



Final Status Survey Final Report Phase VI

**Appendix A1
Survey Unit Release Record
9304-0001, Southwest Protected Area
Grounds**

February 2007



CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

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SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)
SURVEY UNIT 9522-0001

RELEASE RECORD

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9304-0001 (Southwest Protected Area Grounds) is designated as Final Status Survey (FSS) Class 2 and consists of 4,800 m² (1.186 acres) of uninhabited open land located approximately three hundred forty five (345) feet from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The survey unit is bounded by 9520-0001, a Class 2 survey unit, on the southern side, 9302-0000 and 9512-0000, both Class 3 survey units, on the northern side, 9306-0000, a Class 2 survey unit, on the east side and 9512-0000 and the Connecticut River on the western side. Embedded within this survey unit is 9304-0002, a Class 1 survey unit. The survey unit is comprised of predominantly flat disturbed open land that gently slopes from east to west toward the Connecticut River. At the far western end of the survey unit, the topography changes from flat to steep hillside that falls off to the Connecticut River. The hillside is covered, at the northern end, with large stones and with trees and brush at the southern end.

The reference coordinates associated with this survey unit are E002 through E006 by S067 through S072 (refer to LTP Section 5.4.4). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS) based on the Connecticut State Plane System North American Datum (NAD) 1927.

2. CLASSIFICATION BASIS

The survey unit was classified in accordance with Procedure RPM 5.1-10, "*Survey Unit Classification.*" The historical information, scoping analyses and characterization results provided sufficient data to designate Survey Unit 9304-0001 as Class 2 in August 2006.

The "*Classification Basis Summary*" conducted for Survey Unit 9304-0001 consisted of:

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

A review of the 10CFR50.75(g)(1) database report identifies twenty-four (24) documents associated with or relating to this survey area. Two (2) of the twenty-four (24) documents identified pertain to the current radiological conditions of this survey unit at the time of this report.

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- a) HP 98-493: Analyses of Samples Taken East of the Intake Screen House-Bus 10 Modification. - Four (4) asphalt and seven (7) soil samples to a depth of two (2) feet were collected due east of the Screen House. The samples were analyzed on-site by gamma spectroscopy. The results indicate that no plant derived radionuclides were present at quantities above detection limits.
- b) HP 99-111: Analysis of Samples Taken for Proposed Trench from Screen House to Security Building (PAP). - Four (4) asphalt and ten (10) soil samples to a depth of two (2) feet were collected due East of the Screen House. The samples were analyzed on-site by gamma spectroscopy. The results indicate that no plant derived radionuclides were present at quantities above detection limits.

In May of 2006, while performing a Radiological Assessment of Survey Area 9304 during removal of Circulating Water piping system, soil was removed from the area and was staged in piles around the west-northwest edge of the excavation. Survey and sampling was being performed on the removed soil at selected, and accessible, locations along the base of the piles. Survey and sampling was conducted under SSWP 06-03-002. On May 9, 2006 an area of elevated activity was identified on a pile by direct scan measurement using an E-600 with a SPA-3 probe. The maximum response was 168 kcpm according to the survey. The locations were evaluated by additional measurements and Cs-137 was confirmed to be present. A sample was collected (9304-0000-037RACR) and analyzed using gamma spectroscopy. The results indicated that the Cs-137 activity present in the sample was 897 $\rho\text{Ci/g}$ and the Co-60 activity present in the sample was 9.51 $\rho\text{Ci/g}$. The area of the pile was remediated until no further elevated activity was identified. Subsequent sampling confirmed the remediation was successful in removing residual activity.

Based on the levels of activity and the fact that a remediation was conducted in the area, Survey Unit 9304-0002, a Class 1 survey unit, was established around the area of remediation to ensure that the proper level of FSS surveys and sampling are conducted in accordance with the LTP.

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

A characterization survey plan was initiated and executed by Site Closure personnel, in August 2006, to determine existing conditions and obtain radiological data for Final Status Survey (FSS). Six (6) samples were collected within 9304-0001 and analyzed on-site using gamma spectroscopy. Four (4) of the six (6) sample results were determined to be less than the accepted criteria for detection (i.e., a radionuclide is considered to be detected if the result is greater than the value provided as two (2) standard deviations of uncertainty). The highest concentration of Cs-137 found in the soil was

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0.112 pCi/g or 2.4% of the Operational DCGL. The levels were consistent with those concentrations in soil as determined from off-site locations as documented by Health Physics Technical Support Document (TSD) BCY-HP-0063, "Background Cs-137 Concentration in Soil." Characterization results showed Cs-137 and Co-60 to be the isotopes of concern for FSS planning purposes (refer to Table 1).

Table 1 – Basic Statistical Quantities for Cesium-137 and Cobalt-60 from the Characterization Survey

Parameter	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value:	-7.88E-03	-1.86E-02
Maximum Value:	1.12E-01	1.76E-02
Mean:	3.39E-02	-2.85E-03
Median:	2.81E-02	-5.94E-03
Standard deviation:	4.49E-02	1.44E-02

Note: The Operational DCGLs are 4.75 pCi/g for Cs-137 and 2.29 pCi/g for Co-60; these are used in conjunction with the unity rule to achieve 15 mrem/yr TEDE

Additionally, sample number 9304-01-005C was analyzed by the off-site laboratory for Hard-To-Detect (HTD) radionuclides. Material Service Requisition (MSR) number 06-1083 was generated to cover the analysis of the samples at the approved off-site laboratory.

The results of the HTD sample analysis indicated that there were no results above the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty).

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

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

Based upon the historical information and the results of radiological surveys performed during characterization, it was concluded that there was a low probability for residual radioactivity to be present in this survey unit in concentrations greater than the Operational DCGLs, justifying a final survey unit classification of Class 2 (refer to Section 3).

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3. DATA QUALITY OBJECTIVES (DQO)

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

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would indicate that residual activity within the survey unit does not exceed the release criteria. Therefore, the survey unit does satisfy the primary objective of the Final Status Survey Plan (FSSP). 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 FSSP was to demonstrate that the level of residual radioactivity in Survey Unit 9304-0001 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of 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 future groundwater radioactivity that will be contributed by building basements and footings.

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

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Equation 1

$$H_{\text{Total}} = H_{\text{Soil}} + H_{\text{ExistingGW}} + H_{\text{FutureGW}}$$

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

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

This survey unit is considered impacted by future groundwater radioactive contamination, as there are buried concrete foundations or footings containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024). The dose contribution from future groundwater, the third dose component is, therefore, two (2) mrem/yr TEDE.

Equation 2

$$19 \text{ mrem/yr}_{\text{Total}} = 15 \text{ mrem/yr}_{\text{Soil}} + 2 \text{ mrem/yr}_{\text{Existing GW}} + 2 \text{ mrem/yr}_{\text{FutureGW}}$$

The allowable dose for soil in this survey unit is fifteen (15) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in fifteen (15) mrem/yr TEDE is designated as the Operational DCGL (DCGL_{op}), and has been established for the radionuclides of concern as provided in Table 2.

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

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pCi/g) ⁽²⁾	Operational DCGL (pCi/g) ⁽³⁾	Required MDC (pCi/g) ⁽⁴⁾
H-3	4.12E+02	2.48E+02	1.65E+01
C-14	5.66E+00	3.39E+00	2.26E-01
Mn-54	1.74E+01	1.05E+01	6.96E-01
Fe-55	2.74E+04	1.64E+04	1.10E+03
Co-60	3.81E+00	2.28E+00	1.52E-01
Ni-63	7.23E+02	4.34E+02	2.89E+01
Sr-90	1.55E+00	9.28E-01	6.20E-02
Nb-94	7.12E+00	4.27E+00	2.85E-01
Tc-99	1.26E+01	7.56E+00	5.04E-01
Ag-108m	7.14E+00	4.29E+00	2.86E-01
Cs-134	4.67E+00	2.80E+00	1.87E-01
Cs-137	7.91E+00	4.75E+00	3.16E-01
Eu-152	1.01E+01	6.04E+00	4.04E-01
Eu-154	9.29E+00	5.57E+00	3.72E-01
Eu-155	3.92E+02	2.35E+02	1.57E+01
Pu-238	2.96E+01	1.78E+01	1.18E+00
Pu-239/240	2.67E+01	1.60E+01	1.07E+00
Pu-241	8.70E+02	5.22E+02	3.48E+01
Am-241 ⁽⁵⁾	2.58E+01	1.55E+01	1.03E+00
Cm-243/244	2.90E+01	1.74E+01	1.16E+00

- (1) **Bold** indicates those radionuclides considered to be hard to detect.
- (2) The Base Case Soil DCGLs for soil are specified by the LTP in Chapter 6 and are equivalent to twenty five (25) mrem/yr TEDE.
- (3) The Operational DCGL is equivalent to fifteen (15) mrem/yr TEDE.
- (4) The required MDC is equivalent to one (1) mrem/yr TEDE.
- (5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed.

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Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Six (6) samples were collected and analyzed during characterization as discussed in Section 2. The samples were collected through systematic sampling over a simple grid design. One (1) characterization sample was analyzed for Hard to Detect (HTD) radionuclides. Cs-137 was found to be the predominate radionuclide of concern. Co-60 was included in the survey design based on historical information. The mean and variability of Cs-137 and Co-60 in soil in this survey unit was determined during characterization and are provided in Table 1.

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

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

4. SURVEY DESIGN

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

Characterization sampling was used to determine concentration variability. The samples were collected through systematic sampling over a simple grid design.

The DQO process determined that Cs-137 and Co-60 would be the radionuclides of concern in survey unit 9304-0001 (refer to Section 3). The sum of fractions or unity rule was used with the individual Operational DCGLs because multiple radionuclides (Cs-137 and Co-60) are considered in the survey design. Other radionuclides identified during FSS were evaluated to ensure adequate survey design.

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 aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates.

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

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

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "Determination of the Number of Surface Samples for Final Status Survey." The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 4.66 to maintain the relative shift (Δ/σ) in the range of 1 and 3. The resulting Adjusted Relative Shift was 2.0. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10 CFR 20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. Survey design specified fifteen (15) surface 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 systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 2 area.

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

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

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Table 3 - Sample Measurement Locations with Associated GPS Coordinates

Designation	Northing	Easting
9304-0001-001F	236439.43	668456.31
9304-0001-002F	236383.25	668423.88
9304-0001-002FS		
9304-0001-003F	236383.25	668488.74
9304-0001-004F	236327.08	668456.31
9304-0001-005F	236270.90	668488.74
9304-0001-006F	236214.73	668521.17
9304-0001-007F	236158.56	668553.60
9304-0001-008F	236214.73	668586.04
9304-0001-009F	236158.56	668618.47
9304-0001-010F	236102.38	668650.90
9304-0001-010FS		
9304-0001-011F	236158.56	668683.33
9304-0001-012F	236214.73	668650.90
9304-0001-013F	236270.90	668618.47
9304-0001-014F	236270.90	668683.33
9304-0001-015F	236214.73	668715.77

Although Procedure RPM 5.1-11 only specified that 5% of the samples are required to be selected for HTD analysis, two (2) soil samples or 13% of the number of samples that would be used for non-parametric statistical testing were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RANDBETWEEN" function. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in the LTP, Table 2-12, "Radionuclides Potentially Present at Haddam Neck Plant" and as provided in Table 2.

The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey," included the collection of two (2) soil samples for "split sample" analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel "RANDBETWEEN" function. The number of quality control soil samples was determined to be 13% of fifteen (15) samples.

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

Based on the historical site assessment and the characterization data available, it was determined that three (3) separate scan grids needed to be established. The total surface area to be scanned was approximately 25% of the survey unit. A map of the scan grid locations is provided in Attachment 1.

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

Table 4 – Synopsis of the Survey Design⁽¹⁾

Feature	Design Criteria	Basis
Survey Unit Land Area	4,800 m ²	Based on AutoCAD-LT and Visual Sample Plan calculations
Number of Measurements	15	Type 1 and Type 2 errors were 0.05, sigma was 0.045 pCi/g, the LBGR was adjusted to 4.66 to maintain Relative Shift in the range of 1 and 3.
Grid Spacing	19.2 m	Based on triangular grid
Operational DCGL	4.75 pCi/g Cs-137 2.29 pCi/g Co-60	Administratively set to achieve 15 mrem/yr TEDE ⁽²⁾
Soil Investigation Level	4.75 pCi/g Cs-137 2.29 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 2 survey unit
Scan Survey Area Coverage	Approximately 25% of the area	The LTP requires >10% area coverage for Class 2 Survey Units.
Scan Investigation Level	Detectable over background	Administratively set to achieve 15 mrem/yr TEDE ⁽¹⁾

(1) The allowable dose for soil in this survey unit is fifteen (15) mrem/yr TEDE as the bounding dose from existing and future groundwater has been established based on field data (reference CY memo ISC 06-024.)

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5. SURVEY IMPLEMENTATION

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

Three (3) scan areas were established that constituted approximately 25% of the surface area of Survey Unit 9304-0001. Grid lines, one meter wide, were painted on the ground of each of the three (3) scan areas. A background survey was performed around the survey unit and it was determined that the range of background measurements, using a Eberline E-600 with a SPA-3 sodium iodide detector, was from 7,800 counts per minute (cpm) in the western part of the survey unit up to 10,600 cpm toward the eastern part of the survey unit. This was particularly evident in scan area 1. The decision was made to split the scan grids within scan area 1 in half to minimize the change in background from east to west.

The scan areas were established and each area was scanned for elevated readings (see Attachment 2 for all scan results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 25% of the survey unit was scanned.

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

Two (2) of the original fifteen (15) samples identified, 9304-0001-006F & 9304-0001-007F, were not able to be collected because the sample locations identified were inaccessible. Additionally, no sample locations could be identified within 3 meters of the original location. Subsequently, Addendum 1 to FSSP 9304-0001 was written to address the collection of additional soil samples. Two (2) additional samples were selected randomly, in accordance with the FSSP 9304-0001 Addendum 1, as determined by using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, "Identifying, and Marking Surface Sample Locations for Final Status Survey." The additional two (2) random samples collected were 9304-0001-016F and 9304-0001-021F. A map that identifies the two (2) additional random sample locations is provided in Attachment 1.

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

Two (2) samples (9304-0001-008F and 9304-0001-013F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of two (2) samples (9304-0001-002F and 9304-0001-010F) for "split sample" analysis.

6. SURVEY RESULTS

All field survey activities were conducted between August 17 and August 22, 2006.

On August 17, 2006 the areas were scanned in accordance with the FSSP. Four (4) elevated measurement locations were identified during scanning. Each of the locations was evaluated and naturally occurring radionuclides were confirmed to be present. Additionally, four (4) judgmental or biased samples were collected at the elevated measurement locations. The samples collected at elevated measurement locations were 9304-0001-017F, 9304-0001-018F, 9304-0001-019F and 9304-0001-020F. A map identifying all of the sample locations is provided in Attachment 1.

The nineteen (19) sample fixed measurement locations identified in the FSS plan were scanned over approximately a one (1) meter radius for elevated radiation levels. Table 5 provides an overview of the scan results for sample measurement locations. All scan results are provided in Attachment 2.

Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
1	8.57	10.80	NO
2	10.20	11.0	NO
3	9.95	10.90	NO
4	7.31	7.51	NO
5	9.81	11.0	NO
6	SAMPLE LOCATION IS INACCESSIBLE		

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Table 5 - (continued)

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
7	SAMPLE LOCATION IS INACCESSIBLE		
8	9.18	10.3	NO
9 ⁽³⁾	9.94	7.50	YES
10	6.27	7.25	NO
11	7.58	10.0	NO
12	9.25	11.1	NO
13	10.2	10.7	NO
14	8.50	9.92	NO
15	8.45	10.2	NO
16	7.89	8.37	NO
17	11.7	11.2	YES
18	13.0	11.6	YES
19	12.0	11.1	YES
20	11.4	10.4	YES
21	8.11	8.42	NO

- (1) The action level is based on a measurement above ambient background in accordance with the FSSP.
- (2) FSS sample plans require movement of the sample measurement location to the area within the one (1) meter radius yielding the response above the action level
- (3) Field notes indicated that the initial background measurement was taken in the center of the one meter diameter circle that encompassed the VSP generated sample location. However, the elevated reading was at the outer edge of the one meter circle. Subsequent background measurements at one meter above the elevated location provided a background measurement of 8.76 kcpm which would correspond to a revised action level of 10.0 kcpm. This would indicate that the highest logged reading of 9.94 kcpm, at location 9, would be less than the revised action level of 10.0 kcpm.

Three (3) areas, that comprised approximately 25% of the total surface area for the survey unit, were scanned for elevated radiation levels. Several elevated measurement areas were identified and determined to be Naturally Occurring Radioactive Material (NORM) based on the presence of loose rock. Table 6 provides an overview of the scan area survey. All scan results are provided in Attachment 2.

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Table 6 - Scan Area Results

Scan Area	Grid #'s	Range of Logged Readings (kcpm)	Highest Logged Reading (kcpm)	Range of Action Levels (kcpm) ⁽¹⁾	>Action Level ⁽²⁾	Elevated Reading Identification ⁽³⁾	Judgmental Sample
1	1-5	7.42-9.82	9.82	8.99-11.4	NO		
	6-10	7.71-8.42	8.42	8.49-9.68	NO		
	11-15	6.88-7.70	7.70	7.69-8.26	NO		
	16-20	7.00-10.5	10.5	9.00-12.5	NO		
	21-25	10.4-11.6	11.6	9.3-13.0	YES	9304-01-SC-01-25-0 9304-01-ER-01-25-1	9304-0001-020F
	26-30	8.34-10.4	10.4	10.8-12.0	NO		
	31-32	8.54-9.49	9.49	10.5-11.7	NO		
2	1-5	8.14-9.62	9.62	9.45-11.4	NO		
	6-10	8.00-11.3	11.3	10.0-11.2	YES	9304-01-ER-02-07-1	9304-0001-017F
						9304-01-ER-02-09-1	9304-0001-018F
						9304-01-ER-02-10-1	9304-0001-019F
						9304-01-SC-02-10-0	
11-14	9.49-10.3	10.3	11.2-12.0	NO			
3	1-5	8.16-9.09	9.09	9.81-11.3	NO		
	6-10	7.15-9.42	9.42	8.36-10.8	NO		
	11-14	6.34-7.10	7.10	7.48-8.30	NO		

- (1) The action level is based on a measurement above ambient background.
- (2) Elevated areas were determined to be Naturally Occurring Radioactive Material (NORM), refer to Section 8.
- (3) ER and SC are nomenclature associated with the barcodes used in the field where ER stands for Elevated Reading and SC refers to Scan.

Attachment 1 contains a map that identifies the locations of the three (3) scan grids.

Four (4) judgmental or biased samples were collected at elevated measurement locations identified above. The samples collected at elevated locations were 9304-0001-017F, 9304-0001-018F, 9304-0001-019F and 9304-0001-020F.

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC, Charleston, South Carolina. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing, the associated duplicates, and the four (4) biased samples using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDCs. Gamma spectroscopy results identified some radionuclides

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meeting the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty).

Cs-137 was identified in six (6) of the fifteen (15) samples collected for non-parametric statistical testing. Co-60 was not identified in any of the fifteen (15) samples collected for non-parametric statistical testing. The mean of the gamma spectroscopic analysis results for the samples indicated that Cs-137 was present at levels that are similar to the concentrations of Cs-137 found in soil at off-site locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063. A summary of the fifteen (15) samples collected for non-parametric statistical testing results is provided in Table 7.

Table 7 - Summary of Soil Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g
9304-0001-001F	0.00E+00	-4.42E-03
9304-0001-002F	6.46E-02	6.38E-03
9304-0001-003F	5.11E-02	-5.87E-03
9304-0001-004F	1.90E-02	2.04E-03
9304-0001-005F	-2.18E-02	1.08E-02
9304-0001-008F	1.63E-03	6.39E-03
9304-0001-009F	9.84E-03	1.45E-02
9304-0001-010F	8.35E-02	-1.14E-02
9304-0001-011F	2.32E-02	7.61E-05
9304-0001-012F	-3.20E-04	-1.00E-03
9304-0001-013F	-1.10E-02	-1.63E-03
9304-0001-014F	2.90E-02	-8.10E-03
9304-0001-015F	3.71E-03	1.17E-02
9304-0001-016F ⁽¹⁾	9.41E-03	-2.99E-02
9304-0001-021F ⁽¹⁾	2.48E-02	3.16E-03

(1) Sample locations 9304-0001-006F and 9304-0001-007F were deemed inaccessible; sample locations 9304-0001-016F and 9304-0001-021F were added under an FSS plan addendum (refer to Section 10)

The “sum-of-fractions” or “unity rule” is the mathematical test used to evaluate compliance with radiological criteria for license termination when more than one radionuclide has been determined to be potentially present. The unity rule is:

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Equation 3

$$\frac{C_1}{DCGL_1} + \frac{C_2}{DCGL_2} + \dots + \frac{C_n}{DCGL_n} \leq 1$$

Where: C_n = concentration of radionuclide n and
 $DCGL_n$ = DCGL of radionuclide n .

The results of the unity rule calculation for the radionuclides of concern in the statistical sample population for Survey Unit 9304-0001 are provided in Table 8 below.

**Table 8 – Results of Unity Calculation for Surface Soil Samples
Comprising the Statistical Sample Population**

Sample Number	Fraction of the Operational DCGL ⁽¹⁾⁽²⁾		Unity
	Cs-137	Co-60	
9304-0001-001F	-	-	-
9304-0001-002F	0.014	-	0.014
9304-0001-003F	0.011	-	0.011
9304-0001-004F	-	-	-
9304-0001-005F	-	-	-
9304-0001-008F	-	-	-
9304-0001-009F	-	-	-
9304-0001-010F	0.018	-	0.018
9304-0001-011F	0.005	-	0.005
9304-0001-012F	-	-	-
9304-0001-013F	-	-	-
9304-0001-014F	0.006	-	0.006
9304-0001-015F	-	-	-
9304-0001-016F	-	-	-
9304-0001-021F	0.005	-	0.005

(1) The Operational DCGL from Table 2 is 4.75 pCi/g for Cs-137 and 2.29 pCi/g for Co-60 to achieve fifteen (15) mrem/yr TEDE respectively.

