



Final Status Survey Final Report Phase VI

**Appendix A13
Survey Unit Release Record
9527-0005, East Mountain Side**

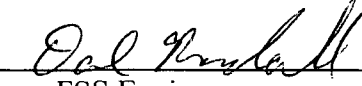
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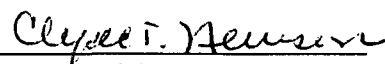
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FINAL STATUS SURVEY RELEASE RECORD
EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

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TOTAL 176

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9527-0005 (East Mountainside Area) is designated as Final Status Survey (FSS) Class 2 and consists of 5,777 m² (1.4 acres) of uninhabited open land located approximately 525 feet from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The survey unit is bounded as follows: Survey Unit 9514-0000 to the north (called north as oriented with the north to south flow of the Connecticut River), Survey Unit 9527-0001 and Survey Unit 9527-0002 to the east, Survey Unit 9522-0002 to the south, and Survey Unit 9312-0009 and survey Unit 9312-0010 to the west. A relatively small portion of the area topography is flat or open space. A steep cliff along the western boundary follows the former Radiologically Controlled Area (RCA) boundary. Rip-rap and later gunite were used to stabilize a section of the mountainside that had washed out in 1978 (refer to Plant Information Report (PIR) 78-19).

The reference coordinates associated with this survey unit are E014 through E018 by S059 through S077 (refer to License Termination Plan (LTP) Section 5.4.4). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS) based on the Connecticut State Plane System North American Datum (NAD) 1927.

2. CLASSIFICATION BASIS

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

The "*Classification Basis Summary*" conducted for Survey Unit 9527-0005 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."
- e) Personal interviews

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A review of the 10CFR50.75(g)(1) database report and historical files associates several events with this survey unit. Examples of some of the major events are provided below.

- a) Plant Incident Report (PIR) 78-19 reported that part of the mountainside slid down during heavy rains and caused damage to a building outside the Protected Area. Rip-rap was initially used to stabilize the section of the mountainside that had washed out. Photographs show that stabilization was in place by at least 1980. A Health Physics technician during an interview recalled surveying rip-rap in 1980 (refer to next event). Gunitite, a trade name for "dry gunned" or pneumatically applied or sprayed in place concrete, was later used to provide additional stabilization. The exact date of application is unknown, but interviews with an Operator and a Radwaste Supervisor place the date somewhere between 1980 and 1981. Additional stabilization along the western ledge was performed sometime after 1989. The stabilization activities included moving the Protective Area fence up onto the ledge and establishing a narrow gunitite walkway and drain system adjacent to the fence (reference memo EN-88-749). Additional repair was recommended in 1995 to repair the walkway (reference memo CY-TS-95-0529). The repairs appear to have included applying gunitite along the side wall to maintain erosion control and a safe walkway for personnel. The gunitite walkway and RCA fence were removed prior to Final Status Survey (FSS).
- b) Plant Incident Report (PIR) 80-37 reported the discovery of three (3) discrete sources of elevated activity on the East Mountainside in March 1980, along with other areas around the site. These locations are believed to be associated with Survey Unit 9527-0005 based on a review of the 1980 survey maps. The most likely source, according to the reports associated with PIR 80-37, was any one of a number of operational events that occurred since January 1979 (to discovery in March 1980) causing a burst of air or steam to be released through ventilation ducts and out the Primary Ventilation Stack. The elevated areas were removed upon detection according to the historical records.
- c) Event CR 05-0244: Tank farm material with low-level fixed contamination was found in Survey Unit 9527-0005 along the upper fence. The material was removed upon detection.

A review of the "*Initial and Supplemental Characterization Reports*" as well as the previous "*Classification Basis Summaries*" was performed. Survey Unit 9527-0005 was originally part of Survey Unit 9527-0003. The source documents, the "*Connecticut Yankee Haddam Neck Characterization Report*" and "*Initial Classification for Survey Areas at Connecticut Yankee*", were

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incorporated by reference in LTP revision 0 (references 2-2 and 2-7 respectively). The second source document justified a Class 2 designation for those areas for which there was historical evidence of contamination above the Derived Concentration Guideline Levels (DCGLs - refer to Section 2 for definition and description of DCGL), but for which recent surveys had shown that decontamination efforts had occurred and that the radiological conditions were expected to be below the DCGLs. Additional justification for a Class 2 designation based on survey and sampling data was provided as another reference to the LTP by the "*Haddam Neck Plant Historical Site Assessment Supplement*". Survey Unit 9527-0004 was created during the revision to the LTP (revision 2) to take advantage of existing physical boundaries (an upper and lower fence) and to satisfy LTP land size requirements for Class 2 areas.

Characterization was performed in August 2005 to support final classification and FSS planning. A review of the characterization data shows that Cs-137 was the only radionuclide of concern. Twenty-eight (28) samples were evaluated overall. Statistical quantities (mean, median and standard deviation) from the 2005 characterization survey are provided in Table 1.

Table 1 – Basic Statistical Quantities for Cs-137 from the 2005 Characterization Survey

Minimum Observed Concentration (pCi/g) :	2.20E-02
Maximum Observed Concentration (pCi/g) :	1.44E+00
Mean (pCi/g):	4.71E-01
Median (pCi/g):	4.55E-01
Standard Deviation (pCi/g):	3.71E-01

The FSS Engineer performed a visual inspection and walk-down during September 2006 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions. A follow-up walkdown was performed in December 2006 after the Industrial Area fence and walkway were removed.

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

Based upon the results of the 2005 characterization survey, it was concluded that there was a low probability for residual radioactivity in concentrations greater than the DCGLs, justifying a final survey unit classification of Class 2.

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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 FSS plan.

The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9527-0005 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of DCGLs. The DCGLs represent average levels of radioactivity above background levels and are presented in terms of surface or mass activity concentrations. Chapter 6 of the LTP describes in detail the modeling used to develop the DCGLs for soil (called Base Case Soil DCGL), existing groundwater radioactivity and future groundwater radioactivity that will be contributed by building basements and footings.

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

Equation 1

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

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

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

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

Equation 2

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

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

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

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pCi/g) ⁽²⁾	Operational DCGL (pCi/g) ⁽³⁾	Required MDC (pCi/g) ⁽⁴⁾
H-3	4.12E+02	2.80E+02	1.65E+01
C-14	5.66E+00	3.85E+00	2.26E-01
Mn-54	1.74E+01	1.18E+01	6.96E-01
Fe-55	2.74E+04	1.86E+04	1.10E+03
Co-60	3.81E+00	2.59E+00	1.52E-01
Ni-63	7.23E+02	4.92E+02	2.89E+01
Sr-90	1.55E+00	1.05E+00	6.20E-02
Nb-94	7.12E+00	4.84E+00	2.85E-01
Tc-99	1.26E+01	8.57E+00	5.04E-01
Ag-108m	7.14E+00	4.86E+00	2.86E-01
Cs-134	4.67E+00	3.18E+00	1.87E-01

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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⁾
Cs-137	7.91E+00	5.38E+00	3.16E-01
Eu-152	1.01E+01	6.87E+00	4.04E-01
Eu-154	9.29E+00	6.32E+00	3.72E-01
Eu-155	3.92E+02	2.67E+02	1.57E+01
Pu-238	2.96E+01	2.01E+01	1.18E+00
Pu-239/240	2.67E+01	1.82E+01	1.07E+00
Pu-241	8.70E+02	5.92E+02	3.48E+01
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00
Cm-243/244	2.90E+01	1.97E+01	1.16E+00

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

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

(3) The Operational DCGL is equivalent to seventeen (17) 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

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Soil samples were collected in 2005 to establish the radiological condition of Survey Unit 9527-0005 for FSS. Cs-137 was the only gamma emitting radionuclide reported in concentrations with the potential for exceeding the screening criteria. The characterization data were used for the survey design and are provided in Table 1.

It was decided that removing the gunite, on the section of the East Mountainside that had washed out in 1978, may increase instability of the mountainside, especially during upcoming winter storms and the spring thaw. Based on a review of the documentation (PIR 80-37), there was a reasonable likelihood that two (2) of the three (3) discrete sources of elevated activity identified and removed from the East Mountainside were in the area covered by the gunite. However, the discrete sources on the East Mountainside were determined to be short-lived fission products by gamma spectroscopy. The gamma activity was predominately Ce-144, Nb-95, Zr-95 and Ru-106. Cs-137 was present, but at much lower concentrations. An evaluation of possible residual activity from the 1979 events was performed in 2001 (Technical Support Document (TSD) BCY-HP-0075). The evaluation concluded that if residual activity from the 1979 events was present today it would be indistinguishable from background in the general environment. There was no reason to believe that residual activity from

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the 1979 events would be present following the surveys performed in 1980 because the higher activity present then would have improved chances for detection.

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.

Barcodes, machine-readable representations of information in a visual format, are the generally accepted method for identifying and processing FSS scan data at HNP, largely because of the improved speed and accuracy of computer data entry and they provide a Unique Product Code (UPC - barcodes) for easy reference and recognition. The instrument DQOs recognized that it would be much more difficult to perform scanning on the East Mountainside than previously surveyed units. The gunite and rip-rap provided uneven and unstable walking surfaces, and the steep slope of the East Mountainside terminates with a nearly vertical drop to the Industrial Area. Fall prevention and protection was necessary to access the steepest locations within the survey unit and to work within six feet (6 ft) of an unprotected edge (e.g., near the cliff edge). The fall arrest system included tie-off points, a harness, lanyard and a rope grab which required both hands to move in a vertical direction. An exception was made, in this case, to forgo the use of barcodes in the interest of safety and personnel reassurance and to manually log the data points using the E-600 function switch. Downloading of electronic scan information was performed as usual and the reviewed data is provided in Attachment 2.

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

4. SURVEY DESIGN

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

The DQO process determined that Cs-137 would be the radionuclide of concern in Survey Unit 9527-0005 (refer to Section 3). Other radionuclides identified during this FSS would be evaluated to ensure adequate survey design.

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Surrogate DCGLs were not required for this survey unit via screening under LTP Section 5.4.7.2, "*Gross Activity DCGLs*". Radionuclide screening or de-selection is a process where an individual radionuclide or aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates.

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

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

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "*Determination of the Number of Surface Samples for Final Status Survey.*" The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 4.68 pCi/g Cs-137 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. The 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.

Biased sampling was included as a feature of this survey design based on field observation and professional judgment. The first and second locations bordered a Class 1 unit, Survey Unit 9527-0006. The third location was along the uppermost fence line and was chosen because of the prevailing wind pattern and relative close proximity to demolition activities. The fourth and last location was at the bottom of the southern hillside where runoff and collection occurred.

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

Table 3 - Sample Measurement Locations with Associated GPS Coordinates

Designation	Northing	Easting
9527-0005-001F	236985.42	668510.34
9527-0005-002F	236985.42	668584.24
9527-0005-003F	236921.42	668621.19
9527-0005-004F	236921.42	668695.10
9527-0005-005F	236857.41	668732.05
9527-0005-006F	236793.41	668842.91
9527-0005-007F	236664.46	669058.77
9527-0005-008F	236793.41	668990.72
9527-0005-009F	236888.25	668665.91
9527-0005-010F	236729.41	668953.76
9527-0005-011F	236729.41	669027.67
9527-0005-012F	236665.40	669064.62
9527-0005-013F	236665.40	669138.53
9527-0005-014F	236601.40	669101.57
9527-0005-015F	236601.40	669175.48
9527-0005-016F	236813.48	668873.70
9527-0005-017F	236791.23	668944.34
9527-0005-018F	236723.69	669089.94
9527-0005-019F	236661.42	669020.57

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

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The implementation of quality control measures as referenced by Procedure RPM 5.1-24, “*Split Sample Assessment for Final Status Survey*,” included the collection of two (2) soil samples for “split sample” analysis by the off-site laboratory. These locations were selected randomly using the Microsoft Excel “RANDBETWEEN” function. The number of quality control soil samples was about 10% of fifteen (15) samples.

The LTP specifies a required scanning coverage of 10% to 100% for outdoor Class 2 areas. The fraction of scanning coverage was determined during the DQO process with the total amount and location(s) based on the likelihood of finding elevated activity during FSS. Based on the historical site assessment, the characterization data available, and the use of the survey unit to store spoils from remediation, it was determined that scanning was required in four (4) separate areas. The total surface area to be scanned was approximately 30% of the survey unit. One of the scan areas provided 100% coverage of the area covered by the rip-rap and the gunite. A map of the scan grid locations is provided in Attachment 1.

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

Table 4 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Survey Unit Land Area	5,817 m ²	Based on AutoCAD-LT
Number of Measurements	19 (15 systematic grid) (4 biased)	Type 1 and Type 2 errors were 0.05, sigma was 0.371 pCi/g, the LBGR was adjusted to 4.68 pCi/g Cs-137 to maintain Relative Shift in the range of 1 and 3
Grid Spacing	22.4 m	Based on triangular grid
Operational DCGL	5.38 pCi/g Cs-137	Administratively set to achieve 17 mrem/yr TEDE ⁽¹⁾
Soil Investigation Level	5.38 pCi/g Cs-137	The Operational DCGL meets the LTP criteria for a Class 2 survey unit
Scan Survey Area Coverage	Approximately 30% of the area	The LTP requires >10% area coverage for Class 2 survey units
Scan Investigation Level	Detectable over background	Administratively set to achieve 17 mrem/yr TEDE ⁽¹⁾

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

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5. SURVEY IMPLEMENTATION

FSS field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0038. The WP&IR package included a detailed FSS plan, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

Four (4) scan areas were established that constituted approximately 30% of the surface area of Survey Unit 9527-0005. Grid lines, one meter wide, were painted or otherwise delineated on the ground of the scan area. A background survey was performed around the survey unit and it was determined that, using an Eberline E-600 with a SPA-3 sodium iodide detector, background ranged from 5,400 counts per minute (cpm) up to 11,400 cpm.

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

Measurement locations were identified in NAD 1927 coordinates using GPS coordinates; sample locations were identified and marked with a surveyor's flag or paint for identification. A one (1) meter radius around the sample flag or paint mark was scanned for elevated radiation levels at those sample locations not included within a scan area.

Twenty-six (26) surface soil samples were collected and packaged in accordance with 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 (9527-0005-005F and 9527-0005-012F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of two (2) samples (9527-0005-006F and 9527-0005-020F) for "split sample" analysis.

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6. SURVEY RESULTS

All field survey activities were conducted from December 12, 2006 through January 10, 2007.

A one (1) meter radius around the sample flag or paint mark was scanned for elevated radiation levels at those sample locations not included within a scan area. Table 5 provides an overview of the scan results for sample measurement locations. Scan results are provided in Attachment 2.

Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location ⁽¹⁾	Highest Logged Reading (kcpm)	Action Level ⁽²⁾ (kcpm)	> Action Level ⁽³⁾
1	10.8	12.6	NO
3	8.40	9.31	NO
4	10.3	9.80	YES
5	10.8	11.7	NO
6	10.1	12.3	NO
7	11.8	11.2	YES
8	9.09	10.0	NO
9	10.5	10.2	YES
11	10.7	11.0	NO
12	11.8	11.4	YES
13	10.1	11.7	NO
14	8.77	10.1	NO
15	10.2	11.7	NO
16	11.4	11.7	NO
17	9.82	11.2	NO
18	10.5	11.9	NO
19	11.8	11.9	NO

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Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location ⁽¹⁾	Highest Logged Reading (kcpm)	Action Level ⁽²⁾ (kcpm)	> Action Level ⁽³⁾
20	10.6	11.6	NO
31	7.62	8.66	NO

(1) Sample location #2 was deemed inaccessible for safety reasons, and was replaced by sample location #20 under an addendum to the FSS plan; sample location #10 was relocated within the boundary of Survey Unit 9527-0006, and was replaced by #31 under an addendum to the FSS plan (sample designations 26 through 30 were used to verify the boundary of survey Unit 9527-0006, and are not included in this report)

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

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

The scan areas, that comprised approximately 30% of the total surface area for the survey unit, were scanned for elevated radiation levels. The areas were scanned in accordance with the FSS plan from December 12, 2006 through December 15, 2006. Several elevated measurement locations were identified during scanning. Table 6 provides an overview of the scan area survey. Scan results are provided in Attachment 2.

Table 6 - Scan Area Results

Scan Area	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification ⁽²⁾	Investigation Sample
1	8.21	7.02	Log 2	9527-0005-021F
			Log 13	9527-0005-022F
2	12.7	9.90	Log 22	9527-0005-025F
3	12.4	12.3	Log 19 ⁽³⁾	9527-0005-023F
			Log 20	9527-0005-024F
4	11.8	11.9	None – no elevated areas identified	None

(1) The action level is based on a measurement above ambient background

(2) Refer to Attachment 2 Scan Results for additional information

(3) The location associated with Log 19 was not above the action level, but was flagged and sampled at the discretion of the FSS Supervisor

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing, the two (2) associated field splits, the four (4) biased samples, and the five (5) investigative samples using gamma spectroscopy. Gamma spectroscopy analysis was

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performed to the required MDCs. Gamma spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). Cs-137 was the only radionuclide reported in concentrations exceeding the de-selection criteria. Cs-137 was identified in all fifteen (15) samples collected for non-parametric statistical testing. Co-60 was also identified in six (6) of the fifteen (15) samples; however, none of the sample results exceeded the de-selection criteria.

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 MDCs.

As previously stated in Section 4 of this report, the criteria for de-selection of a radionuclide is a concentration that is less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the Operational DCGLs for aggregates. Sr-90 was the only HTD, which by analysis, met the criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). Only one (1) Sr-90 reported result exceeded the de-selection criteria. The highest result for Sr-90 was about 6% of the Operational DCGL.

A review of the DQOs was performed to evaluate Sr-90 impact on dose compliance. Additional analysis for Sr-90 in the remaining FSS samples was considered, and found to be unjustified for the following two reasons. Sr-90 represents a small fraction of the dose limits and was found in quantities only slightly in excess of detection limits during FSS. Likewise, Sr-90 results reported during characterization of this survey unit and during the FSS of adjacent survey units were also a small fraction of the dose limits and in quantities only slightly in excess of detection limits in a few cases (some results were non detects). Therefore, the risk of failing the survey unit based on Sr-90 is not likely. For the purposes of dose compliance the average concentration from the FSS results of $4.57E-02$ pCi/g was used to provide a reasonable value for Sr-90 for using the unity rule.

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**Table 7 - Summary of Sr-90 Analysis Results for Surface Soil Samples
Comprising the Statistical Sample Population**

Sample	Sr-90 (pCi/g)
9527-0006-005F	6.78E-02
9527-0006-012F	2.35E-02

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 combination of the fractions of each detected radionuclide against their respective Operational DCGL must be less than or equal to one (1). The unity rule is:

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 9527-0005 are provided in Table 8 below.

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

Sample Number ⁽¹⁾	Fraction of the Operational DCGL ⁽²⁾		Unity Fraction
	Cs-137	Sr-90 ⁽³⁾	
9527-0005-001F	0.04	0.05	0.09
9527-0005-003F	0.10	0.05	0.15
9527-0005-004F	0.12	0.05	0.17
9527-0005-005F	0.12	0.06	0.18
9527-0005-006F	0.12	0.05	0.17
9527-0005-007F	0.21	0.05	0.26
9527-0005-008F	0.21	0.05	0.26
9527-0005-009F	0.05	0.05	0.10
9527-0005-011F	0.12	0.05	0.17

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

Sample Number ⁽¹⁾	Fraction of the Operational DCGL ⁽²⁾		Unity Fraction
	Cs-137	Sr-90 ⁽³⁾	
9527-0005-012F	0.38	0.02	0.40
9527-0005-013F	0.21	0.05	0.26
9527-0005-014F	0.03	0.05	0.08
9527-0005-015F	0.25	0.05	0.30
9527-0005-020F	0.03	0.05	0.08
9527-0005-031F	0.01	0.05	0.06

(1) Refer to Section 10 for a discussion about sample locations 9527-0005-002F, 9527-0005-010F, 9527-0005-020F and 9527-0005-031F

(2) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 and 1.05 pCi/g for Sr-90 used in conjunction with the unity rule to achieve seventeen (17) mrem/yr TEDE

(3) The average concentration of 4.57E-02 pCi/g for Sr-90 was used to provide a reasonable value for using the unity rule

Four (4) biased samples were collected at locations selected by FSS Supervision based on professional judgment and observation. Gamma spectroscopy analysis was performed by the off-site laboratory to the required MDC.

Table 9 - Judgmental or Biased Sample Results

Sample Number	Cs-137 pCi/g	Sr-90 ⁽¹⁾ pCi/g	Unity Fraction ⁽²⁾
9527-0005-016F	7.90E-01	4.57E-02	0.191
9527-0005-017F	2.81E-01	4.57E-02	0.098
9527-0005-018F	1.12E+00	4.57E-02	0.259
9527-0005-019F	3.72E+00	4.57E-02	0.754

(1) The average concentration of 4.57E-02 pCi/g for Sr-90 was used to provide a reasonable value for using the unity rule

(2) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 and 1.05 pCi/g for Sr-90 used in conjunction with the unity rule to achieve seventeen (17) mrem/yr TEDE

7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Ten percent (10%) of the samples were selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "Split Sample Assessment for Final Status Survey". There was acceptable agreement between the Cs-137 field split results at location 9527-0005-006. Cs-137 was not detected in one of

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the field split results at location 9527-0005-020. Evaluation using the reported results for K-40, a naturally occurring radionuclide, resulted in acceptable agreement between the field split result at this location.

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

8. INVESTIGATIONS AND RESULTS

Five (5) investigative samples were collected from scan area 1, scan area 2 and scan area 3 at locations exhibiting elevated scan readings. The two (2) samples collected in scan area 1 were collected under the gunite. The samples are denoted as shown in Table 6, with the sample results shown in Table 10 below.

Table 10 - Investigative Sample Results

Sample Number	Cs-137 pCi/g	Sr-90 ⁽¹⁾ pCi/g	Unity Fraction ⁽²⁾
9527-0005-021F	6.40E-02	4.57E-02	0.061
9527-0005-022F	0.00E+00	4.57E-02	0.052
9527-0005-023F	0.00E+00	4.57E-02	0.069
9527-0005-024F	2.27E+00	4.57E-02	0.478
9527-0005-025F	5.22E-01	4.57E-02	0.151

(1) The average concentration of 4.57E-02 pCi/g for Sr-90 was used to provide a reasonable value for using the unity rule

(2) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 and 1.05 pCi/g for Sr-90 used in conjunction with the unity rule to achieve seventeen (17) mrem/yr TEDE

The sample results for 9527-0005-010 were above the investigation level, which was not expected for this Class 2 survey unit. The physical location of the sample was within six feet (6 ft) of the boundary of Survey Unit 9527-0006. Additional survey and sampling around the sample location did not identify areas of elevated radioactivity. The boundary for Survey Unit 9527-0006 was extended to include sample location 9527-0005-010 and the area of investigation. Approximately 40 m² were removed from this survey unit, resulting in final land area of 5,777 m². The 40 m² was added to Survey Unit 9527-0006.

