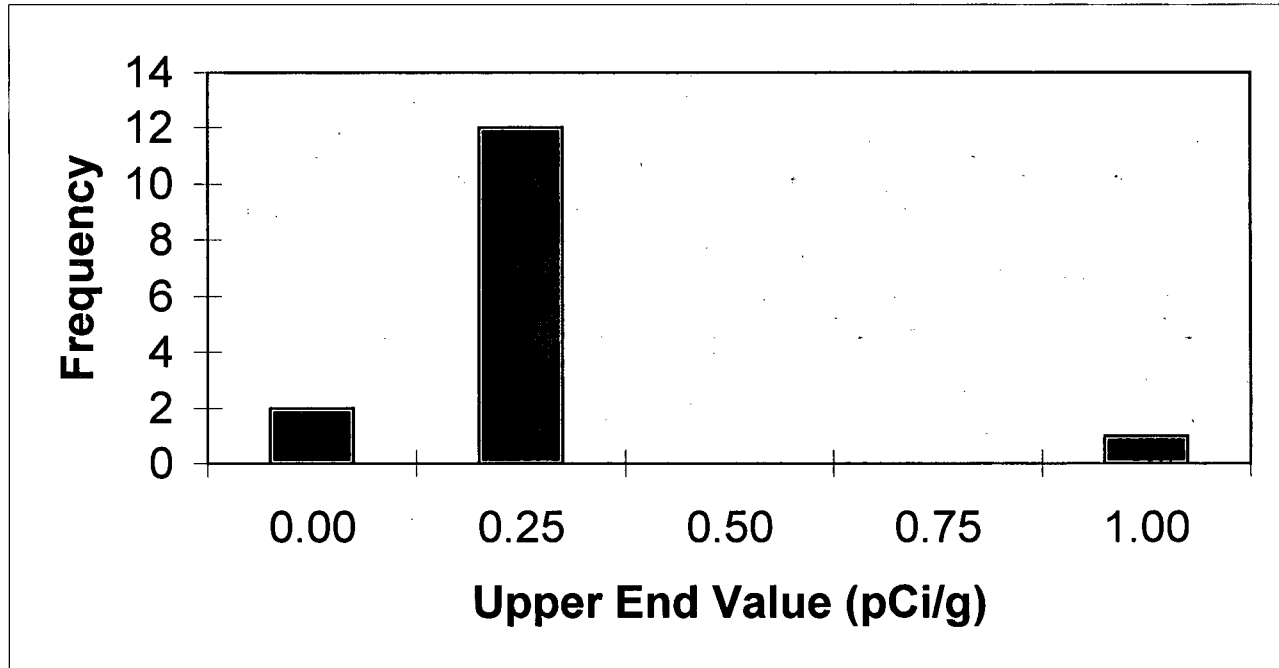
Prepared By: *Robt J. H.*Date: 11/13/06Reviewed By: *D. J. H.*Date: 11/13/06



**Frequency Plot For Cs - 137**

Survey Unit: 9508-0000  
Survey Unit Name: Pond

Mean: 0.128 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
0.00	2	13%
0.25	12	80%
0.50	0	0%
0.75	0	0%
1.00	1	7%
Total	15	100%

Prepared By: *W. H. H.*

Date: 11/13/06

Reviewed By: *[Signature]*

Date: 11/13/06

POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

---

Attachment 2e  
Sign Test Calculation  
(1 Page)

**Sign Test Calculation Sheet For Multiple Radionuclides**

Survey Unit Number: 9508-0000																																																																			
Survey Unit Name: Pond																																																																			
WP&IR#: 2006-0027																																																																			
Classification : 3	TYPE I ( $\alpha$ error):0.05	TYPE I ( $\beta$ error):0.05																																																																	
<p>Radionuclides: Cs-137</p> <p>Survey Design DCGL (pCi/g): 6.01</p> <table style="width: 100%; margin-top: 20px;"> <thead> <tr> <th style="text-align: left;">Cs-137 Results</th> <th style="text-align: left;">Weighted Sum (<math>W_s</math>)</th> <th style="text-align: left;">DCGL-Result</th> <th style="text-align: left;">Sign</th> </tr> </thead> <tbody> <tr><td>-5.23E-03</td><td>-8.70E-04</td><td>1.00E+00</td><td>1</td></tr> <tr><td>1.10E-02</td><td>1.83E-03</td><td>9.98E-01</td><td>1</td></tr> <tr><td>1.76E-01</td><td>2.93E-02</td><td>9.71E-01</td><td>1</td></tr> <tr><td>1.10E-02</td><td>1.83E-03</td><td>9.98E-01</td><td>1</td></tr> <tr><td>9.76E-01</td><td>1.62E-01</td><td>8.38E-01</td><td>1</td></tr> <tr><td>2.68E-02</td><td>4.46E-03</td><td>9.96E-01</td><td>1</td></tr> <tr><td>1.16E-01</td><td>1.93E-02</td><td>9.81E-01</td><td>1</td></tr> <tr><td>3.36E-02</td><td>5.59E-03</td><td>9.94E-01</td><td>1</td></tr> <tr><td>2.03E-02</td><td>3.38E-03</td><td>9.97E-01</td><td>1</td></tr> <tr><td>1.85E-01</td><td>3.08E-02</td><td>9.69E-01</td><td>1</td></tr> <tr><td>4.79E-02</td><td>7.97E-03</td><td>9.92E-01</td><td>1</td></tr> <tr><td>8.02E-02</td><td>1.33E-02</td><td>9.87E-01</td><td>1</td></tr> <tr><td>2.23E-01</td><td>3.71E-02</td><td>9.63E-01</td><td>1</td></tr> <tr><td>2.61E-02</td><td>4.34E-03</td><td>9.96E-01</td><td>1</td></tr> <tr><td>-2.99E-04</td><td>-4.98E-05</td><td>1.00E+00</td><td>1</td></tr> </tbody> </table> <p style="text-align: right; margin-top: 20px;">Number of Positive Differences (S+): 15</p>				Cs-137 Results	Weighted Sum ( $W_s$ )	DCGL-Result	Sign	-5.23E-03	-8.70E-04	1.00E+00	1	1.10E-02	1.83E-03	9.98E-01	1	1.76E-01	2.93E-02	9.71E-01	1	1.10E-02	1.83E-03	9.98E-01	1	9.76E-01	1.62E-01	8.38E-01	1	2.68E-02	4.46E-03	9.96E-01	1	1.16E-01	1.93E-02	9.81E-01	1	3.36E-02	5.59E-03	9.94E-01	1	2.03E-02	3.38E-03	9.97E-01	1	1.85E-01	3.08E-02	9.69E-01	1	4.79E-02	7.97E-03	9.92E-01	1	8.02E-02	1.33E-02	9.87E-01	1	2.23E-01	3.71E-02	9.63E-01	1	2.61E-02	4.34E-03	9.96E-01	1	-2.99E-04	-4.98E-05	1.00E+00	1
Cs-137 Results	Weighted Sum ( $W_s$ )	DCGL-Result	Sign																																																																
-5.23E-03	-8.70E-04	1.00E+00	1																																																																
1.10E-02	1.83E-03	9.98E-01	1																																																																
1.76E-01	2.93E-02	9.71E-01	1																																																																
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-2.99E-04	-4.98E-05	1.00E+00	1																																																																