(2) - indicates that the radionuclide was not positively detected in the sample

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The off-site laboratory also processed two (2) samples for HTD analysis as required by the sample plan. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC. Table 8 lists the results for those HTD radionuclides meeting the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty) in one sample.

As previously stated in Section 4 of this report, the criteria for de-selection of a radionuclide is a concentration that is less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the Operational DCGLs for aggregates. The HTD radionuclides identified in Table 8 meet the criteria for de-selection since their ratios are 1.4% for Cm-243/244 and 0.5% for Fe-55. Therefore, Cm-243/244 and Fe-55 will not be considered in the final dose determination for this survey unit.

Table 9 - Hard-to-Detect Sample Results

Sample	Cm-243/244 ($\rho\text{Ci/g}$)	Fraction of DCGL _{op} ⁽¹⁾	Fe-55 ($\rho\text{Ci/g}$)	Fraction of DCGL _{op} ⁽¹⁾
9304-0001-008F	2.55E-01	0.014	7.76E+01	0.005

(1) The Operational DCGL from Table 2 is 17.4 $\rho\text{Ci/g}$ for Cm-243/244 and 16,400 $\rho\text{Ci/g}$ for Fe-55

Four (4) judgmental 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. None of the samples exceeded 2% of the Operational DCGL. No further action or investigations were required (see Table 9).

Table 9- Judgmental or Biased Sample Results

Sample Number	Cs-137 $\rho\text{Ci/g}$	Co-60 $\rho\text{Ci/g}$	Fraction of the Operational DCGL ⁽¹⁾
9304-0001-017F	4.08E-02	1.33E-02	0.014
9304-0001-018F	3.06E-02	2.33E-02	0.017
9304-0001-019F	-1.17E-02	-4.39E-03	-
9304-0001-020F	8.94E-03	7.89E-05	-

(1) The Operational DCGLs from Table 2 are 4.75 $\rho\text{Ci/g}$ for Cs-137 and 2.29 $\rho\text{Ci/g}$ for Co-60 and are used in conjunction with the unity rule

(2) - indicates that the radionuclide was not positively detected in the sample

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7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Thirteen percent (13%) of the samples were selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey." There was unacceptable agreement between field split results for Co-60 which was due to very low levels of activity reported that were generally approaching or below instrumentation detection limits. Evaluation of the data using the reported results for NORM and Cs-137 resulted in acceptable agreement.

The sample analysis vendor, General Engineering Laboratories, LLC, Charleston, South Carolina, maintains quality control and quality assurance plans as part of normal operation. Refer to Attachment 3 and Attachment 4 for data and data quality analysis results.

8. INVESTIGATIONS AND RESULTS

No investigations were performed for this Survey Unit.

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

Two (2) of the systematic samples (sample numbers 9304-0001-006F and 9304-0001-0007F) initially identified for non-parametric testing, could not be collected because they were located on a steep slope that was covered by large rocks. Additionally, there was no location within three (3) meters of the samples that was suitable for sampling. Therefore, two (2) additional random samples were selected for non-parametric testing, in accordance with Addendum 1 of the FSS plan. The random samples were numbered 9304-0001-016F and 9304-0001-021F and are identified on the map provided in Attachment 1.

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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 evaluation of the Sign Test results demonstrates that the survey unit passes the unrestricted release criteria, thus, the null hypothesis is rejected.

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

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The standard deviation was slightly less than the value used for the survey design. This would indicate that the number of samples collected was sufficient to meet the Operational DCGL. The mean and median values are well below the Operational DCGL when used in conjunction with the unity rule. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs.

For Cs-137, the range of the data, about four (4) standard deviations, was not a particularly large variation considering that the levels were essentially at existing environmental levels where such variation is to be expected. The difference between the mean and median was 28% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot indicates a positive skewness as confirmed by the calculated skew of 0.97.

For Co-60, the range of the data, about four (4) standard deviations, was not a particularly large variation considering that the levels were at extremely low levels where such variation is to be expected. The difference between the mean and median was 2.4% of the standard deviation which indicates a small skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot shows a negative skewness as confirmed by the calculated skew of -1.23.

All data, assessments, and graphical representations are provided in Attachment 3 and Attachment 4.

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12. ANOMALIES

The anomalies associated with the disagreement between the field splits was presented in Section 7. The source of the disagreement for Co-60 is likely a due to extremely low levels of activity being reported and the statistical uncertainties associated with the comparison of very small numbers. Standard statistical tests, ratio comparisons and skew, may not provide the same information at extremely low numbers as compared to higher numbers.

No other anomalies were noted.

13. CONCLUSION

Survey Unit 9304-0001 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

Since Co-60 was not identified in any of the fifteen (15) samples collected and analyzed for non-parametric statistical testing, Cs-137 was used for statistical testing to determine the adequacy of the survey unit for FSS.

The sample data passed the Sign Test. The null hypothesis was rejected. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit is properly designated as Class 2.

The dose contribution from soil is 0.06 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

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

This survey unit is considered impacted by future groundwater radioactive contamination, as there are underground structures, systems or components containing residual radioactive material within the groundwater saturated zone in the area (reference CY memo ISC 06-024); therefore, the dose contribution from future groundwater is two (2) mrem/yr TEDE.

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 4.06 mrem/yr Total Effective Dose Equivalent (TEDE). Therefore, Survey Unit 9304-0001 is acceptable for unrestricted release.

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14. ATTACHMENTS

14.1 Attachment 1 – Survey Unit Location Map

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

14.4 Attachment 4 – DQA Results

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ATTACHMENT 1 (FIGURES)

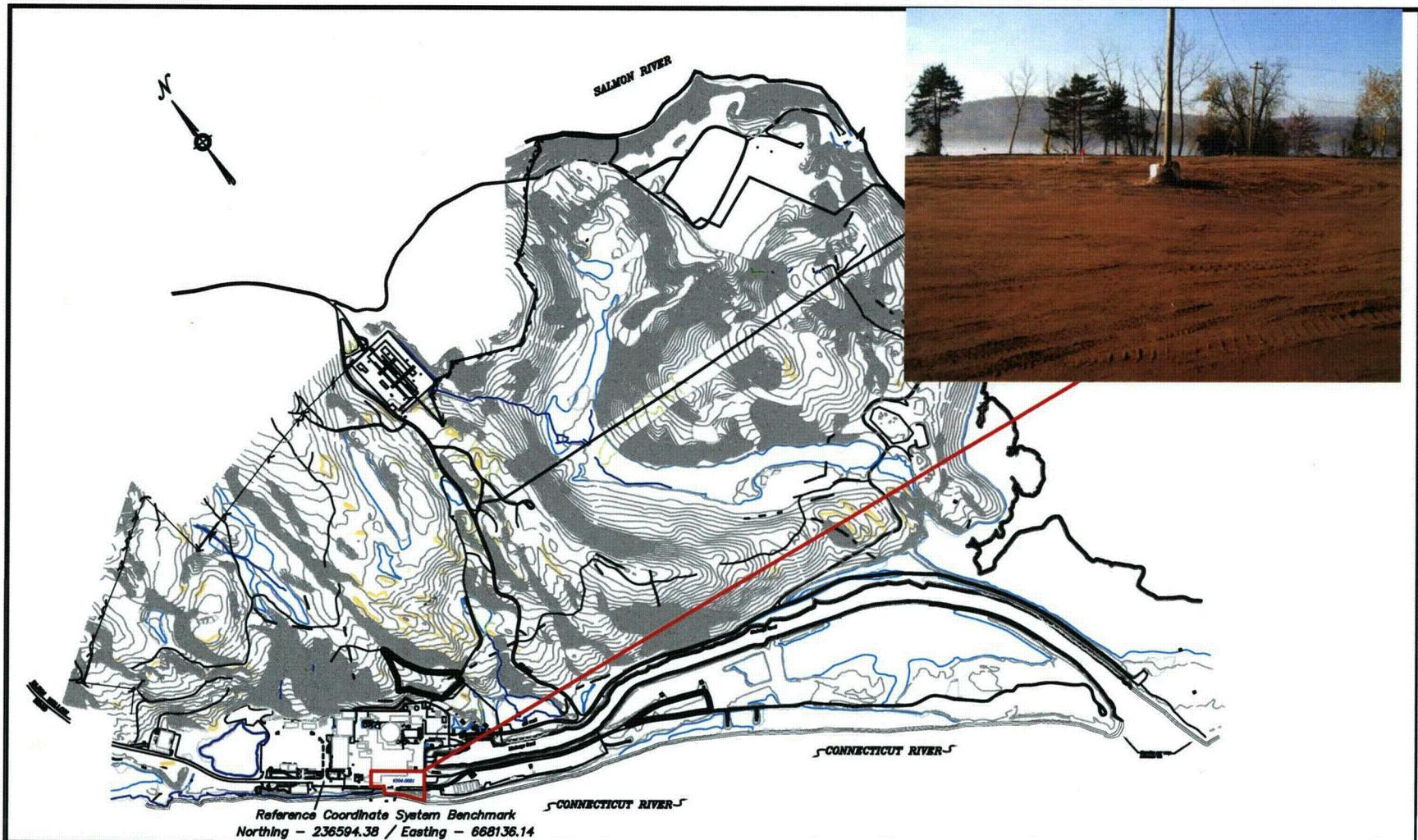


Figure 1



Connecticut Yankee Atomic Power Company
 Site Map With Reference To Survey Unit 9304-0001

Date	By
October 2006	E.E.S.

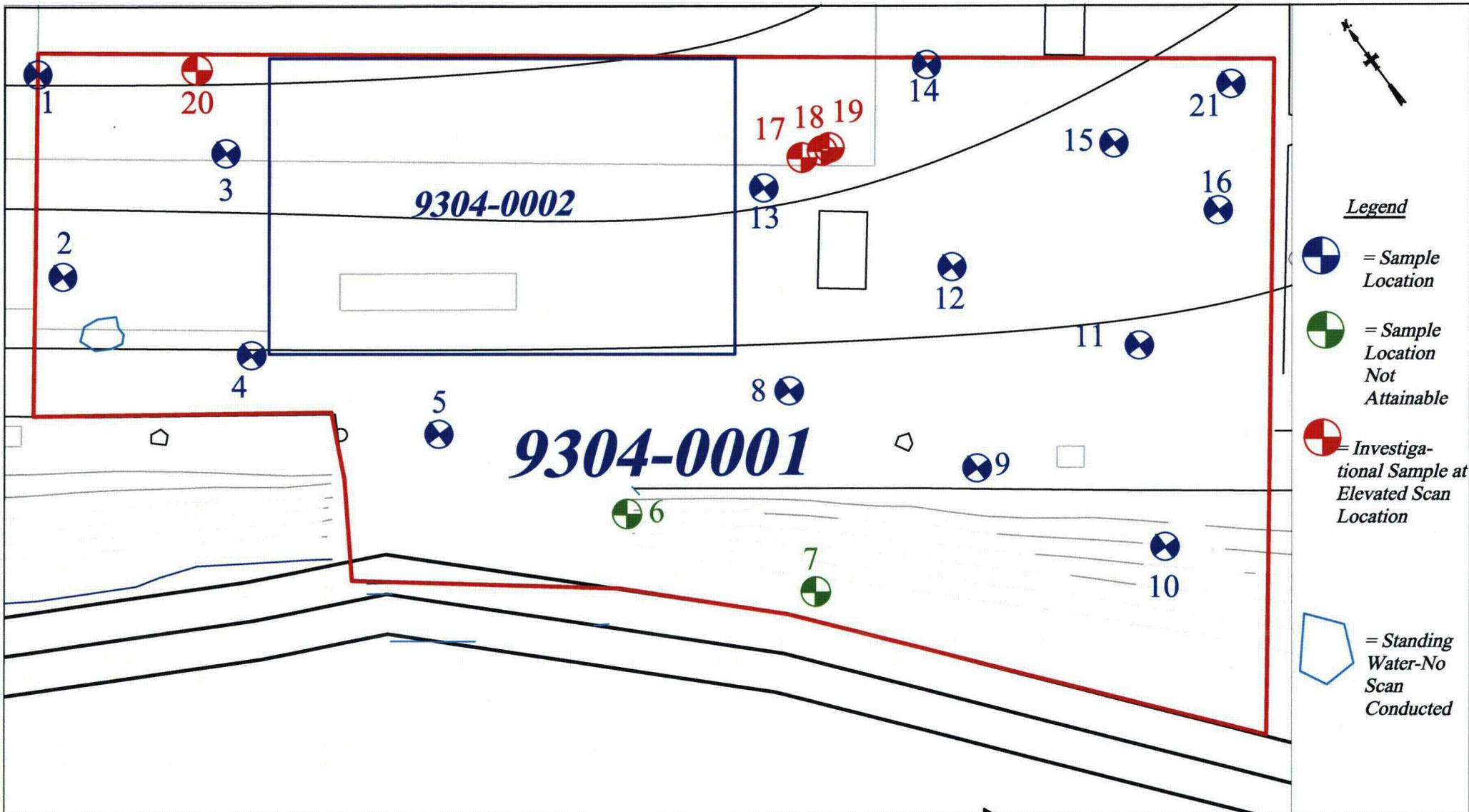


Figure 2



Connecticut Yankee Atomic Power Company
 9304-0001 Final Status Survey Design

Date	By
October 2006	E. E. Sergent

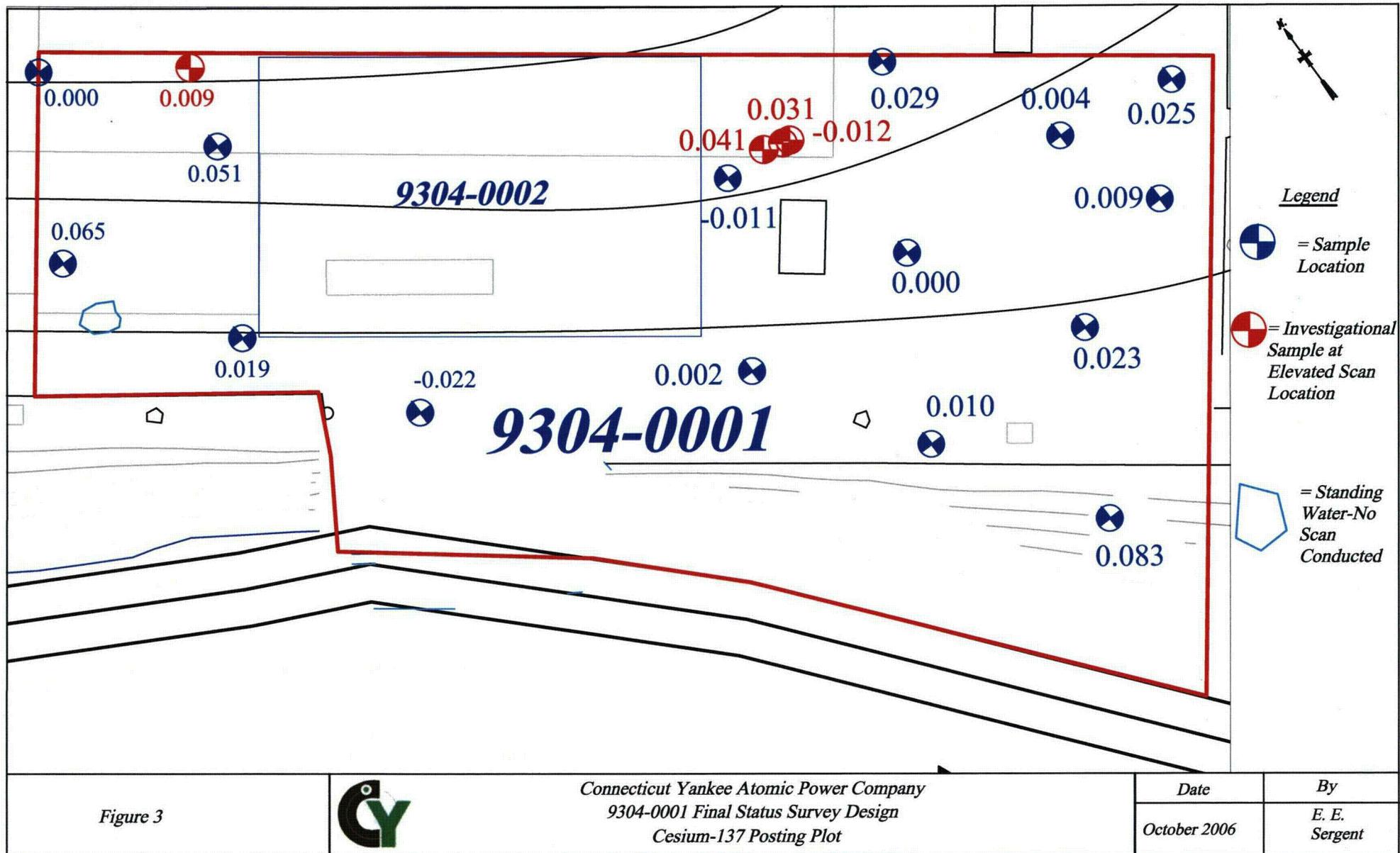


Figure 3



Connecticut Yankee Atomic Power Company
 9304-0001 Final Status Survey Design
 Cesium-137 Posting Plot

Date	By
October 2006	E. E. Sergent

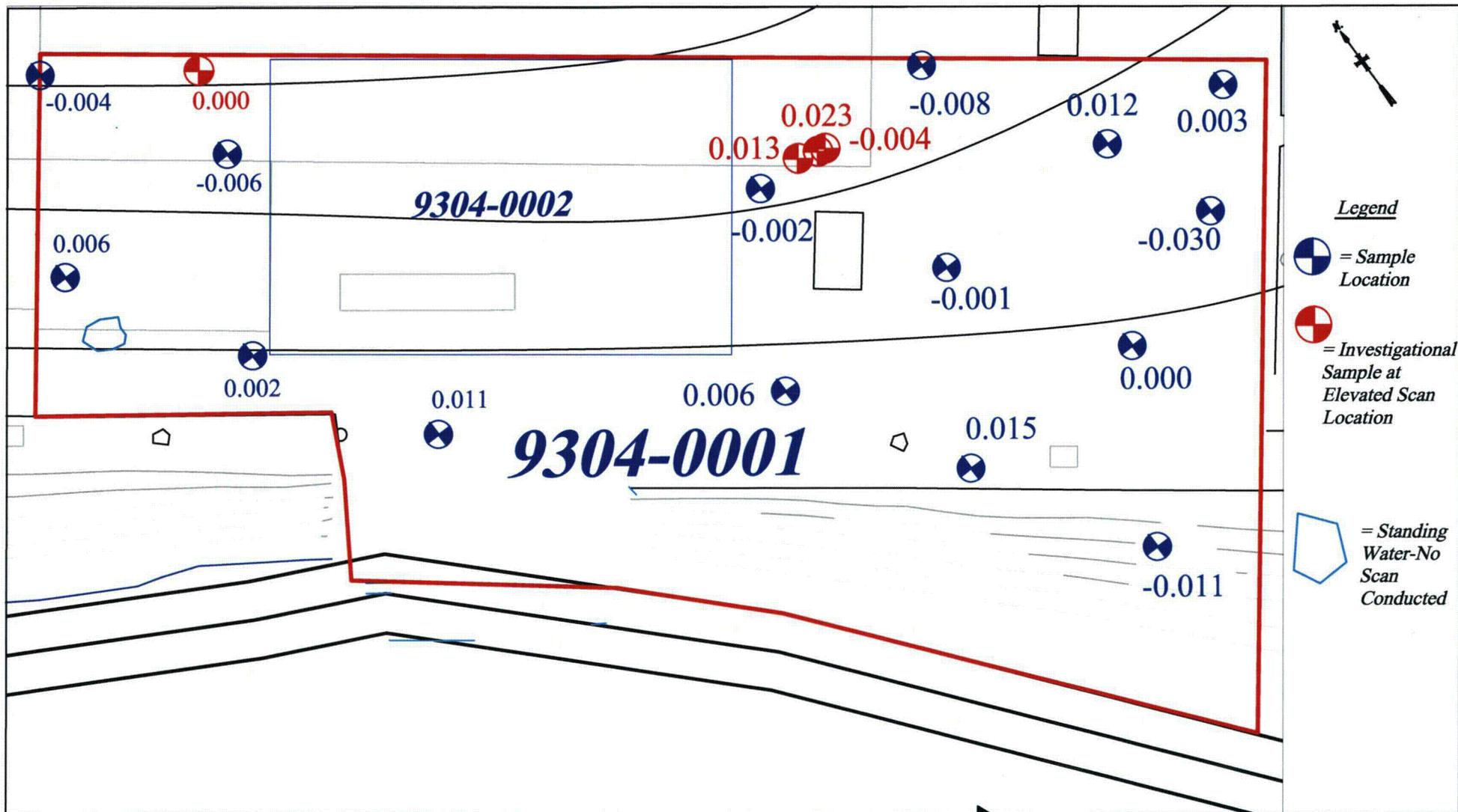
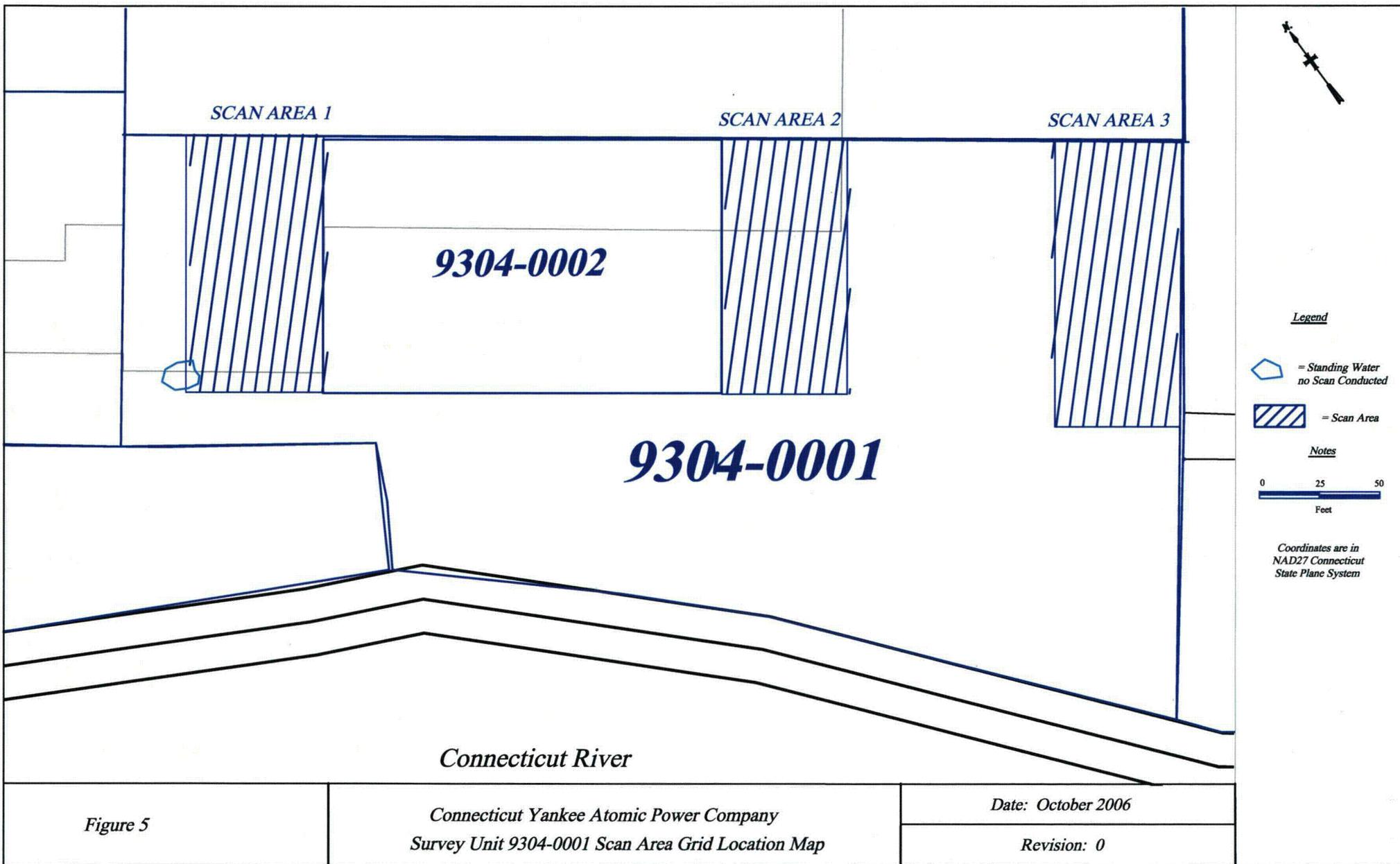