9. REMEDIATION AND RESULTS

Historically, no radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to or as a result of the FSS. Health Physics TSD BCY-HP-0078, "ALARA Evaluation of Soil Remediation in Support of Final Status Survey," determined that remediation beyond that required to meet the release criteria is unnecessary and that the remaining residual radioactivity in soil was ALARA.

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10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

Sample location 9527-0005-002 was deemed inaccessible for safety reasons, and was replaced by sample location 9527-0005-020 under an addendum to the FSS plan.

Sample location 9527-0005-010 was removed from the FSS design and was replaced by sample location 9527-0005-031 to complete the required number of samples for non-parametric statistical sampling. Sample location #10 was relocated within the boundary of adjacent Survey Unit 9527-0006, and was replaced by #31 under an addendum to the FSS plan (sample designations #26 through #30 were used to verify the boundary of survey Unit 9527-0006, and are not included in this report)

Sr-90 was reported in concentrations exceeding the 5% and 10% rule for de-selection. Therefore, the individual Operational DCGL for Sr-90 was included into sample design in conjunction with the unity rule to ensure adequate survey design in accordance with the DQOs. The result of the COMPASS computer run showed adequate power and maintained the original fifteen (15) surface soil samples for non-parametric statistical testing.

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. Co-60 and Sr-90 were included to demonstrate compliance with release criteria. The sampling design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. The evaluation of the Sign Test results demonstrates that the survey unit passes the unrestricted release criteria, thus, the null hypothesis is rejected.

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

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The mean and median values are well below the Operational DCGL. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs. The basic statistical quantities for the statistical sample population are provided below in Table 11.

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Table 11 - Basic Statistical Quantities for Cs-137 and Sr-90 from the Final Status Survey

	Cs-137 pCi/g	Sr-90 pCi/g
Operational DCGL:	5.38E+00	1.05E+00
Minimum Value:	6.04E-02	2.35E-02
Maximum Value:	2.05E+00	6.78E-02
Mean:	7.14E-01	4.57E-02
Median:	6.47E-01	4.57E-02
Standard Deviation:	5.48E-01	8.37E-03

For Cs-137, the range of the data, about four (4) standard deviations, was not a particularly large variation, which is not unexpected given the extreme changes in terrain and topography. The difference between the mean and median was about 12% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot indicates positive skewness as confirmed by the calculated skew of 0.98.

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

12. ANOMALIES

The sample results for 9527-0005-010 were above the investigation level, which was not expected for this Class 2 survey unit. Sample location 9527-0005-010 was removed from the FSS design and was replaced by sample location 9527-0005-031 as discussed in Section 10. Sample location 9527-0005-010, and additional scan and sampling results, are included in the Release Record for Survey Unit 9527-0006.

13. CONCLUSION

Survey Unit 9527-0005 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

Cs-137 and Sr-90 were used for statistical testing to determine the adequacy of the survey unit for FSS.

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

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The dose contribution from soil is about 3.2 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

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

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

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 5.2 mrem/yr TEDE. Therefore, Survey Unit 9527-0005 is acceptable for unrestricted release.

14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

14.4 Attachment 4 – DQA Results

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ATTACHMENT 1 (FIGURES)

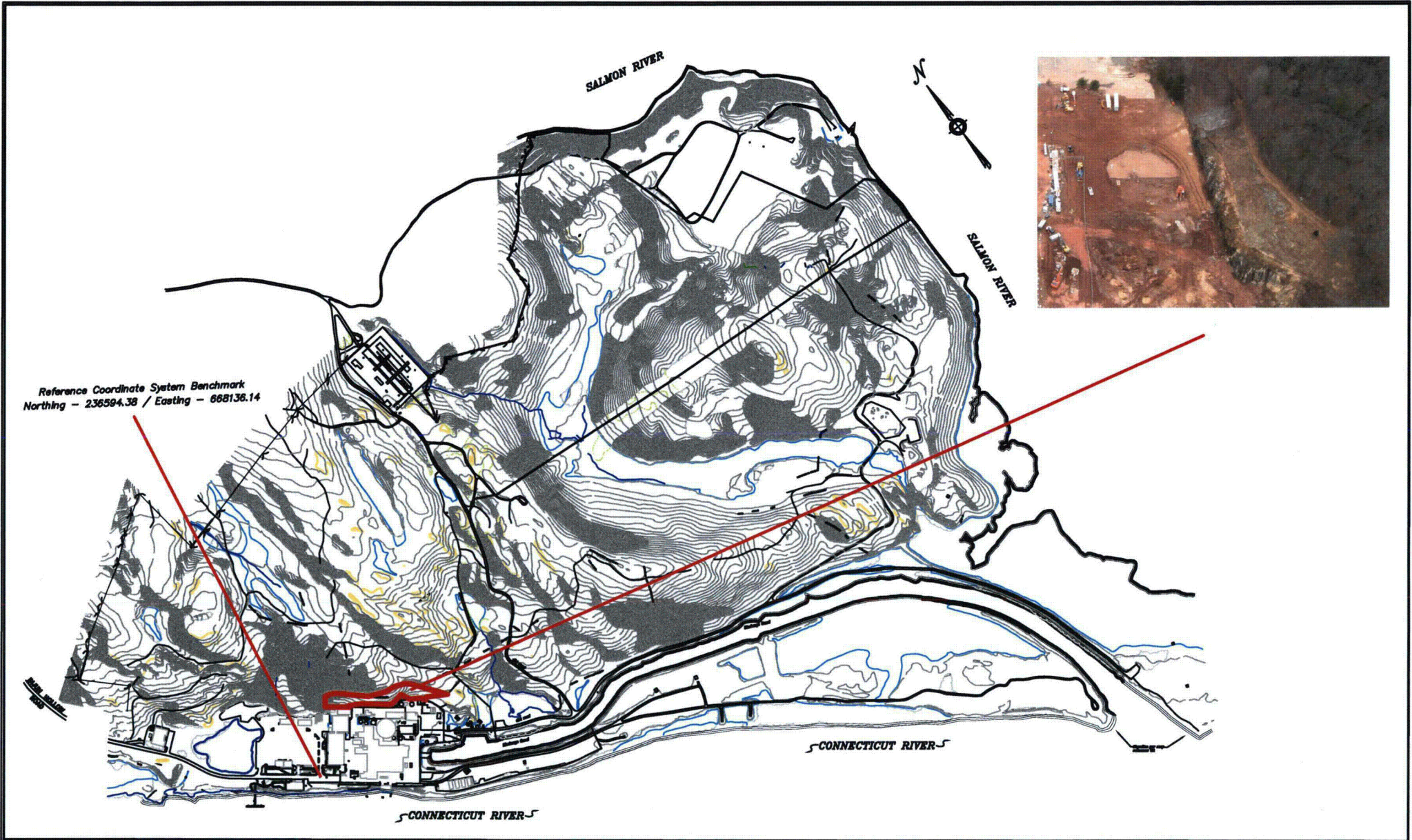


Figure 1



Connecticut Yankee Atomic Power Company
 Site Map With Reference To Survey Unit 9527-0005

Date	By
January 2007	J. McCarthy

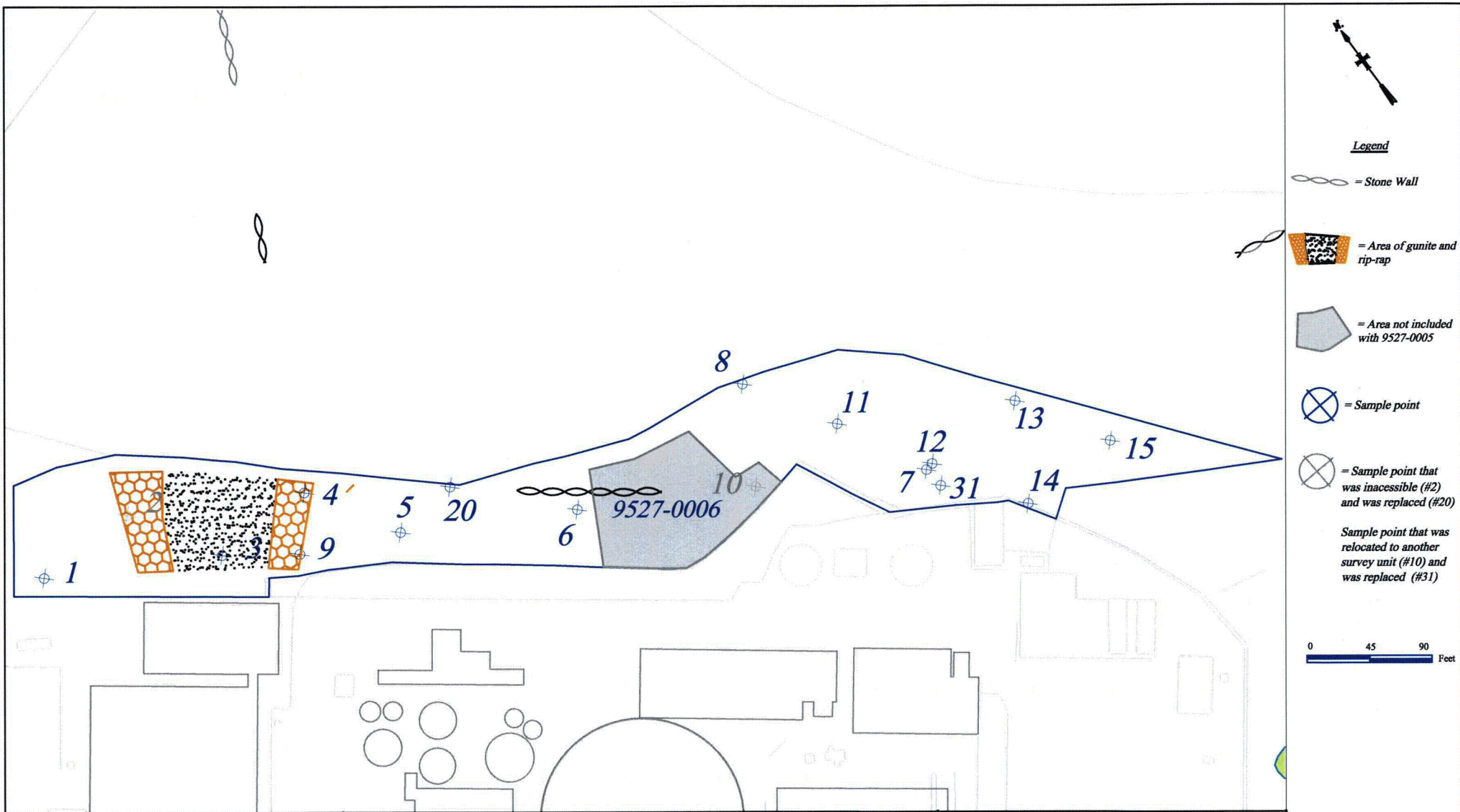
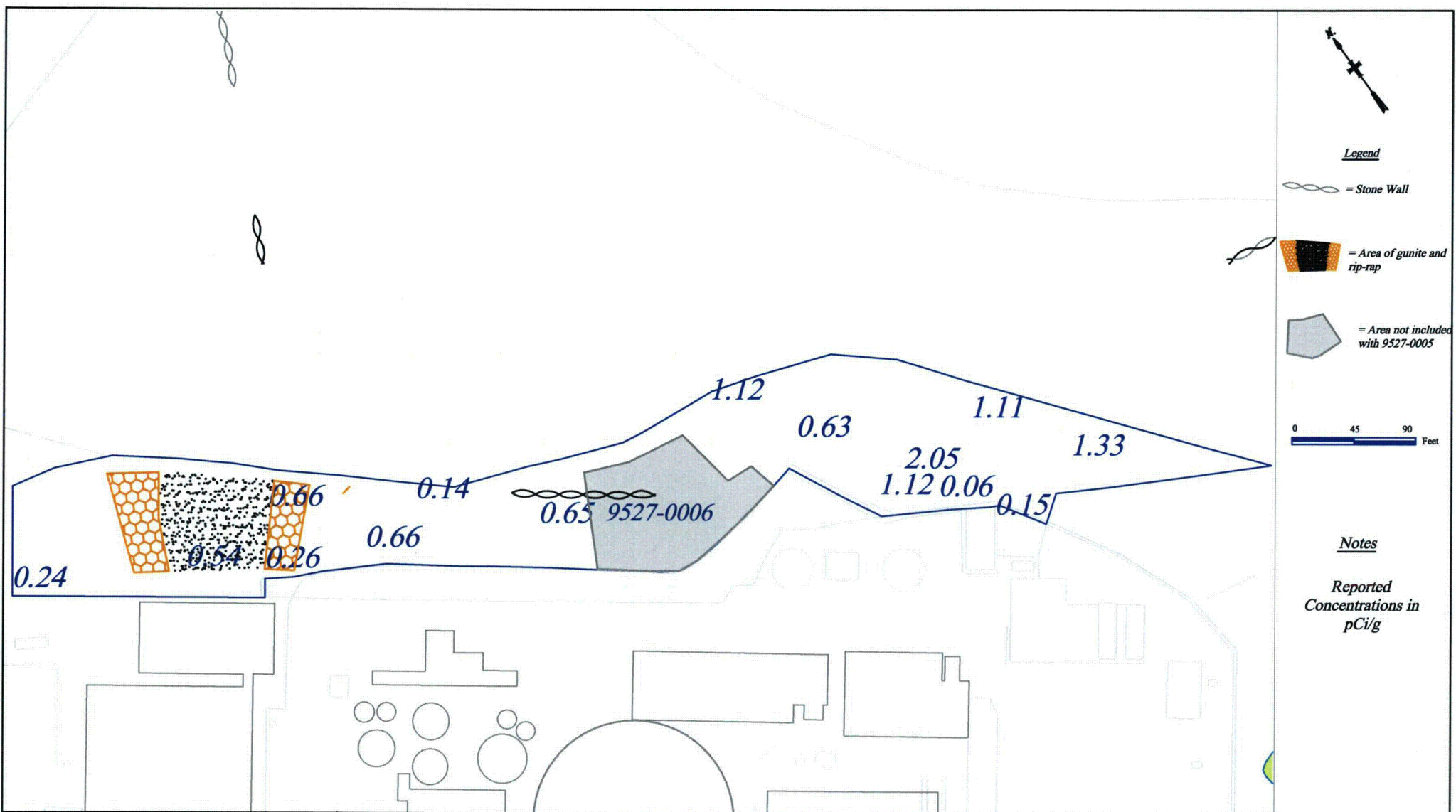


Figure 2

Connecticut Yankee Atomic Power Company
 9527-0005 Final Status Survey Design

Date: January 2007

J. McCarthy



Legend

- = Stone Wall
- = Area of gunite and rip-rap
- = Area not included with 9527-0005

0 45 90 Feet

Notes

Reported Concentrations in pCi/g

Figure 3

Connecticut Yankee Atomic Power Company
 9527-0005 Final Status Survey Cs-137 Posting Plot

Date: January 2007
 J. McCarthy

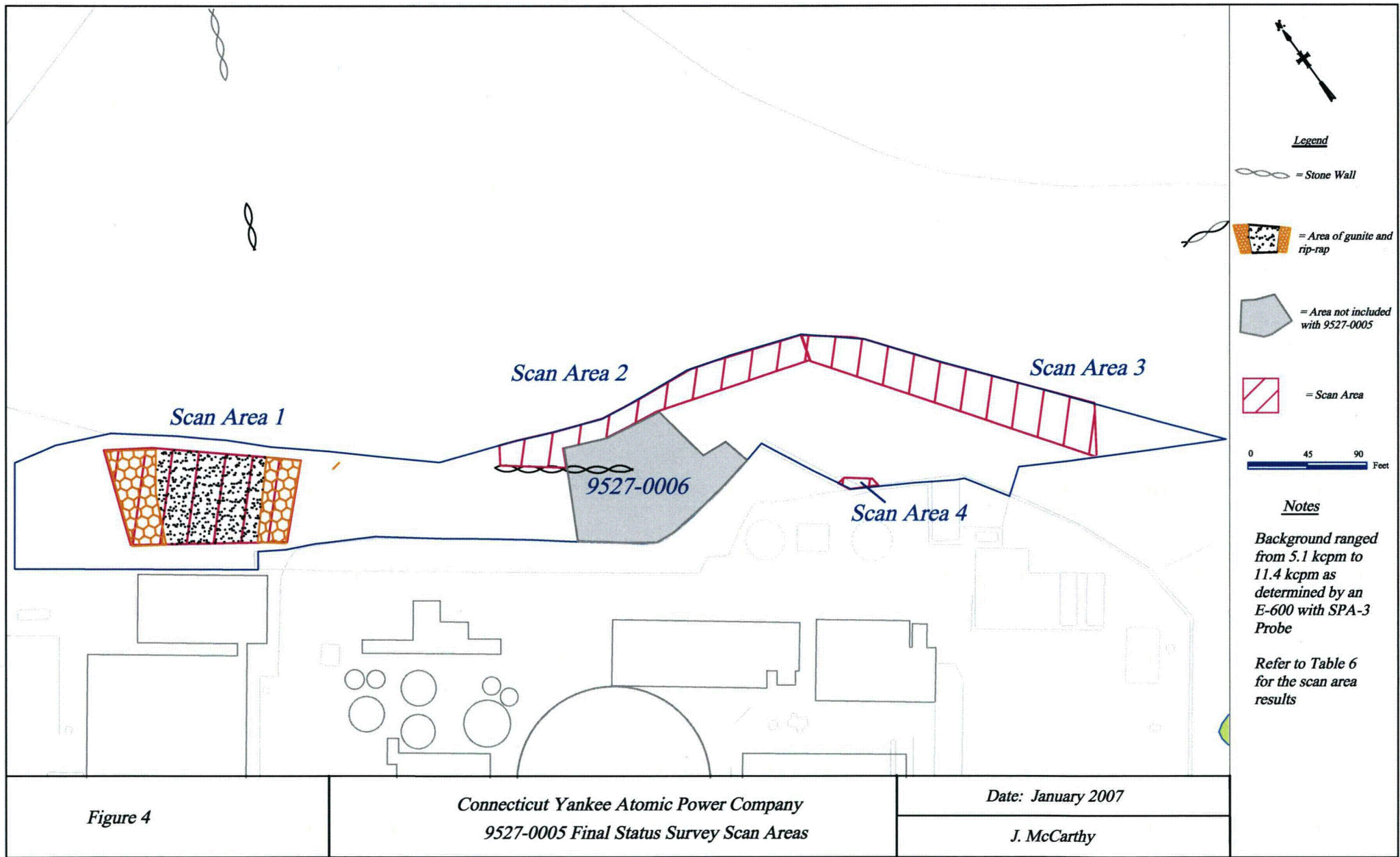
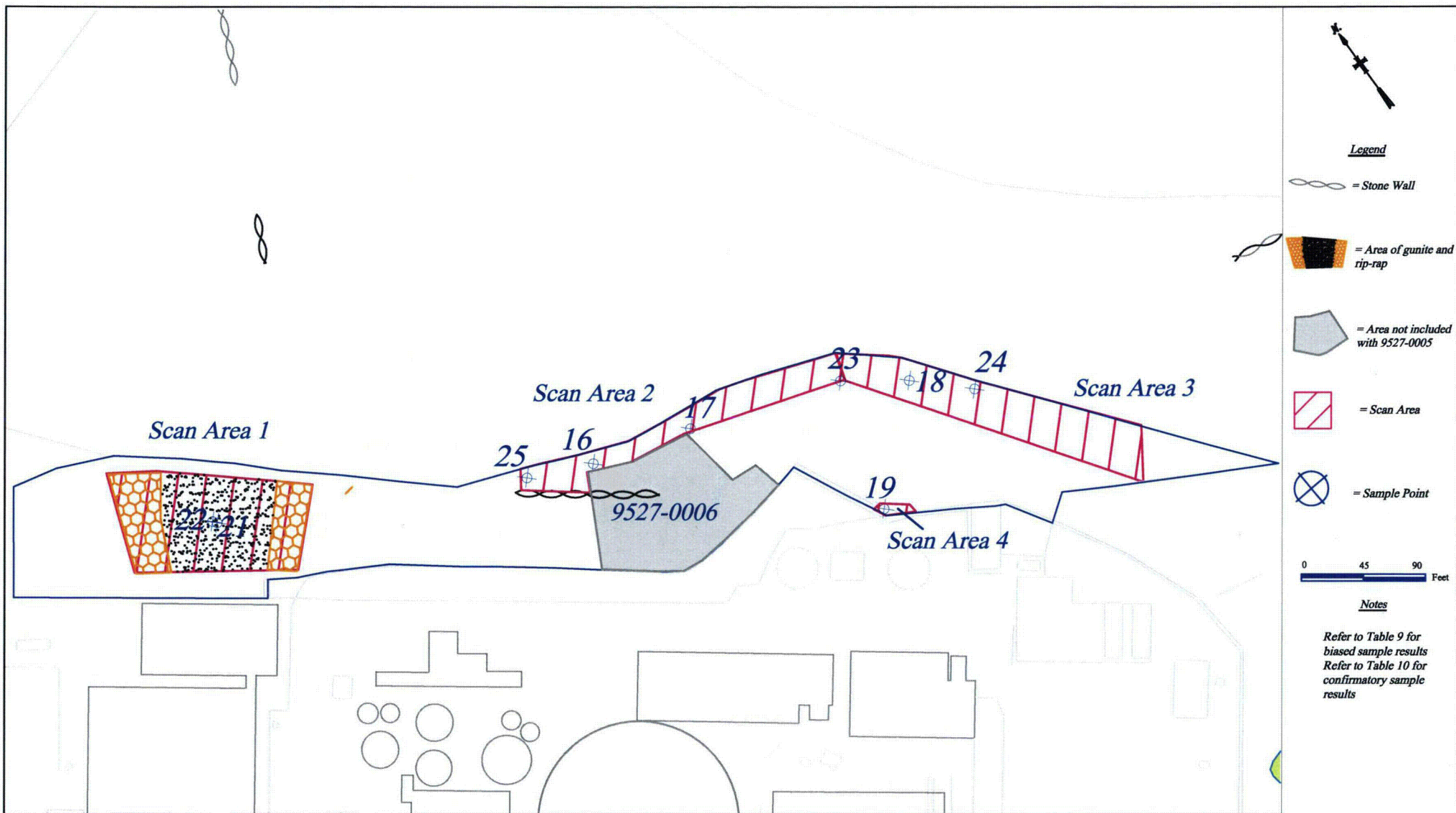


Figure 4

Connecticut Yankee Atomic Power Company
 9527-0005 Final Status Survey Scan Areas

Date: January 2007

J. McCarthy



Legend

- = Stone Wall
- = Area of gunite and rip-rap
- = Area not included with 9527-0005
- = Scan Area
- = Sample Point

0 45 90 Feet

Notes

Refer to Table 9 for biased sample results
 Refer to Table 10 for confirmatory sample results

Figure 5

Connecticut Yankee Atomic Power Company
 9527-0005 Final Status Survey Biased and Confirmatory Samples

Date: January 2007
 J. McCarthy

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 2 (SCAN RESULTS)