Critical Value: 11Survey Unit: Meets Acceptance CriterionPerformed By: Date: 11-13-06Independent Review: Date: 11-13-06

POND  
SURVEY UNIT 9508-0000  
RELEASE RECORD

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Attachment 2f  
COMPASS DQA Surface Soil Report with  
Retrospective Power Curve  
(2 Pages)

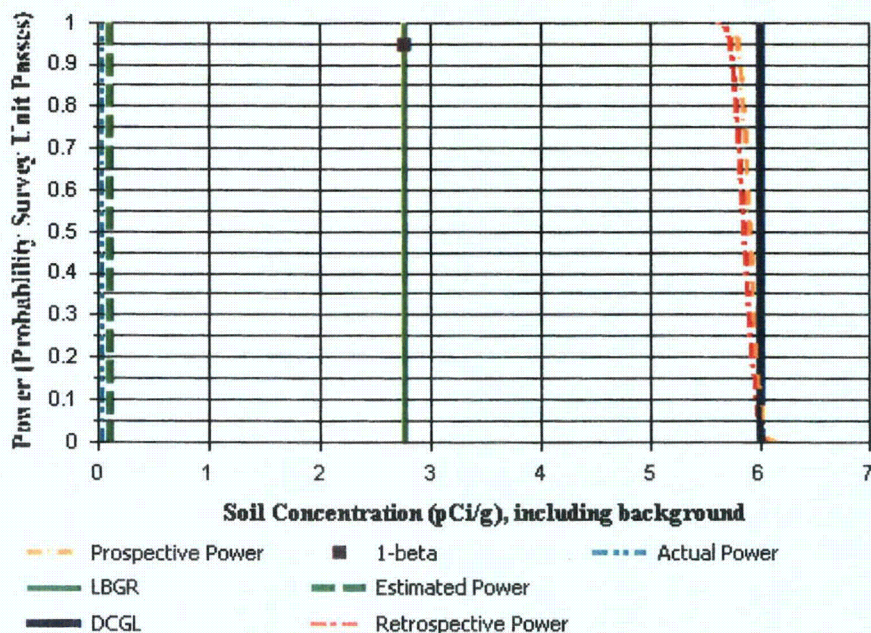


# DQA Surface Soil Report

## Assessment Summary

Site:	9508-0000 (19 mrem/yr)		
Planner(s):	A. Hammond		
Survey Unit Name:	Pond		
Report Number:	2		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	<b><i>Reject Null Hypothesis (Survey Unit PASSES)</i></b>		

## Retrospective Power Curve





# DQA Surface Soil Report

## Survey Unit Data

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NOTE: Type = "S" indicates survey unit sample.  
Type = "R" indicates reference area sample.

Sample Number	Type	Cs-137 (pCi/g)
9508-0000-001F	S	-0.01
9508-0000-002F	S	0.01
9508-0000-003F	S	0.18
9508-0000-004F	S	0.01
9508-0000-005F	S	0.98
9508-0000-006F	S	0.03
9508-0000-007F	S	0.12
9508-0000-009F	S	0.03
9508-0000-010F	S	0.02
9508-0000-011F	S	0.18
9508-0000-012F	S	0.05
9508-0000-013F	S	0.08
9508-0000-014F	S	0.22
9508-0000-015F	S	0.03
9508-0000-016F	S	0

## Basic Statistical Quantities Summary

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Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=13
Mean (pCi/g)	0.13	N/A	0.1
Median (pCi/g)	0.03	N/A	N/A
Std Dev (pCi/g)	0.25	N/A	0.198
High Value (pCi/g)	0.98	N/A	N/A
Low Value (pCi/g)	-0.01	N/A	N/A