Figure 4



Connecticut Yankee Atomic Power Company
 9304-0001 Final Status Survey Design
 Cobalt-60 Posting Plot

Date	By
October 2006	E. E. Sergent



SOUTHWEST PROTECTED AREA GROUNDS
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ATTACHMENT 2 (SCAN RESULTS)

9304-001
SCANS AT SAMPLE LOCATIONS

	Survey Location	Log Date	Log Time	Reading	AL	>AL	E-600 S/N	Probe S/N
1	9304-01-BL-00-17-0	8/22/2006	8:06:00	9.76E+03			1107	1013
2	9304-01-SL-00-17-0	8/22/2006	8:08:00	1.17E+04	1.12E+04	+	1107	1013
3	9304-01-BL-00-18-0	8/22/2006	8:12:00	1.02E+04			1107	1013
4	9304-01-SL-00-18-0	8/22/2006	8:13:00	1.30E+04	1.16E+04	+	1107	1013
5	9304-01-BL-00-19-0	8/22/2006	8:19:00	9.71E+03			1107	1013
6	9304-01-SL-00-19-0	8/22/2006	8:20:00	1.20E+04	1.11E+04	+	1107	1013
7	9304-01-BL-00-20-0	8/22/2006	8:26:00	9.06E+03			1107	1013
8	9304-01-SL-00-20-0	8/22/2006	8:27:00	1.14E+04	1.04E+04	+	1107	1013
9	9304-01-BL-00-01-0	8/22/2006	9:32:00	9.39E+03			1107	1013
10	9304-01-SL-00-01-0	8/22/2006	9:34:00	8.56E+03	1.08E+04		1107	1013
11	9304-01-BL-00-02-0	8/22/2006	9:36:00	9.58E+03			1107	1013
12	9304-01-SL-00-02-0	8/22/2006	9:38:00	1.02E+04	1.10E+04		1107	1013
13	9304-01-BL-00-03-0	8/22/2006	9:42:00	9.55E+03			1107	1013
14	9304-01-SL-00-03-0	8/22/2006	9:43:00	9.95E+03	1.09E+04		1107	1013
15	9304-01-BL-00-04-0	8/22/2006	9:52:00	6.37E+03			1107	1013
16	9304-01-SL-00-04-0	8/22/2006	9:54:00	7.31E+03	7.51E+03		1107	1013
17	9304-01-BL-00-05-0	8/22/2006	10:13:00	9.58E+03			1107	1013
18	9304-01-SL-00-05-0	8/22/2006	10:15:00	9.81E+03	1.10E+04		1107	1013
19	9304-01-BL-00-08-0	8/22/2006	10:16:00	8.94E+03			1107	1013
20	9304-01-SL-00-08-0	8/22/2006	10:18:00	9.18E+03	1.03E+04		1107	1013
21	9304-01-BL-00-09-0	8/22/2006	10:32:00	6.36E+03			1107	1013
22	9304-01-SL-00-09-0	8/22/2006	10:35:00	9.94E+03	7.50E+03	+	1107	1013
23	9304-01-BL-00-09-0	8/22/2006	11:15:00	8.76E+03			1107	1013
24	9304-01-BL-00-10-0	8/22/2006	10:36:00	6.13E+03			1107	1013
25	9304-01-SL-00-10-0	8/22/2006	10:37:00	6.27E+03	7.25E+03		1107	1013
26	9304-01-BL-00-11-0	8/22/2006	10:42:00	8.71E+03			1107	1013
27	9304-01-SL-00-11-0	8/22/2006	10:43:00	7.58E+03	1.00E+04		1107	1013
28	9304-01-BL-00-12-0	8/22/2006	10:50:00	9.73E+03			1107	1013
29	9304-01-SL-00-12-0	8/22/2006	10:52:00	9.25E+03	1.11E+04		1107	1013
30	9304-01-BL-00-13-0	8/22/2006	10:53:00	9.31E+03			1107	1013
31	9304-01-SL-00-13-0	8/22/2006	10:55:00	1.02E+04	1.07E+04		1107	1013
32	9304-01-BL-00-14-0	8/22/2006	11:01:00	8.60E+03			1107	1013
33	9304-01-SL-00-14-0	8/22/2006	11:03:00	8.50E+03	9.92E+03		1107	1013
34	9304-01-BL-00-15-0	8/22/2006	11:07:00	8.90E+03			1107	1013
35	9304-01-SL-00-15-0	8/22/2006	11:08:00	8.45E+03	1.02E+04		1107	1013
36	9304-01-BL-00-16-0	8/22/2006	11:09:00	7.16E+03			1107	1013
37	9304-01-SL-00-16-0	8/22/2006	11:11:00	7.89E+03	8.37E+03		1107	1013
38	9304-01-BL-00-21-0	8/22/2006	11:18:00	7.21E+03			1107	1013
39	9304-01-SL-00-21-0	8/22/2006	11:20:00	8.11E+03	8.42E+03		1107	1013

SURVEY UNIT
9304-0001
(CLASS 2 AREA)
SCAN AREA 2

Survey Location	Log Date	Log Time	Reading	AL	>AL	E-600 S/N	Probe S/N
9304-01-BC-02-01-0	8/17/2006	13:08:00	8.79E+03			1107	1013
9304-01-SC-02-01-0	8/17/2006	13:14:00	8.14E+03	1.01E+04		1107	1013
9304-01-BC-02-02-0	8/17/2006	13:15:00	9.37E+03			1107	1013
9304-01-SC-02-02-0	8/17/2006	13:18:00	9.06E+03	1.08E+04		1107	1013
9304-01-BC-02-03-0	8/17/2006	13:19:00	8.16E+03			1107	1013
9304-01-SC-02-03-0	8/17/2006	13:24:00	9.08E+03	9.45E+03		1107	1013
9304-01-BC-02-04-0	8/17/2006	13:25:00	9.49E+03			1107	1013
9304-01-SC-02-04-0	8/17/2006	13:29:00	9.62E+03	1.09E+04		1107	1013
9304-01-BC-02-05-0	8/17/2006	13:31:00	1.00E+04			1107	1013
9304-01-SC-02-05-0	8/17/2006	13:35:00	8.61E+03	1.14E+04		1107	1013
9304-01-BC-02-06-0	8/17/2006	13:36:00	9.49E+03			1107	1013
9304-01-SC-02-06-0	8/17/2006	13:41:00	8.00E+03	1.09E+04		1107	1013
9304-01-BC-02-07-0	8/17/2006	13:42:00	8.67E+03			1107	1013
9304-01-ER-02-07-1	8/17/2006	13:47:00	1.03E+04	1.00E+04	+	1107	1013
9304-01-SC-02-07-0	8/17/2006	13:48:00	8.02E+03	1.00E+04		1107	1013
9304-01-BC-02-08-0	8/17/2006	13:50:00	9.75E+03			1107	1013
9304-01-SC-02-08-0	8/17/2006	13:54:00	9.18E+03	1.12E+04		1107	1013
9304-01-BC-02-09-0	8/17/2006	13:11:00	9.19E+03			1115	1009
9304-01-ER-02-09-1	8/17/2006	13:22:00	1.19E+04	1.06E+04	+	1115	1009
9304-01-SC-02-09-0	8/17/2006	13:23:00	9.41E+03	1.06E+04		1115	1009
9304-01-BC-02-10-0	8/17/2006	13:24:00	9.82E+03			1115	1009
9304-01-ER-02-10-1	8/17/2006	13:33:00	1.13E+04	1.12E+04	+	1115	1009
9304-01-SC-02-10-0	8/17/2006	13:33:00	9.50E+03	1.12E+04		1115	1009
9304-01-BC-02-11-0	8/17/2006	13:35:00	1.05E+04			1115	1009
9304-01-SC-02-11-0	8/17/2006	13:39:00	1.01E+04	1.20E+04		1115	1009
9304-01-BC-02-12-0	8/17/2006	13:40:00	1.04E+04			1115	1009
9304-01-SC-02-12-0	8/17/2006	13:44:00	9.49E+03	1.19E+04		1115	1009
9304-01-BC-02-13-0	8/17/2006	13:46:00	1.03E+04			1115	1009
9304-01-SC-02-13-0	8/17/2006	13:49:00	9.65E+03	1.17E+04		1115	1009
9304-01-BC-02-14-0	8/17/2006	13:50:00	9.79E+03			1115	1009
9304-01-SC-02-14-0	8/17/2006	13:55:00	1.03E+04	1.12E+04		1115	1009

SURVEY UNIT
9304-0001
(CLASS 2 AREA)
SCAN AREA 1

Survey Location	Log Date	Log Time	Reading	AL	>AL	E-600 S/N	Probe S/N
9304-01-BC-01-25-0	8/18/2006	13:06:00	9.79E+03				
9304-01-SC-01-25-0	8/18/2006	0:00:00	1.11E+04	1.12E+04		1117	1001
9304-01-ER-01-25-1	8/18/2006	13:14:00	1.16E+04	1.12E+04	+	1117	1001
9304-01-BC-01-26-0	8/18/2006	13:16:00	9.46E+03			1117	1001
9304-01-SC-01-26-0	8/18/2006	13:19:00	1.04E+04	1.08E+04		1117	1001
9304-01-BC-01-27-0	8/18/2006	13:20:00	1.01E+04			1117	1001
9304-01-SC-01-27-0	8/18/2006	13:22:00	9.71E+03	1.15E+04		1117	1001
9304-01-BC-01-28-0	8/18/2006	13:23:00	1.04E+04			1117	1001
9304-01-SC-01-28-0	8/18/2006	13:25:00	8.37E+03	1.19E+04		1117	1001
9304-01-BC-01-29-0	8/18/2006	13:26:00	1.05E+04			1117	1001
9304-01-SC-01-29-0	8/18/2006	13:28:00	8.34E+03	1.20E+04		1117	1001
9304-01-BC-01-30-0	8/18/2006	13:30:00	9.99E+03			1117	1001
9304-01-SC-01-30-0	8/18/2006	13:32:00	8.90E+03	1.14E+04		1117	1001
9304-01-BC-01-31-0	8/18/2006	13:33:00	1.03E+04			1117	1001
9304-01-SC-01-31-0	8/18/2006	13:35:00	8.54E+03	1.17E+04		1117	1001
9304-01-BC-01-32-0	8/18/2006	13:35:00	9.14E+03			1117	1001
9304-01-SC-01-32-0	8/18/2006	13:37:00	9.49E+03	1.05E+04		1117	1001

SURVEY UNIT
9304-0001
(CLASS 2 AREA)
SCAN AREA 1

Survey Location	Log Date	Log Time	Reading	AL	>AL	E-600 S/N	Probe S/N
9304-01-BC-01-01-0	8/18/2006	13:04:00	8.64E+03			1105	1012
9304-01-SC-01-01-0	8/18/2006	13:09:00	9.18E+03	9.97E+03		1105	1012
9304-01-BC-01-02-0	8/18/2006	13:09:00	9.97E+03			1105	1012
9304-01-SC-01-02-0	8/18/2006	13:12:00	9.82E+03	1.14E+04		1105	1012
9304-01-BC-01-03-0	8/18/2006	13:13:00	8.37E+03			1105	1012
9304-01-SC-01-03-0	8/18/2006	13:16:00	8.30E+03	9.68E+03		1105	1012
9304-01-BC-01-04-0	8/18/2006	13:16:00	8.53E+03			1105	1012
9304-01-SC-01-04-0	8/18/2006	13:19:00	8.02E+03	9.85E+03		1105	1012
9304-01-BC-01-05-0	8/17/2006	14:12:00	7.73E+03			1115	1009
9304-01-SC-01-05-0	8/17/2006	14:24:00	7.42E+03	8.99E+03		1115	1009
9304-01-BC-01-06-0	8/17/2006	14:25:00	7.72E+03			1115	1009
9304-01-SC-01-06-0	8/17/2006	14:26:00	7.71E+03	8.97E+03		1115	1009
9304-01-BC-01-07-0	8/17/2006	14:33:00	8.15E+03			1115	1009
9304-01-SC-01-07-0	8/17/2006	14:34:00	7.87E+03	9.44E+03		1115	1009
9304-01-BC-01-08-0	8/17/2006	14:35:00	8.25E+03			1115	1009
9304-01-SC-01-08-0	8/17/2006	14:37:00	7.83E+03	9.55E+03		1115	1009
9304-01-BC-01-09-0	8/17/2006	14:38:00	7.27E+03			1115	1009
9304-01-SC-01-09-0	8/17/2006	14:41:00	8.04E+03	8.49E+03		1115	1009
9304-01-BC-01-10-0	8/17/2006	14:42:00	8.37E+03			1115	1009
9304-01-SC-01-10-0	8/17/2006	14:44:00	8.42E+03	9.68E+03		1115	1009
9304-01-BC-01-11-0	8/17/2006	14:12:00	6.75E+03			1107	1013
9304-01-SC-01-11-0	8/17/2006	14:23:00	7.70E+03	7.92E+03		1107	1013
9304-01-BC-01-12-0	8/17/2006	14:24:00	7.06E+03			1107	1013
9304-01-SC-01-12-0	8/17/2006	14:25:00	7.64E+03	8.26E+03		1107	1013
9304-01-BC-01-13-0	8/17/2006	14:26:00	6.68E+03			1107	1013
9304-01-SC-01-13-0	8/17/2006	14:28:00	6.88E+03	7.85E+03		1107	1013
9304-01-BC-01-14-0	8/17/2006	14:29:00	6.54E+03			1107	1013
9304-01-SC-01-14-0	8/17/2006	14:31:00	7.03E+03	7.69E+03		1107	1013
9304-01-BC-01-15-0	8/17/2006	14:32:00	6.93E+03			1107	1013
9304-01-SC-01-15-0	8/17/2006	14:34:00	7.49E+03	8.12E+03		1107	1013
9304-01-BC-01-16-0	8/17/2006	14:34:00	7.74E+03			1107	1013
9304-01-SC-01-16-0	8/17/2006	14:36:00	7.00E+03	9.00E+03		1107	1013
9304-01-BC-01-17-0	8/18/2006	12:34:00	1.08E+04			1105	1012
9304-01-SC-01-17-0	8/18/2006	12:37:00	1.05E+04	1.23E+04		1105	1012
9304-01-BC-01-18-0	8/18/2006	12:38:00	1.10E+04			1105	1012
9304-01-SC-01-18-0	8/18/2006	12:41:00	1.00E+04	1.25E+04		1105	1012
9304-01-BC-01-19-0	8/18/2006	12:42:00	1.07E+04			1105	1012
9304-01-SC-01-19-0	8/18/2006	12:46:00	1.05E+04	1.22E+04		1105	1012
9304-01-BC-01-20-0	8/18/2006	12:47:00	1.08E+04			1105	1012
9304-01-SC-01-20-0	8/18/2006	12:50:00	1.05E+04	1.23E+04		1105	1012
9304-01-BC-01-21-0	8/18/2006	12:51:00	1.15E+04			1105	1012
9304-01-SC-01-21-0	8/18/2006	12:53:00	1.15E+04	1.30E+04		1105	1012
9304-01-BC-01-22-0	8/18/2006	12:54:00	1.14E+04			1105	1012
9304-01-SC-01-22-0	8/18/2006	12:56:00	1.12E+04	1.29E+04		1105	1012
9304-01-BC-01-23-0	8/18/2006	12:57:00	1.14E+04			1105	1012
9304-01-SC-01-23-0	8/18/2006	12:59:00	1.08E+04	1.29E+04		1105	1012
9304-01-BC-01-24-0	8/18/2006	13:00:00	1.15E+04			1105	1012
9304-01-SC-01-24-0	8/18/2006	13:02:00	1.04E+04	1.30E+04		1105	1012

SURVEY UNIT
9304-0001
(CLASS 2 AREA)
SCAN AREA 3

Survey Location	Log Date	Log Time	Reading	AL	>AL	E-600 S/N	Probe S/N
9304-01-BC-03-01-0	8/17/2006	13:07:00	9.85E+03			1115	1009
9304-01-SC-03-01-0	8/17/2006	13:10:00	8.16E+03	1.13E+04		1115	1009
9304-01-BC-03-02-0	8/17/2006	10:20:00	8.77E+03	1.01E+04		1115	1009
9304-01-SC-03-02-0	8/17/2006	10:26:00	8.49E+03			1115	1009
9304-01-BC-03-03-0	8/17/2006	10:28:00	8.49E+03	9.81E+03		1115	1009
9304-01-SC-03-03-0	8/17/2006	10:33:00	8.62E+03			1115	1009
9304-01-BC-03-04-0	8/17/2006	10:34:00	8.56E+03	9.88E+03		1115	1009
9304-01-SC-03-04-0	8/17/2006	10:39:00	8.74E+03			1115	1009
9304-01-BC-03-05-0	8/17/2006	10:40:00	9.09E+03	1.05E+04		1115	1009
9304-01-SC-03-05-0	8/17/2006	10:45:00	8.18E+03			1115	1009
9304-01-BC-03-06-0	8/17/2006	10:47:00	9.42E+03	1.08E+04		1115	1009
9304-01-SC-03-06-0	8/17/2006	10:51:00	8.04E+03			1115	1009
9304-01-BC-03-07-0	8/17/2006	10:52:00	8.45E+03	9.76E+03		1115	1009
9304-01-SC-03-07-0	8/17/2006	10:55:00	8.95E+03			1115	1009
9304-01-BC-03-08-0	8/17/2006	10:56:00	8.84E+03	1.02E+04		1115	1009
9304-01-SC-03-08-0	8/17/2006	11:03:00	7.59E+03			1115	1009
9304-01-BC-03-09-0	8/17/2006	10:10:00	7.15E+03	8.36E+03		1107	1013
9304-01-SC-03-09-0	8/17/2006	10:17:00	7.30E+03			1107	1013
9304-01-BC-03-10-0	8/17/2006	10:18:00	7.27E+03	8.49E+03		1107	1013
9304-01-SC-03-10-0	8/17/2006	10:23:00	7.15E+03			1107	1013
9304-01-BC-03-11-0	8/17/2006	10:24:00	7.10E+03	8.30E+03		1107	1013
9304-01-SC-03-11-0	8/17/2006	10:29:00	7.33E+03			1107	1013
9304-01-BC-03-12-0	8/17/2006	10:30:00	6.69E+03	7.86E+03		1107	1013
9304-01-SC-03-12-0	8/17/2006	10:35:00	6.93E+03			1107	1013
9304-01-BC-03-13-0	8/17/2006	10:37:00	6.34E+03	7.48E+03		1107	1013
9304-01-SC-03-13-0	8/17/2006	10:45:00	7.34E+03			1107	1013
9304-01-BC-03-14-0	8/17/2006	10:47:00	6.42E+03	7.56E+03		1107	1013
9304-01-SC-03-14-0	8/17/2006	10:56:00	7.32E+03			1107	1013

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

**ATTACHMENT 3
(LABORATORY DATA)**

General Narrative

CASE NARRATIVE
For
CONNECTICUT YANKEE
RE: Soil
PO# 002332
Work Order: 170543
SDG: MSR#06-1172

September 6, 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 August 30, 2006. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following sample(s):

<u>Sample ID</u>	<u>Client Sample ID</u>
170543001	9304-0001-001F
170543002	9304-0001-002F
170543003	9304-0001-002FS
170543004	9304-0001-003F
170543005	9304-0001-004F
170543006	9304-0001-005F
170543007	9304-0001-009F
170543008	9304-0001-010F
170543009	9304-0001-010FS

170543010	9304-0001-011F
170543011	9304-0001-012F
170543012	9304-0001-014F
170543013	9304-0001-015F
170543014	9304-0001-016F
170543015	9304-0001-017F
170543016	9304-0001-018F
170543017	9304-0001-019F
170543018	9304-0001-020F
170543019	9304-0001-021F
170543020	9304-0001-008F
170543021	9304-0001-013F

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:

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

Internal Chain of Custody:

Custody was maintained for the sample(s).