Survey Release Record Sample Location Scan Results

Survey Unit 9527-0005

<u>Sample Name</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
9527-0005-001F	1.11E+04	1.26E+04	1.08E+04		12/18/2006	11:11:00	1114	1014
9527-0005-003F	8.03E+03	9.31E+03	8.40E+03		12/18/2006	10:37:00	1114	1014
9527-0005-004F	8.48E+03	9.80E+03	1.03E+04	+	12/18/2006	11:21:00	1114	1014
9527-0005-005F	1.03E+04	1.17E+04	1.08E+04		12/18/2006	11:27:00	1114	1014
9527-0005-006F	1.08E+04	1.23E+04	1.01E+04		12/18/2006	11:41:00	1114	1014
9527-0005-007F	9.76E+03	1.12E+04	1.18E+04	+	12/18/2006	14:06:00	1114	1014
9527-0005-008F	8.71E+03	1.00E+04	9.09E+03		12/18/2006	13:32:00	1114	1014
9527-0005-009F	8.81E+03	1.02E+04	1.05E+04	+	12/18/2006	11:29:00	1114	1014
9527-0005-011F	9.64E+03	1.10E+04	1.07E+04		12/18/2006	14:18:00	1114	1014
9527-0005-012F	1.00E+04	1.14E+04	1.18E+04	+	12/18/2006	14:07:00	1114	1014
9527-0005-013F	1.03E+04	1.17E+04	1.01E+04		12/18/2006	14:00:00	1114	1014
9527-0005-014F	8.72E+03	1.01E+04	8.77E+03		12/18/2006	14:03:00	1114	1014
9527-0005-015F	1.03E+04	1.17E+04	1.02E+04		12/18/2006	14:02:00	1114	1014
9527-0005-016F	1.03E+04	1.17E+04	1.14E+04		12/18/2006	11:39:00	1114	1014
9527-0005-017F	9.76E+03	1.12E+04	9.82E+03		12/18/2006	13:30:00	1114	1014
9527-0005-018F	1.04E+04	1.19E+04	1.05E+04		12/18/2006	14:20:00	1114	1014
9527-0005-019F	1.04E+04	1.19E+04	1.18E+04		12/13/2006	10:23:00	1114	1014
9527-0005-020F	1.02E+04	1.16E+04	1.06E+04		12/18/2006	11:32:00	1114	1014
9527-0005-031F	7.43E+03	8.66E+03	7.62E+03		1/10/2007	8:43:00	1111	1004

Note - Sample location 9527-0005-002F was determined to be inaccessible due to safety concerns, and was replaced by sample location 9527-0005-020F under an addendum to the sample plan

Note - Sample location 9527-0005-010F was relocated within the boundary of Survey Unit 9527-0006, and was replaced by sample location 9527-0005-031F under an addendum to the sample plan (sample designations 26-30 were used to verify the boundary of Survey Unit 9527-0006)

Survey Release Record Scan Area Results

Survey Unit 9527-0005

9527-0005 SCAN AREA 1

<u>Log Number</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
2	5.92E+03	7.02E+03	8.21E+03	+	12/14/2006	9:54:00	1112	1013
3	5.92E+03	7.02E+03	6.69E+03		12/14/2006	9:55:00	1112	1013
5	5.36E+03	6.41E+03	5.07E+03		12/14/2006	10:00:00	1112	1013
7	6.74E+03	7.91E+03	5.95E+03		12/14/2006	10:03:00	1112	1013
9	5.76E+03	6.84E+03	5.41E+03		12/14/2006	10:06:00	1112	1013
11	6.14E+03	7.26E+03	5.21E+03		12/14/2006	10:09:00	1112	1013
13	5.07E+03	6.09E+03	6.39E+03	+	12/14/2006	10:19:00	1112	1013
14	5.07E+03	6.09E+03	5.02E+03		12/14/2006	10:23:00	1112	1013
5	7.69E+03	8.94E+03	7.61E+03		12/14/2006	9:51:00	1114	1014
7	6.97E+03	8.16E+03	7.28E+03		12/14/2006	9:56:00	1114	1014
9	7.10E+03	8.30E+03	6.49E+03		12/14/2006	10:01:00	1114	1014
11	6.16E+03	7.28E+03	7.14E+03		12/14/2006	10:04:00	1114	1014
13	6.83E+03	8.01E+03	6.59E+03		12/14/2006	10:09:00	1114	1014
16	6.44E+03	7.59E+03	6.40E+03		12/14/2006	10:19:00	1114	1014
18	7.17E+03	8.38E+03	6.65E+03		12/14/2006	14:20:00	1114	1014
20	6.09E+03	7.20E+03	6.62E+03		12/14/2006	14:25:00	1114	1014
22	6.69E+03	7.86E+03	7.30E+03		12/14/2006	14:28:00	1114	1014
24	7.87E+03	9.14E+03	7.28E+03		12/14/2006	14:30:00	1114	1014
26	7.59E+03	8.83E+03	7.86E+03		12/14/2006	14:33:00	1114	1014
28	6.23E+03	7.36E+03	6.11E+03		12/14/2006	15:06:00	1114	1014
30	6.61E+03	7.77E+03	6.20E+03		12/14/2006	15:07:00	1114	1014
32	5.36E+03	6.41E+03	5.78E+03		12/14/2006	15:08:00	1114	1014
34	6.13E+03	7.25E+03	5.70E+03		12/14/2006	15:09:00	1114	1014
36	6.44E+03	7.59E+03	5.21E+03		12/14/2006	15:11:00	1114	1014
38	6.35E+03	7.49E+03	7.11E+03		12/14/2006	15:12:00	1114	1014
40	6.43E+03	7.58E+03	5.93E+03		12/14/2006	15:14:00	1114	1014
42	5.49E+03	6.55E+03	6.39E+03		12/14/2006	15:15:00	1114	1014

AL - Action Level

The log number assignment is an intrinsic property of the survey instrument, and as such, may not be sequential or unique based on the date and number of instruments used in the field

Survey Release Record Scan Area Results

Survey Unit 9527-0005

44	6.35E+03	7.49E+03	5.61E+03	12/14/2006	15:16:00	1114	1014
46	5.58E+03	6.65E+03	6.45E+03	12/14/2006	15:18:00	1114	1014
48	5.94E+03	7.04E+03	5.22E+03	12/14/2006	15:20:00	1114	1014
50	5.69E+03	6.77E+03	5.78E+03	12/14/2006	15:21:00	1114	1014
52	5.82E+03	6.91E+03	5.43E+03	12/14/2006	15:23:00	1114	1014
54	5.41E+03	6.46E+03	5.59E+03	12/14/2006	15:24:00	1114	1014

9527-0005 SCAN AREA 2

<u>Log Number</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
2	8.16E+03	9.45E+03	8.43E+03		12/12/2006	10:38:00	1112	1013
4	8.58E+03	9.90E+03	8.05E+03		12/12/2006	10:45:00	1112	1013
22	8.58E+03	9.90E+03	1.27E+04	+	12/13/2006	10:32:00	1114	1014
7	7.30E+03	8.52E+03	8.20E+03		12/12/2006	10:56:00	1112	1013
9	8.35E+03	9.65E+03	8.03E+03		12/12/2006	11:05:00	1112	1013
11	7.66E+03	8.91E+03	8.26E+03		12/12/2006	11:12:00	1112	1013
13	8.53E+03	9.85E+03	8.70E+03		12/12/2006	11:24:00	1112	1013
15	7.90E+03	9.17E+03	6.95E+03		12/12/2006	11:27:00	1112	1013
17	7.36E+03	8.59E+03	7.26E+03		12/12/2006	11:28:00	1112	1013

9527-0005 SCAN AREA 3

<u>Log Number</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
19	7.84E+03	9.10E+03	7.42E+03		12/12/2006	13:27:00	1112	1013
21	6.94E+03	8.13E+03	7.83E+03		12/12/2006	13:28:00	1112	1013
23	7.48E+03	8.72E+03	7.85E+03		12/12/2006	13:29:00	1112	1013
25	7.66E+03	8.91E+03	6.76E+03		12/12/2006	13:31:00	1112	1013
27	7.36E+03	8.59E+03	7.02E+03		12/12/2006	13:32:00	1112	1013
29	7.11E+03	8.31E+03	7.30E+03		12/12/2006	13:35:00	1112	1013
31	7.59E+03	8.83E+03	6.48E+03		12/12/2006	13:36:00	1112	1013

AL - Action Level

The log number assignment is an intrinsic property of the survey instrument, and as such, may not be sequential or unique based on the date and number of instruments used in the field

Survey Release Record Scan Area Results

Survey Unit 9527-0005

33	8.23E+03	9.53E+03	8.56E+03		12/12/2006	13:38:00	1112	1013
35	7.47E+03	8.70E+03	7.18E+03		12/12/2006	13:40:00	1112	1013
37	7.49E+03	8.73E+03	8.12E+03		12/12/2006	13:42:00	1112	1013
39	9.10E+03	1.05E+04	7.89E+03		12/12/2006	13:44:00	1112	1013
41	7.66E+03	8.91E+03	8.09E+03		12/12/2006	13:47:00	1112	1013
43	7.17E+03	8.38E+03	8.01E+03		12/12/2006	13:49:00	1112	1013
45	8.95E+03	1.03E+04	8.12E+03		12/12/2006	13:51:00	1112	1013
47	8.06E+03	9.34E+03	7.49E+03		12/12/2006	13:52:00	1112	1013
49	8.81E+03	1.02E+04	7.87E+03		12/12/2006	13:56:00	1112	1013
51	8.02E+03	9.30E+03	8.42E+03		12/12/2006	13:58:00	1112	1013
53	8.06E+03	9.34E+03	8.29E+03		12/12/2006	14:01:00	1112	1013
55	7.83E+03	9.09E+03	8.20E+03		12/12/2006	14:06:00	1112	1013
57	8.43E+03	9.74E+03	7.87E+03		12/12/2006	14:09:00	1112	1013
59	7.80E+03	9.06E+03	8.18E+03		12/12/2006	14:13:00	1112	1013
61	7.73E+03	8.99E+03	7.56E+03		12/12/2006	14:17:00	1112	1013
63	7.44E+03	8.67E+03	8.27E+03		12/12/2006	14:24:00	1112	1013
20	7.44E+03	1.23E+03	1.24E+04	+	12/13/2006	10:20:00	1114	1014
65	7.30E+03	8.52E+03	7.63E+03		12/12/2006	14:31:00	1112	1013
67	7.51E+03	8.75E+03	7.70E+03		12/12/2006	14:35:00	1112	1013
69	7.87E+03	9.14E+03	8.48E+03		12/12/2006	14:38:00	1112	1013
71	8.63E+03	9.96E+03	7.45E+03		12/12/2006	14:39:00	1112	1013
73	8.11E+03	9.40E+03	8.86E+03		12/12/2006	14:43:00	1112	1013
75	8.46E+03	9.77E+03	8.12E+03		12/12/2006	14:45:00	1112	1013
77	8.36E+03	9.67E+03	8.39E+03		12/12/2006	14:48:00	1112	1013
79	8.33E+03	9.63E+03	8.32E+03		12/12/2006	14:50:00	1112	1013
81	8.03E+03	9.31E+03	8.87E+03		12/12/2006	14:52:00	1112	1013
83	8.97E+03	1.03E+04	8.79E+03		12/12/2006	14:54:00	1112	1013
85	9.27E+03	1.06E+04	9.26E+03		12/12/2006	14:56:00	1112	1013
2	8.72E+03	1.01E+04	8.26E+03		12/13/2006	8:31:00	1112	1013

AL - Action Level

The log number assignment is an intrinsic property of the survey instrument, and as such, may not be sequential or unique based on the date and number of instruments used in the field

Survey Release Record Scan Area Results

Survey Unit 9527-0005

4	8.06E+03	9.34E+03	8.11E+03	12/13/2006	8:40:00	1112	1013
6	8.49E+03	9.81E+03	8.67E+03	12/13/2006	8:47:00	1112	1013
8	8.31E+03	9.61E+03	8.30E+03	12/13/2006	10:01:00	1112	1013
10	9.22E+03	1.06E+04	9.00E+03	12/13/2006	10:09:00	1112	1013
12	8.29E+03	9.59E+03	8.38E+03	12/13/2006	10:15:00	1112	1013
3	1.04E+04	1.19E+04	1.14E+04	12/13/2006	8:21:00	1114	1014
19	1.04E+04	1.19E+04	1.11E+04	12/13/2006	10:19:00	1114	1014
6	1.11E+04	1.26E+04	1.05E+04	12/13/2006	8:32:00	1114	1014
8	1.03E+04	1.17E+04	1.03E+04	12/13/2006	8:36:00	1114	1014
10	1.14E+04	1.29E+04	1.03E+04	12/13/2006	8:41:00	1114	1014
12	1.03E+04	1.17E+04	1.07E+04	12/13/2006	10:00:00	1114	1014
14	1.06E+04	1.21E+04	9.82E+03	12/13/2006	10:05:00	1114	1014
16	1.04E+04	1.19E+04	1.09E+04	12/13/2006	10:11:00	1114	1014
18	1.01E+04	1.15E+04	9.97E+03	12/13/2006	10:15:00	1114	1014

9527-0005 SCAN AREA 4

<u>Log Number</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
2	1.01E+04	1.15E+04	9.36E+03		12/12/2006	13:30:00	1114	1014
4	1.04E+04	1.19E+04	9.30E+03		12/12/2006	13:32:00	1114	1014
6	1.04E+04	1.19E+04	1.04E+04		12/12/2006	13:36:00	1114	1014
21	1.04E+04	1.19E+04	1.18E+04		12/13/2006	10:23:00	1114	1014

AL - Action Level

The log number assignment is an intrinsic property of the survey instrument, and as such, may not be sequential or unique based on the date and number of instruments used in the field

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)

General Narrative

General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 178150
SDG: MSR#06-1582

January 02, 2007

Laboratory Identification:

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

Summary

Sample receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on December 21, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
178150001	9527-0005-001F
178150002	9527-0005-003F
178150003	9527-0005-004F
178150004	9527-0005-005F
178150005	9527-0005-006F
178150006	9527-0005-006FS
178150007	9527-0005-007F
178150008	9527-0005-008F
178150009	9527-0005-009F
178150010	9527-0005-010F
178150011	9527-0005-011F
178150012	9527-0005-012F
178150013	9527-0005-013F
178150014	9527-0005-014F
178150015	9527-0005-015F
178150016	9527-0005-016F
178150017	9527-0005-017F
178150018	9527-0005-018F
178150019	9527-0005-019F
178150020	9527-0005-020F
178150021	9527-0005-020FS
178150022	9527-0005-021F
178150023	9527-0005-022F
178150024	9527-0005-023F
178150025	9527-0005-024F

Items of Note

There are no items to note.

Case Narrative

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

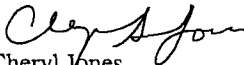
Analytical Request

Twenty-four soil samples were analyzed for FSSGAM. Two soil samples were analyzed for FSSALL.

Data Package

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

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


Cheryl Jones
Project Manager

List of current GEL Certifications as of 02 January 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

**Chain of Custody
and
Supporting
Documentation**

Connecticut Yankee Atomic Power Company

Chain of Custody Form

No. 2006-00736

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

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													178150%	
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. Other: <i>or other</i>														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
9527-0005-001F	12/18/06	1110	TS	G	BP	X								
9527-0005-003F	12/18/06	1036	TS	G	BP	X								
9527-0005-004F	12/18/06	1120	TS	G	BP	X								
9527-0005-005F	12/18/06	1126	TS	G	BP		X							
9527-0005-006F	12/18/06	1141	TS	G	BP	X								
9527-0005-006FS	12/18/06	1141	TS	G	BP	X								
9527-0005-007F	12/18/06	1405	TS	G	BP	X								
9527-0005-008F	12/18/06	1332	TS	G	BP	X								
9527-0005-009F	12/18/06	1130	TS	G	BP	X								
9527-0005-010F	12/18/06	1345	TS	G	BP	X								
9527-0005-011F	12/18/06	1418	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 06-1583 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA 53/65 TRK 7922 6068 3118										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: 17 Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N Custody Seal Intact? Y N		
1) Relinquished By <i>[Signature]</i> Date/Time 12/20/06 1315			2) Received By <i>K. Light</i> Date/Time 12/21/06 1030			Bill of Lading #								
3) Relinquished By Date/Time			4) Received By Date/Time											
5) Relinquished By Date/Time			6) Received By Date/Time											

Connecticut Yankee Atomic Power Company

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

Chain of Custody Form

No. 2006-00737

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- &Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													178150%	
Priority: <input type="checkbox"/> 30 D. <input checked="" type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. Other: <i>in 12 hr</i>														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
9527-0005-012F	12/18/06	1407	TS	G	BP		X							
9527-0005-013F	12/18/06	1400	TS	G	BP	X								
9527-0005-014F	12/18/06	1403	TS	G	BP	X								
9527-0005-015F	12/18/06	1402	TS	G	BP	X								
9527-0005-016F	12/18/06	1139	TS	G	BP	X								
9527-0005-017F	12/18/06	1330	TS	G	BP	X								
9527-0005-018F	12/18/06	1420	TS	G	BP	X								
9527-0005-019F	12/18/06	1410	TS	G	BP	X								
9527-0005-020F	12/18/06	1131	TS	G	BP	X								
9527-0005-020FS	12/18/06	1131	TS	G	BP	X								
9527-0005-021F	12/18/06	1055	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 06-1582 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA <i>TRK 82/65 7922 6068 7134</i>										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: <input type="checkbox"/> Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N Custody Seal Intact? Y N		
1) Relinquished By <i>AKK</i> Date/Time <i>12/20/06 1315</i>			2) Received By <i>R. Wright</i> Date/Time <i>12/20/06 1030</i>							Bill of Lading #				
3) Relinquished By			4) Received By											
5) Relinquished By			6) Received By											

Figure 1. Sample Check-in List

Date/Time Received: 12/21/06 1030

SDG#: MSR# 06-1582, MSR# 06-1583

Work Order Number: 178150, 178151

Shipping Container ID: See below Chain of Custody # 2006-00736/739/740
737/738

1. Custody Seals on shipping container intact? Yes No NA
2. Custody Seals dated and signed? Yes No NA
3. Chain-of-Custody record present? Yes No
4. Cooler temperature 17; 17; 18
5. Vermiculite/packing materials is: Wet Dry NA
6. Number of samples in shipping container: 42 total
7. Sample holding times exceeded? Yes No

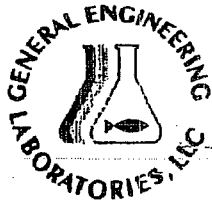
8. Samples have:	
<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels
9. Samples are:	
<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> 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):
7922 6068 3130; 7995 5750 2703; 7922 6068 3118

Sample Custodian/Laboratory: K. W. Light Date: 12/21/06 1030

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Conn. Bank</u>	SDG/ARCOC/Work Order: <u>178150, 178151</u>
Date Received: <u>12/21/04</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <u>[Signature]</u>
Received By: <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				

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?	/			Maximum Counts Observed*: <u>cpm 00</u>
B PCB Regulated?	/			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?	/			
PM (or PMA) review of Hazard classification: <input checked="" type="checkbox"/>				Initials: <u>[Signature]</u> Date: <u>12/21/06</u>

Data Review Qualifier Definitions

Data Review Qualifier Definitions

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 178150**

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: 597843
Prep Batch Number: 597815
Dry Soil Prep GL-RAD-A-021 Batch Number: 597805

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251176	Method Blank (MB)
1201251177	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251178	178150004(9527-0005-005F) Matrix Spike (MS)
1201251179	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 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: 178150004 (9527-0005-005F).

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.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The Cm-242 blank result is greater than the MDA, but less than the detection limit. The sample and the duplicate, 1201251177 (9527-0005-005F) and 178150004 (9527-0005-005F), did not meet the relative percent difference requirement for Cm-242, however they do meet the relative error ratio requirement with a value of 1.71.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: Alphaspec Pu, Solid-ALL FSS
Analytical Method: DOE EML HASL-300, Pu-11-RC Modified
Prep Method: Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method: Dry Soil Prep
Analytical Batch Number: 597851
Prep Batch Number: 597815
Dry Soil Prep GL-RAD-A-021 Batch Number: 597805

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251200	Method Blank (MB)
1201251201	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251202	178150004(9527-0005-005F) Matrix Spike (MS)
1201251203	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 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: 178150004 (9527-0005-005F).

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.

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:	597852
Prep Batch Number:	597815
Dry Soil Prep GL-RAD-A-021 Batch Number:	597805

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251204	Method Blank (MB)
1201251205	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251206	178150004(9527-0005-005F) Matrix Spike (MS)
1201251207	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 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: 178150004 (9527-0005-005F).

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.

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:	598453
Prep Batch Number:	597805

Sample ID	Client ID
178150001	9527-0005-001F
178150002	9527-0005-003F
178150003	9527-0005-004F
178150004	9527-0005-005F
178150005	9527-0005-006F
178150006	9527-0005-006FS
178150007	9527-0005-007F
178150008	9527-0005-008F
178150009	9527-0005-009F
178150010	9527-0005-010F
178150011	9527-0005-011F
178150012	9527-0005-012F
178150013	9527-0005-013F
178150014	9527-0005-014F
178150015	9527-0005-015F
178150016	9527-0005-016F
178150017	9527-0005-017F
178150018	9527-0005-018F
178150019	9527-0005-019F
178150020	9527-0005-020F
1201252575	Method Blank (MB)
1201252576	178150001(9527-0005-001F) Sample Duplicate (DUP)
1201252577	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 178150001 (9527-0005-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:**NCR Documentation**

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak-width.	Cobalt-60	178150006
UI	Data rejected due to interference.	Cesium-134	178150007
		Europium-155	178150002
			178150005
			178150006
			178150012
			178150013
			178150015
			178150017
			1201252576
UI	Data rejected due to low abundance.	Bismuth-212	178150003
		Cesium-134	178150001
			178150003
			178150004
			178150006
			178150008
			178150009
			178150013
			178150014
			178150015
			178150016
			178150017
			178150018
			178150019
			178150020
			1201252576
		Cobalt-60	178150003
			178150004
		Lead-212	1201252575

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: 598454
Prep Batch Number: 597808

Sample ID	Client ID
178150021	9527-0005-020FS
178150022	9527-0005-021F
178150023	9527-0005-022F
178150024	9527-0005-023F
178150025	9527-0005-024F
178150026	9527-0005-025F
1201252578	Method Blank (MB)
1201252579	178150021(9527-0005-020FS) Sample Duplicate (DUP)
1201252580	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 178150021 (9527-0005-020FS).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

The sample and the duplicate, 1201252579 (9527-0005-020FS) and 178150021 (9527-0005-020FS) , did not meet the relative percent difference requirement for Cs-137, however they do meet the relative error ratio requirement with value of 2.15513.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak-width.	Bismuth-212	178150025
		Cesium-137	178150023
UI	Data rejected due to interference.	Europium-155	178150026
UI	Data rejected due to low abundance.	Cesium-134	178150021
			178150024
			178150026
			1201252579
UI	Data rejected due to no valid peak.	Cesium-137	178150021

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: 597867
Prep Batch Number: 597815
Dry Soil Prep GL-RAD-A-021 Batch Number: 597805

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251237	Method Blank (MB)
1201251238	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251239	178150004(9527-0005-005F) Matrix Spike (MS)
1201251240	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 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: 178150004 (9527-0005-005F).

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: 599130

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201254111	Method Blank (MB)
1201254112	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201254113	178150004(9527-0005-005F) Matrix Spike (MS)
1201254114	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in

accordance with GL-RAD-A-005 REV# 13.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 178150004 (9527-0005-005F).