Data Package:

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

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



Cheryl Jones
Project Manager

List of current GEL Certifications as of 06 September 2006

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	N/A
Virginia	00151
Washington	C223

**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. 2006-00513

170543%

Project Name: Haddam Neck Decommissioning							Analyses Requested				Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924											Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.														
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code	FSSGAM	FSSALL					Comment, Preservation	Lab Sample ID	
9304-0001-001F	8/22/06	0938	TS	G	BP	X								
9304-0001-002F	8/22/06	1004	TS	G	BP	X								
9304-0001-002FS	8/22/06	1004	TS	G	BP	X								
9304-0001-003F	8/22/06	0945	TS	G	BP	X								
9304-0001-004F (0955)	8/22/06	0945	TS	G	BP	X-								
9304-0001-005F	8/22/06	1015	TS	G	BP	X-								
9304-0001-008F	8/22/06	1019	TS	G	BP		X							
9304-0001-009F (1034)	8/22/06	1035	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 06-1172 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.: <u>23</u> Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By <i>[Signature]</i>			Date/Time 8/29/06 1315			2) Received By <i>[Signature]</i>			Date/Time 8/30/06 0915			7900 5137 8770 Bill of Lading #		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

02
03
04
05
06
07

Connecticut Yankee Atomic Power Company						Chain of Custody Form						No. 2006-00514			
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						1705437.									
Project Name: Haddam Neck Decommissioning						Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924												Comments:			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL						Comment, Preservation	Lab Sample ID	
9304-0001-010F	8/22/06	1039	TS	G	BP	X									
9304-0001-010FS	8/22/06	1039	TS	G	BP	X									
9304-0001-011F	8/22/06	1045	TS	G	BP	X									
9304-0001-012F	8/22/06	1053	TS	G	BP	X									
9304-0001-013F	8/22/06	1057	TS	G	BP		X								
9304-0001-014F	8/22/06	1104	TS	G	BP	X									
9304-0001-015F	8/22/06	1110	TS	G	BP	X									
9304-0001-016F	8/22/06	1112	TS	G	BP	X									
9304-0001-017F	8/22/06	0809	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 06-1172 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.: 23 Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By <i>[Signature]</i>			Date/Time 8/29/06 1315			2) Received By <i>[Signature]</i>			Date/Time 8/30/06 0915			Bill of Lading #			
3) Relinquished By			Date/Time			4) Received By			Date/Time						
5) Relinquished By			Date/Time			6) Received By			Date/Time						

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Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						Chain of Custody Form						No. 2006-00515			
Project Name: Haddam Neck Decommissioning						170543%						Analyses Requested		Lab Use Only	
Contact Name & Phone: Jack McCarthy 860-267-3924						<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">FSSGAM</td> <td style="width: 50%; text-align: center;">FSSALL</td> </tr> </table>						FSSGAM	FSSALL	Comments:	
FSSGAM	FSSALL														
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size- & Type Code							Comment, Preservation	Lab Sample ID		
9304-0001-018F	8/22/06	0815	TS	G	BP	X									
9304-0001-019F (0825)	8/22/06	0822	TS	G	BP	X									
9304-0001-020F	8/22/06	0830	TS	G	BP	X									
9304-0001-021F	8/22/06	1121	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 06- 1172 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.: <u>23</u> Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>			
1) Relinquished By <i>J. O. Gault</i>			Date/Time 8/29/06 1315			2) Received By <i>K. K. Gault</i>			Date/Time 8/30/06 0915			Bill of Lading #			
3) Relinquished By			Date/Time			4) Received By			Date/Time						
5) Relinquished By			Date/Time			6) Received By			Date/Time						

Figure 1. Sample Check-in List

Date/Time Received: 8/30/06 0915.

SDG#: MSR# 06-1172

Work Order Number: 170543

Shipping Container ID: 7900 5137 8770 Chain of Custody # 2006-00514/15/13

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 - soil
5. Vermiculite/packing materials is: Wet Dry not present.
6. Number of samples in shipping container: 21
7. Sample holding times exceeded? Yes No

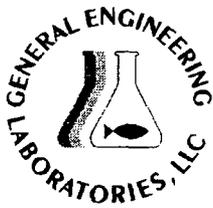
8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/>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

10. Were any anomalies identified in sample receipt? Yes No

11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: K. W. Light Date: 8/30/06 0915

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Bank</u>	SDG/ARCOC/Work Order: <u>170543</u>
Date Received: <u>8.30.06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>(Signature)</u>	<u>(Signature)</u>

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant # ice bags blue ice dry ice none other describe)
3	Chain of custody documents included with shipment?				
4	Sample containers intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8	Samples received within holding time?				Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?				Sample ID's affected:
11	Number of containers received match number indicated on COC?				Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?				
14	Air Bill ,Tracking #'s, & Additional Comments				<u>Chain # 2006-00513 00514 00515</u>

#	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Maximum Counts Observed*: <u>cpm 20 Not RAD-cty</u>
B	PCB Regulated?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Comments: _____
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: _____ UN#: _____
PM (or PMA) review of Hazard classification:		Initials		Date: <u>8/30/06</u>	

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 170543**

Method/Analysis Information

Product: Alphaspec Am241, Cm, Solid ALL FSS
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep
Analytical Batch Number: 564247
Prep Batch Number: 563877
Dry Soil Prep GL-RAD-A-021 Batch Number: 563873

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173419	Method Blank (MB)
1201173420	170543020(9304-0001-008F) Sample Duplicate (DUP)
1201173421	170543020(9304-0001-008F) Matrix Spike (MS)
1201173422	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: 170543020 (9304-0001-008F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Batch was cleaned-up and recounted due to Thorium interference.

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

Qualifier	Reason	Analyte	Sample
X	Results may be biased high due to Thorium interference in the sample.	Americium-241	170543020 170543021 1201173420

Method/Analysis Information

Product: Alphaspec Pu, Solid-ALL FSS

Analytical Method: DOE EML HASL-300, Pu-11-RC Modified

Prep Method: Ash Soil Prep

Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep

Analytical Batch Number: 564258

Prep Batch Number: 563877

Dry Soil Prep GL-RAD-A-021 Batch Number: 563873

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173423	Method Blank (MB)
1201173424	170543020(9304-0001-008F) Sample Duplicate (DUP)
1201173425	170543020(9304-0001-008F) Matrix Spike (MS)
1201173426	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: 170543020 (9304-0001-008F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Sample 1201173423 (MB) was recounted due to a negative result greater than three times the 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

Product:	Liquid Scint Pu241, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	564259
Prep Batch Number:	563877
Dry Soil Prep GL-RAD-A-021 Batch Number:	563873

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173427	Method Blank (MB)
1201173428	170543020(9304-0001-008F) Sample Duplicate (DUP)
1201173429	170543020(9304-0001-008F) Matrix Spike (MS)
1201173430	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: 170543020 (9304-0001-008F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	563986
Prep Batch Number:	563873

Sample ID	Client ID
170543001	9304-0001-001F
170543002	9304-0001-002F
170543003	9304-0001-002FS
170543004	9304-0001-003F
170543005	9304-0001-004F
170543006	9304-0001-005F
170543007	9304-0001-009F
170543008	9304-0001-010F
170543009	9304-0001-010FS
170543010	9304-0001-011F
170543011	9304-0001-012F
170543012	9304-0001-014F
170543013	9304-0001-015F
170543014	9304-0001-016F
170543015	9304-0001-017F
170543016	9304-0001-018F
170543017	9304-0001-019F
170543018	9304-0001-020F
170543019	9304-0001-021F
170543020	9304-0001-008F
1201172831	Method Blank (MB)
1201172832	170543001(9304-0001-001F) Sample Duplicate (DUP)
1201172833	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 12.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 170543001 (9304-0001-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples 170543005 (9304-0001-004F), 170543010 (9304-0001-011F), 170543015 (9304-0001-017F) and 170543019 (9304-0001-021F) 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. The following NCR was generated for this SDG: NCR 358811 was generated due to Failed RPD for DUP. 1. The relative percent difference (170543001, 1201172832) did not meet with in the duplication criteria for Pb-212. 1. Pb-212 is a naturally occurring nuclide. All other nuclides meet the duplication criteria.

Additional Comments

The relative percent difference (1201172832 (9304-0001-001F) and 170543001 (9304-0001-001F)) for Ac-228 do not meet the duplication criteria. However, when a relative error ratio is calculated, precision is shown at 1.48374 for Ac-228.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak-width.	Cesium-137	170543001
UI	Data rejected due to interference.	Cesium-134	170543007
		Europium-155	170543013
UI	Data rejected due to low abundance.	Cesium-134	170543002
			170543003
			170543006
			170543013
			170543015
			170543016
			170543017
			170543018
			170543019
		Europium-155	170543007
		Niobium-94	170543001
		Silver-108m	170543009

Method/Analysis Information

Product: Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived
Analytical Method: EML HASL 300, 4.5.2.3
Prep Method: Dry Soil Prep
Analytical Batch Number: 563988
Prep Batch Number: 563875

Sample ID	Client ID
170543021	9304-0001-013F
1201172834	Method Blank (MB)
1201172835	170543021(9304-0001-013F) Sample Duplicate (DUP)
1201172836	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 12.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 170543021 (9304-0001-013F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

The duplicate and the sample 1201172835 (9304-0001-013F) and 170543021 (9304-0001-013F) did not meet the relative percent difference requirement for Bi-214 and Ra-226, but they do meet the relative error ratio requirement with a value of 1.79394.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: GFPC, Sr90, solid-ALL FSS
Analytical Method: EPA 905.0 Modified
Prep Method: Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep
Analytical Batch Number: 564153
Prep Batch Number: 563877
Dry Soil Prep GL-RAD-A-021 Batch Number: 563873

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173179	Method Blank (MB)
1201173180	170544018(9304-0002-005F) Sample Duplicate (DUP)
1201173181	170544018(9304-0002-005F) Matrix Spike (MS)
1201173182	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: 170544018 (9304-0002-005F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Chemical Recoveries

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Tc99, Solid-ALL FSS
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	564445

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173840	Method Blank (MB)
1201173841	170544018(9304-0002-005F) Sample Duplicate (DUP)
1201173842	170544018(9304-0002-005F) Matrix Spike (MS)
1201173843	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: 170544018 (9304-0002-005F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint Fe55, Solid-ALL FSS
Analytical Method:	DOE RESL Fe-1, Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	564451
Prep Batch Number:	563877
Dry Soil Prep GL-RAD-A-021 Batch Number:	563873

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173858	Method Blank (MB)
1201173859	170543020(9304-0001-008F) Sample Duplicate (DUP)
1201173860	170543020(9304-0001-008F) Matrix Spike (MS)
1201173861	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: 170543020 (9304-0001-008F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Liquid Scint Ni63, Solid-ALL FSS
Analytical Method: DOE RESL Ni-1, Modified
Prep Method: Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep
Analytical Batch Number: 564452
Prep Batch Number: 563877
Dry Soil Prep GL-RAD-A-021 Batch Number: 563873

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173872	Method Blank (MB)
1201173873	170543020(9304-0001-008F) Sample Duplicate (DUP)
1201173874	170543020(9304-0001-008F) Matrix Spike (MS)
1201173875	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: 170543020 (9304-0001-008F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: LSC, Tritium Dist, Solid-HTD2,ALL FSS
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 564447

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173844	Method Blank (MB)
1201173845	170544018(9304-0002-005F) Sample Duplicate (DUP)
1201173846	170544018(9304-0002-005F) Matrix Spike (MS)
1201173847	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 170544018 (9304-0002-005F).

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 1201173846 (9304-0002-005F) and 1201173847 (LCS) were recounted 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. The following NCR was generated for this SDG: NCR 356177 was generated due to Container scanning event for custody missed. 1. Container scanning event for custody missed: The analyst did not scan the samples into the batch prior to analysis, however the samples did remain in their custody at all times. 1. The error has been corrected and the analyst has been instructed on proper scanning procedures. Reporting results

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: 564449

Sample ID	Client ID
170543020	9304-0001-008F
170543021	9304-0001-013F
1201173848	Method Blank (MB)
1201173849	170544019(9304-0002-008F) Sample Duplicate (DUP)
1201173850	170544019(9304-0002-008F) Matrix Spike (MS)
1201173851	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: 170544019 (9304-0002-008F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples 1201173849 (9304-0002-008F), 170543020 (9304-0001-008F) and 170543021 (9304-0001-013F) were recounted due to a negative result greater than three times the 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.

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: LCnd 9/15/09

COMPANY - WIDE NONCONFORMANCE REPORT

Mo.Day Yr. 14-SEP-06	Division: Industrial	Quality Criteria: SOP	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: EML HASL 300, 4.5.2.3	Matrix Type: Solid	Client Code: YANK
Batch ID: 563986	Sample Numbers: 170543001, 1201172832		
Potentially affected work order(s)(SDG): 170543(MSR#06-1172)			
Application Issues: Failed RPD for DUP			
Specification and Requirements		NRG Disposition:	
Nonconformance Description:			
1. The relative percent difference (170543001, 1201172832) did not meet with in the duplication criteria for Pb-212.		1. Pb-212 is a naturally occurring nuclide. All other nuclides meet the duplication criteria.	

Originator's Name:
 Jimmy Hartley 14-SEP-06

Data Validator/Group Leader:
 Lesley Anderson 15-SEP-06

Quality Review:

Director:

COMPANY - WIDE NONCONFORMANCE REPORT

Mo.Day Yr. 08-SEP-06	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: LSC	Test / Method: EPA 906.0 Modified	Matrix Type: Solid	Client Code: YANK
Batch ID: 564447	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 170543(MSR#06-1172),170544(MSR#06-1174),170683			
Application Issues: Container scanning event for custody missed			
Specification and Requirements Nonconformance Description:		NRG Disposition:	
1. Container scanning event for custody missed: The analyst did not scan the samples into the batch prior to analysis, however the samples did remain in their custody at all times.		1. The error has been corrected and the analyst has been instructed on proper scanning procedures. Reporting results	

Originator's Name:
 Kenshalla Oston 08-SEP-06

Data Validator/Group Leader:
 Melanie Aycock 08-SEP-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#06-1172 GEL Work Order: 170543

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

A handwritten signature in black ink, appearing to read "Z. Lynch", is written over a horizontal line.

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: September 15, 2006

Client Sample ID:	9304-0001-001F	Project:	YANK01204
Sample ID:	170543001	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	22-AUG-06		
Receive Date:	30-AUG-06		
Collector:	Client		
Moisture:	7.42%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.786	+/-0.169	0.0513	+/-0.169	0.111	pCi/g		MJH1	09/10/06	1905	563986
Americium-241	U	-0.00558	+/-0.0443	0.0404	+/-0.0443	0.0833	pCi/g					
Bismuth-212		0.761	+/-0.305	0.122	+/-0.305	0.260	pCi/g					
Bismuth-214		0.631	+/-0.0933	0.0298	+/-0.0933	0.063	pCi/g					
Cesium-134	U	0.0345	+/-0.0282	0.0211	+/-0.0282	0.0444	pCi/g					
Cesium-137	UI	0.00	+/-0.0287	0.0134	+/-0.0287	0.0287	pCi/g					
Cobalt-60	U	-0.00442	+/-0.0201	0.0162	+/-0.0201	0.0354	pCi/g					
Europium-152	U	0.0327	+/-0.0436	0.0403	+/-0.0436	0.0844	pCi/g					
Europium-154	U	-0.0073	+/-0.0497	0.0406	+/-0.0497	0.0894	pCi/g					
Europium-155	U	0.0796	+/-0.0682	0.0397	+/-0.0682	0.0821	pCi/g					
Lead-212		0.707	+/-0.0898	0.0301	+/-0.0898	0.062	pCi/g					
Lead-214		0.690	+/-0.0938	0.0302	+/-0.0938	0.0631	pCi/g					
Manganese-54	U	-0.00214	+/-0.0188	0.0163	+/-0.0188	0.0347	pCi/g					
Niobium-94	UI	0.00	+/-0.0242	0.0156	+/-0.0242	0.033	pCi/g					
Potassium-40		15.4	+/-1.24	0.135	+/-1.24	0.299	pCi/g					
Radium-226		0.631	+/-0.0933	0.0298	+/-0.0933	0.063	pCi/g					
Silver-108m	U	0.0051	+/-0.0156	0.0138	+/-0.0156	0.0291	pCi/g					
Thallium-208		0.278	+/-0.0444	0.0163	+/-0.0444	0.0344	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304–0001–001F
Sample ID: 170543001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-002F
Sample ID: 170543002
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 3.38%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch #
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.843	+/-0.200	0.0693	+/-0.200	0.139	pCi/g		MJH1	09/10/06	1918	563986
Americium-241	U	0.0867	+/-0.0881	0.0749	+/-0.0881	0.150	pCi/g					
Bismuth-212		0.461	+/-0.279	0.128	+/-0.279	0.256	pCi/g					
Bismuth-214		0.600	+/-0.110	0.0349	+/-0.110	0.0697	pCi/g					
Cesium-134	UI	0.00	+/-0.0455	0.0254	+/-0.0455	0.0509	pCi/g					
Cesium-137		0.0646	+/-0.0321	0.0177	+/-0.0321	0.0354	pCi/g					
Cobalt-60	U	0.00638	+/-0.022	0.0192	+/-0.022	0.0384	pCi/g					
Europium-152	U	-0.00705	+/-0.0696	0.0507	+/-0.0696	0.101	pCi/g					
Europium-154	U	0.00158	+/-0.0645	0.0549	+/-0.0645	0.110	pCi/g					
Europium-155	U	0.0212	+/-0.0745	0.0539	+/-0.0745	0.108	pCi/g					
Lead-212		0.798	+/-0.0913	0.028	+/-0.0913	0.0561	pCi/g					
Lead-214		0.721	+/-0.0981	0.0361	+/-0.0981	0.0721	pCi/g					
Manganese-54	U	0.0102	+/-0.0217	0.0196	+/-0.0217	0.0393	pCi/g					
Niobium-94	U	0.0132	+/-0.0199	0.0177	+/-0.0199	0.0355	pCi/g					
Potassium-40		14.0	+/-1.25	0.152	+/-1.25	0.304	pCi/g					
Radium-226		0.600	+/-0.110	0.0349	+/-0.110	0.0697	pCi/g					
Silver-108m	U	-0.00253	+/-0.019	0.0167	+/-0.019	0.0333	pCi/g					
Thallium-208		0.238	+/-0.0446	0.0181	+/-0.0446	0.0361	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-002F
Sample ID: 170543002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-002FS
Sample ID: 170543003
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 3.43%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.04	+/-0.221	0.0898	+/-0.221	0.179	pCi/g		MJH1	09/10/06	1919	563986
Americium-241	U	0.0257	+/-0.0431	0.0353	+/-0.0431	0.0706	pCi/g					
Bismuth-212		0.909	+/-0.346	0.190	+/-0.346	0.379	pCi/g					
Bismuth-214		0.742	+/-0.135	0.0444	+/-0.135	0.0887	pCi/g					
Cesium-134	UI	0.00	+/-0.0372	0.0358	+/-0.0372	0.0715	pCi/g					
Cesium-137		0.062	+/-0.036	0.0259	+/-0.036	0.0519	pCi/g					
Cobalt-60	U	0.00609	+/-0.0346	0.0295	+/-0.0346	0.059	pCi/g					
Europium-152	U	0.0228	+/-0.0925	0.0573	+/-0.0925	0.115	pCi/g					
Europium-154	U	-0.00385	+/-0.109	0.0775	+/-0.109	0.155	pCi/g					
Europium-155	U	0.0556	+/-0.0705	0.0565	+/-0.0705	0.113	pCi/g					
Lead-212		0.889	+/-0.102	0.0314	+/-0.102	0.0628	pCi/g					
Lead-214		0.912	+/-0.135	0.0404	+/-0.135	0.0808	pCi/g					
Manganese-54	U	0.00185	+/-0.0306	0.0267	+/-0.0306	0.0534	pCi/g					
Niobium-94	U	-0.00745	+/-0.0296	0.0236	+/-0.0296	0.0472	pCi/g					
Potassium-40		14.5	+/-1.23	0.258	+/-1.23	0.515	pCi/g					
Radium-226		0.742	+/-0.135	0.0444	+/-0.135	0.0887	pCi/g					
Silver-108m	U	-0.0163	+/-0.0239	0.0199	+/-0.0239	0.0397	pCi/g					
Thallium-208		0.308	+/-0.0557	0.0238	+/-0.0557	0.0476	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-002FS
Sample ID: 170543003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-003F
Sample ID: 170543004
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 2.55%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.19	+/-0.234	0.0717	+/-0.234	0.143	pCi/g		MJH1	09/10/06	2135	563986
Americium-241	U	0.108	+/-0.0884	0.0719	+/-0.0884	0.144	pCi/g					
Bismuth-212		0.654	+/-0.318	0.162	+/-0.318	0.324	pCi/g					
Bismuth-214		0.924	+/-0.135	0.0422	+/-0.135	0.0844	pCi/g					
Cesium-134	U	0.0307	+/-0.0496	0.0288	+/-0.0496	0.0575	pCi/g					
Cesium-137		0.0511	+/-0.0293	0.0199	+/-0.0293	0.0397	pCi/g					
Cobalt-60	U	-0.00587	+/-0.0267	0.0216	+/-0.0267	0.0433	pCi/g					
Europium-152	U	-0.00667	+/-0.0761	0.0569	+/-0.0761	0.114	pCi/g					
Europium-154	U	-0.0138	+/-0.0759	0.0621	+/-0.0759	0.124	pCi/g					
Europium-155	U	0.0301	+/-0.0885	0.0635	+/-0.0885	0.127	pCi/g					
Lead-212		1.20	+/-0.121	0.0322	+/-0.121	0.0644	pCi/g					
Lead-214		1.04	+/-0.132	0.0403	+/-0.132	0.0805	pCi/g					
Manganese-54	U	-0.00288	+/-0.0298	0.0219	+/-0.0298	0.0437	pCi/g					
Niobium-94	U	0.0092	+/-0.0231	0.0205	+/-0.0231	0.041	pCi/g					
Potassium-40		17.5	+/-1.50	0.186	+/-1.50	0.372	pCi/g					
Radium-226		0.924	+/-0.135	0.0422	+/-0.135	0.0844	pCi/g					
Silver-108m	U	-0.0187	+/-0.022	0.0179	+/-0.022	0.0358	pCi/g					
Thallium-208		0.387	+/-0.0653	0.0201	+/-0.0653	0.0401	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-003F
 Sample ID: 170543004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-004F
 Sample ID: 170543005
 Matrix: Soil
 Collect Date: 22-AUG-06
 Receive Date: 30-AUG-06
 Collector: Client
 Moisture: 4.55%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.610	+/-0.140	0.044	+/-0.140	0.0959	pCi/g		MJH1	09/13/06	2053	563986
Americium-241	U	-0.0423	+/-0.0707	0.058	+/-0.0707	0.120	pCi/g					
Bismuth-212		0.489	+/-0.202	0.113	+/-0.202	0.242	pCi/g					
Bismuth-214		0.554	+/-0.0811	0.0244	+/-0.0811	0.0521	pCi/g					
Cesium-134	U	0.0393	+/-0.0207	0.0187	+/-0.0207	0.0397	pCi/g					
Cesium-137	U	0.019	+/-0.0173	0.0146	+/-0.0173	0.0311	pCi/g					
Cobalt-60	U	0.00204	+/-0.0165	0.0144	+/-0.0165	0.0319	pCi/g					
Europium-152	U	0.00343	+/-0.0408	0.0348	+/-0.0408	0.0732	pCi/g					
Europium-154	U	0.0176	+/-0.0531	0.0474	+/-0.0531	0.103	pCi/g					
Europium-155	U	0.0504	+/-0.0474	0.0395	+/-0.0474	0.0817	pCi/g					
Lead-212		0.626	+/-0.0502	0.0209	+/-0.0502	0.0435	pCi/g					
Lead-214		0.586	+/-0.0715	0.0271	+/-0.0715	0.0568	pCi/g					
Manganese-54	U	-0.00477	+/-0.0177	0.0146	+/-0.0177	0.0314	pCi/g					
Niobium-94	U	0.00719	+/-0.0156	0.0139	+/-0.0156	0.0295	pCi/g					
Potassium-40		9.86	+/-0.772	0.128	+/-0.772	0.287	pCi/g					
Radium-226		0.554	+/-0.0811	0.0244	+/-0.0811	0.0521	pCi/g					
Silver-108m	U	0.00818	+/-0.0156	0.0129	+/-0.0156	0.0272	pCi/g					
Thallium-208		0.199	+/-0.0361	0.0132	+/-0.0361	0.0282	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	JMB1	08/30/06	1540	563873

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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 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: September 15, 2006

Client Sample ID: 9304-0001-004F
 Sample ID: 170543005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-005F
Sample ID: 170543006
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 4.14%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.15	+/-0.205	0.0604	+/-0.205	0.130	pCi/g		MJH1	09/10/06	2217	563986
Americium-241	U	0.00427	+/-0.0549	0.0454	+/-0.0549	0.0935	pCi/g					
Bismuth-212		0.884	+/-0.285	0.137	+/-0.285	0.291	pCi/g					
Bismuth-214		0.696	+/-0.107	0.0329	+/-0.107	0.0695	pCi/g					
Cesium-134	UI	0.00	+/-0.0378	0.0238	+/-0.0378	0.0501	pCi/g					
Cesium-137	U	-0.0218	+/-0.0205	0.0166	+/-0.0205	0.0354	pCi/g					
Cobalt-60	U	0.0108	+/-0.0216	0.0188	+/-0.0216	0.041	pCi/g					
Europium-152	U	0.0017	+/-0.0524	0.0458	+/-0.0524	0.0958	pCi/g					
Europium-154	U	0.0213	+/-0.0604	0.0519	+/-0.0604	0.113	pCi/g					
Europium-155	U	0.0501	+/-0.0543	0.0485	+/-0.0543	0.0999	pCi/g					
Lead-212		1.07	+/-0.108	0.0286	+/-0.108	0.0592	pCi/g					
Lead-214		0.807	+/-0.115	0.0324	+/-0.115	0.0678	pCi/g					
Manganese-54	U	0.000339	+/-0.021	0.0181	+/-0.021	0.0387	pCi/g					
Niobium-94	U	0.0323	+/-0.029	0.0173	+/-0.029	0.0365	pCi/g					
Potassium-40		18.2	+/-1.44	0.143	+/-1.44	0.320	pCi/g					
Radium-226		0.696	+/-0.107	0.0329	+/-0.107	0.0695	pCi/g					
Silver-108m	U	0.00638	+/-0.0182	0.0159	+/-0.0182	0.0335	pCi/g					
Thallium-208		0.333	+/-0.054	0.0183	+/-0.054	0.0387	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-005F
Sample ID: 170543006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-009F
Sample ID: 170543007
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 5.68%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.20	+/-0.196	0.0716	+/-0.196	0.143	pCi/g		MJH1	09/10/06	2230	563986
Americium-241	U	0.137	+/-0.104	0.0862	+/-0.104	0.172	pCi/g					
Bismuth-212		0.639	+/-0.405	0.158	+/-0.405	0.315	pCi/g					
Bismuth-214		0.852	+/-0.122	0.0381	+/-0.122	0.0762	pCi/g					
Cesium-134	UI	0.00	+/-0.0369	0.0229	+/-0.0369	0.0457	pCi/g					
Cesium-137	U	0.00984	+/-0.0267	0.0203	+/-0.0267	0.0405	pCi/g					
Cobalt-60	U	0.0145	+/-0.0302	0.0233	+/-0.0302	0.0466	pCi/g					
Europium-152	U	0.0184	+/-0.082	0.056	+/-0.082	0.112	pCi/g					
Europium-154	U	-0.011	+/-0.0729	0.0606	+/-0.0729	0.121	pCi/g					
Europium-155	UI	0.00	+/-0.0805	0.0672	+/-0.0805	0.134	pCi/g					
Lead-212		1.06	+/-0.116	0.0326	+/-0.116	0.0652	pCi/g					
Lead-214		1.09	+/-0.136	0.0386	+/-0.136	0.077	pCi/g					
Manganese-54	U	0.00869	+/-0.0281	0.0218	+/-0.0281	0.0435	pCi/g					
Niobium-94	U	0.0148	+/-0.0213	0.0186	+/-0.0213	0.0371	pCi/g					
Potassium-40		16.1	+/-1.39	0.195	+/-1.39	0.390	pCi/g					
Radium-226		0.852	+/-0.122	0.0381	+/-0.122	0.0762	pCi/g					
Silver-108m	U	0.00208	+/-0.021	0.0184	+/-0.021	0.0367	pCi/g					
Thallium-208		0.333	+/-0.0576	0.0199	+/-0.0576	0.0399	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-009F
Sample ID: 170543007

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

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

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Address : 362 Injun Hollow Rd

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

Report Date: September 15, 2006

Client Sample ID: 9304-0001-010F
Sample ID: 170543008
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 3.54%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.645	+/-0.212	0.104	+/-0.212	0.208	pCi/g		MJH1	09/10/06	2230	563986
Americium-241	U	-0.00937	+/-0.0386	0.0301	+/-0.0386	0.0601	pCi/g					
Bismuth-212		0.617	+/-0.297	0.158	+/-0.297	0.316	pCi/g					
Bismuth-214		0.499	+/-0.107	0.0431	+/-0.107	0.0862	pCi/g					
Cesium-134	U	0.0492	+/-0.0466	0.0308	+/-0.0466	0.0616	pCi/g					
Cesium-137		0.0835	+/-0.043	0.0283	+/-0.043	0.0566	pCi/g					
Cobalt-60	U	-0.0114	+/-0.0322	0.0255	+/-0.0322	0.0509	pCi/g					
Europium-152	U	0.0278	+/-0.082	0.0563	+/-0.082	0.113	pCi/g					
Europium-154	U	0.147	+/-0.146	0.0773	+/-0.146	0.155	pCi/g					
Europium-155	U	-0.0314	+/-0.0549	0.047	+/-0.0549	0.0939	pCi/g					
Lead-212		0.630	+/-0.0839	0.0307	+/-0.0839	0.0614	pCi/g					
Lead-214		0.635	+/-0.109	0.0375	+/-0.109	0.075	pCi/g					
Manganese-54	U	0.0116	+/-0.0332	0.0258	+/-0.0332	0.0516	pCi/g					
Niobium-94	U	0.00398	+/-0.0256	0.0222	+/-0.0256	0.0443	pCi/g					
Potassium-40		10.8	+/-1.10	0.238	+/-1.10	0.475	pCi/g					
Radium-226		0.499	+/-0.107	0.0431	+/-0.107	0.0862	pCi/g					
Silver-108m	U	0.0143	+/-0.023	0.0207	+/-0.023	0.0414	pCi/g					
Thallium-208		0.188	+/-0.0553	0.0223	+/-0.0553	0.0446	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-010F
Sample ID: 170543008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-010FS
Sample ID: 170543009
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 3.48%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.628	+/-0.155	0.056	+/-0.155	0.112	pCi/g		MJH1	09/11/06	0044	563986
Americium-241	U	-0.011	+/-0.0665	0.0524	+/-0.0665	0.105	pCi/g					
Bismuth-212		0.403	+/-0.272	0.129	+/-0.272	0.259	pCi/g					
Bismuth-214		0.463	+/-0.0842	0.0308	+/-0.0842	0.0616	pCi/g					
Cesium-134	U	0.0408	+/-0.021	0.0207	+/-0.021	0.0413	pCi/g					
Cesium-137		0.0617	+/-0.0295	0.0145	+/-0.0295	0.0289	pCi/g					
Cobalt-60	U	0.0178	+/-0.0227	0.0186	+/-0.0227	0.0371	pCi/g					
Europium-152	U	0.0242	+/-0.0856	0.0455	+/-0.0856	0.091	pCi/g					
Europium-154	U	-0.0432	+/-0.0669	0.052	+/-0.0669	0.104	pCi/g					
Europium-155	U	0.0369	+/-0.0624	0.0484	+/-0.0624	0.0967	pCi/g					
Lead-212		0.655	+/-0.0769	0.0255	+/-0.0769	0.051	pCi/g					
Lead-214		0.575	+/-0.0938	0.0306	+/-0.0938	0.0613	pCi/g					
Manganese-54	U	-0.0106	+/-0.0197	0.0163	+/-0.0197	0.0325	pCi/g					
Niobium-94	U	0.0142	+/-0.018	0.0166	+/-0.018	0.0332	pCi/g					
Potassium-40		10.3	+/-1.04	0.158	+/-1.04	0.316	pCi/g					
Radium-226		0.463	+/-0.0842	0.0308	+/-0.0842	0.0616	pCi/g					
Silver-108m	UI	0.00	+/-0.0252	0.0149	+/-0.0252	0.0297	pCi/g					
Thallium-208		0.195	+/-0.0401	0.0159	+/-0.0401	0.0317	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-010FS
Sample ID: 170543009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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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: September 15, 2006

Client Sample ID: 9304-0001-011F
Sample ID: 170543010
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 3.81%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.731	+/-0.164	0.0552	+/-0.164	0.118	pCi/g		MJH1	09/13/06	2054	563986
Americium-241	U	-0.0316	+/-0.0792	0.0647	+/-0.0792	0.133	pCi/g					
Bismuth-212		0.678	+/-0.263	0.111	+/-0.263	0.236	pCi/g					
Bismuth-214		0.547	+/-0.0786	0.0268	+/-0.0786	0.0566	pCi/g					
Cesium-134	U	0.0373	+/-0.0319	0.0192	+/-0.0319	0.0406	pCi/g					
Cesium-137	U	0.0232	+/-0.0224	0.0148	+/-0.0224	0.0313	pCi/g					
Cobalt-60	U	7.610E-05	+/-0.021	0.0178	+/-0.021	0.0384	pCi/g					
Europium-152	U	-0.000823	+/-0.0474	0.0414	+/-0.0474	0.0863	pCi/g					
Europium-154	U	0.0165	+/-0.0566	0.0495	+/-0.0566	0.107	pCi/g					
Europium-155	U	0.031	+/-0.0494	0.0451	+/-0.0494	0.0927	pCi/g					
Lead-212		0.720	+/-0.0544	0.0221	+/-0.0544	0.0457	pCi/g					
Lead-214		0.660	+/-0.0788	0.0286	+/-0.0788	0.0597	pCi/g					
Manganese-54	U	0.0125	+/-0.0195	0.0173	+/-0.0195	0.0365	pCi/g					
Niobium-94	U	0.00231	+/-0.0163	0.0142	+/-0.0163	0.030	pCi/g					
Potassium-40		12.4	+/-0.841	0.119	+/-0.841	0.266	pCi/g					
Radium-226		0.547	+/-0.0786	0.0268	+/-0.0786	0.0566	pCi/g					
Silver-108m	U	0.00371	+/-0.0154	0.0134	+/-0.0154	0.0281	pCi/g					
Thallium-208		0.263	+/-0.0416	0.0147	+/-0.0416	0.0309	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-011F
Sample ID: 170543010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID:	9304-0001-012F	Project:	YANK01204
Sample ID:	170543011	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	22-AUG-06		
Receive Date:	30-AUG-06		
Collector:	Client		
Moisture:	5.39%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.886	+/-0.196	0.0567	+/-0.196	0.122	pCi/g		MJH1	09/11/06	0154	563986
Americium-241	U	0.00278	+/-0.0496	0.044	+/-0.0496	0.0909	pCi/g					
Bismuth-212		0.579	+/-0.314	0.142	+/-0.314	0.302	pCi/g					
Bismuth-214		0.733	+/-0.116	0.0353	+/-0.116	0.0745	pCi/g					
Cesium-134	U	0.0484	+/-0.0348	0.0229	+/-0.0348	0.0485	pCi/g					
Cesium-137	U	-0.00032	+/-0.0201	0.0177	+/-0.0201	0.0376	pCi/g					
Cobalt-60	U	-0.001	+/-0.0214	0.0175	+/-0.0214	0.0385	pCi/g					
Europium-152	U	-0.0165	+/-0.0502	0.0427	+/-0.0502	0.0898	pCi/g					
Europium-154	U	0.0178	+/-0.0649	0.0552	+/-0.0649	0.120	pCi/g					
Europium-155	U	0.0933	+/-0.0889	0.0494	+/-0.0889	0.102	pCi/g					
Lead-212		0.862	+/-0.101	0.0398	+/-0.101	0.0817	pCi/g					
Lead-214		0.785	+/-0.109	0.0331	+/-0.109	0.0693	pCi/g					
Manganese-54	U	0.0161	+/-0.0219	0.0198	+/-0.0219	0.0421	pCi/g					
Niobium-94	U	-0.00687	+/-0.0177	0.0151	+/-0.0177	0.0322	pCi/g					
Potassium-40		16.4	+/-1.34	0.150	+/-1.34	0.334	pCi/g					
Radium-226		0.733	+/-0.116	0.0353	+/-0.116	0.0745	pCi/g					
Silver-108m	U	0.0169	+/-0.018	0.0163	+/-0.018	0.0342	pCi/g					
Thallium-208		0.330	+/-0.0513	0.0173	+/-0.0513	0.0368	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-012F
Sample ID: 170543011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-014F
Sample ID: 170543012
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 5.53%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.632	+/-0.168	0.0577	+/-0.168	0.115	pCi/g		MJH1	09/11/06	0207	563986
Americium-241	U	0.043	+/-0.0883	0.0738	+/-0.0883	0.148	pCi/g					
Bismuth-212		0.474	+/-0.231	0.123	+/-0.231	0.245	pCi/g					
Bismuth-214		0.567	+/-0.0861	0.034	+/-0.0861	0.0679	pCi/g					
Cesium-134	U	0.0209	+/-0.0352	0.0211	+/-0.0352	0.0423	pCi/g					
Cesium-137	U	0.029	+/-0.0279	0.0161	+/-0.0279	0.0322	pCi/g					
Cobalt-60	U	-0.0081	+/-0.0234	0.0191	+/-0.0234	0.0382	pCi/g					
Europium-152	U	-0.00622	+/-0.0621	0.0453	+/-0.0621	0.0905	pCi/g					
Europium-154	U	0.00789	+/-0.0638	0.0549	+/-0.0638	0.110	pCi/g					
Europium-155	U	0.0397	+/-0.0668	0.0504	+/-0.0668	0.101	pCi/g					
Lead-212		0.692	+/-0.082	0.0267	+/-0.082	0.0535	pCi/g					
Lead-214		0.705	+/-0.102	0.0324	+/-0.102	0.0647	pCi/g					
Manganese-54	U	0.0171	+/-0.0207	0.0189	+/-0.0207	0.0378	pCi/g					
Niobium-94	U	0.00685	+/-0.0184	0.0161	+/-0.0184	0.0323	pCi/g					
Potassium-40		10.1	+/-1.00	0.149	+/-1.00	0.297	pCi/g					
Radium-226		0.567	+/-0.0861	0.034	+/-0.0861	0.0679	pCi/g					
Silver-108m	U	0.000167	+/-0.0163	0.0144	+/-0.0163	0.0288	pCi/g					
Thallium-208		0.227	+/-0.0448	0.0162	+/-0.0448	0.0324	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	JMB1	08/30/06	1540	563873

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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Certificate of Analysis

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

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

Report Date: September 15, 2006

Client Sample ID: 9304-0001-014F
Sample ID: 170543012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-015F
 Sample ID: 170543013
 Matrix: Soil
 Collect Date: 22-AUG-06
 Receive Date: 30-AUG-06
 Collector: Client
 Moisture: 3.06%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.710	+/-0.178	0.0711	+/-0.178	0.142	pCi/g		MJH1	09/11/06	0207	563986
Americium-241	U	0.0139	+/-0.036	0.0297	+/-0.036	0.0595	pCi/g					
Bismuth-212		0.396	+/-0.305	0.146	+/-0.305	0.291	pCi/g					
Bismuth-214		0.596	+/-0.114	0.0373	+/-0.114	0.0745	pCi/g					
Cesium-134	UI	0.00	+/-0.0401	0.0281	+/-0.0401	0.0561	pCi/g					
Cesium-137	U	0.00371	+/-0.0285	0.0222	+/-0.0285	0.0443	pCi/g					
Cobalt-60	U	0.0117	+/-0.0302	0.0266	+/-0.0302	0.0531	pCi/g					
Europium-152	U	0.0712	+/-0.0681	0.0476	+/-0.0681	0.0951	pCi/g					
Europium-154	U	-0.0199	+/-0.0877	0.0719	+/-0.0877	0.144	pCi/g					
Europium-155	UI	0.00	+/-0.086	0.0453	+/-0.086	0.0905	pCi/g					
Lead-212		0.706	+/-0.0863	0.0283	+/-0.0863	0.0566	pCi/g					
Lead-214		0.645	+/-0.108	0.0352	+/-0.108	0.0704	pCi/g					
Manganese-54	U	-0.000926	+/-0.0271	0.0236	+/-0.0271	0.0471	pCi/g					
Niobium-94	U	-0.0149	+/-0.0233	0.0195	+/-0.0233	0.039	pCi/g					
Potassium-40		10.1	+/-0.967	0.201	+/-0.967	0.402	pCi/g					
Radium-226		0.596	+/-0.114	0.0373	+/-0.114	0.0745	pCi/g					
Silver-108m	U	-0.0175	+/-0.0211	0.0174	+/-0.0211	0.0348	pCi/g					
Thallium-208		0.241	+/-0.0501	0.0189	+/-0.0501	0.0378	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	JMB1	08/30/06	1540	563873

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

Company : Connecticut Yankee Atomic Power

Address : 362 Injun Hollow Rd

East Hampton, Connecticut 06424

Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: September 15, 2006

Client Sample ID: 9304-0001-015F
Sample ID: 170543013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-016F
 Sample ID: 170543014
 Matrix: Soil
 Collect Date: 22-AUG-06
 Receive Date: 30-AUG-06
 Collector: Client
 Moisture: 2.91%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.564	+/-0.162	0.0541	+/-0.162	0.108	pCi/g		MJH1	09/11/06	0414	563986
Americium-241	U	0.0206	+/-0.0674	0.0546	+/-0.0674	0.109	pCi/g					
Bismuth-212		0.335	+/-0.238	0.114	+/-0.238	0.228	pCi/g					
Bismuth-214		0.552	+/-0.0827	0.0292	+/-0.0827	0.0584	pCi/g					
Cesium-134	U	0.029	+/-0.0349	0.015	+/-0.0349	0.0299	pCi/g					
Cesium-137	U	0.00941	+/-0.020	0.0175	+/-0.020	0.035	pCi/g					
Cobalt-60	U	-0.0299	+/-0.0277	0.016	+/-0.0277	0.0321	pCi/g					
Europium-152	U	-0.0248	+/-0.0638	0.0443	+/-0.0638	0.0886	pCi/g					
Europium-154	U	0.0209	+/-0.0644	0.0559	+/-0.0644	0.112	pCi/g					
Europium-155	U	0.00348	+/-0.0536	0.0477	+/-0.0536	0.0954	pCi/g					
Lead-212		0.634	+/-0.0752	0.025	+/-0.0752	0.0499	pCi/g					
Lead-214		0.594	+/-0.0943	0.0328	+/-0.0943	0.0655	pCi/g					
Manganese-54	U	0.0201	+/-0.0211	0.0175	+/-0.0211	0.0351	pCi/g					
Niobium-94	U	0.00148	+/-0.0175	0.0154	+/-0.0175	0.0309	pCi/g					
Potassium-40		9.95	+/-0.974	0.145	+/-0.974	0.290	pCi/g					
Radium-226		0.552	+/-0.0827	0.0292	+/-0.0827	0.0584	pCi/g					
Silver-108m	U	0.00764	+/-0.0169	0.0151	+/-0.0169	0.0302	pCi/g					
Thallium-208		0.220	+/-0.0409	0.0149	+/-0.0409	0.0297	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-016F
Sample ID: 170543014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
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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: September 15, 2006