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 were recounted due to spectral interference. Samples 178150004 (9527-0005-005F) and 178150012 (9527-0005-012F) were reprepared due to low/high carrier/tracer yield.

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: 597832
Prep Batch Number: 597815
Dry Soil Prep GL-RAD-A-021 Batch Number: 597805

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251144	Method Blank (MB)
1201251145	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251146	178150004(9527-0005-005F) Matrix Spike (MS)
1201251147	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 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: 178150004 (9527-0005-005F).

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 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:	597834
Prep Batch Number:	597815
Dry Soil Prep GL-RAD-A-021 Batch Number:	597805

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251149	Method Blank (MB)
1201251150	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251151	178150004(9527-0005-005F) Matrix Spike (MS)
1201251152	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 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: 178150004 (9527-0005-005F).

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: LSC, Tritium Dist, Solid - 3 pCi/g
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 597837

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251159	Method Blank (MB)
1201251160	178151003(9527-0006-002F) Sample Duplicate (DUP)
1201251161	178151003(9527-0006-002F) Matrix Spike (MS)
1201251162	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 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: 178151003 (9527-0006-002F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were 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. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Liquid Scint C14, Solid All,FSS
Analytical Method:	EPA EERF C-01 Modified
Analytical Batch Number:	597838

Sample ID	Client ID
178150004	9527-0005-005F
178150012	9527-0005-012F
1201251163	Method Blank (MB)
1201251164	178150004(9527-0005-005F) Sample Duplicate (DUP)
1201251165	178150004(9527-0005-005F) Matrix Spike (MS)
1201251166	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 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: 178150004 (9527-0005-005F).

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.

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: *X Cmd* 1/4/07

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-1582 GEL Work Order: 178150

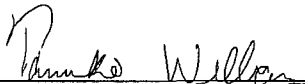
The Qualifiers in this report are defined as follows:

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

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

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

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



Reviewed by _____

GEL LABORATORIES LLC

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

Certificate of Analysis

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

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

Report Date: January 4, 2007

Client Sample ID:	9527-0005-001F	Project:	YANK01204
Sample ID:	178150001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	18-DEC-06		
Receive Date:	21-DEC-06		
Collector:	Client		
Moisture:	16.1%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.01	+/-0.183	0.0468	+/-0.183	0.0983	pCi/g		JPH1	12/22/06	1558	598453	1
Americium-241	U	0.00969	+/-0.0785	0.0588	+/-0.0785	0.120	pCi/g						
Bismuth-212		0.638	+/-0.259	0.101	+/-0.259	0.211	pCi/g						
Bismuth-214		0.882	+/-0.111	0.0247	+/-0.111	0.0514	pCi/g						
Cesium-134	UI	0.00	+/-0.0273	0.0185	+/-0.0273	0.0383	pCi/g						
Cesium-137		0.241	+/-0.0419	0.0145	+/-0.0419	0.0302	pCi/g						
Cobalt-60	U	0.0101	+/-0.0204	0.0147	+/-0.0204	0.0313	pCi/g						
Europium-152	U	-0.0434	+/-0.0389	0.0325	+/-0.0389	0.0671	pCi/g						
Europium-154	U	0.00345	+/-0.0477	0.0396	+/-0.0477	0.0842	pCi/g						
Europium-155	U	0.0297	+/-0.0432	0.0384	+/-0.0432	0.0785	pCi/g						
Lead-212		1.00	+/-0.0899	0.0179	+/-0.0899	0.0368	pCi/g						
Lead-214		1.01	+/-0.110	0.0236	+/-0.110	0.0487	pCi/g						
Manganese-54	U	-0.0055	+/-0.016	0.0135	+/-0.016	0.0281	pCi/g						
Niobium-94	U	0.00663	+/-0.0161	0.0135	+/-0.0161	0.0281	pCi/g						
Potassium-40		10.4	+/-0.929	0.114	+/-0.929	0.246	pCi/g						
Radium-226		0.882	+/-0.111	0.0247	+/-0.111	0.0514	pCi/g						
Silver-108m	U	-0.00839	+/-0.0133	0.0111	+/-0.0133	0.0231	pCi/g						
Thallium-208		0.292	+/-0.0409	0.0148	+/-0.0409	0.0306	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	12/21/06	1218	597805

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

GEL 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: January 4, 2007

Client Sample ID: 9527-0005-001F
Sample ID: 178150001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527–0005–003F
Sample ID: 178150002
Matrix: TS
Collect Date: 18–DEC–06
Receive Date: 21–DEC–06
Collector: Client
Moisture: 10.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid–FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium–228		0.601	+/-0.116	0.0389	+/-0.116	0.0817	pCi/g		JPH1	12/22/06	1559	598453	1
Americium–241	U	0.00606	+/-0.0162	0.014	+/-0.0162	0.0286	pCi/g						
Bismuth–212		0.405	+/-0.188	0.0797	+/-0.188	0.167	pCi/g						
Bismuth–214		0.649	+/-0.0618	0.0192	+/-0.0618	0.040	pCi/g						
Cesium–134	U	0.0248	+/-0.0219	0.013	+/-0.0219	0.0272	pCi/g						
Cesium–137		0.535	+/-0.0344	0.0109	+/-0.0344	0.0228	pCi/g						
Cobalt–60		0.0703	+/-0.0292	0.0111	+/-0.0292	0.0237	pCi/g						
Europium–152	U	0.00849	+/-0.0312	0.0264	+/-0.0312	0.0545	pCi/g						
Europium–154	U	0.0011	+/-0.0413	0.0346	+/-0.0413	0.0733	pCi/g						
Europium–155	UI	0.00	+/-0.0414	0.0231	+/-0.0414	0.0472	pCi/g						
Lead–212		0.663	+/-0.0346	0.0144	+/-0.0346	0.0296	pCi/g						
Lead–214		0.626	+/-0.0572	0.0184	+/-0.0572	0.038	pCi/g						
Manganese–54	U	0.00211	+/-0.0132	0.011	+/-0.0132	0.0231	pCi/g						
Niobium–94	U	-6.590E-05	+/-0.0117	0.00983	+/-0.0117	0.0205	pCi/g						
Potassium–40		10.9	+/-0.538	0.0892	+/-0.538	0.194	pCi/g						
Radium–226		0.649	+/-0.0618	0.0192	+/-0.0618	0.040	pCi/g						
Silver–108m	U	-0.00896	+/-0.0107	0.00913	+/-0.0107	0.0189	pCi/g						
Thallium–208		0.239	+/-0.0296	0.0101	+/-0.0296	0.0211	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	12/21/06	1218	597805

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

Report Date: January 4, 2007

Client Sample ID: 9527-0005-003F
Sample ID: 178150002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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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East Hampton, Connecticut 06424
Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: January 4, 2007

Client Sample ID: 9527-0005-004F
Sample ID: 178150003
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 21.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.783	+/-0.225	0.118	+/-0.225	0.253	pCi/g		JPH1	12/23/06	0842	598453	1
Americium-241	U	0.00846	+/-0.0467	0.036	+/-0.0467	0.0745	pCi/g						
Bismuth-212	UI	0.00	+/-0.294	0.286	+/-0.294	0.605	pCi/g						
Bismuth-214		1.00	+/-0.148	0.0547	+/-0.148	0.117	pCi/g						
Cesium-134	UI	0.00	+/-0.0399	0.0389	+/-0.0399	0.0827	pCi/g						
Cesium-137		0.663	+/-0.0824	0.0282	+/-0.0824	0.0606	pCi/g						
Cobalt-60	UI	0.00	+/-0.0559	0.0334	+/-0.0559	0.0735	pCi/g						
Europium-152	U	0.0164	+/-0.0835	0.0721	+/-0.0835	0.152	pCi/g						
Europium-154	U	-0.107	+/-0.132	0.0826	+/-0.132	0.183	pCi/g						
Europium-155	U	0.0496	+/-0.0711	0.0613	+/-0.0711	0.127	pCi/g						
Lead-212		1.02	+/-0.0922	0.0366	+/-0.0922	0.0764	pCi/g						
Lead-214		1.25	+/-0.133	0.0502	+/-0.133	0.106	pCi/g						
Manganese-54	U	0.0233	+/-0.0318	0.0278	+/-0.0318	0.0601	pCi/g						
Niobium-94	U	-0.00443	+/-0.031	0.0251	+/-0.031	0.054	pCi/g						
Potassium-40		9.65	+/-1.12	0.234	+/-1.12	0.536	pCi/g						
Radium-226		1.00	+/-0.148	0.0547	+/-0.148	0.117	pCi/g						
Silver-108m	U	0.0178	+/-0.0291	0.0256	+/-0.0291	0.0542	pCi/g						
Thallium-208		0.391	+/-0.0761	0.0227	+/-0.0761	0.0491	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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Certificate of Analysis

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Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: January 4, 2007

Client Sample ID: 9527-0005-004F
Sample ID: 178150003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID:	9527-0005-005F	Project:	YANK01204
Sample ID:	178150004	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	18-DEC-06		
Receive Date:	21-DEC-06		
Collector:	Client		
Moisture:	17.8%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0434	+/-0.0605	0.0371	+/-0.0605	0.153	pCi/g		JAS1	12/26/06	0908	597843	1
Curium-242	U	0.046	+/-0.0863	0.0384	+/-0.0865	0.159	pCi/g						
Curium-243/244	U	0.106	+/-0.160	0.0982	+/-0.161	0.276	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0772	+/-0.162	0.158	+/-0.162	0.402	pCi/g		JAS1	12/27/06	1458	597851	2
Plutonium-239/240	U	-0.0038	+/-0.120	0.102	+/-0.120	0.291	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	0.668	+/-5.68	4.75	+/-5.68	9.83	pCi/g		JAS1	12/27/06	2230	597852	3
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.12	+/-0.174	0.0331	+/-0.174	0.0698	pCi/g		JPH1	12/22/06	1600	598453	4
Americium-241	U	0.0174	+/-0.0385	0.0328	+/-0.0385	0.0669	pCi/g						
Bismuth-212		0.776	+/-0.215	0.0844	+/-0.215	0.176	pCi/g						
Bismuth-214		0.795	+/-0.0907	0.0203	+/-0.0907	0.0421	pCi/g						
Cesium-134	UI	0.00	+/-0.0326	0.0154	+/-0.0326	0.0319	pCi/g						
Cesium-137		0.655	+/-0.0634	0.012	+/-0.0634	0.0249	pCi/g						
Cobalt-60	UI	0.00	+/-0.0204	0.0126	+/-0.0204	0.0266	pCi/g						
Europium-152	U	-0.0121	+/-0.0358	0.030	+/-0.0358	0.0617	pCi/g						
Europium-154	U	0.00144	+/-0.0395	0.0325	+/-0.0395	0.0687	pCi/g						
Europium-155	U	0.0179	+/-0.0339	0.0311	+/-0.0339	0.0635	pCi/g						
Lead-212		1.04	+/-0.0899	0.0168	+/-0.0899	0.0344	pCi/g						
Lead-214		0.841	+/-0.0976	0.0223	+/-0.0976	0.0458	pCi/g						
Manganese-54	U	0.00899	+/-0.0167	0.0111	+/-0.0167	0.0232	pCi/g						
Niobium-94	U	0.00257	+/-0.0115	0.0101	+/-0.0115	0.0209	pCi/g						
Potassium-40		9.97	+/-0.821	0.0978	+/-0.821	0.210	pCi/g						
Radium-226		0.795	+/-0.0907	0.0203	+/-0.0907	0.0421	pCi/g						
Silver-108m	U	0.0195	+/-0.0195	0.0112	+/-0.0195	0.0231	pCi/g						
Thallium-208		0.335	+/-0.0435	0.0101	+/-0.0435	0.021	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0678	+/-0.0236	0.0163	+/-0.0239	0.0346	pCi/g		KSD1	12/28/06	1724	597867	5
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	-0.119	+/-1.10	0.930	+/-1.10	1.98	pCi/g		AXD2	12/28/06	2255	597837	7

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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: January 4, 2007

Client Sample ID: 9527-0005-005F
Sample ID: 178150004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0205	+/-0.0667	0.0558	+/-0.0667	0.113	pCi/g		AXD2	12/25/06	0533	597838	9
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-8.18	+/-16.2	13.2	+/-16.2	27.6	pCi/g		MXP1	01/03/07	1328	597832	10
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-0.808	+/-13.8	11.6	+/-13.8	24.0	pCi/g		MXP1	12/30/06	2011	597834	11
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	-0.0363	+/-0.197	0.166	+/-0.197	0.337	pCi/g		KXR1	01/03/07	1358	599130	12

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/21/06	1218	597805

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 905.0 Modified
7	EPA 906.0 Modified
8	EPA 906.0 Modified
9	EPA EERF C-01 Modified
10	DOE RESL Fe-1, Modified
11	DOE RESL Ni-1, Modified
12	DOE EML HASL-300, Tc-02-RC Modified
13	DOE EML HASL-300, Tc-02-RC Modified
14	DOE EML HASL-300, Tc-02-RC Modified
15	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	88	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	97	(15%-125%)

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Report Date: January 4, 2007

Client Sample ID: 9527-0005-005F
Sample ID: 178150004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Strontium-90		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			89		(25%-125%)						
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			72		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			72		(25%-125%)						
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			54		(15%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			54		(15%-125%)						

Notes:

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
 - < 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: January 4, 2007

Client Sample ID: 9527-0005-006F
Sample ID: 178150005
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 14.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.04	+/-0.195	0.0623	+/-0.195	0.125	pCi/g		JPH1	12/22/06	1605	598453	1
Americium-241	U	0.015	+/-0.032	0.024	+/-0.032	0.048	pCi/g						
Bismuth-212		0.470	+/-0.282	0.134	+/-0.282	0.268	pCi/g						
Bismuth-214		0.810	+/-0.125	0.0343	+/-0.125	0.0686	pCi/g						
Cesium-134	U	0.0455	+/-0.0397	0.025	+/-0.0397	0.050	pCi/g						
Cesium-137		0.647	+/-0.0867	0.0187	+/-0.0867	0.0374	pCi/g						
Cobalt-60		0.0912	+/-0.0388	0.020	+/-0.0388	0.040	pCi/g						
Europium-152	U	-0.0743	+/-0.0742	0.0441	+/-0.0742	0.0882	pCi/g						
Europium-154	U	0.0117	+/-0.0806	0.0672	+/-0.0806	0.134	pCi/g						
Europium-155	UI	0.00	+/-0.0609	0.0365	+/-0.0609	0.073	pCi/g						
Lead-212		0.991	+/-0.103	0.0239	+/-0.103	0.0477	pCi/g						
Lead-214		0.843	+/-0.111	0.0314	+/-0.111	0.0628	pCi/g						
Manganese-54	U	0.0204	+/-0.0256	0.0199	+/-0.0256	0.0397	pCi/g						
Niobium-94	U	-0.0039	+/-0.0216	0.0183	+/-0.0216	0.0365	pCi/g						
Potassium-40		10.1	+/-0.812	0.182	+/-0.812	0.364	pCi/g						
Radium-226		0.810	+/-0.125	0.0343	+/-0.125	0.0686	pCi/g						
Silver-108m	U	-0.00493	+/-0.0197	0.0163	+/-0.0197	0.0326	pCi/g						
Thallium-208		0.295	+/-0.0548	0.0186	+/-0.0548	0.0372	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: January 4, 2007

Client Sample ID: 9527-0005-006F
Sample ID: 178150005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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Project: Soils PO# 002332

Report Date: January 4, 2007

Client Sample ID: 9527-0005-006FS
Sample ID: 178150006
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 13.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.887	+/-0.106	0.0319	+/-0.106	0.0664	pCi/g		JPH1	12/22/06	1600	598453	1
Americium-241	U	0.0303	+/-0.0473	0.0384	+/-0.0473	0.0781	pCi/g						
Bismuth-212		0.621	+/-0.144	0.071	+/-0.144	0.147	pCi/g						
Bismuth-214		0.688	+/-0.0569	0.0182	+/-0.0569	0.0376	pCi/g						
Cesium-134	UI	0.00	+/-0.0182	0.013	+/-0.0182	0.0268	pCi/g						
Cesium-137		0.609	+/-0.0318	0.0103	+/-0.0318	0.0212	pCi/g						
Cobalt-60	UI	0.00	+/-0.0178	0.0087	+/-0.0178	0.0184	pCi/g						
Europium-152	U	-0.0239	+/-0.0318	0.0264	+/-0.0318	0.0542	pCi/g						
Europium-154	U	-0.013	+/-0.0353	0.029	+/-0.0353	0.0605	pCi/g						
Europium-155	UI	0.00	+/-0.0426	0.0302	+/-0.0426	0.0614	pCi/g						
Lead-212		0.951	+/-0.0416	0.0155	+/-0.0416	0.0316	pCi/g						
Lead-214		0.815	+/-0.0557	0.0187	+/-0.0557	0.0383	pCi/g						
Manganese-54	U	0.00372	+/-0.0116	0.00981	+/-0.0116	0.0203	pCi/g						
Niobium-94	U	-0.000635	+/-0.0103	0.00866	+/-0.0103	0.0179	pCi/g						
Potassium-40		10.2	+/-0.449	0.0869	+/-0.449	0.183	pCi/g						
Radium-226		0.688	+/-0.0569	0.0182	+/-0.0569	0.0376	pCi/g						
Silver-108m	U	0.00379	+/-0.0111	0.00939	+/-0.0111	0.0193	pCi/g						
Thallium-208		0.323	+/-0.029	0.00914	+/-0.029	0.0189	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

GEL 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: January 4, 2007

Client Sample ID: 9527-0005-006FS
Sample ID: 178150006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-007F
Sample ID: 178150007
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 23.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.30	+/-0.176	0.0615	+/-0.176	0.130	pCi/g		JPH1	12/23/06	0842	598453	1
Americium-241	U	0.0316	+/-0.0783	0.0705	+/-0.0783	0.145	pCi/g						
Bismuth-212		0.768	+/-0.352	0.120	+/-0.352	0.255	pCi/g						
Bismuth-214		0.849	+/-0.0852	0.0306	+/-0.0852	0.0642	pCi/g						
Cesium-134	UI	0.00	+/-0.0285	0.0159	+/-0.0285	0.0338	pCi/g						
Cesium-137		1.12	+/-0.0689	0.0165	+/-0.0689	0.0348	pCi/g						
Cobalt-60	U	0.00772	+/-0.0215	0.0185	+/-0.0215	0.0397	pCi/g						
Europium-152	U	-0.0469	+/-0.0564	0.0461	+/-0.0564	0.0959	pCi/g						
Europium-154	U	-0.069	+/-0.0618	0.0467	+/-0.0618	0.101	pCi/g						
Europium-155	U	0.069	+/-0.0821	0.0505	+/-0.0821	0.104	pCi/g						
Lead-212		1.17	+/-0.0703	0.028	+/-0.0703	0.0578	pCi/g						
Lead-214		0.924	+/-0.0959	0.0345	+/-0.0959	0.0717	pCi/g						
Manganese-54	U	0.0069	+/-0.0231	0.0172	+/-0.0231	0.0362	pCi/g						
Niobium-94	U	0.000474	+/-0.0188	0.0159	+/-0.0188	0.0334	pCi/g						
Potassium-40		11.8	+/-0.776	0.128	+/-0.776	0.282	pCi/g						
Radium-226		0.849	+/-0.0852	0.0306	+/-0.0852	0.0642	pCi/g						
Silver-108m	U	-0.0124	+/-0.0203	0.0164	+/-0.0203	0.0342	pCi/g						
Thallium-208		0.381	+/-0.0508	0.016	+/-0.0508	0.0336	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	12/21/06	1218	597805

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

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

Report Date: January 4, 2007

Client Sample ID: 9527-0005-007F
Sample ID: 178150007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-008F
Sample ID: 178150008
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 18.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.988	+/-0.212	0.0699	+/-0.212	0.153	pCi/g		JPH1	12/23/06	0845	598453	1
Americium-241	U	0.0381	+/-0.0996	0.0743	+/-0.0996	0.153	pCi/g						
Bismuth-212		0.854	+/-0.425	0.171	+/-0.425	0.367	pCi/g						
Bismuth-214		0.672	+/-0.139	0.0462	+/-0.139	0.0978	pCi/g						
Cesium-134	UI	0.00	+/-0.0382	0.028	+/-0.0382	0.0597	pCi/g						
Cesium-137		1.12	+/-0.125	0.0253	+/-0.125	0.0538	pCi/g						
Cobalt-60		0.063	+/-0.0268	0.0228	+/-0.0268	0.0507	pCi/g						
Europium-152	U	-0.0491	+/-0.0793	0.0647	+/-0.0793	0.136	pCi/g						
Europium-154	U	0.0219	+/-0.0731	0.0637	+/-0.0731	0.141	pCi/g						
Europium-155	U	0.0345	+/-0.103	0.0651	+/-0.103	0.134	pCi/g						
Lead-212		0.933	+/-0.104	0.0379	+/-0.104	0.0786	pCi/g						
Lead-214		0.922	+/-0.141	0.0448	+/-0.141	0.094	pCi/g						
Manganese-54	U	-0.0124	+/-0.0284	0.0223	+/-0.0284	0.0479	pCi/g						
Niobium-94	U	0.0073	+/-0.0259	0.0219	+/-0.0259	0.0466	pCi/g						
Potassium-40		9.35	+/-1.08	0.159	+/-1.08	0.370	pCi/g						
Radium-226		0.672	+/-0.139	0.0462	+/-0.139	0.0978	pCi/g						
Silver-108m	U	0.00717	+/-0.0305	0.0227	+/-0.0305	0.0478	pCi/g						
Thallium-208		0.327	+/-0.0597	0.0239	+/-0.0597	0.0507	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	12/21/06	1218	597805

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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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: January 4, 2007

Client Sample ID: 9527-0005-008F
Sample ID: 178150008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-009F
Sample ID: 178150009
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 13%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.849	+/-0.183	0.0715	+/-0.183	0.155	pCi/g		JPH1	12/23/06	0846	598453	1
Americium-241	U	-0.314	+/-0.131	0.0901	+/-0.131	0.186	pCi/g						
Bismuth-212		0.396	+/-0.310	0.182	+/-0.310	0.388	pCi/g						
Bismuth-214		0.453	+/-0.130	0.0404	+/-0.130	0.0861	pCi/g						
Cesium-134	UI	0.00	+/-0.0483	0.030	+/-0.0483	0.0636	pCi/g						
Cesium-137		0.258	+/-0.0685	0.0201	+/-0.0685	0.0432	pCi/g						
Cobalt-60	U	0.0107	+/-0.0268	0.0231	+/-0.0268	0.051	pCi/g						
Europium-152	U	0.00905	+/-0.0676	0.0566	+/-0.0676	0.119	pCi/g						
Europium-154	U	0.00408	+/-0.0746	0.0615	+/-0.0746	0.136	pCi/g						
Europium-155	U	0.0159	+/-0.0715	0.0625	+/-0.0715	0.129	pCi/g						
Lead-212		0.827	+/-0.073	0.033	+/-0.073	0.0687	pCi/g						
Lead-214		0.607	+/-0.111	0.0408	+/-0.111	0.0859	pCi/g						
Manganese-54	U	-0.0362	+/-0.0251	0.0181	+/-0.0251	0.0394	pCi/g						
Niobium-94	U	-0.0029	+/-0.023	0.0193	+/-0.023	0.0412	pCi/g						
Potassium-40		12.5	+/-1.08	0.201	+/-1.08	0.450	pCi/g						
Radium-226		0.453	+/-0.130	0.0404	+/-0.130	0.0861	pCi/g						
Silver-108m	U	0.017	+/-0.0206	0.018	+/-0.0206	0.0383	pCi/g						
Thallium-208		0.232	+/-0.0426	0.0196	+/-0.0426	0.042	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-009F
Sample ID: 178150009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-010F
Sample ID: 178150010
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 9.97%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.791	+/-0.245	0.0948	+/-0.245	0.203	pCi/g		JPH1	12/23/06	0846	598453	1
Americium-241	U	0.00944	+/-0.0461	0.0393	+/-0.0461	0.0808	pCi/g						
Bismuth-212		0.754	+/-0.437	0.218	+/-0.437	0.463	pCi/g						
Bismuth-214		0.848	+/-0.150	0.054	+/-0.150	0.114	pCi/g						
Cesium-134	U	0.0612	+/-0.0519	0.0338	+/-0.0519	0.0714	pCi/g						
Cesium-137		5.45	+/-0.173	0.0302	+/-0.173	0.0637	pCi/g						
Cobalt-60		0.228	+/-0.0663	0.0226	+/-0.0663	0.0504	pCi/g						
Europium-152	U	0.0374	+/-0.095	0.0802	+/-0.095	0.167	pCi/g						
Europium-154	U	0.0123	+/-0.0973	0.0821	+/-0.0973	0.178	pCi/g						
Europium-155	U	0.0214	+/-0.0746	0.0616	+/-0.0746	0.127	pCi/g						
Lead-212		0.637	+/-0.0855	0.0528	+/-0.0855	0.108	pCi/g						
Lead-214		0.866	+/-0.140	0.057	+/-0.140	0.119	pCi/g						
Manganese-54	U	0.00324	+/-0.0365	0.0301	+/-0.0365	0.0638	pCi/g						
Niobium-94	U	-0.0119	+/-0.0369	0.0261	+/-0.0369	0.0553	pCi/g						
Potassium-40		8.43	+/-0.906	0.239	+/-0.906	0.528	pCi/g						
Radium-226		0.848	+/-0.150	0.054	+/-0.150	0.114	pCi/g						
Silver-108m	U	0.0202	+/-0.0356	0.0318	+/-0.0356	0.0661	pCi/g						
Thallium-208		0.156	+/-0.0662	0.0294	+/-0.0662	0.0618	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	12/21/06	1218	597805

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-010F
Sample ID: 178150010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID:	9527-0005-011F	Project:	YANK01204
Sample ID:	178150011	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	18-DEC-06		
Receive Date:	21-DEC-06		
Collector:	Client		
Moisture:	11.2%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.13	+/-0.193	0.0696	+/-0.193	0.151	pCi/g		JPH1	12/23/06	0847	598453	1
Americium-241	U	0.0289	+/-0.029	0.0257	+/-0.029	0.0529	pCi/g						
Bismuth-212		0.778	+/-0.345	0.152	+/-0.345	0.326	pCi/g						
Bismuth-214		0.751	+/-0.0994	0.0336	+/-0.0994	0.0719	pCi/g						
Cesium-134	U	0.0429	+/-0.0337	0.0256	+/-0.0337	0.0544	pCi/g						
Cesium-137		0.625	+/-0.0634	0.0204	+/-0.0634	0.0436	pCi/g						
Cobalt-60	U	0.0146	+/-0.0282	0.0248	+/-0.0282	0.0541	pCi/g						
Europium-152	U	-0.0245	+/-0.0568	0.0458	+/-0.0568	0.0965	pCi/g						
Europium-154	U	-0.00104	+/-0.0803	0.067	+/-0.0803	0.146	pCi/g						
Europium-155	U	0.0843	+/-0.0453	0.0439	+/-0.0453	0.0908	pCi/g						
Lead-212		0.961	+/-0.0659	0.0271	+/-0.0659	0.0565	pCi/g						
Lead-214		0.887	+/-0.109	0.0325	+/-0.109	0.0685	pCi/g						
Manganese-54	U	-0.00717	+/-0.023	0.0183	+/-0.023	0.0396	pCi/g						
Niobium-94	U	0.00789	+/-0.0209	0.0181	+/-0.0209	0.0386	pCi/g						
Potassium-40		10.8	+/-0.960	0.150	+/-0.960	0.345	pCi/g						
Radium-226		0.751	+/-0.0994	0.0336	+/-0.0994	0.0719	pCi/g						
Silver-108m	U	0.00132	+/-0.0199	0.0175	+/-0.0199	0.037	pCi/g						
Thallium-208		0.305	+/-0.0502	0.0185	+/-0.0502	0.0395	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	12/21/06	1218	597805

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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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: January 4, 2007

Client Sample ID: 9527-0005-011F
Sample ID: 178150011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-012F
Sample ID: 178150012
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 19.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.00729	+/-0.112	0.0974	+/-0.112	0.288	pCi/g	JAS1	12/26/06	0908	597843	1	
Curium-242		0.259	+/-0.199	0.0553	+/-0.202	0.207	pCi/g						
Curium-243/244	U	-0.0275	+/-0.153	0.138	+/-0.153	0.369	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0603	+/-0.173	0.126	+/-0.173	0.336	pCi/g	JAS1	12/27/06	1458	597851	2	
Plutonium-239/240	U	-0.0369	+/-0.0323	0.0617	+/-0.0326	0.207	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-1.5	+/-4.74	4.03	+/-4.74	8.34	pCi/g	JAS1	12/27/06	2302	597852	3	
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.932	+/-0.179	0.0512	+/-0.179	0.111	pCi/g	JPH1	12/23/06	0847	598453	4	
Americium-241	U	0.0754	+/-0.0634	0.0591	+/-0.0634	0.121	pCi/g						
Bismuth-212		0.601	+/-0.232	0.120	+/-0.232	0.257	pCi/g						
Bismuth-214		0.725	+/-0.112	0.0292	+/-0.112	0.0618	pCi/g						
Cesium-134	U	0.0322	+/-0.0329	0.0206	+/-0.0329	0.0436	pCi/g						
Cesium-137		2.05	+/-0.194	0.0166	+/-0.194	0.0352	pCi/g						
Cobalt-60		0.074	+/-0.0287	0.0151	+/-0.0287	0.0333	pCi/g						
Europium-152	U	-0.0614	+/-0.0595	0.0425	+/-0.0595	0.0888	pCi/g						
Europium-154	U	0.0155	+/-0.041	0.0418	+/-0.041	0.0921	pCi/g						
Europium-155	UI	0.00	+/-0.0663	0.0455	+/-0.0663	0.0939	pCi/g						
Lead-212		0.986	+/-0.0952	0.0253	+/-0.0952	0.0525	pCi/g						
Lead-214		0.863	+/-0.110	0.0321	+/-0.110	0.0669	pCi/g						
Manganese-54	U	0.00794	+/-0.0175	0.0155	+/-0.0175	0.0332	pCi/g						
Niobium-94	U	0.00503	+/-0.0151	0.0135	+/-0.0151	0.0289	pCi/g						
Potassium-40		10.2	+/-0.937	0.116	+/-0.937	0.264	pCi/g						
Radium-226		0.725	+/-0.112	0.0292	+/-0.112	0.0618	pCi/g						
Silver-108m	U	-0.00564	+/-0.0196	0.0163	+/-0.0196	0.0342	pCi/g						
Thallium-208		0.327	+/-0.048	0.0154	+/-0.048	0.0327	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0235	+/-0.0195	0.015	+/-0.0195	0.032	pCi/g	KSD1	12/28/06	1724	597867	5	
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	0.793	+/-1.16	0.927	+/-1.16	1.97	pCi/g	AXD2	12/28/06	2327	597837	6	

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Certificate of Analysis

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

Report Date: January 4, 2007

Client Sample ID: 9527-0005-012F
Sample ID: 178150012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0177	+/-0.0682	0.057	+/-0.0682	0.116	pCi/g		AXD2	12/25/06	0738	597838	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-12.6	+/-13.9	11.4	+/-13.9	23.9	pCi/g		MXP1	01/03/07	1359	597832	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-3.32	+/-10.5	8.90	+/-10.5	18.4	pCi/g		MXP1	12/30/06	2027	597834	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.037	+/-0.214	0.179	+/-0.214	0.363	pCi/g		KXR1	01/03/07	1500	599130	11

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/21/06	1218	597805

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 906.0 Modified
8	EPA EERF C-01 Modified
9	DOE RESL Fe-1, Modified
10	DOE RESL Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified
12	DOE EML HASL-300, Tc-02-RC Modified
13	DOE EML HASL-300, Tc-02-RC Modified
14	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	73	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	106	(15%-125%)
Strontium-90	GFPC, Sr90, solid-ALL FSS	91	(25%-125%)

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Contact: Mr. Jack McCarthy
Project: Soils PO# 002332

Report Date: January 4, 2007

Client Sample ID: 9527-0005-012F
Sample ID: 178150012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL	FSS		91		(25%-125%)					
Nickel-63		Liquid Scint Ni63, Solid-ALL	FS		88		(25%-125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL	FS		88		(25%-125%)					
Technetium-99		Liquid Scint Tc99, Solid-ALL	FS		50		(15%-125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL	FS		50		(15%-125%)					

Notes:

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
 - < 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-013F
Sample ID: 178150013
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 19.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.879	+/-0.113	0.0398	+/-0.113	0.084	pCi/g		JPH1	12/23/06	1134	598453	1
Americium-241	U	-0.0368	+/-0.0876	0.0585	+/-0.0876	0.120	pCi/g						
Bismuth-212		0.737	+/-0.213	0.0828	+/-0.213	0.174	pCi/g						
Bismuth-214		0.766	+/-0.0693	0.0217	+/-0.0693	0.0452	pCi/g						
Cesium-134	UI	0.00	+/-0.020	0.0155	+/-0.020	0.0323	pCi/g						
Cesium-137		1.11	+/-0.045	0.012	+/-0.045	0.025	pCi/g						
Cobalt-60	U	0.0158	+/-0.0153	0.0138	+/-0.0153	0.0294	pCi/g						
Europium-152	U	-0.0255	+/-0.0401	0.0325	+/-0.0401	0.067	pCi/g						
Europium-154	U	0.0443	+/-0.0422	0.0383	+/-0.0422	0.0813	pCi/g						
Europium-155	UI	0.00	+/-0.0571	0.0341	+/-0.0571	0.0698	pCi/g						
Lead-212		0.903	+/-0.0459	0.0181	+/-0.0459	0.0372	pCi/g						
Lead-214		0.798	+/-0.063	0.0251	+/-0.063	0.0516	pCi/g						
Manganese-54	U	0.00548	+/-0.0145	0.0106	+/-0.0145	0.0223	pCi/g						
Niobium-94	U	0.00273	+/-0.0129	0.011	+/-0.0129	0.0229	pCi/g						
Potassium-40		8.80	+/-0.582	0.0938	+/-0.582	0.205	pCi/g						
Radium-226		0.766	+/-0.0693	0.0217	+/-0.0693	0.0452	pCi/g						
Silver-108m	U	-0.00419	+/-0.0133	0.0115	+/-0.0133	0.0239	pCi/g						
Thallium-208		0.304	+/-0.0318	0.0114	+/-0.0318	0.0238	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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Certificate of Analysis

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

Report Date: January 4, 2007

Client Sample ID: 9527-0005-013F
Sample ID: 178150013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-014F
Sample ID: 178150014
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 15.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid – FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.05	+/-0.134	0.0437	+/-0.134	0.0916	pCi/g		JPH1	12/23/06	1149	598453	1
Americium-241	U	-0.0338	+/-0.0229	0.0183	+/-0.0229	0.0372	pCi/g						
Bismuth-212		0.703	+/-0.219	0.0957	+/-0.219	0.200	pCi/g						
Bismuth-214		0.829	+/-0.0695	0.0237	+/-0.0695	0.0492	pCi/g						
Cesium-134	UI	0.00	+/-0.0306	0.0168	+/-0.0306	0.0349	pCi/g						
Cesium-137		0.155	+/-0.0239	0.0118	+/-0.0239	0.0246	pCi/g						
Cobalt-60	U	-0.00496	+/-0.0153	0.0127	+/-0.0153	0.027	pCi/g						
Europium-152	U	-0.0115	+/-0.0344	0.0304	+/-0.0344	0.0626	pCi/g						
Europium-154	U	0.0102	+/-0.0447	0.0386	+/-0.0447	0.0815	pCi/g						
Europium-155	U	0.0594	+/-0.0454	0.0292	+/-0.0454	0.0595	pCi/g						
Lead-212		1.11	+/-0.0451	0.017	+/-0.0451	0.0348	pCi/g						
Lead-214		0.930	+/-0.0605	0.023	+/-0.0605	0.0474	pCi/g						
Manganese-54	U	0.00833	+/-0.015	0.0129	+/-0.015	0.0268	pCi/g						
Niobium-94	U	0.0158	+/-0.014	0.0125	+/-0.014	0.0259	pCi/g						
Potassium-40		11.2	+/-0.601	0.108	+/-0.601	0.232	pCi/g						
Radium-226		0.829	+/-0.0695	0.0237	+/-0.0695	0.0492	pCi/g						
Silver-108m	U	0.00183	+/-0.0119	0.0105	+/-0.0119	0.0217	pCi/g						
Thallium-208		0.345	+/-0.0348	0.0115	+/-0.0348	0.024	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/21/06	1218	597805

The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-014F
Sample ID: 178150014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
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 - 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID:	9527-0005-015F	Project:	YANK01204
Sample ID:	178150015	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	18-DEC-06		
Receive Date:	21-DEC-06		
Collector:	Client		
Moisture:	16.2%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.870	+/-0.205	0.0652	+/-0.205	0.136	pCi/g		JPH1	12/23/06	1150	598453	1
Americium-241	U	0.000403	+/-0.028	0.0233	+/-0.028	0.0474	pCi/g						
Bismuth-212		1.08	+/-0.311	0.139	+/-0.311	0.287	pCi/g						
Bismuth-214		0.890	+/-0.103	0.0323	+/-0.103	0.0668	pCi/g						
Cesium-134	UI	0.00	+/-0.0409	0.0221	+/-0.0409	0.0456	pCi/g						
Cesium-137		1.33	+/-0.0702	0.019	+/-0.0702	0.0392	pCi/g						
Cobalt-60	U	0.0275	+/-0.0244	0.0206	+/-0.0244	0.0433	pCi/g						
Europium-152	U	-0.00262	+/-0.0549	0.0449	+/-0.0549	0.0921	pCi/g						
Europium-154	U	0.00336	+/-0.0695	0.0501	+/-0.0695	0.106	pCi/g						
Europium-155	UI	0.00	+/-0.0773	0.0359	+/-0.0773	0.0733	pCi/g						
Lead-212		0.908	+/-0.0684	0.0344	+/-0.0684	0.0698	pCi/g						
Lead-214		0.925	+/-0.0967	0.0319	+/-0.0967	0.0656	pCi/g						
Manganese-54	U	-0.000103	+/-0.0226	0.0184	+/-0.0226	0.0383	pCi/g						
Niobium-94	U	0.00785	+/-0.0216	0.0182	+/-0.0216	0.0375	pCi/g						
Potassium-40		9.95	+/-0.763	0.159	+/-0.763	0.338	pCi/g						
Radium-226		0.890	+/-0.103	0.0323	+/-0.103	0.0668	pCi/g						
Silver-108m	U	-0.00649	+/-0.019	0.0162	+/-0.019	0.0334	pCi/g						
Thallium-208		0.357	+/-0.052	0.0181	+/-0.052	0.0374	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-015F
Sample ID: 178150015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-016F
Sample ID: 178150016
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 17.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.969	+/-0.169	0.0611	+/-0.169	0.122	pCi/g		JPH1	12/23/06	1139	598453	1
Americium-241	U	0.0386	+/-0.032	0.0243	+/-0.032	0.0486	pCi/g						
Bismuth-212		0.780	+/-0.372	0.147	+/-0.372	0.293	pCi/g						
Bismuth-214		0.777	+/-0.117	0.0345	+/-0.117	0.0689	pCi/g						
Cesium-134	UI	0.00	+/-0.0262	0.0243	+/-0.0262	0.0486	pCi/g						
Cesium-137		0.790	+/-0.0905	0.019	+/-0.0905	0.0379	pCi/g						
Cobalt-60	U	0.00147	+/-0.0272	0.0224	+/-0.0272	0.0448	pCi/g						
Europium-152	U	-0.0763	+/-0.0687	0.044	+/-0.0687	0.088	pCi/g						
Europium-154	U	0.0437	+/-0.0769	0.0661	+/-0.0769	0.132	pCi/g						
Europium-155	U	0.0377	+/-0.0462	0.0388	+/-0.0462	0.0776	pCi/g						
Lead-212		0.916	+/-0.0977	0.0237	+/-0.0977	0.0473	pCi/g						
Lead-214		0.841	+/-0.112	0.0338	+/-0.112	0.0677	pCi/g						
Manganese-54	U	0.00283	+/-0.024	0.0204	+/-0.024	0.0408	pCi/g						
Niobium-94	U	0.00223	+/-0.0219	0.0187	+/-0.0219	0.0374	pCi/g						
Potassium-40		10.5	+/-0.815	0.173	+/-0.815	0.345	pCi/g						
Radium-226		0.777	+/-0.117	0.0345	+/-0.117	0.0689	pCi/g						
Silver-108m	U	-0.0149	+/-0.0201	0.0162	+/-0.0201	0.0324	pCi/g						
Thallium-208		0.315	+/-0.0529	0.0173	+/-0.0529	0.0345	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	12/21/06	1218	597805

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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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: January 4, 2007

Client Sample ID: 9527-0005-016F
Sample ID: 178150016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527–0005–017F
Sample ID: 178150017
Matrix: TS
Collect Date: 18–DEC–06
Receive Date: 21–DEC–06
Collector: Client
Moisture: 15.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid–FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium–228		0.966	+/-0.180	0.0497	+/-0.180	0.0993	pCi/g		JPH1	12/23/06	1139	598453	1
Americium–241	U	0.0658	+/-0.0798	0.0629	+/-0.0798	0.126	pCi/g						
Bismuth–212		0.791	+/-0.249	0.100	+/-0.249	0.200	pCi/g						
Bismuth–214		0.765	+/-0.102	0.0274	+/-0.102	0.0548	pCi/g						
Cesium–134	UI	0.00	+/-0.0269	0.0178	+/-0.0269	0.0355	pCi/g						
Cesium–137		0.281	+/-0.0437	0.0139	+/-0.0437	0.0279	pCi/g						
Cobalt–60	U	0.00596	+/-0.0181	0.0153	+/-0.0181	0.0305	pCi/g						
Europium–152	U	0.00395	+/-0.0548	0.0361	+/-0.0548	0.0722	pCi/g						
Europium–154	U	-0.0219	+/-0.0595	0.0406	+/-0.0595	0.0812	pCi/g						
Europium–155	UI	0.00	+/-0.0646	0.040	+/-0.0646	0.0799	pCi/g						
Lead–212		1.03	+/-0.0945	0.0214	+/-0.0945	0.0428	pCi/g						
Lead–214		0.861	+/-0.100	0.0265	+/-0.100	0.0531	pCi/g						
Manganese–54	U	0.0113	+/-0.0168	0.0148	+/-0.0168	0.0295	pCi/g						
Niobium–94	U	0.00107	+/-0.0155	0.0129	+/-0.0155	0.0257	pCi/g						
Potassium–40		9.54	+/-0.881	0.128	+/-0.881	0.255	pCi/g						
Radium–226		0.765	+/-0.102	0.0274	+/-0.102	0.0548	pCi/g						
Silver–108m	U	-0.0123	+/-0.0148	0.0122	+/-0.0148	0.0243	pCi/g						
Thallium–208		0.325	+/-0.0515	0.013	+/-0.0515	0.0259	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	12/21/06	1218	597805

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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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: January 4, 2007

Client Sample ID: 9527-0005-017F
Sample ID: 178150017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-018F
Sample ID: 178150018
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 18.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.16	+/-0.124	0.0441	+/-0.124	0.0932	pCi/g		JPH1	12/23/06	1136	598453	1
Americium-241	U	0.0254	+/-0.105	0.0788	+/-0.105	0.161	pCi/g						
Bismuth-212		0.683	+/-0.211	0.105	+/-0.211	0.220	pCi/g						
Bismuth-214		0.809	+/-0.0863	0.0262	+/-0.0863	0.0544	pCi/g						
Cesium-134	UI	0.00	+/-0.0298	0.0181	+/-0.0298	0.0375	pCi/g						
Cesium-137		1.12	+/-0.0525	0.0143	+/-0.0525	0.0299	pCi/g						
Cobalt-60	U	0.0178	+/-0.0229	0.0153	+/-0.0229	0.0327	pCi/g						
Europium-152	U	-0.0378	+/-0.0476	0.0373	+/-0.0476	0.077	pCi/g						
Europium-154	U	-0.00131	+/-0.0523	0.0434	+/-0.0523	0.0922	pCi/g						
Europium-155	U	0.0752	+/-0.0592	0.0396	+/-0.0592	0.081	pCi/g						
Lead-212		1.15	+/-0.0549	0.0236	+/-0.0549	0.0482	pCi/g						
Lead-214		1.00	+/-0.077	0.0283	+/-0.077	0.0582	pCi/g						
Manganese-54	U	0.00941	+/-0.0168	0.0142	+/-0.0168	0.0297	pCi/g						
Niobium-94	U	0.00379	+/-0.0173	0.0127	+/-0.0173	0.0265	pCi/g						
Potassium-40		10.9	+/-0.628	0.119	+/-0.628	0.259	pCi/g						
Radium-226		0.809	+/-0.0863	0.0262	+/-0.0863	0.0544	pCi/g						
Silver-108m	U	0.00749	+/-0.0157	0.0137	+/-0.0157	0.0282	pCi/g						
Thallium-208		0.358	+/-0.0404	0.0127	+/-0.0404	0.0266	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	12/21/06	1218	597805

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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- * 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: January 4, 2007