Client Sample ID: 9304-0001-017F
Sample ID: 170543015
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 2.75%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.33	+/-0.149	0.0463	+/-0.149	0.0971	pCi/g		MJH1	09/13/06	2054	563986
Americium-241	U	-0.039	+/-0.0611	0.0553	+/-0.0611	0.113	pCi/g					
Bismuth-212		0.853	+/-0.244	0.0955	+/-0.244	0.200	pCi/g					
Bismuth-214		0.928	+/-0.0818	0.024	+/-0.0818	0.050	pCi/g					
Cesium-134	UI	0.00	+/-0.0327	0.0179	+/-0.0327	0.0371	pCi/g					
Cesium-137		0.0408	+/-0.0229	0.0134	+/-0.0229	0.028	pCi/g					
Cobalt-60	U	0.0133	+/-0.0167	0.0146	+/-0.0167	0.0309	pCi/g					
Europium-152	U	-0.0123	+/-0.0405	0.0353	+/-0.0405	0.073	pCi/g					
Europium-154	U	-0.0121	+/-0.0472	0.0385	+/-0.0472	0.0815	pCi/g					
Europium-155	U	0.0429	+/-0.0512	0.0466	+/-0.0512	0.0952	pCi/g					
Lead-212		1.20	+/-0.0546	0.0203	+/-0.0546	0.0418	pCi/g					
Lead-214		1.04	+/-0.0715	0.0249	+/-0.0715	0.0515	pCi/g					
Manganese-54	U	0.0181	+/-0.0164	0.0126	+/-0.0164	0.0264	pCi/g					
Niobium-94	U-0.000533		+/-0.0137	0.012	+/-0.0137	0.0251	pCi/g					
Potassium-40		18.5	+/-0.732	0.0967	+/-0.732	0.210	pCi/g					
Radium-226		0.928	+/-0.0818	0.024	+/-0.0818	0.050	pCi/g					
Silver-108m	U	-0.00151	+/-0.0136	0.0117	+/-0.0136	0.0243	pCi/g					
Thallium-208		0.416	+/-0.0407	0.012	+/-0.0407	0.0251	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	JMB1	08/30/06	1540	563873

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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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: September 15, 2006

Client Sample ID: 9304-0001-017F
Sample ID: 170543015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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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: September 15, 2006

Client Sample ID: 9304-0001-018F
Sample ID: 170543016
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 2.41%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.26	+/-0.208	0.0517	+/-0.208	0.111	pCi/g		MJH1	09/11/06	0458	563986
Americium-241	U	-0.0275	+/-0.0505	0.0454	+/-0.0505	0.0932	pCi/g					
Bismuth-212		0.766	+/-0.276	0.123	+/-0.276	0.262	pCi/g					
Bismuth-214		1.03	+/-0.144	0.0329	+/-0.144	0.0692	pCi/g					
Cesium-134	UI	0.00	+/-0.0357	0.0241	+/-0.0357	0.0505	pCi/g					
Cesium-137	U	0.0306	+/-0.026	0.018	+/-0.026	0.0379	pCi/g					
Cobalt-60	U	0.0233	+/-0.023	0.0192	+/-0.023	0.0414	pCi/g					
Europium-152	U	-0.00117	+/-0.0533	0.0471	+/-0.0533	0.0981	pCi/g					
Europium-154	U	0.0204	+/-0.0562	0.0486	+/-0.0562	0.105	pCi/g					
Europium-155	U	0.0426	+/-0.0529	0.048	+/-0.0529	0.0986	pCi/g					
Lead-212		1.09	+/-0.108	0.0257	+/-0.108	0.0532	pCi/g					
Lead-214		1.21	+/-0.134	0.0311	+/-0.134	0.065	pCi/g					
Manganese-54	U	0.0328	+/-0.0285	0.0168	+/-0.0285	0.0357	pCi/g					
Niobium-94	U	0.0115	+/-0.0171	0.0158	+/-0.0171	0.0333	pCi/g					
Potassium-40		16.0	+/-1.28	0.131	+/-1.28	0.292	pCi/g					
Radium-226		1.03	+/-0.144	0.0329	+/-0.144	0.0692	pCi/g					
Silver-108m	U	0.0103	+/-0.0172	0.0154	+/-0.0172	0.0323	pCi/g					
Thallium-208		0.388	+/-0.0571	0.0158	+/-0.0571	0.0335	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-018F
Sample ID: 170543016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	NA
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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: September 15, 2006

Client Sample ID: 9304-0001-019F
Sample ID: 170543017
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 3.72%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.00	+/-0.184	0.0649	+/-0.184	0.130	pCi/g		MJH1	09/11/06	0512	563986
Americium-241	U	0.0327	+/-0.0935	0.0784	+/-0.0935	0.157	pCi/g					
Bismuth-212		0.862	+/-0.305	0.149	+/-0.305	0.298	pCi/g					
Bismuth-214		0.932	+/-0.122	0.0339	+/-0.122	0.0677	pCi/g					
Cesium-134	UI	0.00	+/-0.0353	0.0269	+/-0.0353	0.0537	pCi/g					
Cesium-137	U	-0.0117	+/-0.025	0.0209	+/-0.025	0.0417	pCi/g					
Cobalt-60	U	-0.00439	+/-0.0223	0.0186	+/-0.0223	0.0371	pCi/g					
Europium-152	U	-0.0278	+/-0.0676	0.0516	+/-0.0676	0.103	pCi/g					
Europium-154	U	-0.0557	+/-0.0834	0.0555	+/-0.0834	0.111	pCi/g					
Europium-155	U	0.0511	+/-0.0659	0.0617	+/-0.0659	0.123	pCi/g					
Lead-212		0.997	+/-0.105	0.0304	+/-0.105	0.0607	pCi/g					
Lead-214		1.05	+/-0.127	0.0392	+/-0.127	0.0784	pCi/g					
Manganese-54	U	0.0063	+/-0.0249	0.0194	+/-0.0249	0.0389	pCi/g					
Niobium-94	U	0.0107	+/-0.0236	0.0181	+/-0.0236	0.0363	pCi/g					
Potassium-40		16.4	+/-1.34	0.142	+/-1.34	0.283	pCi/g					
Radium-226		0.932	+/-0.122	0.0339	+/-0.122	0.0677	pCi/g					
Silver-108m	U	0.0183	+/-0.0331	0.018	+/-0.0331	0.0359	pCi/g					
Thallium-208		0.356	+/-0.0541	0.0193	+/-0.0541	0.0385	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	JMB1	08/30/06	1540	563873

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

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

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

Report Date: September 15, 2006

Client Sample ID: 9304-0001-019F
 Sample ID: 170543017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-020F
Sample ID: 170543018
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 2.49%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		1.04	+/-0.226	0.101	+/-0.226	0.201	pCi/g		MJH1	09/11/06	0512	563986
Americium-241	U	0.0294	+/-0.046	0.0377	+/-0.046	0.0754	pCi/g					
Bismuth-212		0.625	+/-0.534	0.204	+/-0.534	0.408	pCi/g					
Bismuth-214		0.976	+/-0.158	0.0449	+/-0.158	0.0898	pCi/g					
Cesium-134	UI	0.00	+/-0.0645	0.0373	+/-0.0645	0.0745	pCi/g					
Cesium-137	U	0.00894	+/-0.0328	0.0295	+/-0.0328	0.0589	pCi/g					
Cobalt-60	U	7.890E-05	+/-0.0372	0.0311	+/-0.0372	0.0622	pCi/g					
Europium-152	U	0.0049	+/-0.0824	0.0598	+/-0.0824	0.120	pCi/g					
Europium-154	U	0.0378	+/-0.102	0.0891	+/-0.102	0.178	pCi/g					
Europium-155	U	0.0863	+/-0.0656	0.0599	+/-0.0656	0.120	pCi/g					
Lead-212		1.14	+/-0.122	0.033	+/-0.122	0.0659	pCi/g					
Lead-214		0.985	+/-0.133	0.0445	+/-0.133	0.0889	pCi/g					
Manganese-54	U	-0.00929	+/-0.0316	0.0268	+/-0.0316	0.0535	pCi/g					
Niobium-94	U	0.00576	+/-0.0278	0.0248	+/-0.0278	0.0496	pCi/g					
Potassium-40		15.2	+/-1.27	0.253	+/-1.27	0.506	pCi/g					
Radium-226		0.976	+/-0.158	0.0449	+/-0.158	0.0898	pCi/g					
Silver-108m	U	-0.00897	+/-0.0247	0.021	+/-0.0247	0.042	pCi/g					
Thallium-208		0.348	+/-0.0754	0.0245	+/-0.0754	0.049	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	JMB1	08/30/06	1540	563873

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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

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

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

Report Date: September 15, 2006

Client Sample ID: 9304-0001-020F
Sample ID: 170543018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-021F
 Sample ID: 170543019
 Matrix: Soil
 Collect Date: 22-AUG-06
 Receive Date: 30-AUG-06
 Collector: Client
 Moisture: 4.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>												
<i>Waived</i>												
Actinium-228		0.756	+/-0.160	0.0641	+/-0.160	0.128	pCi/g		MJH1	09/13/06	2108	563986
Americium-241	U	0.048	+/-0.0312	0.0257	+/-0.0312	0.0514	pCi/g					
Bismuth-212		0.569	+/-0.234	0.140	+/-0.234	0.280	pCi/g					
Bismuth-214		0.606	+/-0.0955	0.0317	+/-0.0955	0.0633	pCi/g					
Cesium-134	UI	0.00	+/-0.0434	0.024	+/-0.0434	0.0479	pCi/g					
Cesium-137	U	0.0248	+/-0.0282	0.0158	+/-0.0282	0.0316	pCi/g					
Cobalt-60	U	0.00316	+/-0.026	0.022	+/-0.026	0.0439	pCi/g					
Europium-152	U	0.0675	+/-0.0637	0.0423	+/-0.0637	0.0845	pCi/g					
Europium-154	U	-0.0262	+/-0.0767	0.0621	+/-0.0767	0.124	pCi/g					
Europium-155	U	0.0232	+/-0.0507	0.0379	+/-0.0507	0.0758	pCi/g					
Lead-212		0.703	+/-0.0788	0.0234	+/-0.0788	0.0468	pCi/g					
Lead-214		0.669	+/-0.0969	0.0299	+/-0.0969	0.0597	pCi/g					
Manganese-54	U	0.00414	+/-0.0228	0.020	+/-0.0228	0.0399	pCi/g					
Niobium-94	U	0.0262	+/-0.0432	0.0167	+/-0.0432	0.0333	pCi/g					
Potassium-40		9.62	+/-0.834	0.192	+/-0.834	0.383	pCi/g					
Radium-226		0.606	+/-0.0955	0.0317	+/-0.0955	0.0633	pCi/g					
Silver-108m	U	0.00852	+/-0.0174	0.0154	+/-0.0174	0.0308	pCi/g					
Thallium-208		0.212	+/-0.0446	0.019	+/-0.0446	0.038	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	JMB1	08/30/06	1540	563873

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: September 15, 2006

Client Sample ID: 9304-0001-021F
 Sample ID: 170543019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID: 9304-0001-008F
Sample ID: 170543020
Matrix: Soil
Collect Date: 22-AUG-06
Receive Date: 30-AUG-06
Collector: Client
Moisture: 4.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	X	0.667	+/-0.335	0.0535	+/-0.348	0.221	pCi/g		BXL1	09/14/06	0931	564247	
Curium-242	U	0.082	+/-0.131	0.0418	+/-0.132	0.210	pCi/g						
Curium-243/244	U	0.255	+/-0.223	0.0758	+/-0.226	0.266	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0353	+/-0.0346	0.0661	+/-0.0349	0.232	pCi/g		BXL1	09/10/06	0859	564258	
Plutonium-239/240	U	-0.025	+/-0.0854	0.0874	+/-0.0855	0.274	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-4.55	+/-7.51	6.51	+/-7.51	13.7	pCi/g		BXL1	09/13/06	0909	564259	
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.998	+/-0.185	0.0529	+/-0.185	0.115	pCi/g		MJH1	09/11/06	0811	563986	
Americium-241	U	-0.0074	+/-0.0511	0.0448	+/-0.0511	0.0924	pCi/g						
Bismuth-212		0.684	+/-0.299	0.139	+/-0.299	0.297	pCi/g						
Bismuth-214		0.723	+/-0.124	0.0313	+/-0.124	0.0665	pCi/g						
Cesium-134	U	0.0444	+/-0.0348	0.0219	+/-0.0348	0.0465	pCi/g						
Cesium-137	U	0.00163	+/-0.0206	0.0182	+/-0.0206	0.0387	pCi/g						
Cobalt-60	U	0.00639	+/-0.0203	0.0173	+/-0.0203	0.0383	pCi/g						
Europium-152	U	0.0365	+/-0.0528	0.0475	+/-0.0528	0.0994	pCi/g						
Europium-154	U	-0.0286	+/-0.0589	0.0453	+/-0.0589	0.100	pCi/g						
Europium-155	U	0.0353	+/-0.0561	0.049	+/-0.0561	0.101	pCi/g						
Lead-212		0.833	+/-0.103	0.0418	+/-0.103	0.0857	pCi/g						
Lead-214		0.769	+/-0.110	0.0316	+/-0.110	0.0664	pCi/g						
Manganese-54	U	0.00929	+/-0.021	0.0187	+/-0.021	0.0399	pCi/g						
Niobium-94	U	0.00963	+/-0.0185	0.0167	+/-0.0185	0.0355	pCi/g						
Potassium-40		16.7	+/-1.39	0.142	+/-1.39	0.319	pCi/g						
Radium-226		0.723	+/-0.124	0.0313	+/-0.124	0.0665	pCi/g						
Silver-108m	U	0.0104	+/-0.0177	0.0156	+/-0.0177	0.0329	pCi/g						
Thallium-208		0.309	+/-0.0527	0.0169	+/-0.0527	0.036	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0153	+/-0.0109	0.0119	+/-0.0109	0.0278	pCi/g		KSD1	09/09/06	1443	564153	
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	2.39	+/-5.81	4.76	+/-5.81	10.0	pCi/g		DFA1	09/05/06	1640	564447	

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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: September 15, 2006

Client Sample ID: 9304-0001-008F
Sample ID: 170543020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	-0.0321	+/-0.109	0.092	+/-0.109	0.189	pCi/g		AXD2	09/09/06	0157	564449	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	77.6	+/-70.0	46.0	+/-70.2	95.6	pCi/g		MXP1	09/08/06	2252	564451	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	1.42	+/-6.33	5.26	+/-6.33	10.9	pCi/g		MXP1	09/09/06	0215	564452	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.175	+/-0.277	0.227	+/-0.277	0.468	pCi/g		KXR1	09/06/06	1532	564445	

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	08/30/06	1540	563873

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	65	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	83	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	95	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	99	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	64	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	87	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL FS	80	(15%-125%)

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

Report Date: September 15, 2006

Client Sample ID: 9304-0001-008F
 Sample ID: 170543020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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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: September 15, 2006

Client Sample ID:	9304-0001-013F	Project:	YANK01204
Sample ID:	170543021	Client ID:	YANK001
Matrix:	Soil	Vol. Recv.:	
Collect Date:	22-AUG-06		
Receive Date:	30-AUG-06		
Collector:	Client		
Moisture:	3.69%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	X	0.300	+/-0.244	0.0705	+/-0.247	0.264	pCi/g		BXL1	09/14/06	0931	564247	
Curium-242	U	0.00	+/-0.0981	0.00	+/-0.0981	0.136	pCi/g						
Curium-243/244	U	0.171	+/-0.179	0.0408	+/-0.181	0.205	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0473	+/-0.0378	0.0721	+/-0.0382	0.233	pCi/g		BXL1	09/10/06	0859	564258	
Plutonium-239/240	U	-0.0774	+/-0.0864	0.110	+/-0.0869	0.309	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	1.82	+/-8.15	6.76	+/-8.15	14.2	pCi/g		BXL1	09/13/06	0925	564259	
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.07	+/-0.229	0.0869	+/-0.229	0.174	pCi/g		MJH1	09/10/06	1157	563988	
Americium-241	U	0.0273	+/-0.0421	0.0344	+/-0.0421	0.0687	pCi/g						
Bismuth-212		0.437	+/-0.373	0.197	+/-0.373	0.394	pCi/g						
Bismuth-214		0.570	+/-0.128	0.0454	+/-0.128	0.0908	pCi/g						
Cesium-134	U	0.0383	+/-0.0339	0.0314	+/-0.0339	0.0627	pCi/g						
Cesium-137	U	-0.011	+/-0.0293	0.0251	+/-0.0293	0.0502	pCi/g						
Cobalt-60	U	-0.00163	+/-0.0332	0.0276	+/-0.0332	0.0551	pCi/g						
Europium-152	U	0.044	+/-0.0764	0.0578	+/-0.0764	0.116	pCi/g						
Europium-154	U	-0.00651	+/-0.105	0.0871	+/-0.105	0.174	pCi/g						
Europium-155	U	0.0206	+/-0.0595	0.0533	+/-0.0595	0.107	pCi/g						
Lead-212		0.772	+/-0.093	0.0308	+/-0.093	0.0616	pCi/g						
Lead-214		0.680	+/-0.109	0.0384	+/-0.109	0.0767	pCi/g						
Manganese-54	U	0.0306	+/-0.0338	0.0265	+/-0.0338	0.053	pCi/g						
Niobium-94	U	-1.500E-05	+/-0.0317	0.024	+/-0.0317	0.048	pCi/g						
Potassium-40		15.3	+/-1.23	0.223	+/-1.23	0.446	pCi/g						
Radium-226		0.570	+/-0.128	0.0454	+/-0.128	0.0908	pCi/g						
Silver-108m	U	-0.00955	+/-0.0232	0.0195	+/-0.0232	0.0391	pCi/g						
Thallium-208		0.296	+/-0.0555	0.0238	+/-0.0555	0.0475	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0188	+/-0.0116	0.0127	+/-0.0116	0.0293	pCi/g		KSD1	09/09/06	1604	564153	
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>													

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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: September 15, 2006

Client Sample ID: 9304-0001-013F
 Sample ID: 170543021

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>												
Tritium	U	0.887	+/-6.12	5.09	+/-6.12	10.7	pCi/g	DFA1	09/05/06	1712	564447	
<i>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	0.0028	+/-0.103	0.0864	+/-0.103	0.177	pCi/g	AXD2	09/09/06	0244	564449	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	6.70	+/-35.1	23.7	+/-35.1	49.2	pCi/g	MXP1	09/08/06	2308	564451	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	6.24	+/-6.32	5.08	+/-6.32	10.6	pCi/g	MXP1	09/09/06	0247	564452	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99	U	0.00	+/-0.258	0.217	+/-0.258	0.446	pCi/g	KXR1	09/06/06	1548	564445	

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	08/30/06	1546	563875

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	61	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	86	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	90	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	101	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	74	(15%-125%)

QUALITY CONTROL DATA

GENERAL ENGINEERING LABORATORIES, LLC

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

QC Summary

Report Date: September 15, 2006

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Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 170543

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	564247										
QC1201173420 170543020 DUP											
Americium-241		X	0.667	X	0.300	pCi/g	76	(0% - 100%)	BXL1	09/14/06	09:31
		Uncert:	+/-0.335		+/-0.218						
		TPU:	+/-0.348		+/-0.221						
Curium-242		U	0.082	U	0.0236	pCi/g	111	(0% - 100%)			
		Uncert:	+/-0.131		+/-0.0939						
		TPU:	+/-0.132		+/-0.0939						
Curium-243/244		U	0.255	U	0.0428	pCi/g	143	(0% - 100%)			
		Uncert:	+/-0.223		+/-0.120						
		TPU:	+/-0.226		+/-0.121						
QC1201173422 LCS											
Americium-241	13.0				11.7	pCi/g	90	(75%-125%)			
		Uncert:			+/-1.25						
		TPU:			+/-1.92						
Curium-242				U	0.0188	pCi/g					
		Uncert:			+/-0.075						
		TPU:			+/-0.075						
Curium-243/244	15.7				12.5	pCi/g	80	(75%-125%)			
		Uncert:			+/-1.30						
		TPU:			+/-2.02						
QC1201173419 MB											
Americium-241				U	-0.0458	pCi/g					
		Uncert:			+/-0.0756						
		TPU:			+/-0.0757						
Curium-242				U	0.00	pCi/g					
		Uncert:			+/-0.0739						
		TPU:			+/-0.0739						
Curium-243/244				U	-0.00877	pCi/g					
		Uncert:			+/-0.0737						
		TPU:			+/-0.0738						
QC1201173421 170543020 MS											
Americium-241	13.5	X	0.667		12.8	pCi/g	90	(75%-125%)			
		Uncert:	+/-0.335		+/-1.35						
		TPU:	+/-0.348		+/-2.10						
Curium-242		U	0.082	U	0.0211	pCi/g					
		Uncert:	+/-0.131		+/-0.084						
		TPU:	+/-0.132		+/-0.0841						
Curium-243/244	16.3	U	0.255		14.8	pCi/g	91	(75%-125%)			
		Uncert:	+/-0.223		+/-1.45						
		TPU:	+/-0.226		+/-2.36						
Batch	564258										
QC1201173424 170543020 DUP											
Plutonium-238		U	-0.0353	U	-0.00766	pCi/g	129	(0% - 100%)	BXL1	09/10/06	08:59

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QC Summary

Workorder: 170543

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec										
Batch	564258									
Plutonium-239/240										
	Uncert:	+/-0.0346	+/-0.015							
	TPU:	+/-0.0349	+/-0.015							
	U	-0.025	U	-0.0306	pCi/g	20	(0% - 100%)			
	Uncert:	+/-0.0854	+/-0.030							
	TPU:	+/-0.0855	+/-0.0302							
QC1201173426 LCS										
Plutonium-238			U	0.00736	pCi/g		(75%-125%)		09/10/06	08:59
	Uncert:			+/-0.0558						
	TPU:			+/-0.0558						
Plutonium-239/240	12.0			9.86	pCi/g	82	(75%-125%)			
	Uncert:			+/-1.00						
	TPU:			+/-1.39						
QC1201173423 MB										
Plutonium-238			U	0.0173	pCi/g				09/11/06	16:09
	Uncert:			+/-0.107						
	TPU:			+/-0.107						
Plutonium-239/240			U	-0.0751	pCi/g					
	Uncert:			+/-0.0773						
	TPU:			+/-0.0776						
QC1201173425 170543020 MS										
Plutonium-238		U	-0.0353	U	-0.0128	pCi/g	(75%-125%)		09/10/06	08:59
	Uncert:		+/-0.0346		+/-0.0662					
	TPU:		+/-0.0349		+/-0.0662					
Plutonium-239/240	12.5	U	-0.025		11.5	pCi/g	92 (75%-125%)			
	Uncert:		+/-0.0854		+/-1.14					
	TPU:		+/-0.0855		+/-1.62					
Batch	564259									
QC1201173428 170543020 DUP										
Plutonium-241		U	-4.55	U	4.44	pCi/g	0 (0% - 100%) BXL1		09/13/06	10:30
	Uncert:		+/-7.51		+/-8.58					
	TPU:		+/-7.51		+/-8.59					
QC1201173430 LCS										
Plutonium-241	137				140	pCi/g	103 (75%-125%)		09/13/06	11:03
	Uncert:				+/-14.1					
	TPU:				+/-19.7					
QC1201173427 MB										
Plutonium-241				U	1.82	pCi/g			09/13/06	10:14
	Uncert:				+/-7.33					
	TPU:				+/-7.33					
QC1201173429 170543020 MS										
Plutonium-241	139	U	-4.55		127	pCi/g	91 (75%-125%)		09/13/06	10:47
	Uncert:		+/-7.51		+/-12.9					
	TPU:		+/-7.51		+/-17.6					
Rad Gamma Spec										
Batch	563986									
QC1201172832 170543001 DUP										
Actinium-228			0.786		1.01	pCi/g	25 (0% - 100%) MJH1		09/11/06	08:22
	Uncert:		+/-0.169		+/-0.248					
					+/-0.248					