Client Sample ID: 9527-0005-018F
Sample ID: 178150018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-019F
Sample ID: 178150019
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 22.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.672	+/-0.136	0.0388	+/-0.136	0.0813	pCi/g		JPH1	12/23/06	1136	598453	1
Americium-241	U	-0.0065	+/-0.0763	0.0649	+/-0.0763	0.132	pCi/g						
Bismuth-212		0.452	+/-0.144	0.0785	+/-0.144	0.164	pCi/g						
Bismuth-214		0.827	+/-0.113	0.0226	+/-0.113	0.0468	pCi/g						
Cesium-134	UI	0.00	+/-0.0193	0.0142	+/-0.0193	0.0295	pCi/g						
Cesium-137		3.72	+/-0.343	0.0126	+/-0.343	0.0261	pCi/g						
Cobalt-60		0.0505	+/-0.0277	0.0116	+/-0.0277	0.0247	pCi/g						
Europium-152	U	0.0166	+/-0.0564	0.0366	+/-0.0564	0.075	pCi/g						
Europium-154	U	0.0469	+/-0.039	0.0352	+/-0.039	0.0744	pCi/g						
Europium-155	U	0.0267	+/-0.0426	0.0393	+/-0.0426	0.080	pCi/g						
Lead-212		0.641	+/-0.0631	0.0192	+/-0.0631	0.0392	pCi/g						
Lead-214		1.04	+/-0.112	0.0262	+/-0.112	0.0536	pCi/g						
Manganese-54	U	0.0171	+/-0.0146	0.0104	+/-0.0146	0.0218	pCi/g						
Niobium-94	U	0.0122	+/-0.012	0.0105	+/-0.012	0.0219	pCi/g						
Potassium-40		8.31	+/-0.700	0.0973	+/-0.700	0.209	pCi/g						
Radium-226		0.827	+/-0.113	0.0226	+/-0.113	0.0468	pCi/g						
Silver-108m	U	-0.00843	+/-0.0163	0.0141	+/-0.0163	0.0289	pCi/g						
Thallium-208		0.239	+/-0.0416	0.0123	+/-0.0416	0.0254	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-019F
Sample ID: 178150019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy---Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-020F
Sample ID: 178150020
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 12.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.01	+/-0.173	0.038	+/-0.173	0.0797	pCi/g		JPH1	12/23/06	1137	598453	1
Americium-241	U	0.0385	+/-0.0767	0.051	+/-0.0767	0.104	pCi/g						
Bismuth-212		0.727	+/-0.199	0.0797	+/-0.199	0.167	pCi/g						
Bismuth-214		0.758	+/-0.0933	0.0214	+/-0.0933	0.0445	pCi/g						
Cesium-134	UI	0.00	+/-0.0228	0.0147	+/-0.0228	0.0306	pCi/g						
Cesium-137		0.136	+/-0.0296	0.0123	+/-0.0296	0.0255	pCi/g						
Cobalt-60	U	0.00252	+/-0.0127	0.0107	+/-0.0127	0.0229	pCi/g						
Europium-152	U	0.0138	+/-0.0343	0.0306	+/-0.0343	0.0629	pCi/g						
Europium-154	U	-0.0162	+/-0.0438	0.0357	+/-0.0438	0.0753	pCi/g						
Europium-155	U	0.0572	+/-0.0589	0.0319	+/-0.0589	0.0652	pCi/g						
Lead-212		1.02	+/-0.0879	0.0164	+/-0.0879	0.0337	pCi/g						
Lead-214		0.848	+/-0.0948	0.021	+/-0.0948	0.0432	pCi/g						
Manganese-54	U	0.000347	+/-0.015	0.0114	+/-0.015	0.0237	pCi/g						
Niobium-94	U	0.0117	+/-0.0124	0.011	+/-0.0124	0.0228	pCi/g						
Potassium-40		10.5	+/-0.888	0.107	+/-0.888	0.229	pCi/g						
Radium-226		0.758	+/-0.0933	0.0214	+/-0.0933	0.0445	pCi/g						
Silver-108m	U	0.00879	+/-0.0113	0.0102	+/-0.0113	0.021	pCi/g						
Thallium-208		0.299	+/-0.0359	0.0111	+/-0.0359	0.0231	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	12/21/06	1218	597805

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-020F
Sample ID: 178150020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID:	9527-0005-020FS	Project:	YANK01204
Sample ID:	178150021	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	18-DEC-06		
Receive Date:	21-DEC-06		
Collector:	Client		
Moisture:	11.9%		

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

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

Actinium-228		1.08	+/-0.201	0.055	+/-0.201	0.121	pCi/g		JPH1	12/26/06	1253	598454	1
Americium-241	U	-0.0392	+/-0.118	0.0949	+/-0.118	0.196	pCi/g						
Bismuth-212		0.582	+/-0.318	0.149	+/-0.318	0.318	pCi/g						
Bismuth-214		0.828	+/-0.119	0.0351	+/-0.119	0.0746	pCi/g						
Cesium-134	UI	0.00	+/-0.0337	0.0264	+/-0.0337	0.0558	pCi/g						
Cesium-137	UI	0.00	+/-0.0348	0.0181	+/-0.0348	0.0388	pCi/g						
Cobalt-60	U	0.0177	+/-0.0265	0.0236	+/-0.0265	0.0514	pCi/g						
Europium-152	U	0.0617	+/-0.0613	0.0533	+/-0.0613	0.112	pCi/g						
Europium-154	U	-0.036	+/-0.0821	0.0656	+/-0.0821	0.142	pCi/g						
Europium-155	U	0.0603	+/-0.0861	0.0519	+/-0.0861	0.107	pCi/g						
Lead-212		1.12	+/-0.0722	0.0276	+/-0.0722	0.0575	pCi/g						
Lead-214		0.998	+/-0.109	0.034	+/-0.109	0.0715	pCi/g						
Manganese-54	U	0.00793	+/-0.0258	0.0217	+/-0.0258	0.0461	pCi/g						
Niobium-94	U	0.00641	+/-0.0223	0.0189	+/-0.0223	0.0401	pCi/g						
Potassium-40		10.9	+/-0.860	0.204	+/-0.860	0.450	pCi/g						
Radium-226		0.828	+/-0.119	0.0351	+/-0.119	0.0746	pCi/g						
Silver-108m	U	0.00836	+/-0.0192	0.0171	+/-0.0192	0.036	pCi/g						
Thallium-208		0.355	+/-0.0455	0.018	+/-0.0455	0.0383	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	12/21/06	1232	597808

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: January 4, 2007

Client Sample ID: 9527-0005-020FS
Sample ID: 178150021

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-021F
Sample ID: 178150022
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 12.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.26	+/-0.230	0.0776	+/-0.230	0.175	pCi/g		JPH1	12/26/06	1253	598454	1
Americium-241	U	0.0272	+/-0.0502	0.0417	+/-0.0502	0.0862	pCi/g						
Bismuth-212		0.835	+/-0.370	0.198	+/-0.370	0.435	pCi/g						
Bismuth-214		1.04	+/-0.152	0.0489	+/-0.152	0.106	pCi/g						
Cesium-134	U	0.0471	+/-0.0357	0.0339	+/-0.0357	0.0735	pCi/g						
Cesium-137	U	0.064	+/-0.041	0.0389	+/-0.041	0.0825	pCi/g						
Cobalt-60	U	0.014	+/-0.0347	0.031	+/-0.0347	0.0694	pCi/g						
Europium-152	U	-0.0654	+/-0.0757	0.0626	+/-0.0757	0.134	pCi/g						
Europium-154	U	-0.0424	+/-0.095	0.0615	+/-0.095	0.143	pCi/g						
Europium-155	U	0.053	+/-0.0953	0.0653	+/-0.0953	0.136	pCi/g						
Lead-212		1.08	+/-0.0943	0.0381	+/-0.0943	0.080	pCi/g						
Lead-214		1.04	+/-0.138	0.0465	+/-0.138	0.0992	pCi/g						
Manganese-54	U	0.0276	+/-0.0356	0.0225	+/-0.0356	0.0501	pCi/g						
Niobium-94	U	-0.031	+/-0.0311	0.0233	+/-0.0311	0.0509	pCi/g						
Potassium-40		12.8	+/-1.46	0.218	+/-1.46	0.512	pCi/g						
Radium-226		1.04	+/-0.152	0.0489	+/-0.152	0.106	pCi/g						
Silver-108m	U-0.000766		+/-0.0283	0.0246	+/-0.0283	0.0525	pCi/g						
Thallium-208		0.385	+/-0.0615	0.0255	+/-0.0615	0.0553	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	12/21/06	1232	597808

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-021F
Sample ID: 178150022

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy--Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-022F
Sample ID: 178150023
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 9.02%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.501	+/-0.238	0.117	+/-0.238	0.253	pCi/g		JPH1	12/26/06	1254	598454	1
Americium-241	U	0.00529	+/-0.0496	0.0427	+/-0.0496	0.0886	pCi/g						
Bismuth-212		0.721	+/-0.400	0.287	+/-0.400	0.611	pCi/g						
Bismuth-214		0.916	+/-0.189	0.0575	+/-0.189	0.123	pCi/g						
Cesium-134	U	0.0308	+/-0.0467	0.041	+/-0.0467	0.0875	pCi/g						
Cesium-137	UI	0.00	+/-0.0796	0.0315	+/-0.0796	0.0677	pCi/g						
Cobalt-60	U	0.0217	+/-0.0396	0.0353	+/-0.0396	0.0778	pCi/g						
Europium-152	U	0.0138	+/-0.0946	0.0797	+/-0.0946	0.168	pCi/g						
Europium-154	U	0.0725	+/-0.123	0.109	+/-0.123	0.239	pCi/g						
Europium-155	U	0.0882	+/-0.0813	0.0712	+/-0.0813	0.148	pCi/g						
Lead-212		0.773	+/-0.110	0.0594	+/-0.110	0.123	pCi/g						
Lead-214		1.10	+/-0.155	0.0577	+/-0.155	0.122	pCi/g						
Manganese-54	U	-0.00181	+/-0.0429	0.0353	+/-0.0429	0.0755	pCi/g						
Niobium-94	U	0.0224	+/-0.0399	0.032	+/-0.0399	0.0682	pCi/g						
Potassium-40		10.3	+/-1.30	0.304	+/-1.30	0.681	pCi/g						
Radium-226		0.916	+/-0.189	0.0575	+/-0.189	0.123	pCi/g						
Silver-108m	U	-0.0169	+/-0.0317	0.0268	+/-0.0317	0.057	pCi/g						
Thallium-208		0.302	+/-0.0709	0.031	+/-0.0709	0.0664	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	12/21/06	1232	597808

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
- ** Analyte is a surrogate compound

GEL 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: January 4, 2007

Client Sample ID: 9527-0005-022F
Sample ID: 178150023

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-023F
Sample ID: 178150024
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 31.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid - FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.828	+/-0.201	0.0659	+/-0.201	0.143	pCi/g		JPH1	12/26/06	1254	598454	1
Americium-241	U	-0.0314	+/-0.0748	0.0607	+/-0.0748	0.126	pCi/g						
Bismuth-212		0.540	+/-0.313	0.141	+/-0.313	0.305	pCi/g						
Bismuth-214		0.738	+/-0.124	0.0347	+/-0.124	0.0743	pCi/g						
Cesium-134	UI	0.00	+/-0.0359	0.0258	+/-0.0359	0.0549	pCi/g						
Cesium-137	U	0.00	+/-0.0907	0.0189	+/-0.0907	0.0407	pCi/g						
Cobalt-60		0.0662	+/-0.0326	0.0182	+/-0.0326	0.0407	pCi/g						
Europium-152	U	-0.0142	+/-0.0559	0.0455	+/-0.0559	0.0964	pCi/g						
Europium-154	U	-0.002	+/-0.0673	0.057	+/-0.0673	0.126	pCi/g						
Europium-155	U	0.0319	+/-0.0599	0.0496	+/-0.0599	0.103	pCi/g						
Lead-212		0.805	+/-0.0977	0.0439	+/-0.0977	0.0903	pCi/g						
Lead-214		0.894	+/-0.132	0.0333	+/-0.132	0.0705	pCi/g						
Manganese-54	U	-0.00183	+/-0.0233	0.0193	+/-0.0233	0.0416	pCi/g						
Niobium-94	U	-0.0038	+/-0.0207	0.0172	+/-0.0207	0.0369	pCi/g						
Potassium-40		9.72	+/-1.03	0.151	+/-1.03	0.347	pCi/g						
Radium-226		0.738	+/-0.124	0.0347	+/-0.124	0.0743	pCi/g						
Silver-108m	U	0.0124	+/-0.021	0.0179	+/-0.021	0.0379	pCi/g						
Thallium-208		0.318	+/-0.0578	0.0193	+/-0.0578	0.0412	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	12/21/06	1232	597808

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-023F
Sample ID: 178150024

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL.
 - 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: January 4, 2007

Client Sample ID: 9527-0005-024F
Sample ID: 178150025
Matrix: TS
Collect Date: 18-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 21.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.804	+/-0.360	0.139	+/-0.360	0.307	pCi/g		JPH1	12/26/06	1255	598454	1
Americium-241	U	0.0155	+/-0.0548	0.0461	+/-0.0548	0.0962	pCi/g						
Bismuth-212	UI	0.00	+/-0.585	0.297	+/-0.585	0.649	pCi/g						
Bismuth-214		1.08	+/-0.190	0.0732	+/-0.190	0.158	pCi/g						
Cesium-134	U	0.0479	+/-0.0599	0.0399	+/-0.0599	0.0883	pCi/g						
Cesium-137		2.27	+/-0.168	0.0369	+/-0.168	0.0808	pCi/g						
Cobalt-60	U	0.0315	+/-0.0571	0.050	+/-0.0571	0.111	pCi/g						
Europium-152	U	-0.0225	+/-0.103	0.0847	+/-0.103	0.182	pCi/g						
Europium-154	U	-0.0743	+/-0.145	0.107	+/-0.145	0.245	pCi/g						
Europium-155	U	0.121	+/-0.146	0.0698	+/-0.146	0.147	pCi/g						
Lead-212		1.15	+/-0.116	0.0506	+/-0.116	0.107	pCi/g						
Lead-214		1.19	+/-0.189	0.0663	+/-0.189	0.141	pCi/g						
Manganese-54	U	-0.0108	+/-0.0451	0.0369	+/-0.0451	0.0813	pCi/g						
Niobium-94	U	0.0152	+/-0.0424	0.0374	+/-0.0424	0.081	pCi/g						
Potassium-40		9.66	+/-1.41	0.365	+/-1.41	0.845	pCi/g						
Radium-226		1.08	+/-0.190	0.0732	+/-0.190	0.158	pCi/g						
Silver-108m	U	0.00287	+/-0.0449	0.0371	+/-0.0449	0.0791	pCi/g						
Thallium-208		0.373	+/-0.110	0.0387	+/-0.110	0.0838	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	12/21/06	1232	597808

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
- ** Analyte is a surrogate compound

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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: January 4, 2007

Client Sample ID: 9527-0005-024F
Sample ID: 178150025

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - 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: January 4, 2007

Client Sample ID: 9527-0005-025F
Sample ID: 178150026
Matrix: TS
Collect Date: 19-DEC-06
Receive Date: 21-DEC-06
Collector: Client
Moisture: 15.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid - FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.01	+/-0.174	0.0476	+/-0.174	0.102	pCi/g		JPH1	12/26/06	1255	598454	1
Americium-241	U	-0.0645	+/-0.0753	0.065	+/-0.0753	0.134	pCi/g						
Bismuth-212		0.761	+/-0.279	0.119	+/-0.279	0.253	pCi/g						
Bismuth-214		0.840	+/-0.108	0.0316	+/-0.108	0.0663	pCi/g						
Cesium-134	UI	0.00	+/-0.0316	0.0209	+/-0.0316	0.0439	pCi/g						
Cesium-137		0.522	+/-0.0522	0.0158	+/-0.0522	0.0335	pCi/g						
Cobalt-60	U	0.028	+/-0.0237	0.0189	+/-0.0237	0.0406	pCi/g						
Europium-152	U	-0.0306	+/-0.0515	0.0425	+/-0.0515	0.0886	pCi/g						
Europium-154	U	-0.00262	+/-0.0608	0.0507	+/-0.0608	0.109	pCi/g						
Europium-155	UI	0.00	+/-0.0852	0.0475	+/-0.0852	0.0981	pCi/g						
Lead-212		0.968	+/-0.0656	0.0261	+/-0.0656	0.054	pCi/g						
Lead-214		0.941	+/-0.101	0.0332	+/-0.101	0.0691	pCi/g						
Manganese-54	U	0.0222	+/-0.0254	0.0169	+/-0.0254	0.0356	pCi/g						
Niobium-94	U	0.0119	+/-0.0172	0.0152	+/-0.0172	0.032	pCi/g						
Potassium-40		10.6	+/-0.716	0.111	+/-0.716	0.249	pCi/g						
Radium-226		0.840	+/-0.108	0.0316	+/-0.108	0.0663	pCi/g						
Silver-108m	U	0.0104	+/-0.0175	0.0151	+/-0.0175	0.0317	pCi/g						
Thallium-208		0.302	+/-0.0384	0.0158	+/-0.0384	0.0332	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	12/21/06	1232	597808

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
- ** Analyte is a surrogate compound

GEL 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: January 4, 2007

Client Sample ID: 9527-0005-025F
Sample ID: 178150026

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtd
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- < Result is 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: January 4, 2007
Page 1 of 12

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 178150

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec										
Batch 597843										
QC1201251177 178150004 DUP										
Americium-241		U	-0.0434	U	-0.023	pCi/g	61	(0% - 100%)	JAS1	12/26/06 09:08
			Uncert: +/-0.0605		+/-0.143					
			TPU: +/-0.0605		+/-0.143					
Curium-242		U	0.046		0.216	pCi/g	130	(0% - 100%)		
			Uncert: +/-0.0863		+/-0.173					
			TPU: +/-0.0865		+/-0.175					
Curium-243/244		U	0.106	U	-0.0256	pCi/g	327	(0% - 100%)		
			Uncert: +/-0.160		+/-0.142					
			TPU: +/-0.161		+/-0.142					
QC1201251179 LCS										
Americium-241	12.0				11.5	pCi/g		96 (75%-125%)		12/26/06 09:08
			Uncert: +/-1.09		+/-1.74					
			TPU: +/-1.74							
Curium-242				U	0.123	pCi/g				
			Uncert: +/-0.120		+/-0.121					
			TPU: +/-0.121							
Curium-243/244	14.5				13.5	pCi/g		93 (75%-125%)		
			Uncert: +/-1.18		+/-1.98					
			TPU: +/-1.98							
QC1201251176 MB										
Americium-241				U	-0.0252	pCi/g				12/26/06 09:08
			Uncert: +/-0.0563		+/-0.0563					
			TPU: +/-0.0563							
Curium-242					0.389	pCi/g				
			Uncert: +/-0.201		+/-0.206					
			TPU: +/-0.206							
Curium-243/244				U	0.107	pCi/g				
			Uncert: +/-0.141		+/-0.141					
			TPU: +/-0.141							
QC1201251178 178150004 MS										
Americium-241	12.0	U	-0.0434		12.4	pCi/g		103 (75%-125%)		
			Uncert: +/-0.0605		+/-1.22					
			TPU: +/-0.0605		+/-1.95					
Curium-242		U	0.046	U	0.137	pCi/g				
			Uncert: +/-0.0863		+/-0.143					
			TPU: +/-0.0865		+/-0.144					
Curium-243/244	14.6	U	0.106		14.4	pCi/g		99 (75%-125%)		
			Uncert: +/-0.160		+/-1.31					
			TPU: +/-0.161		+/-2.20					
Batch 597851										
QC1201251201 178150004 DUP										
Plutonium-238		U	-0.0772	U	-0.0271	pCi/g	96	(0% - 100%)	JAS1	12/27/06 14:58

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec										
Batch	597851									
Plutonium-239/240										
	Uncert:	+/-0.162	+/-0.153							
	TPU:	+/-0.162	+/-0.153							
	U	-0.0038	U -0.0384	pCi/g	164		(0% - 100%)			
	Uncert:	+/-0.120	+/-0.0928							
	TPU:	+/-0.120	+/-0.0929							
QC1201251203 LCS										
Plutonium-238			U				(75%-125%)			
	Uncert:		+/-0.0848							
	TPU:		+/-0.0848							
Plutonium-239/240	11.8			11.3	pCi/g		96 (75%-125%)			
	Uncert:			+/-1.12						
	TPU:			+/-1.74						
QC1201251200 MB										
Plutonium-238			U							
	Uncert:		+/-0.0325							
	TPU:		+/-0.0328							
Plutonium-239/240			U							
	Uncert:		0.00988		pCi/g					
	TPU:		+/-0.0938							
	TPU:		+/-0.0938							
QC1201251202 178150004 MS										
Plutonium-238	U	-0.0772	U				(75%-125%)			
	Uncert:	+/-0.162	+/-0.151							
	TPU:	+/-0.162	+/-0.153							
Plutonium-239/240	12.4	U	-0.0038				86 (75%-125%)			
	Uncert:	+/-0.120	+/-1.19							
	TPU:	+/-0.120	+/-1.76							
Batch	597852									
QC1201251205 178150004 DUP										
Plutonium-241	U	0.668	U				(0% - 100%)	JAS1	12/28/06	01:38
	Uncert:	+/-5.68	+/-5.56							
	TPU:	+/-5.68	+/-5.56							
QC1201251207 LCS										
Plutonium-241	133			106	pCi/g		80 (75%-125%)		12/28/06	02:41
	Uncert:			+/-7.69						
	TPU:			+/-12.3						
QC1201251204 MB										
Plutonium-241			U						12/28/06	01:07
	Uncert:		+/-6.23							
	TPU:		+/-6.23							
QC1201251206 178150004 MS										
Plutonium-241	137	U	0.668				86 (75%-125%)		12/28/06	02:09
	Uncert:	+/-5.68	+/-9.18							
	TPU:	+/-5.68	+/-14.3							
Rad Gamma Spec										
Batch	598453									
QC1201252576 178150001 DUP										
Actinium-228									12/23/06	11:51
	Uncert:	+/-0.183	+/-0.125				(0% - 100%)	JPH1		
			+/-0.125							

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	598453									
Americium-241		TPU: +/-0.183 U 0.00969 U	-0.0914	pCi/g	247		(0% - 100%)			
		Uncert: +/-0.0785	+/-0.0712							
Bismuth-212		TPU: +/-0.0785 0.638	+/-0.0712 0.691	pCi/g	8		(0% - 100%)			
		Uncert: +/-0.259	+/-0.253							
Bismuth-214		TPU: +/-0.259 0.882	+/-0.253 0.949	pCi/g	7		(0% - 100%)			
		Uncert: +/-0.111	+/-0.0746							
Cesium-134		TPU: +/-0.111 UI 0.00 UI	+/-0.0746 0.00	pCi/g	27		(0% - 100%)			
		Uncert: +/-0.0273	+/-0.0254							
Cesium-137		TPU: +/-0.0273 0.241	+/-0.0254 0.207	pCi/g	16		(0% - 100%)			
		Uncert: +/-0.0419	+/-0.042							
Cobalt-60		TPU: +/-0.0419 U 0.0101 U	+/-0.042 0.00526	pCi/g	63		(0% - 100%)			
		Uncert: +/-0.0204	+/-0.0166							
Europium-152		TPU: +/-0.0204 U -0.0434 U	+/-0.0166 -0.0789	pCi/g	58		(0% - 100%)			
		Uncert: +/-0.0389	+/-0.0476							
Europium-154		TPU: +/-0.0389 U 0.00345 U	+/-0.0476 0.0356	pCi/g	165		(0% - 100%)			
		Uncert: +/-0.0477	+/-0.0499							
Europium-155		TPU: +/-0.0477 U 0.0297 UI	+/-0.0499 0.00	pCi/g	107		(0% - 100%)			
		Uncert: +/-0.0432	+/-0.0572							
Lead-212		TPU: +/-0.0432 1.00	+/-0.0572 1.03	pCi/g	3		(0% - 20%)			
		Uncert: +/-0.0899	+/-0.0504							
Lead-214		TPU: +/-0.0899 1.01	+/-0.0504 1.09	pCi/g	8		(0% - 20%)			
		Uncert: +/-0.110	+/-0.0684							
Manganese-54		TPU: +/-0.110 U -0.0055 U	+/-0.0684 0.0103	pCi/g	660		(0% - 100%)			
		Uncert: +/-0.016	+/-0.016							
Niobium-94		TPU: +/-0.016 U 0.00663 U	+/-0.016 0.000542	pCi/g	170		(0% - 100%)			
		Uncert: +/-0.0161	+/-0.0156							
Potassium-40		TPU: +/-0.0161 10.4	+/-0.0156 11.3	pCi/g	8		(0% - 20%)			
		Uncert: +/-0.929	+/-0.615							
Radium-226		TPU: +/-0.929 0.882	+/-0.615 0.949	pCi/g	7		(0% - 100%)			
		Uncert: +/-0.111	+/-0.0746							
Silver-108m		TPU: +/-0.111 U -0.00839 U	+/-0.0746 -2.460E-05	pCi/g	199		(0% - 100%)			
		Uncert: +/-0.0133	+/-0.0156							

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	598453									
Thallium-208	TPU:	+/-0.0133	+/-0.0156							
		0.292	0.332	pCi/g	13		(0% - 100%)			
	Uncert:	+/-0.0409	+/-0.0385							
	TPU:	+/-0.0409	+/-0.0385							
QC1201252577 LCS										
Actinium-228		U	0.183	pCi/g					12/23/06	10:10
	Uncert:		+/-0.449							
	TPU:		+/-0.449							
Americium-241	23.4		24.4	pCi/g		104	(75%-125%)			
	Uncert:		+/-2.02							
	TPU:		+/-2.02							
Bismuth-212		U	-0.0222	pCi/g						
	Uncert:		+/-0.756							
	TPU:		+/-0.756							
Bismuth-214		U	-0.11	pCi/g						
	Uncert:		+/-0.169							
	TPU:		+/-0.169							
Cesium-134		U	0.00839	pCi/g						
	Uncert:		+/-0.109							
	TPU:		+/-0.109							
Cesium-137	9.51		9.66	pCi/g		102	(75%-125%)			
	Uncert:		+/-0.858							
	TPU:		+/-0.858							
Cobalt-60	13.9		14.3	pCi/g		103	(75%-125%)			
	Uncert:		+/-1.01							
	TPU:		+/-1.01							
Europium-152		U	0.0591	pCi/g						
	Uncert:		+/-0.240							
	TPU:		+/-0.240							
Europium-154		U	-0.148	pCi/g						
	Uncert:		+/-0.221							
	TPU:		+/-0.221							
Europium-155		U	0.0653	pCi/g						
	Uncert:		+/-0.217							
	TPU:		+/-0.217							
Lead-212		U	0.0849	pCi/g						
	Uncert:		+/-0.132							
	TPU:		+/-0.132							
Lead-214		U	0.0826	pCi/g						
	Uncert:		+/-0.176							
	TPU:		+/-0.176							
Manganese-54		U	-0.0558	pCi/g						
	Uncert:		+/-0.104							
	TPU:		+/-0.104							
Niobium-94		U	-0.0239	pCi/g						
	Uncert:		+/-0.0982							
	TPU:		+/-0.0982							
Potassium-40		U	0.0709	pCi/g						

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QC Summary

Workorder: 178150

Page 5 of 12

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	598453									
Radium-226		U	-0.11	pCi/g			(75%-125%)			
	Uncert:		+/-0.727							
	TPU:		+/-0.727							
Silver-108m		U	-0.0177	pCi/g						
	Uncert:		+/-0.169							
	TPU:		+/-0.169							
Thallium-208		U	0.133	pCi/g						
	Uncert:		+/-0.0936							
	TPU:		+/-0.0936							
QC1201252575 MB Actinium-228		U	0.0241	pCi/g					12/23/06	11:50
	Uncert:		+/-0.0252							
	TPU:		+/-0.0252							
Americium-241		U	-0.0557	pCi/g						
	Uncert:		+/-0.0218							
	TPU:		+/-0.0218							
Bismuth-212		U	0.0555	pCi/g						
	Uncert:		+/-0.0555							
	TPU:		+/-0.0555							
Bismuth-214		U	0.0182	pCi/g						
	Uncert:		+/-0.0155							
	TPU:		+/-0.0155							
Cesium-134		U	-0.00103	pCi/g						
	Uncert:		+/-0.00746							
	TPU:		+/-0.00746							
Cesium-137		U	0.00328	pCi/g						
	Uncert:		+/-0.0071							
	TPU:		+/-0.0071							
Cobalt-60		U	-0.000224	pCi/g						
	Uncert:		+/-0.00665							
	TPU:		+/-0.00665							
Europium-152		U	0.0084	pCi/g						
	Uncert:		+/-0.0177							
	TPU:		+/-0.0177							
Europium-154		U	-0.000751	pCi/g						
	Uncert:		+/-0.0199							
	TPU:		+/-0.0199							
Europium-155		U	-0.0125	pCi/g						
	Uncert:		+/-0.0168							
	TPU:		+/-0.0168							
Lead-212		UI	0.00	pCi/g						
	Uncert:		+/-0.0118							
	TPU:		+/-0.0118							
Lead-214		U	0.0229	pCi/g						
	Uncert:		+/-0.0138							
	TPU:		+/-0.0138							

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	598453									
Manganese-54		U	-0.00451	pCi/g						
	Uncert:		+/-0.00654							
	TPU:		+/-0.00654							
Niobium-94		U	0.00532	pCi/g						
	Uncert:		+/-0.0046							
	TPU:		+/-0.0046							
Potassium-40		U	0.0842	pCi/g						
	Uncert:		+/-0.155							
	TPU:		+/-0.155							
Radium-226		U	0.0182	pCi/g						
	Uncert:		+/-0.0155							
	TPU:		+/-0.0155							
Silver-108m		U	-0.00181	pCi/g						
	Uncert:		+/-0.00653							
	TPU:		+/-0.00653							
Thallium-208		U	0.00742	pCi/g						
	Uncert:		+/-0.00743							
	TPU:		+/-0.00743							
Batch	598454									
	QC1201252579 178150021 DUP									
Actinium-228			1.08	pCi/g	2		(0% - 100%)	JPH1	12/26/06	13:01
	Uncert:		+/-0.201							
	TPU:		+/-0.201							
Americium-241	U	U	-0.0392	pCi/g	808		(0% - 100%)			
	Uncert:		+/-0.118							
	TPU:		+/-0.118							
Bismuth-212			0.582	pCi/g	11		(0% - 100%)			
	Uncert:		+/-0.318							
	TPU:		+/-0.318							
Bismuth-214			0.828	pCi/g	14		(0% - 100%)			
	Uncert:		+/-0.119							
	TPU:		+/-0.119							
Cesium-134	UI	UI	0.00	pCi/g	10		(0% - 100%)			
	Uncert:		+/-0.0337							
	TPU:		+/-0.0337							
Cesium-137	UI		0.00	pCi/g	43		(0% - 100%)			
	Uncert:		+/-0.0348							
	TPU:		+/-0.0348							
Cobalt-60	U	U	0.0177	pCi/g	23		(0% - 100%)			
	Uncert:		+/-0.0265							
	TPU:		+/-0.0265							
Europium-152	U	U	0.0617	pCi/g	30		(0% - 100%)			
	Uncert:		+/-0.0613							
	TPU:		+/-0.0613							
Europium-154	U	U	-0.036	pCi/g	101		(0% - 100%)			
	Uncert:		+/-0.0821							
	TPU:		+/-0.0821							
Europium-155	U	U	0.0603	pCi/g	30		(0% - 100%)			

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch 598454										
Lead-212	Uncert:	+/-0.0861	+/-0.0719							
	TPU:	+/-0.0861	+/-0.0719							
		1.12	1.08	pCi/g	3		(0% - 20%)			
Lead-214	Uncert:	+/-0.0722	+/-0.116							
	TPU:	+/-0.0722	+/-0.116							
		0.998	0.895	pCi/g	11		(0% - 20%)			
Manganese-54	Uncert:	+/-0.109	+/-0.135							
	TPU:	+/-0.109	+/-0.135							
	U	0.00793	0.0139	pCi/g	55		(0% - 100%)			
Niobium-94	Uncert:	+/-0.0258	+/-0.030							
	TPU:	+/-0.0258	+/-0.030							
	U	0.00641	0.00469	pCi/g	31		(0% - 100%)			
Potassium-40	Uncert:	+/-0.0223	+/-0.025							
	TPU:	+/-0.0223	+/-0.025							
		10.9	10.3	pCi/g	5		(0% - 20%)			
Radium-226	Uncert:	+/-0.860	+/-1.10							
	TPU:	+/-0.860	+/-1.10							
		0.828	0.722	pCi/g	14		(0% - 100%)			
Silver-108m	Uncert:	+/-0.119	+/-0.136							
	TPU:	+/-0.119	+/-0.136							
	U	0.00836	0.00233	pCi/g	113		(0% - 100%)			
Thallium-208	Uncert:	+/-0.0192	+/-0.0222							
	TPU:	+/-0.0192	+/-0.0222							
		0.355	0.316	pCi/g	12		(0% - 100%)			
QC1201252580 Actinium-228	Uncert:	+/-0.0455	+/-0.0642							
	TPU:	+/-0.0455	+/-0.0642							
			-0.413	pCi/g					12/26/06	14:01
Americium-241	Uncert:		+/-0.502							
	TPU:		+/-0.502							
	23.4		24.0	pCi/g		102	(75%-125%)			
Bismuth-212	Uncert:		+/-0.550							
	TPU:		+/-0.550							
			-0.0961	pCi/g						
Bismuth-214	Uncert:		+/-0.894							
	TPU:		+/-0.894							
			0.00759	pCi/g						
Cesium-134	Uncert:		+/-0.195							
	TPU:		+/-0.195							
			-0.0895	pCi/g						
Cesium-137	Uncert:		+/-0.131							
	TPU:		+/-0.131							
	9.51		10.4	pCi/g		110	(75%-125%)			
Cobalt-60	Uncert:		+/-0.461							
	TPU:		+/-0.461							
	13.9		14.8	pCi/g		107	(75%-125%)			
	Uncert:		+/-0.638							
	TPU:		+/-0.638							

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	598454									
Europium-152		U	0.0375	pCi/g						
	Uncert:		+/-0.239							
	TPU:		+/-0.239							
Europium-154		U	0.0136	pCi/g						
	Uncert:		+/-0.258							
	TPU:		+/-0.258							
Europium-155		U	-0.117	pCi/g						
	Uncert:		+/-0.175							
	TPU:		+/-0.175							
Lead-212		U	-0.0318	pCi/g						
	Uncert:		+/-0.121							
	TPU:		+/-0.121							
Lead-214		U	0.011	pCi/g						
	Uncert:		+/-0.190							
	TPU:		+/-0.190							
Manganese-54		U	0.0318	pCi/g						
	Uncert:		+/-0.122							
	TPU:		+/-0.122							
Niobium-94		U	-0.0251	pCi/g						
	Uncert:		+/-0.105							
	TPU:		+/-0.105							
Potassium-40		U	0.910	pCi/g						
	Uncert:		+/-0.964							
	TPU:		+/-0.964							
Radium-226		U	0.00759	pCi/g			(75%-125%)			
	Uncert:		+/-0.195							
	TPU:		+/-0.195							
Silver-108m		U	-0.0481	pCi/g						
	Uncert:		+/-0.096							
	TPU:		+/-0.096							
Thallium-208		U	-0.0161	pCi/g						
	Uncert:		+/-0.0963							
	TPU:		+/-0.0963							
QC1201252578 MB										
Actinium-228		U	-0.000738	pCi/g					12/26/06	13:00
	Uncert:		+/-0.0784							
	TPU:		+/-0.0784							
Americium-241		U	-0.00932	pCi/g						
	Uncert:		+/-0.0769							
	TPU:		+/-0.0769							
Bismuth-212		U	0.0796	pCi/g						
	Uncert:		+/-0.127							
	TPU:		+/-0.127							
Bismuth-214		U	0.0401	pCi/g						
	Uncert:		+/-0.0377							
	TPU:		+/-0.0377							
Cesium-134		U	-0.00661	pCi/g						
	Uncert:		+/-0.0179							

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	598454								
Cesium-137		TPU:	+/-0.0179						
		U	0.0102	pCi/g					
		Uncert:	+/-0.0169						
Cobalt-60		TPU:	+/-0.0169						
		U	0.00304	pCi/g					
		Uncert:	+/-0.0167						
Europium-152		TPU:	+/-0.0167						
		U	0.00853	pCi/g					
		Uncert:	+/-0.0545						
Europium-154		TPU:	+/-0.0545						
		U	-0.0583	pCi/g					
		Uncert:	+/-0.049						
Europium-155		TPU:	+/-0.049						
		U	-0.04	pCi/g					
		Uncert:	+/-0.0525						
Lead-212		TPU:	+/-0.0525						
		U	0.00651	pCi/g					
		Uncert:	+/-0.0679						
Lead-214		TPU:	+/-0.0679						
		U	0.0193	pCi/g					
		Uncert:	+/-0.051						
Manganese-54		TPU:	+/-0.051						
		U	0.0112	pCi/g					
		Uncert:	+/-0.0163						
Niobium-94		TPU:	+/-0.0163						
		U	-0.00723	pCi/g					
		Uncert:	+/-0.017						
Potassium-40		TPU:	+/-0.017						
		U	-0.204	pCi/g					
		Uncert:	+/-0.249						
Radium-226		TPU:	+/-0.249						
		U	0.0401	pCi/g					
		Uncert:	+/-0.0377						
Silver-108m		TPU:	+/-0.0377						
		U	0.00349	pCi/g					
		Uncert:	+/-0.0146						
Thallium-208		TPU:	+/-0.0146						
		U	0.0181	pCi/g					
		Uncert:	+/-0.0214						
		TPU:	+/-0.0214						
Rad Gas Flow									
Batch	597867								
QC1201251238 178150004 DUP									
Strontium-90			0.0678	0.0917	pCi/g	30	(0% - 100%)	KSD1	12/28/06 17:27
		Uncert:	+/-0.0236	+/-0.0235					
		TPU:	+/-0.0239	+/-0.024					
QC1201251240 LCS									
Strontium-90	1.65			1.31	pCi/g		79 (75%-125%)		12/28/06 17:27

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QC Summary

Workorder: 178150

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow									
Batch	597867								
	Uncert:		+/-0.0881						
	TPU:		+/-0.107						
QC1201251237 MB									
Strontium-90		U	0.00445	pCi/g					12/28/06 17:27
	Uncert:		+/-0.0168						
	TPU:		+/-0.0168						
QC1201251239 178150004 MS									
Strontium-90	5.26	0.0678	4.66	pCi/g		87	(75%-125%)		12/28/06 17:27
	Uncert:	+/-0.0236	+/-0.321						
	TPU:	+/-0.0239	+/-0.394						
Rad Liquid Scintillation									
Batch	597832								
QC1201251145 178150004 DUP									
Iron-55	U	-8.18	U	-4.3	pCi/g	0	(0% - 100%)	MXP1	01/03/07 16:37
	Uncert:	+/-16.2		+/-17.2					
	TPU:	+/-16.2		+/-17.2					
QC1201251147 LCS									
Iron-55	600		668	pCi/g		111	(75%-125%)		01/03/07 17:40
	Uncert:		+/-32.9						
	TPU:		+/-86.5						
QC1201251144 MB									
Iron-55			U	-7.49	pCi/g				01/03/07 16:06
	Uncert:			+/-13.9					
	TPU:			+/-13.9					
QC1201251146 178150004 MS									
Iron-55	627	U	-8.18	676	pCi/g		108	(75%-125%)	01/03/07 17:09
	Uncert:		+/-16.2	+/-34.9					
	TPU:		+/-16.2	+/-93.2					
Batch	597834								
QC1201251150 178150004 DUP									
Nickel-63	U	-0.808	U	-6.29	pCi/g	0	(0% - 100%)	MXP1	12/30/06 21:48
	Uncert:	+/-13.8		+/-12.2					
	TPU:	+/-13.8		+/-12.2					
QC1201251152 LCS									
Nickel-63	541			439	pCi/g		81	(75%-125%)	12/30/06 22:21
	Uncert:			+/-21.3					
	TPU:			+/-26.3					
QC1201251149 MB									
Nickel-63			U	-1.04	pCi/g				12/30/06 21:32
	Uncert:			+/-10.7					
	TPU:			+/-10.7					
QC1201251151 178150004 MS									
Nickel-63	588	U	-0.808	524	pCi/g		89	(75%-125%)	12/30/06 22:04
	Uncert:		+/-13.8	+/-24.5					
	TPU:		+/-13.8	+/-31.1					
Batch	597837								
QC1201251160 178151003 DUP									
Tritium		U	-0.325	U	0.156	pCi/g	0	(0% - 100%)	AXD2
									12/29/06 02:05

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QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation										
Batch	597837									
	Uncert:	+/-1.10	+/-1.13							
	TPU:	+/-1.10	+/-1.13							
QC1201251162	LCS									
Tritium	8.11		9.63	pCi/g		119	(75%-125%)		12/29/06	03:08
	Uncert:		+/-1.01							
	TPU:		+/-1.02							
QC1201251159	MB									
Tritium		U	0.0585	pCi/g					12/29/06	01:34
	Uncert:		+/-0.550							
	TPU:		+/-0.550							
QC1201251161	178151003	MS								
Tritium	8.11	U	-0.325	pCi/g		83	(75%-125%)		12/29/06	02:37
	Uncert:		+/-1.10							
	TPU:		+/-1.49							
Batch	597838									
QC1201251164	178150004	DUP								
Carbon-14		U	0.0205	U	0.0357	pCi/g	0	(0% - 100%)	AXD2	12/25/06 17:59
	Uncert:		+/-0.0667							
	TPU:		+/-0.0667							
QC1201251166	LCS									
Carbon-14	6.96		6.96	pCi/g		100	(75%-125%)		12/25/06	21:25
	Uncert:		+/-0.164							
	TPU:		+/-0.197							
QC1201251163	MB									
Carbon-14		U	0.00509	pCi/g					12/25/06	15:55
	Uncert:		+/-0.0661							
	TPU:		+/-0.0661							
QC1201251165	178150004	MS								
Carbon-14	7.01	U	0.0205	pCi/g		98	(75%-125%)		12/25/06	20:01
	Uncert:		+/-0.0667							
	TPU:		+/-0.195							
Batch	599130									
QC1201254112	178150004	DUP								
Technetium-99		U	-0.0363	U	-0.0772	pCi/g	0	(0% - 100%)	KXR1	01/03/07 20:12
	Uncert:		+/-0.197							
	TPU:		+/-0.197							
QC1201254114	LCS									
Technetium-99	12.7		12.2	pCi/g		96	(75%-125%)		01/03/07	22:17
	Uncert:		+/-0.317							
	TPU:		+/-0.440							
QC1201254111	MB									
Technetium-99		U	-0.0432	pCi/g					01/03/07	19:10
	Uncert:		+/-0.158							
	TPU:		+/-0.158							
QC1201254113	178150004	MS								
Technetium-99	12.7	U	-0.0363	pCi/g		93	(75%-125%)		01/03/07	21:15
	Uncert:		+/-0.197							
	TPU:		+/-0.490							

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QC Summary

Workorder: 178150

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Parmname	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
- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B 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
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

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

** Indicates analyte is a surrogate compound.

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

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

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

General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 178922
SDG: MSR#07-0034**

January 12, 2007

Laboratory Identification:

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

Summary

Sample receipt

The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on January 11, 2007 for analysis. Shipping container temperature was checked, documented, and within specifications. The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following sample:

<u>Laboratory Identification</u>	<u>Sample Description</u>
178922001	9527-0005-031F

Items of Note

There are no items to note.

Case Narrative

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


Analytical Request

One soil sample was analyzed for FSSGAM.