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QC Summary

Workorder: 170543

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	563986									
Americium-241		TPU: +/-0.169								
	U	-0.00558	U	0.0146	pCi/g	448	(0% - 100%)			
		Uncert: +/-0.0443		+/-0.0421						
Bismuth-212		TPU: +/-0.0443		+/-0.0421	pCi/g	2	(0% - 100%)			
		0.761		0.773						
		Uncert: +/-0.305		+/-0.470						
Bismuth-214		TPU: +/-0.305		+/-0.470	pCi/g	15	(0% - 100%)			
		0.631		0.734						
		Uncert: +/-0.0933		+/-0.148						
Cesium-134	U	TPU: +/-0.0933	U	+/-0.148	pCi/g	29	(0% - 100%)			
		0.0345		0.046						
		Uncert: +/-0.0282		+/-0.0426						
Cesium-137	UI	TPU: +/-0.0282	U	+/-0.0426	pCi/g	222	(0% - 100%)			
		0.00		-0.00192						
		Uncert: +/-0.0287		+/-0.0292						
Cobalt-60	U	TPU: +/-0.0287	U	+/-0.0292	pCi/g	366	(0% - 100%)			
		-0.00442		0.0151						
		Uncert: +/-0.0201		+/-0.0316						
Europium-152	U	TPU: +/-0.0201	U	+/-0.0316	pCi/g	3440	(0% - 100%)			
		0.0327		-0.0291						
		Uncert: +/-0.0436		+/-0.0755						
Europium-154	U	TPU: +/-0.0436	U	+/-0.0755	pCi/g	125	(0% - 100%)			
		-0.0073		-0.0317						
		Uncert: +/-0.0497		+/-0.107						
Europium-155	U	TPU: +/-0.0497	U	+/-0.107	pCi/g	8	(0% - 100%)			
		0.0796		0.0733						
		Uncert: +/-0.0682		+/-0.0826						
Lead-212		TPU: +/-0.0682		+/-0.0826	pCi/g	36*	(0% - 20%)			
		0.707		1.02						
		Uncert: +/-0.0898		+/-0.114						
Lead-214		TPU: +/-0.0898		+/-0.114	pCi/g	8	(0% - 20%)			
		0.690		0.744						
		Uncert: +/-0.0938		+/-0.107						
Manganese-54	U	TPU: +/-0.0938	U	+/-0.107	pCi/g	176	(0% - 100%)			
		-0.00214		-0.0338						
		Uncert: +/-0.0188		+/-0.029						
Niobium-94	UI	TPU: +/-0.0188	U	+/-0.029	pCi/g	242	(0% - 100%)			
		0.00		-0.00342						
		Uncert: +/-0.0242		+/-0.0259						
Potassium-40		TPU: +/-0.0242		+/-0.0259	pCi/g	3	(0% - 20%)			
		15.4		14.9						
		Uncert: +/-1.24		+/-1.24						
Radium-226		TPU: +/-1.24		+/-1.24	pCi/g	15	(0% - 100%)			
		0.631		0.734						
		Uncert: +/-0.0933		+/-0.148						
Silver-108m	U	TPU: +/-0.0933	U	+/-0.148	pCi/g	17	(0% - 100%)			
		0.0051		0.00602						
		Uncert: +/-0.0156		+/-0.0243						

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QC Summary

Workorder: 170543

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	563986									
Thallium-208		TPU: +/-0.0156	+/-0.0243							
			0.278	0.311	pCi/g	11	(0% - 100%)			
		Uncert: +/-0.0444	+/-0.0568							
		TPU: +/-0.0444	+/-0.0568							
QC1201172833	LCS									
Actinium-228			U	0.107	pCi/g				09/11/06	07:17
		Uncert: +/-0.578								
		TPU: +/-0.578								
Americium-241	23.4			25.0	pCi/g		107 (75%-125%)			
		Uncert: +/-2.53								
		TPU: +/-2.53								
Bismuth-212			U	-0.322	pCi/g					
		Uncert: +/-0.954								
		TPU: +/-0.954								
Bismuth-214			U	0.168	pCi/g					
		Uncert: +/-0.240								
		TPU: +/-0.240								
Cesium-134			U	-0.055	pCi/g					
		Uncert: +/-0.146								
		TPU: +/-0.146								
Cesium-137	9.58			10.1	pCi/g		106 (75%-125%)			
		Uncert: +/-0.888								
		TPU: +/-0.888								
Cobalt-60	14.5			15.4	pCi/g		106 (75%-125%)			
		Uncert: +/-1.03								
		TPU: +/-1.03								
Europium-152			U	0.107	pCi/g					
		Uncert: +/-0.336								
		TPU: +/-0.336								
Europium-154			U	-0.0241	pCi/g					
		Uncert: +/-0.298								
		TPU: +/-0.298								
Europium-155			U	0.152	pCi/g					
		Uncert: +/-0.357								
		TPU: +/-0.357								
Lead-212			U	-0.181	pCi/g					
		Uncert: +/-0.163								
		TPU: +/-0.163								
Lead-214			U	0.161	pCi/g					
		Uncert: +/-0.220								
		TPU: +/-0.220								
Manganese-54			U	-0.0951	pCi/g					
		Uncert: +/-0.137								
		TPU: +/-0.137								
Niobium-94			U	0.00225	pCi/g					
		Uncert: +/-0.113								
		TPU: +/-0.113								
Potassium-40			U	-0.324	pCi/g					

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	563986									
Radium-226										
	Uncert:		+/-1.09							
	TPU:		+/-1.09							
		U	0.168	pCi/g			(75%-125%)			
	Uncert:		+/-0.240							
	TPU:		+/-0.240							
Silver-108m										
	Uncert:		+/-0.115							
	TPU:		+/-0.115							
Thallium-208										
	Uncert:		+/-0.122							
	TPU:		+/-0.122							
QC1201172831 MB										
Actinium-228										09/11/06 08:21
	Uncert:		+/-0.0487							
	TPU:		+/-0.0487							
Americium-241										
	Uncert:		+/-0.0408							
	TPU:		+/-0.0408							
Bismuth-212										
	Uncert:		+/-0.114							
	TPU:		+/-0.114							
Bismuth-214										
	Uncert:		+/-0.0286							
	TPU:		+/-0.0286							
Cesium-134										
	Uncert:		+/-0.0152							
	TPU:		+/-0.0152							
Cesium-137										
	Uncert:		+/-0.012							
	TPU:		+/-0.012							
Cobalt-60										
	Uncert:		+/-0.0137							
	TPU:		+/-0.0137							
Europium-152										
	Uncert:		+/-0.0347							
	TPU:		+/-0.0347							
Europium-154										
	Uncert:		+/-0.0381							
	TPU:		+/-0.0381							
Europium-155										
	Uncert:		+/-0.0289							
	TPU:		+/-0.0289							
Lead-212										
	Uncert:		+/-0.0254							
	TPU:		+/-0.0254							
Lead-214										
	Uncert:		+/-0.0255							
	TPU:		+/-0.0255							

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	563986										
Manganese-54			U	0.000363	pCi/g						
	Uncert:			+/-0.0114							
	TPU:			+/-0.0114							
Niobium-94			U	0.00637	pCi/g						
	Uncert:			+/-0.0124							
	TPU:			+/-0.0124							
Potassium-40			U	-0.288	pCi/g						
	Uncert:			+/-0.171							
	TPU:			+/-0.171							
Radium-226			U	-0.0274	pCi/g						
	Uncert:			+/-0.0286							
	TPU:			+/-0.0286							
Silver-108m			U	-0.00453	pCi/g						
	Uncert:			+/-0.0119							
	TPU:			+/-0.0119							
Thallium-208			U	0.00048	pCi/g						
	Uncert:			+/-0.0151							
	TPU:			+/-0.0151							
Batch	563988										
QC1201172835 170543021 DUP											
Actinium-228		1.07		0.953	pCi/g	11		(0% - 100%)	MJH1	09/11/06	15:13
	Uncert:	+/-0.229		+/-0.197							
	TPU:	+/-0.229		+/-0.197							
Americium-241	U	0.0273	U	-0.0503	pCi/g	677		(0% - 100%)			
	Uncert:	+/-0.0421		+/-0.0891							
	TPU:	+/-0.0421		+/-0.0891							
Bismuth-212		0.437		0.783	pCi/g	57		(0% - 100%)			
	Uncert:	+/-0.373		+/-0.404							
	TPU:	+/-0.373		+/-0.404							
Bismuth-214		0.570		0.699	pCi/g	20		(0% - 100%)			
	Uncert:	+/-0.128		+/-0.103							
	TPU:	+/-0.128		+/-0.103							
Cesium-134	U	0.0383	U	0.0429	pCi/g	12		(0% - 100%)			
	Uncert:	+/-0.0339		+/-0.0346							
	TPU:	+/-0.0339		+/-0.0346							
Cesium-137	U	-0.011	U	-0.00779	pCi/g	34		(0% - 100%)			
	Uncert:	+/-0.0293		+/-0.0221							
	TPU:	+/-0.0293		+/-0.0221							
Cobalt-60	U	-0.00163	U	0.0113	pCi/g	268		(0% - 100%)			
	Uncert:	+/-0.0332		+/-0.0398							
	TPU:	+/-0.0332		+/-0.0398							
Europium-152	U	0.044	U	-0.0504	pCi/g	2980		(0% - 100%)			
	Uncert:	+/-0.0764		+/-0.0579							
	TPU:	+/-0.0764		+/-0.0579							
Europium-154	U	-0.00651	U	0.0217	pCi/g	371		(0% - 100%)			
	Uncert:	+/-0.105		+/-0.0705							
	TPU:	+/-0.105		+/-0.0705							
Europium-155	U	0.0206	U	0.0875	pCi/g	124		(0% - 100%)			

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	563988									
Lead-212	Uncert:	+/-0.0595	+/-0.0954							
	TPU:	+/-0.0595	+/-0.0954							
		0.772	0.903	pCi/g	16		(0% - 20%)			
Lead-214	Uncert:	+/-0.093	+/-0.0706							
	TPU:	+/-0.093	+/-0.0706							
		0.680	0.793	pCi/g	16		(0% - 20%)			
Manganese-54	Uncert:	+/-0.109	+/-0.103							
	TPU:	+/-0.109	+/-0.103							
	U	0.0306	U 0.00764	pCi/g	120		(0% - 100%)			
Niobium-94	Uncert:	+/-0.0338	+/-0.0225							
	TPU:	+/-0.0338	+/-0.0225							
	U	-1.500E-05	U 0.00524	pCi/g	201		(0% - 100%)			
Potassium-40	Uncert:	+/-0.0317	+/-0.0208							
	TPU:	+/-0.0317	+/-0.0208							
		15.3	15.2	pCi/g	0		(0% - 20%)			
Radium-226	Uncert:	+/-1.23	+/-0.985							
	TPU:	+/-1.23	+/-0.985							
		0.570	0.699	pCi/g	20		(0% - 100%)			
Silver-108m	Uncert:	+/-0.128	+/-0.103							
	TPU:	+/-0.128	+/-0.103							
	U	-0.00955	U -0.00886	pCi/g	7		(0% - 100%)			
Thallium-208	Uncert:	+/-0.0232	+/-0.0196							
	TPU:	+/-0.0232	+/-0.0196							
		0.296	0.365	pCi/g	21		(0% - 100%)			
QC1201172836 Actinium-228	Uncert:	+/-0.0555	+/-0.0516							
	TPU:	+/-0.0555	+/-0.0516							
			U 0.434	pCi/g					09/11/06	15:13
Americium-241	Uncert:		+/-0.559							
	TPU:		+/-0.559							
	23.4		25.1	pCi/g		107	(75%-125%)			
Bismuth-212	Uncert:		+/-1.99							
	TPU:		+/-1.99							
			U 0.574	pCi/g						
Bismuth-214	Uncert:		+/-0.992							
	TPU:		+/-0.992							
			U 0.168	pCi/g						
Cesium-134	Uncert:		+/-0.258							
	TPU:		+/-0.258							
			U 0.0765	pCi/g						
Cesium-137	Uncert:		+/-0.150							
	TPU:		+/-0.150							
	9.58		10.0	pCi/g		105	(75%-125%)			
Cobalt-60	Uncert:		+/-0.520							
	TPU:		+/-0.520							
	14.5		15.4	pCi/g		106	(75%-125%)			
			+/-0.671							
			+/-0.671							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	563988									
Europium-152		U	0.317	pCi/g						
	Uncert:		+/-0.314							
	TPU:		+/-0.314							
Europium-154		U	-0.0025	pCi/g						
	Uncert:		+/-0.308							
	TPU:		+/-0.308							
Europium-155		U	0.102	pCi/g						
	Uncert:		+/-0.323							
	TPU:		+/-0.323							
Lead-212		U	0.0975	pCi/g						
	Uncert:		+/-0.163							
	TPU:		+/-0.163							
Lead-214		U	0.389	pCi/g						
	Uncert:		+/-0.367							
	TPU:		+/-0.367							
Manganese-54		U	0.006	pCi/g						
	Uncert:		+/-0.141							
	TPU:		+/-0.141							
Niobium-94		U	-0.0639	pCi/g						
	Uncert:		+/-0.126							
	TPU:		+/-0.126							
Potassium-40		U	0.0608	pCi/g						
	Uncert:		+/-1.18							
	TPU:		+/-1.18							
Radium-226		U	0.168	pCi/g			(75%-125%)			
	Uncert:		+/-0.258							
	TPU:		+/-0.258							
Silver-108m		U	0.0118	pCi/g						
	Uncert:		+/-0.107							
	TPU:		+/-0.107							
Thallium-208		U	0.0723	pCi/g						
	Uncert:		+/-0.123							
	TPU:		+/-0.123							
QC1201172834 MB										
Actinium-228		U	-0.0134	pCi/g					09/11/06	15:25
	Uncert:		+/-0.0482							
	TPU:		+/-0.0482							
Americium-241		U	-0.00197	pCi/g						
	Uncert:		+/-0.0344							
	TPU:		+/-0.0344							
Bismuth-212		U	-0.0714	pCi/g						
	Uncert:		+/-0.104							
	TPU:		+/-0.104							
Bismuth-214		U	0.00749	pCi/g						
	Uncert:		+/-0.0298							
	TPU:		+/-0.0298							
Cesium-134		U	-0.00829	pCi/g						
	Uncert:		+/-0.012							

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	563988									
Cesium-137	TPU:		+/-0.012							
		U	0.00138	pCi/g						
	Uncert:		+/-0.012							
Cobalt-60	TPU:		+/-0.012							
		U	-0.00523	pCi/g						
	Uncert:		+/-0.0135							
Europium-152	TPU:		+/-0.0135							
		U	0.012	pCi/g						
	Uncert:		+/-0.0345							
Europium-154	TPU:		+/-0.0345							
		U	-0.000749	pCi/g						
	Uncert:		+/-0.0385							
Europium-155	TPU:		+/-0.0385							
		U	-0.00474	pCi/g						
	Uncert:		+/-0.0292							
Lead-212	TPU:		+/-0.0292							
		U	-0.022	pCi/g						
	Uncert:		+/-0.0278							
Lead-214	TPU:		+/-0.0278							
		U	-0.0013	pCi/g						
	Uncert:		+/-0.030							
Manganese-54	TPU:		+/-0.030							
		U	0.00461	pCi/g						
	Uncert:		+/-0.0114							
Niobium-94	TPU:		+/-0.0114							
		U	-0.000174	pCi/g						
	Uncert:		+/-0.0116							
Potassium-40	TPU:		+/-0.0116							
		U	-0.104	pCi/g						
	Uncert:		+/-0.181							
Radium-226	TPU:		+/-0.181							
		U	0.00749	pCi/g						
	Uncert:		+/-0.0298							
Silver-108m	TPU:		+/-0.0298							
		U	-0.00225	pCi/g						
	Uncert:		+/-0.0114							
Thallium-208	TPU:		+/-0.0114							
		U	0.0218	pCi/g						
	Uncert:		+/-0.0268							
	TPU:		+/-0.0268							
Rad Gas Flow										
Batch	564153									
QC1201173180	170544018 DUP									
Strontium-90		U	0.0105	U	0.00952	pCi/g	10	(0% - 100%) KSD1	09/09/06	16:05
	Uncert:		+/-0.0185		+/-0.0141					
	TPU:		+/-0.0185		+/-0.0141					
QC1201173182	LCS									
Strontium-90		1.56			1.50	pCi/g	97	(75%-125%)	09/09/06	16:05

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	564153										
		Uncert:		+/-0.0897							
		TPU:		+/-0.0997							
QC1201173179	MB										
Strontium-90			U	-0.0136	pCi/g					09/09/06	16:05
		Uncert:		+/-0.0252							
		TPU:		+/-0.0252							
QC1201173181	170544018	MS									
Strontium-90		3.10	U	0.0105	pCi/g		75	(75%-125%)		09/09/06	16:05
		Uncert:		+/-0.0185							
		TPU:		+/-0.0185							
Rad Liquid Scintillation											
Batch	564445										
QC1201173841	170544018	DUP									
Technetium-99			U	0.128	pCi/g	0		(0% - 100%)	KXR1	09/06/06	17:59
		Uncert:		+/-0.272							
		TPU:		+/-0.272							
QC1201173843	LCS										
Technetium-99		12.7		13.0	pCi/g		103	(75%-125%)		09/06/06	18:32
		Uncert:		+/-0.501							
		TPU:		+/-0.582							
QC1201173840	MB										
Technetium-99			U	0.0991	pCi/g					09/06/06	17:43
		Uncert:		+/-0.243							
		TPU:		+/-0.243							
QC1201173842	170544018	MS									
Technetium-99		13.1	U	0.128	pCi/g		102	(75%-125%)		09/06/06	18:15
		Uncert:		+/-0.272							
		TPU:		+/-0.272							
Batch	564447										
QC1201173845	170544018	DUP									
Tritium			U	1.53	pCi/g	0		(0% - 100%)	DFA1	09/05/06	21:25
		Uncert:		+/-6.54							
		TPU:		+/-6.54							
QC1201173847	LCS										
Tritium		46.9		44.3	pCi/g		95	(75%-125%)		09/07/06	11:21
		Uncert:		+/-8.94							
		TPU:		+/-8.98							
QC1201173844	MB										
Tritium			U	-0.43	pCi/g					09/05/06	20:54
		Uncert:		+/-4.67							
		TPU:		+/-4.67							
QC1201173846	170544018	MS									
Tritium		54.5	U	1.53	pCi/g		105	(75%-125%)		09/07/06	11:05
		Uncert:		+/-6.54							
		TPU:		+/-6.54							
Batch	564449										
QC1201173849	170544019	DUP									
Carbon-14			U	-0.0997	pCi/g	0		(0% - 100%)	AXD2	09/09/06	05:04

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation										
Batch	564449									
	Uncert:	+/-0.0966	+/-0.108							
	TPU:	+/-0.0966	+/-0.108							
QC1201173851 LCS										
Carbon-14	6.66		6.26	pCi/g		94	(75%-125%)		09/06/06	13:38
	Uncert:		+/-0.258							
	TPU:		+/-0.276							
QC1201173848 MB										
Carbon-14		U	-0.0326	pCi/g					09/06/06	12:02
	Uncert:		+/-0.102							
	TPU:		+/-0.102							
QC1201173850 170544019 MS										
Carbon-14	6.86	U	-0.0997	pCi/g		100	(75%-125%)		09/06/06	13:07
	Uncert:		+/-0.0966							
	TPU:		+/-0.0966							
Batch	564451									
QC1201173859 170543020 DUP										
Iron-55		U	77.6	U	25.2	pCi/g	0	(0% - 100%) MXP1	09/09/06	00:15
	Uncert:		+/-70.0		+/-35.2					
	TPU:		+/-70.2		+/-35.3					
QC1201173861 LCS										
Iron-55	628		652	pCi/g		104	(75%-125%)		09/09/06	00:49
	Uncert:		+/-52.8							
	TPU:		+/-66.0							
QC1201173858 MB										
Iron-55		U	9.45	pCi/g					09/08/06	23:59
	Uncert:		+/-38.6							
	TPU:		+/-38.6							
QC1201173860 170543020 MS										
Iron-55	707	U	77.6	pCi/g		104	(75%-125%)		09/09/06	00:32
	Uncert:		+/-70.0		+/-58.4					
	TPU:		+/-70.2		+/-74.2					
Batch	564452									
QC1201173873 170543020 DUP										
Nickel-63		U	1.42	U	7.28	pCi/g	0	(0% - 100%) MXP1	09/09/06	04:54
	Uncert:		+/-6.33		+/-7.57					
	TPU:		+/-6.33		+/-7.57					
QC1201173875 LCS										
Nickel-63	512		468	pCi/g		92	(75%-125%)		09/09/06	05:58
	Uncert:		+/-15.7							
	TPU:		+/-21.7							
QC1201173872 MB										
Nickel-63		U	10.4	pCi/g					09/09/06	04:23
	Uncert:		+/-7.87							
	TPU:		+/-7.87							
QC1201173874 170543020 MS										
Nickel-63	594	U	1.42	pCi/g		91	(75%-125%)		09/09/06	05:26
	Uncert:		+/-6.33		+/-20.8					
	TPU:		+/-6.33		+/-27.9					

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

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

** Indicates analyte is a surrogate compound.

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

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

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

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

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

Preliminary Data Review Form - Judgemental Samples

Survey Unit: 9304- 0001
 Survey Unit Name: Southwest Protected Area Grounds
 Classification: 2
 Survey Media: Soil
 Type of Survey: Final Status Survey
 Type of Measurement: Gross Measurement
 Number of Measurements: 4
 Operational DCGL: 1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60
Minimum Value:	-1.17E-02	-4.39E-03
Maximum Value:	4.08E-02	2.33E-02
Mean:	1.72E-02	8.07E-03
Median:	1.98E-02	6.69E-03
Standard Deviation:	2.34E-02	1.26E-02

RADIONUCLIDE CONCENTRATION (pCi/g)

NUMBER	Cs-137	Cs ID'ed?	Co-60	Co ID'ed	> DCGL
9304-0001-017F	4.08E-02	YES	1.33E-02	NO	NO
9304-0001-018F	3.06E-02	YES	2.33E-02	YES	NO
9304-0001-019F	-1.17E-02	NO	-4.39E-03	NO	NO
9304-0001-020F	8.94E-03	NO	7.89E-05	NO	NO

Performed By: Robert Massengill Date: 10-3-06
 Independent Review: [Signature] Date: 10/9/06

Preliminary Data Review Form - Samples for the Sign Test

Survey Unit: 9304- 0001
 Survey Unit Name: Southwest Protected Area Grounds
 Classification: 2
 Survey Media: Soil
 Type of Survey: Final Status Survey
 Type of Measurement: Gross Measurement
 Number of Measurements: 15
 Operational DCGL: 1

BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60
Minimum Value:	-2.18E-02	-2.99E-02
Maximum Value:	8.35E-02	1.45E-02
Mean:	1.91E-02	-4.85E-04
Median:	9.84E-03	7.61E-05
Standard Deviation:	2.96E-02	1.10E-02
Skew:	9.69E-01	-1.23E+00

RADIONUCLIDE CONCENTRATION (pCi/g)

NUMBER	Cs-137	Co-60	Cs Identified?	Co Identified?
9304-0001-001F	0.00E+00	-4.42E-03	NO	NO
9304-0001-002F	6.46E-02	6.38E-03	YES	NO
9304-0001-003F	5.11E-02	-5.87E-03	YES	NO
9304-0001-004F	1.90E-02	2.04E-03	YES	NO
9304-0001-005F	-2.18E-02	1.08E-02	NO	NO
9304-0001-008F	1.63E-03	6.39E-03	NO	NO
9304-0001-009F	9.84E-03	1.45E-02	NO	NO
9304-0001-010F	8.35E-02	-1.14E-02	YES	NO
9304-0001-011F	2.32E-02	7.61E-05	YES	NO
9304-0001-012F	-3.20E-04	-1.00E-03	NO	NO
9304-0001-013F	-1.10E-02	-1.63E-03	NO	NO
9304-0001-014F	2.90E-02	-8.10E-03	YES	NO
9304-0001-015F	3.71E-03	1.17E-02	NO	NO
9304-0001-016F	9.41E-03	-2.99E-02	NO	NO
9304-0001-021F	2.48E-02	3.16E-03	NO	NO

Performed By: Robert MASSER Date: 10/9/06

Independent Review: EE Sargent Date: 10/9/06

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

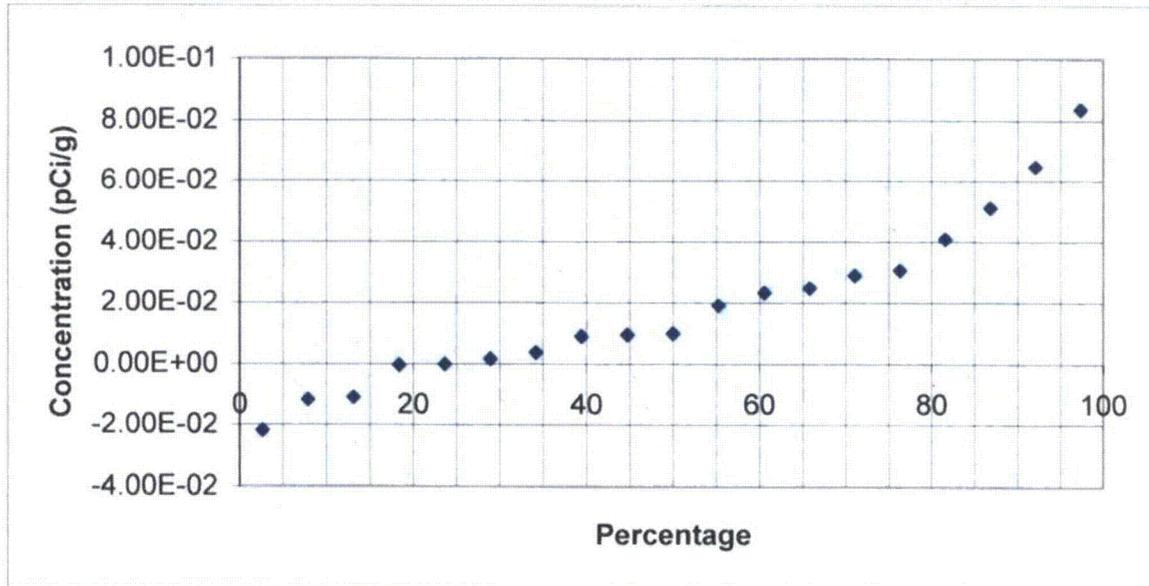
**ATTACHMENT 4B
(GRAPHICAL REPRESENTATION OF
DATA)**

Quantile Plot For Cesium - 137

Survey Unit: 9304-0001

Survey Unit Name: Southwest Protected Area Grounds

Mean: 1.87E-02 pCi/g



Cs-137	Rank	Percentage
-2.18E-02	1	3 %
-1.17E-02	2	8 %
-1.10E-02	3	13 %
-3.20E-04	4	18 %
0.00E+00	5	24 %
1.63E-03	6	29 %
3.71E-03	7	34 %
8.94E-03	8	39 %
9.41E-03	9	45 %
9.84E-03	10	50 %
1.90E-02	11	55 %
2.32E-02	12	61 %
2.48E-02	13	66 %
2.90E-02	14	71 %
3.06E-02	15	76 %
4.08E-02	16	82 %
5.11E-02	17	87 %
6.46E-02	18	92 %
8.35E-02	19	97 %

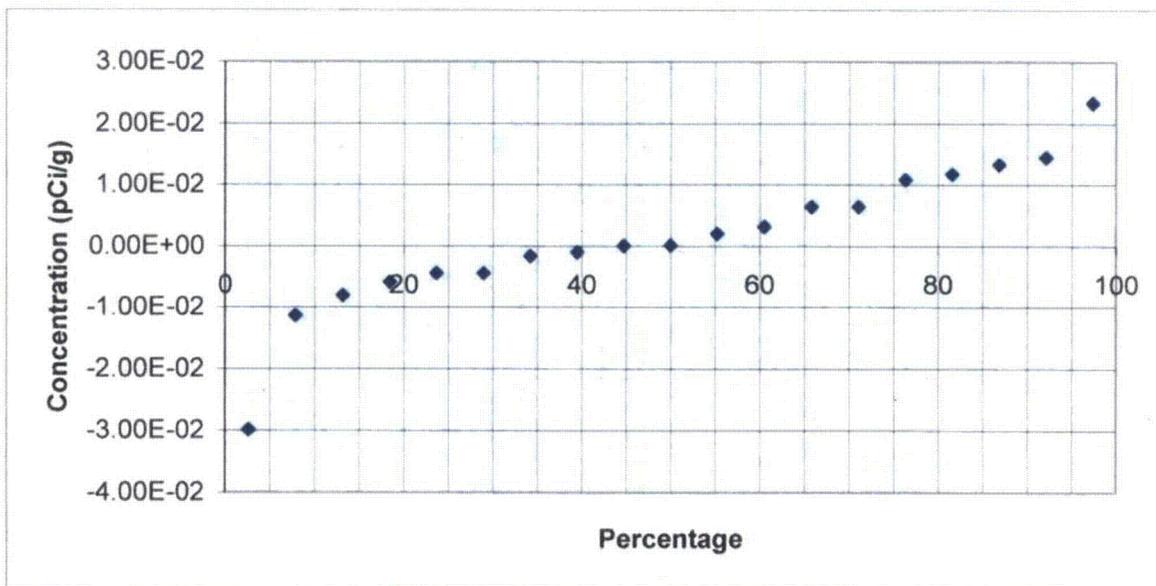
Prepared By: P. Massengill Date: 10/9/06
 Reviewed By: [Signature] Date: 10/9/06

Quantile Plot For Cobalt - 60

Survey Unit: 9304-0001

Survey Unit Name: Southwest Protected Area Grounds

Mean: -7.45E-04 pCi/g



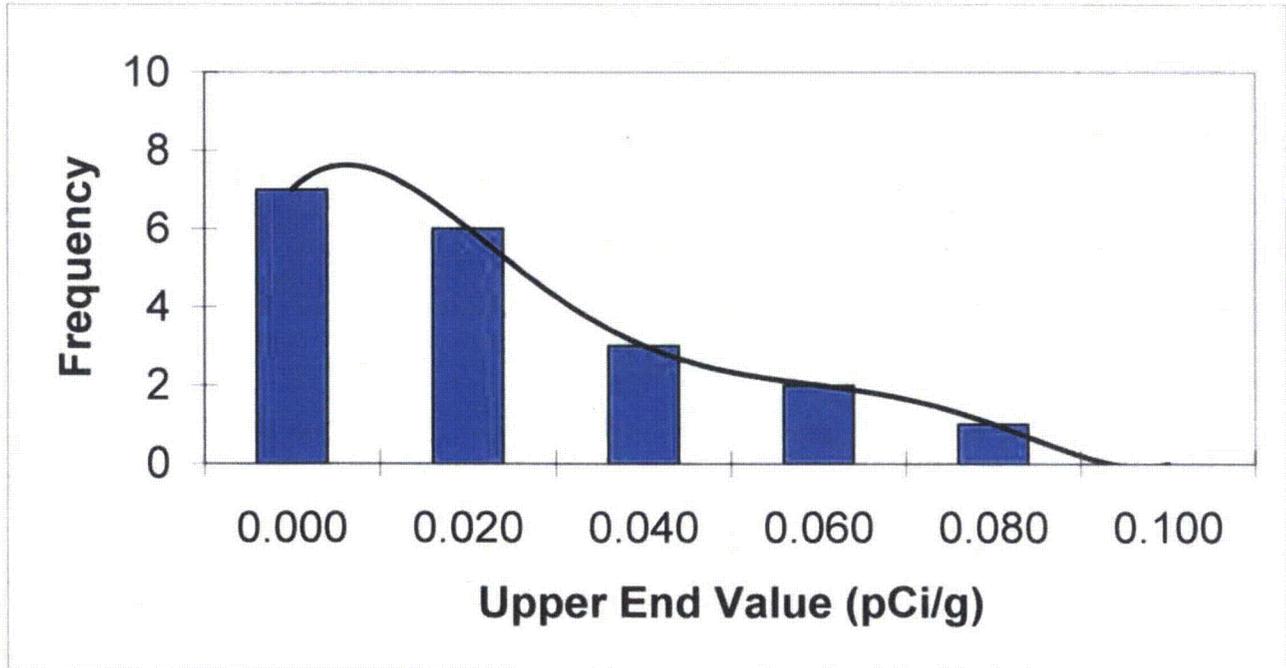
Co-60	Rank	Percentage
-2.99E-02	1	3 %
-1.14E-02	2	8 %
-8.10E-03	3	13 %
-5.87E-03	4	18 %
-4.42E-03	5	24 %
-4.39E-03	6	29 %
-1.63E-03	7	34 %
-1.00E-03	8	39 %
7.61E-05	9	45 %
7.89E-05	10	50 %
2.04E-03	11	55 %
3.16E-03	12	61 %
6.38E-03	13	66 %
6.39E-03	14	71 %
1.08E-02	15	76 %
1.17E-02	16	82 %
1.33E-02	17	87 %
1.45E-02	18	92 %
2.33E-02	19	97 %

Prepared By: R. Massengill
 Reviewed By: [Signature]

Date: 10/9/06
 Date: 10/9/06

Frequency Plot For Cesium-137

Survey Unit: 9304-0001
 Survey Unit Name: Southwest Protected Area Grounds
 Mean: 0.019 pCi/g



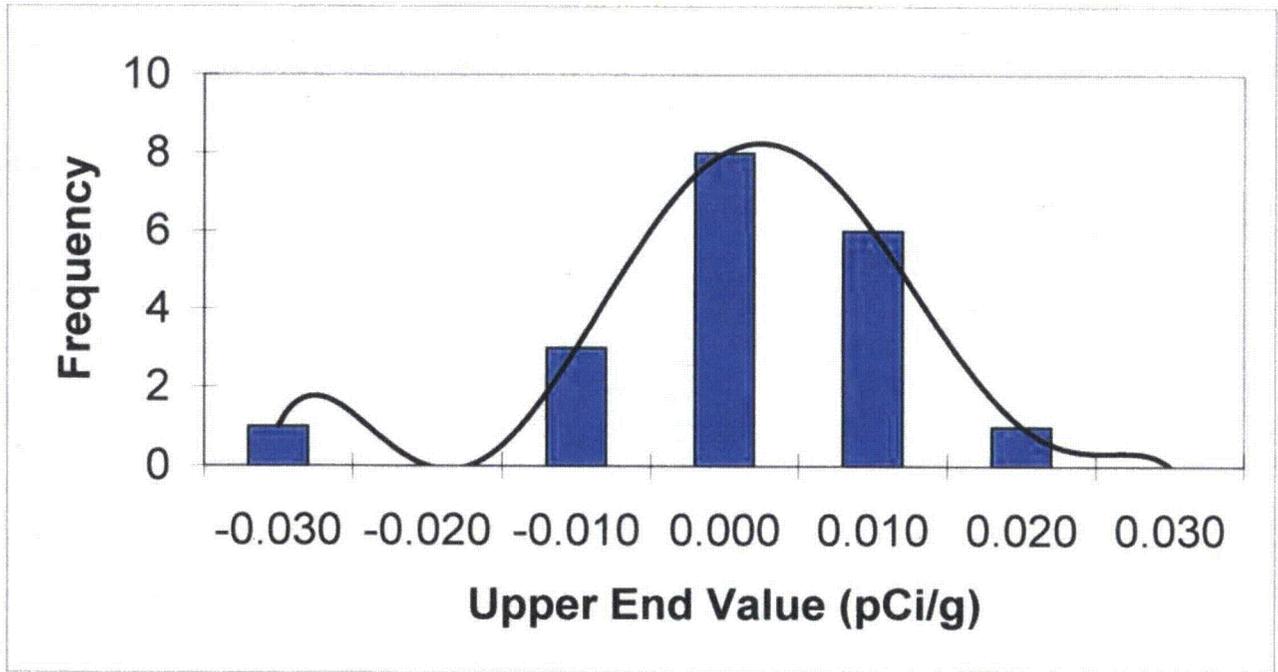
Upper End Value	Observation Frequency	Observation % Frequency
0.000	7	37%
0.020	6	32%
0.040	3	16%
0.060	2	11%
0.080	1	5%
0.100	0	0%
Total	19	100%

Prepared By: Robert Massogill Date: 10/9/00

Reviewed By: E. E. Seeger Date: 10/9/06

Frequency Plot For Cobalt-60

Survey Unit: 9304-0001
 Survey Unit Name: Southwest Protected Area Grounds
 Mean: 0.000 pCi/g



Upper End Value	Observation Frequency	Observation % Frequency
-0.030	1	5%
-0.020	0	0%
-0.010	3	16%
0.000	8	42%
0.010	6	32%
0.020	1	5%
0.030	0	0%
Total	19	100%

Prepared By: Robert Masserill

Date: 10/9/06

Reviewed By: EE Sargent

Date: 10/9/06

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Unit Number: 9304-0001					
Survey Unit Name: Southwest Protected Area Grounds					
WP&IR#: 2006-038					
Classification : 2		TYPE I (α error):0.05	TYPE I (β error):0.05		
Radionuclides: Cs-137 Co-60 Operational DCGL (pCi/g): 4.75 2.29					
Results Cs-137	Results Co-60	Weighted Sum (W _s)	DCGL-Result	Sign	
0.00E+00	-4.42E-03	-1.93E-03	1.00E+00	1	
6.46E-02	6.38E-03	1.64E-02	9.84E-01	1	
5.11E-02	-5.87E-03	8.19E-03	9.92E-01	1	
1.90E-02	2.04E-03	4.89E-03	9.95E-01	1	
-2.18E-02	1.08E-02	1.27E-04	1.00E+00	1	
1.63E-03	6.39E-03	3.13E-03	9.97E-01	1	
9.84E-03	1.45E-02	8.40E-03	9.92E-01	1	
8.35E-02	-1.14E-02	1.26E-02	9.87E-01	1	
2.32E-02	7.61E-05	4.92E-03	9.95E-01	1	
-3.20E-04	-1.00E-03	-5.04E-04	1.00E+00	1	
-1.10E-02	-1.63E-03	-3.03E-03	1.00E+00	1	
2.90E-02	-8.10E-03	2.57E-03	9.97E-01	1	
3.71E-03	1.17E-02	5.89E-03	9.94E-01	1	
9.41E-03	-2.99E-02	-1.11E-02	1.01E+00	1	
4.08E-02	1.33E-02	1.44E-02	9.86E-01	1	
3.06E-02	2.33E-02	1.66E-02	9.83E-01	1	
-1.17E-02	-4.39E-03	-4.38E-03	1.00E+00	1	
8.94E-03	7.89E-05	1.92E-03	9.98E-01	1	
2.48E-02	3.16E-03	6.60E-03	9.93E-01	1	
Number of Positive Differences (S+):			19		

Critical Value: 13

Survey Unit: Meets Acceptance Criterion

Performed By: *Robert Massengill*

Date: 10-3-06

Independent Review: *E. E. Sargeant*

Date: 10/9/06

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

**ATTACHMENT 4D
(QC SPLIT RESULTS)**

Split Sample Assessment Form

Survey Area #:	9304	Survey Unit #:	0001	Survey Unit Name:	Southwest Protected Area Grounds			
Sample Plan or WPIR#:	2006-038				SML #:	9304-0001-002FS		

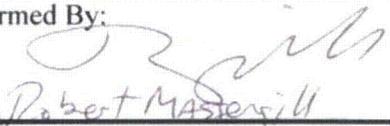
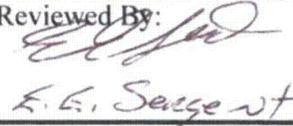
Sample Description: Comparison of split samples collected from sample measurement location #02 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9304-0001-002F the comparison sample was 9304-0001-002FS.

STANDARD					COMPARISON			
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)
Cs-137	6.46E-02	1.61E-02	4	0.50 2.00	6.20E-02	1.80E-02	0.96	Y
Co-60	6.38E-03	1.10E-02	1	NONE	6.09E-03	1.73E-02	0.95	N/A
K-40	1.40E+01	6.25E-01	22	0.75 1.33	1.45E+01	6.15E-01	1.04	Y

Comments/Corrective Actions: Co-60 is reported at levels significantly below detection limits, a small variance in the reported activity for the samples could result in a low resolution and a corresponding unsatisfactory comparison ratio. Guidance for sample agreement was developed from USNRC Inspection Procedure 84750 which does not provide agreement ranges for resolutions less than 4. Therefore, a statement of acceptability in such cases is not appropriate. However, Cs-137 and K-40 were found to be present at an acceptable level of agreement. Therefore, no further action is warranted.

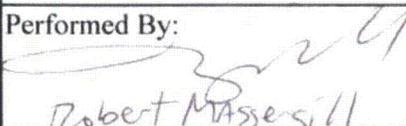
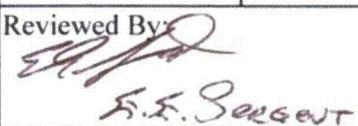
Table is provided to show acceptance criteria used to assess split samples.

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:  Robert Masterson	Date: 10/9/06	Reviewed By:  E. G. Seargeant	Date: 10/9/06
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WPIR – Work Plan and Inspection Record
SML – Sample Measurement Location designation

Split Sample Assessment Form

Survey Area#:	9304	Survey Unit #:	0001	Survey Unit Name:	Southwest Protected Area Grounds																											
Sample Plan or WPIR#:	2006-038			SML #:	9304-0001-010FS																											
Sample Description: Comparison of split samples collected from sample measurement location #10 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9304-0001-010F, the comparison sample was 9304-0001-010FS.																																
STANDARD					COMPARISON																											
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)																								
Cs-137	8.35E-02	2.15E-02	4	0.5- 2.00	6.17E-02	1.48E-02	0.74	Y																								
Co-60	-1.14E-02	1.61E-02	-1	NONE -	1.78E-02	1.14E-02	-1.56	N/A																								
K-40	1.08E+01	5.50E-01	20	0.75 - 1.33	1.03E+01	5.20E-01	0.95	Y																								
<p>Comments/Corrective Actions: <u>Co-60 is reported at levels significantly below detection limits, a small variance in the reported activity for the samples could result in a low resolution and a corresponding unsatisfactory comparison ratio. Guidance for sample agreement was developed from USNRC Inspection Procedure 84750 which does not provide agreement ranges for resolutions less than 4. Therefore, a statement of acceptability in such cases is not appropriate. However, Cs-137 and K-40 were found to be present at an acceptable level of agreement. Therefore, no further action is warranted.</u></p>					<p>Table is provided to show acceptance criteria used to assess split samples.</p> <table border="1"> <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>> 200</td> <td></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	> 200		0.85	1.18
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:  Robert Massesill			Date: 10/9/06		Reviewed By:  S.E. Sargent			Date: 10/9/06																								

WPIR – Work Plan and Inspection Record

SML – Sample Measurement Location designation

SOUTHWEST PROTECTED AREA GROUNDS
SURVEY UNIT 9304-0001

RELEASE RECORD

**ATTACHMENT 4E
(COMPASS DQA WITH POWER
CURVE)**



DQA Surface Soil Report

Assessment Summary

Site:	CY02		
Planner(s):	RWM		
Survey Unit Name:	9304-0001		
Report Number:	1		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	Reject Null Hypothesis (Survey Unit PASSES)		

Retrospective Power Curve