Data Package

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

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



Cheryl Jones
Project Manager

List of current GEL Certifications as of 12 January 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

**Chain of Custody
and
Supporting
Documentation**

Figure 1. Sample Check-in List

Date/Time Received: 1/11/07 9:30
SDG#: MSR # 06-0034, MSR # 06-0036, MSR # 07-0035
Work Order Number: 178922, 178923, 178924
Shipping Container ID: see cont form Chain of Custody #: see cont form

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 15°
5. Vermiculite/packing materials is: Wet Dry
6. Number of samples in shipping container: 44
7. Sample holding times exceeded? Yes No

8. Samples have: <input checked="" type="checkbox"/> tape <input type="checkbox"/> hazard labels <input 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): _____

No time listed on Chain of Custody for sample ID 9527-0005-031F

Time on container is 08:45. ATZ 1/11/07

Sample Custodian/Laboratory: Joson Polito Date: 1/11/07

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client:	SDG/ARCO/Work Order: <u>178922, 178923, 178924</u>
Date Received:	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By:	<i>Amanda Thomas</i>

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				

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?	X			Maximum Counts Observed*: <u>20 cpm</u>
B PCB Regulated?	X			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	X			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?	X			

PM (or PMA) review of Hazard classification: 7

Initials *AT*

Date: 1/11/07

Data Review Qualifier Definitions

Data Review Qualifier Definitions

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
Work Order 178922**

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: 602037
Prep Batch Number: 601624

Sample ID	Client ID
178922001	9527-0005-031F
1201260557	Method Blank (MB)
1201260558	178922001(9527-0005-031F) Sample Duplicate (DUP)
1201260559	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 178922001 (9527-0005-031F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

NCR Documentation

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

Additional Comments

Additional comments were not required for this sample set.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance.	Cesium-134	178922001 1201260558
		Silver-108m	1201260558

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: Stanley A. Rose 11/14/07

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#07-0034 GEL Work Order: 178922


The Qualifiers in this report are defined as follows:

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

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

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

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



Reviewed by

GEL LABORATORIES LLC

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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: January 12, 2007

Client Sample ID:	9527-0005-031F	Project:	YANK01204
Sample ID:	178922001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	10-JAN-07		
Receive Date:	11-JAN-07		
Collector:	Client		
Moisture:	17.8%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.02	+/-0.164	0.0425	+/-0.164	0.085	pCi/g		JPH1	01/12/07	1004	602037	1
Americium-241	U	0.0374	+/-0.106	0.0865	+/-0.106	0.173	pCi/g						
Bismuth-212		0.668	+/-0.216	0.0927	+/-0.216	0.185	pCi/g						
Bismuth-214		0.749	+/-0.101	0.0243	+/-0.101	0.0486	pCi/g						
Cesium-134	UI	0.00	+/-0.0216	0.0163	+/-0.0216	0.0326	pCi/g						
Cesium-137		0.0604	+/-0.0269	0.0121	+/-0.0269	0.0242	pCi/g						
Cobalt-60	U	-0.00601	+/-0.0151	0.0122	+/-0.0151	0.0243	pCi/g						
Europium-152	U	0.0137	+/-0.0479	0.0354	+/-0.0479	0.0707	pCi/g						
Europium-154	U	-0.00477	+/-0.0426	0.0354	+/-0.0426	0.0707	pCi/g						
Europium-155	U	0.0306	+/-0.0657	0.0479	+/-0.0657	0.0957	pCi/g						
Lead-212		0.893	+/-0.084	0.0215	+/-0.084	0.043	pCi/g						
Lead-214		0.927	+/-0.0994	0.0231	+/-0.0994	0.0462	pCi/g						
Manganese-54	U	0.0155	+/-0.0207	0.0122	+/-0.0207	0.0243	pCi/g						
Niobium-94	U	0.00699	+/-0.0132	0.0114	+/-0.0132	0.0227	pCi/g						
Potassium-40		11.4	+/-0.881	0.100	+/-0.881	0.200	pCi/g						
Radium-226		0.749	+/-0.101	0.0243	+/-0.101	0.0486	pCi/g						
Silver-108m	U	-0.0157	+/-0.0132	0.0109	+/-0.0132	0.0217	pCi/g						
Thallium-208		0.298	+/-0.0411	0.0126	+/-0.0411	0.0253	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	01/11/07	1035	601624

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: January 12, 2007

Client Sample ID: 9527-0005-031F
Sample ID: 178922001

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

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

- ** Analyte is a surrogate compound
 - < Result is less than value reported
 - > Result is greater than value reported
 - A The TIC is a suspected aldol-condensation product
 - B 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
 - ND Analyte concentration is not detected above the detection limit
 - R Sample results are rejected
 - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 - UI Gamma Spectroscopy—Uncertain identification
 - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
 - Y QC Samples were not spiked with this compound
 - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
 - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

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QC Summary

Report Date: January 12, 2007
Page 1 of 5

Client : Connecticut Yankee Atomic Power
362 Injun Hollow Rd

Contact: East Hampton, Connecticut
Mr. Jack McCarthy

Workorder: 178922

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 602037											
QC1201260558 178922001 DUP											
Actinium-228		1.02		0.856	pCi/g	18		(0% - 100%)	JPH1	01/12/07	10:00
		Uncert:		+/-0.180							
		TPU:		+/-0.180							
Americium-241	U	0.0374	U	0.0481	pCi/g	66		(0% - 100%)			
		Uncert:		+/-0.110							
		TPU:		+/-0.110							
Bismuth-212		0.668		0.802	pCi/g	32		(0% - 100%)			
		Uncert:		+/-0.310							
		TPU:		+/-0.310							
Bismuth-214		0.749		0.839	pCi/g	8		(0% - 100%)			
		Uncert:		+/-0.104							
		TPU:		+/-0.104							
Cesium-134	UI	0.00	UI	0.00	pCi/g	46		(0% - 100%)			
		Uncert:		+/-0.0337							
		TPU:		+/-0.0337							
Cesium-137		0.0604		0.0538	pCi/g	38		(0% - 100%)			
		Uncert:		+/-0.0299							
		TPU:		+/-0.0299							
Cobalt-60	U	-0.00601	U	-0.0091	pCi/g	16		(0% - 100%)			
		Uncert:		+/-0.0216							
		TPU:		+/-0.0216							
Europium-152	U	0.0137	U	0.00272	pCi/g	176		(0% - 100%)			
		Uncert:		+/-0.0564							
		TPU:		+/-0.0564							
Europium-154	U	-0.00477	U	-0.00183	pCi/g	166		(0% - 100%)			
		Uncert:		+/-0.0675							
		TPU:		+/-0.0675							
Europium-155	U	0.0306	U	0.030	pCi/g	80		(0% - 100%)			
		Uncert:		+/-0.0564							
		TPU:		+/-0.0564							
Lead-212		0.893		0.913	pCi/g	4		(0% - 20%)			
		Uncert:		+/-0.0675							
		TPU:		+/-0.0675							
Lead-214		0.927		0.828	pCi/g	14		(0% - 20%)			
		Uncert:		+/-0.0909							
		TPU:		+/-0.0909							
Manganese-54	U	0.0155	U	0.000723	pCi/g	177		(0% - 100%)			
		Uncert:		+/-0.021							
		TPU:		+/-0.021							
Niobium-94	U	0.00699	U	0.00235	pCi/g	47		(0% - 100%)			
		Uncert:		+/-0.0196							
		TPU:		+/-0.0196							

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QC Summary

Workorder: 178922

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	602037									
Potassium-40		11.4	10.3	pCi/g	10		(0% - 20%)			
	Uncert:	+/-0.881	+/-1.03							
	TPU:	+/-0.881	+/-1.03							
Radium-226		0.749	0.839	pCi/g	8		(0% - 100%)			
	Uncert:	+/-0.101	+/-0.104							
	TPU:	+/-0.101	+/-0.104							
Silver-108m	U	-0.0157	0.00	pCi/g	1070		(0% - 100%)			
	Uncert:	+/-0.0132	+/-0.0239							
	TPU:	+/-0.0132	+/-0.0239							
Thallium-208		0.298	0.273	pCi/g	3		(0% - 100%)			
	Uncert:	+/-0.0411	+/-0.0493							
	TPU:	+/-0.0411	+/-0.0493							
QC1201260559	LCS									
Actinium-228			0.157	pCi/g					01/12/07	10:01
	Uncert:		+/-0.611							
	TPU:		+/-0.611							
Americium-241	23.4		24.6	pCi/g		105	(75%-125%)			
	Uncert:		+/-0.658							
	TPU:		+/-0.658							
Bismuth-212			0.234	pCi/g						
	Uncert:		+/-0.962							
	TPU:		+/-0.962							
Bismuth-214			0.130	pCi/g						
	Uncert:		+/-0.278							
	TPU:		+/-0.278							
Cesium-134			0.125	pCi/g						
	Uncert:		+/-0.146							
	TPU:		+/-0.146							
Cesium-137	9.50		10.6	pCi/g		111	(75%-125%)			
	Uncert:		+/-0.489							
	TPU:		+/-0.489							
Cobalt-60	13.8		14.1	pCi/g		102	(75%-125%)			
	Uncert:		+/-0.673							
	TPU:		+/-0.673							
Europium-152			-0.194	pCi/g						
	Uncert:		+/-0.249							
	TPU:		+/-0.249							
Europium-154			0.0551	pCi/g						
	Uncert:		+/-0.271							
	TPU:		+/-0.271							
Europium-155			-0.0328	pCi/g						
	Uncert:		+/-0.217							
	TPU:		+/-0.217							
Lead-212			0.0592	pCi/g						
	Uncert:		+/-0.134							
	TPU:		+/-0.134							
Lead-214			-0.0845	pCi/g						
	Uncert:		+/-0.181							

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QC Summary

Workorder: 178922

Page 3 of 5

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	602037									
Manganese-54	TPU:		+/-0.181							
		U	0.0184	pCi/g						
	Uncert:		+/-0.131							
Niobium-94	TPU:		+/-0.131							
		U	-0.0454	pCi/g						
	Uncert:		+/-0.112							
Potassium-40	TPU:		+/-0.112							
		U	0.0866	pCi/g						
	Uncert:		+/-0.873							
Radium-226	TPU:		+/-0.873							
		U	0.130	pCi/g			(75%-125%)			
	Uncert:		+/-0.278							
Silver-108m	TPU:		+/-0.278							
		U	-0.0855	pCi/g						
	Uncert:		+/-0.107							
Thallium-208	TPU:		+/-0.107							
		U	0.0458	pCi/g						
	Uncert:		+/-0.114							
	TPU:		+/-0.114							
QC1201260557	MB									
Actinium-228		U	0.0323	pCi/g					01/12/07	10:05
	Uncert:		+/-0.0732							
Americium-241	TPU:		+/-0.0732							
		U	-0.0198	pCi/g						
	Uncert:		+/-0.0146							
Bismuth-212	TPU:		+/-0.0146							
		U	-0.0302	pCi/g						
	Uncert:		+/-0.131							
Bismuth-214	TPU:		+/-0.131							
		U	0.00212	pCi/g						
	Uncert:		+/-0.0369							
Cesium-134	TPU:		+/-0.0369							
		U	0.0122	pCi/g						
	Uncert:		+/-0.0199							
Cesium-137	TPU:		+/-0.0199							
		U	-0.00382	pCi/g						
	Uncert:		+/-0.0168							
Cobalt-60	TPU:		+/-0.0168							
		U	-0.00247	pCi/g						
	Uncert:		+/-0.0231							
Europium-152	TPU:		+/-0.0231							
		U	-0.00175	pCi/g						
	Uncert:		+/-0.039							
Europium-154	TPU:		+/-0.039							
		U	-0.00715	pCi/g						
	Uncert:		+/-0.0735							
Europium-155	TPU:		+/-0.0735							
		U	0.0236	pCi/g						

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QC Summary

Workorder: 178922

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch 602037										
			Uncert:							
			TPU:							
Lead-212		U	0.00281	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.00866	pCi/g						
			Uncert:							
			TPU:							
Manganese-54		U	0.00717	pCi/g						
			Uncert:							
			TPU:							
Niobium-94		U	-0.00192	pCi/g						
			Uncert:							
			TPU:							
Potassium-40		U	0.0547	pCi/g						
			Uncert:							
			TPU:							
Radium-226		U	0.00212	pCi/g						
			Uncert:							
			TPU:							
Silver-108m		U	0.00513	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	0.00936	pCi/g						
			Uncert:							
			TPU:							

Notes:

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
- < 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
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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QC Summary

Workorder: 178922

Page 5 of 5

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

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 4 (DQA RESULTS)

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 4A (PRELIMINARY DATA REVIEW)

PRELIMINARY DATA REVIEW FORM


Survey Unit : 9527-0005
 Survey Unit Name : East Mountainside
 Classification : 2
 Survey Media : Soil
 Type of Survey : Final Status Survey
 Type of Measurement : Radionuclide Specific
 Number of Measurements : 15

BASIC STATISTICAL QUANTITIES

	Cs-137	Sr-90
Target Level (pCi/g) :	5.38E+00	1.05E+00
Minimum Value :	6.04E-02	2.35E-02
Maximum Value :	2.05E+00	6.78E-02
Mean :	7.14E-01	4.57E-02
Median :	6.47E-01	4.57E-02
Standard Deviation :	5.48E-01	8.37E-03

Reported Results

Sample Identification ⁽¹⁾⁽²⁾	Cs-137		Sr-90		Fraction of Target Level
	Concentration (pCi/g)	Detect?	Concentration (pCi/g)	Detect?	
9527-0005-001F	2.41E-01	+	4.57E-02		0.088
9527-0005-003F	5.35E-01	+	4.57E-02		0.143
9527-0005-004F	6.63E-01	+	4.57E-02		0.167
9527-0005-005F	6.55E-01	+	6.78E-02	+	0.186
9527-0005-006F	6.47E-01	+	4.57E-02		0.164
9527-0005-007F	1.12E+00	+	4.57E-02		0.252
9527-0005-008F	1.12E+00	+	4.57E-02		0.252
9527-0005-009F	2.58E-01	+	4.57E-02		0.091



 JACK McLinstock 2/1/07
 Submitted by/Date

PRELIMINARY DATA REVIEW FORM

Sample Identification ⁽¹⁾⁽²⁾	Reported Results		Reported Results		Fraction of Target Level
	Cs-137 Concentration (pCi/g)	Detect?	Sr-90 Concentration (pCi/g)	Detect?	
9527-0005-011F	6.25E-01	+	4.57E-02		0.160
9527-0005-012F	2.05E+00	+	2.35E-02	+	0.403
9527-0005-013F	1.11E+00	+	4.57E-02		0.250
9527-0005-014F	1.55E-01	+	4.57E-02		0.072
9527-0005-015F	1.33E+00	+	4.57E-02		0.291
9527-0005-020F	1.36E-01	+	4.57E-02		0.069
9527-0005-031F	6.04E-02	+	4.57E-02		0.055

(1) Sample 9527-0005-020F replaced sample 9527-0005-002F, which was inaccessible

(2) Sample 9527-0005-031F replaced sample 9527-0005-010F, which was included within the boundary of Survey Unit 9527-0006


 Submitted by/Date 2/1/07

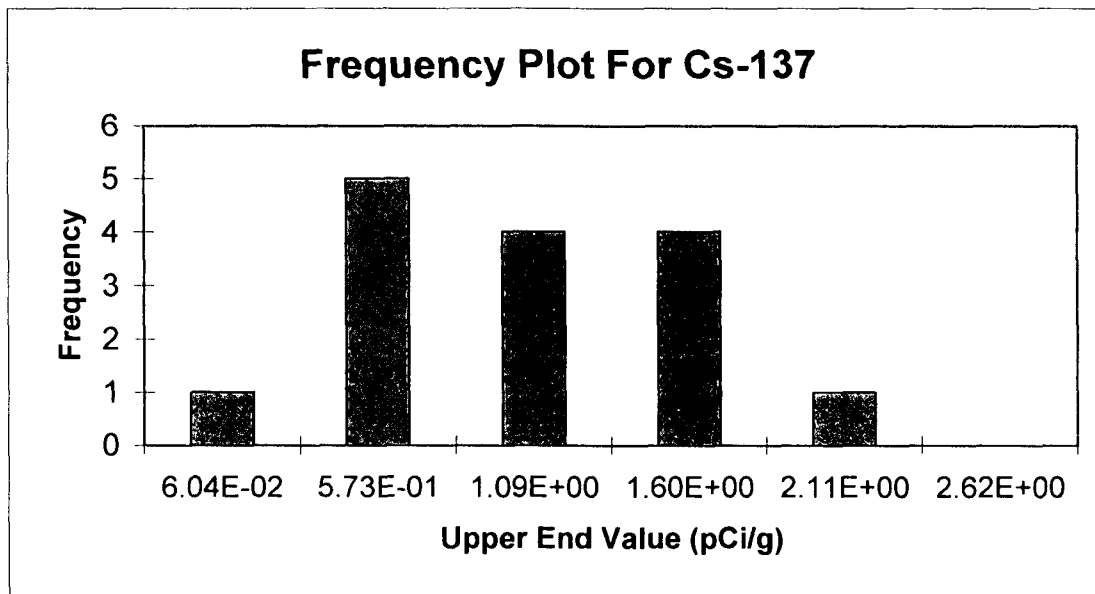
EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 4B (GRAPHICAL REPRESENTATION OF DATA)

FREQUENCY PLOT FOR CESIUM-137

Survey Unit: 9527-0005
 Survey Unit Name: SouthEast Mountainside
 Mean: 7.14E-01 pCi/g



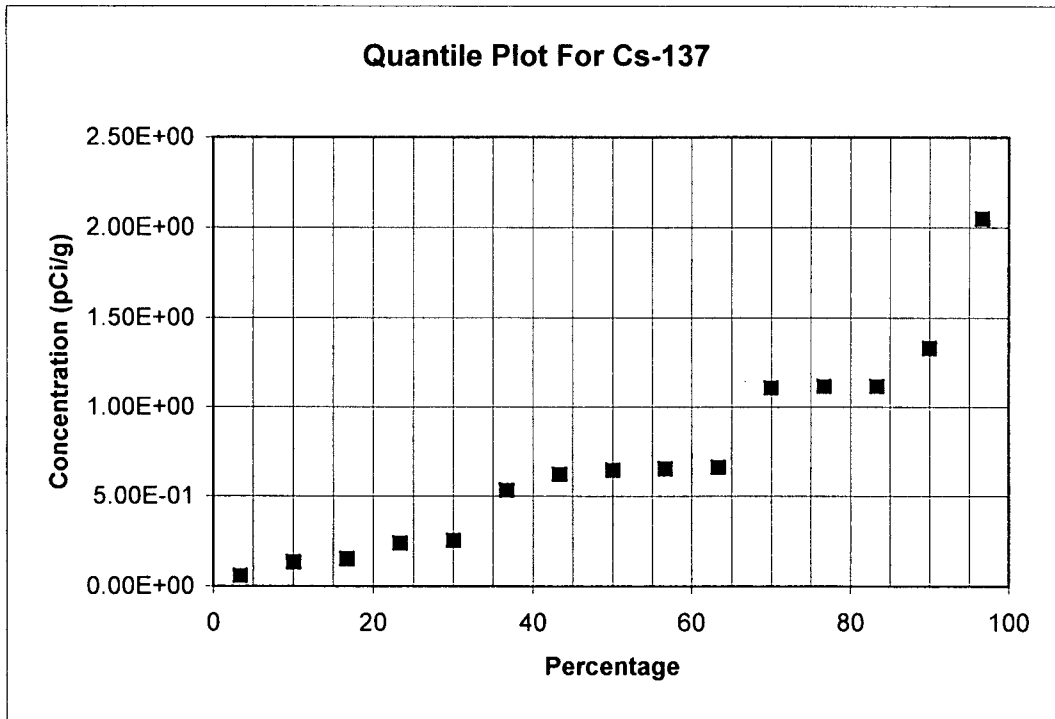
Upper End Value	Observation Frequency	Observation Frequency
6.04E-02	1	7%
5.73E-01	5	33%
1.09E+00	4	27%
1.60E+00	4	27%
2.11E+00	1	7%
2.62E+00	0	0%
Total:	15	100%

Jack McCully 1/15/07
 Submitted by/Date

Dee Randall 1-22-07
 Reviewed by/Date

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9527-0005
 Survey Unit Name: East Mountainside
 Mean: 7.14E-01 pCi/g



Cs-137	Rank	Percentage
6.04E-02	1	3%
1.36E-01	2	10%
1.55E-01	3	17%
2.41E-01	4	23%
2.58E-01	5	30%
5.35E-01	6	37%
6.25E-01	7	43%
6.47E-01	8	50%
6.55E-01	9	57%
6.63E-01	10	63%
1.11E+00	11	70%
1.12E+00	12	77%
1.12E+00	13	83%
1.33E+00	14	90%
2.05E+00	15	97%

Jack McInerney
 Submitted by/Date 1/15/97

Gal Russell
 Reviewed by/Date 1-22-97

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 4C (SIGN TEST)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Area Number: 9527		Survey Unit Number: 0005			WPIR#: 2006-0038		
Survey Area Name: East Mountainside		Classification: 2	TYPE I (α error): 0.05		N: 15		
Radionuclides:		Cs-137	Sr-90				
DCGL:		5.38E+00	1.05E+00				
Results 1 st Radionuclide (pCi/g)	Results 2 nd Radionuclide (pCi/g)	Results 3 rd Radionuclide (pCi/g)	Results 4 th Radionuclide (pCi/g)	Results 5 th Radionuclide (pCi/g)	Weighted Sum (W _s)	1 - W _s	Sign
2.41E-01	4.57E-02				0.088	0.912	+
5.35E-01	4.57E-02				0.143	0.857	+
6.63E-01	4.57E-02				0.167	0.833	+
6.55E-01	6.78E-02				0.186	0.814	+
6.47E-01	4.57E-02				0.164	0.836	+
1.12E+00	4.57E-02				0.252	0.748	+
1.12E+00	4.57E-02				0.252	0.748	+
2.58E-01	4.57E-02				0.091	0.909	+
6.25E-01	4.57E-02				0.160	0.840	+
2.05E+00	2.35E-02				0.403	0.597	+
1.11E+00	4.57E-02				0.250	0.750	+
1.55E-01	4.57E-02				0.072	0.928	+
1.33E+00	4.57E-02				0.291	0.709	+
1.36E-01	4.57E-02				0.069	0.931	+
6.04E-02	4.57E-02				0.055	0.945	+
Number of positive differences (S+):						15	

Critical Value: 11

Survey Unit Meets Acceptance Criterion

Performed by: JACK [Signature] Date: 2/1/07

Independent Review by: [Signature] Date: 2-1-07

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 4D (QC SPLIT RESULTS)

Split Sample Assessment Form

Survey Area#: 9527		Survey Unit #: 0005		Survey Unit name: East Mountainside																
Sample Plan or WPIR#: 2005-0038						SML#: 9527-0005-006														
Sample Description: Comparison of split samples collected from sample measurement location #6 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9527-0005-006F, the comparison sample was 9527-0005-006FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	6.47E-1	4.34E-2	15	0.6 - 1.66	6.09E-1	1.59E-2	0.94	Y												
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples. <table style="margin-left: auto; margin-right: auto; border: none;"> <tr> <td style="text-align: center;"><u>Resolution</u></td> <td style="text-align: center;"><u>Agreement Range</u></td> </tr> <tr> <td style="text-align: center;">4 - 7</td> <td style="text-align: center;">0.5 - 2.0</td> </tr> <tr> <td style="text-align: center;">8 - 15</td> <td style="text-align: center;">0.6 - 1.66</td> </tr> <tr> <td style="text-align: center;">16 - 50</td> <td style="text-align: center;">0.75 - 1.33</td> </tr> <tr> <td style="text-align: center;">51 - 200</td> <td style="text-align: center;">0.80 - 1.25</td> </tr> <tr> <td style="text-align: center;">>200</td> <td style="text-align: center;">0.85 - 1.18</td> </tr> </table>				<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
<u>Resolution</u>	<u>Agreement Range</u>																			
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed By: <i>Jack McLaughlin</i>		Date: <i>1/8/07</i>		Reviewed By: <i>Paul J. ...</i>			Date: <i>1-16-07</i>													

Split Sample Assessment Form

Survey Area#: 9527		Survey Unit #: 0005		Survey Unit name: East Mountainside																
Sample Plan or WPIR#: 2005-0038						SML#: 9527-0005-020														
Sample Description: Comparison of split samples collected from sample measurement location #20 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9527-0005-020F, the comparison sample was 9527-0005-020FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	0.14	0.015	9	0.6 – 1.66	0.00	4.30E-1	0.00	N												
K-40	10.5	4.44E-1	24	0.75 – 1.33	10.9	4.30E-1	1.04	Y												
Comments/Corrective Actions: The agreement level for Cs-137 may be explained by differences in relative quantities of organic material constituent to each sample. This does not necessarily indicate a problem with the sample collection and preparation methodology. In fact, the agreement level for K-40 shows acceptable agreement.					Table is provided to show acceptance criteria used to assess split samples. <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;"><u>Resolution</u></th> <th style="text-align: left; padding: 2px;"><u>Agreement Range</u></th> </tr> </thead> <tbody> <tr><td style="padding: 2px;">4 - 7</td><td style="padding: 2px;">0.5 - 2.0</td></tr> <tr><td style="padding: 2px;">8 - 15</td><td style="padding: 2px;">0.6 - 1.66</td></tr> <tr><td style="padding: 2px;">16 - 50</td><td style="padding: 2px;">0.75 - 1.33</td></tr> <tr><td style="padding: 2px;">51 - 200</td><td style="padding: 2px;">0.80 - 1.25</td></tr> <tr><td style="padding: 2px;">>200</td><td style="padding: 2px;">0.85 - 1.18</td></tr> </tbody> </table>				<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
<u>Resolution</u>	<u>Agreement Range</u>																			
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed By:		Date: 1/12/17		Reviewed By:		Date: 1-22-07														

EAST MOUNTAINSIDE AREA
SURVEY UNIT 9527-0005

RELEASE RECORD

ATTACHMENT 4E (COMPASS DQA WITH POWER CURVE)



DQA Surface Soil Report

Assessment Summary

Site: 9527-0005 (FSS)
Planner(s): McCarthy
Survey Unit Name: East Mountainside
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

