




Final Status Survey Final Report Phase III

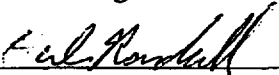
**Appendix A2
Survey Unit Release Record
9527-0001, East Mountain Side**

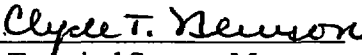
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CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9527-0001 (East Mountain Side) is designated as Final Status Survey (FSS) Class 2 and consists of approximately 8,600 m² (2.13 acres) of wooded and wetland area located approximately 0.1 miles from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1, Figure 1). The survey unit is bounded by a fence on the northern side, an unpaved road along the western side and a stone wall along the southern side. A Class 2 survey unit, 9527-0002, bounds this survey unit on the south. The survey unit comprises wooded terrain with some steep rock ledge and rock outcroppings within the interior.

The reference coordinates associated with this survey unit are E013 through E022 by S056 through S064 (refer to License Termination Plan 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).

A review of the historical files indicates two (2) events potentially impacting this survey unit. Contamination was found in 1980 in uncontrolled areas including the East Mountain Side (refer to Plant Information Report PIR 80-37). Recently, tank farm tent material with low-level fixed contamination was found on the East Mountain Side (refer to Condition Report CR 05-0244). This material was found in another survey unit of 9527. Walkdowns of the remaining East Mountain Side did not identify more tent material. The single piece of tent material was found in Survey Unit 9527-0005 along the fence and about one hundred eighty (180) feet from the nearest boundary of 9527-0001.

In Section 5.4.7.1 of the LTP, Equation 5-1 expresses the total dose contribution from three (3) components; soil contribution, existing groundwater contribution and future groundwater contribution. The survey data results for this release record address the dose contribution due to soil as provided in LTP Equation 5-1. This survey unit is considered impacted by existing groundwater radioactive contamination as the survey unit is within the capture zone perimeter for an affected monitoring well. The dose contribution from the existing groundwater contamination will be addressed later and will be included to show compliance with site unrestricted release criteria as required by the LTP. This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no underground structures, systems or components containing residual radioactive material within the groundwater saturated zone in the area. The dose contribution from future groundwater, the third component of Equation 5-1, is therefore zero.

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2. **CLASSIFICATION BASIS**

The survey unit was classified in accordance with Procedure RPM 5.1-10, "*Survey Unit Classification*." The historical information, scoping analyses and characterization results provided sufficient data to designate Survey Unit 9527-0001 as Class 2 in September 2005.

The "*Classification Basis Summary*" conducted for this survey unit consisted of:

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

A review of the 10CFR50.75 (g) (1) database report identifies six (6) documents associated with or relating to this survey area.

- a) Event PIR 80-37: Contamination was documented to be present in an area outside the restricted area. Small areas of low-level contamination were found on the facility grounds through routine survey in a normally non-radioactive area. The areas were cleaned up in 1980.
- b) Radiological Assessment Branch (RAB) memo NE-83-RA-1374 (September 1983): Results of a contamination survey outside the southeast RCA boundary has identified plant related activity in an adjacent survey area to 9527. According to the memo, the source could have been the events described by PIR 80-37.
- c) Adverse Condition Report ACR 97-0994: Soil sample analysis identified plant related radioactivity on hillside east of plant (in another survey unit of 9527).
- d) Scoping Survey Report 1998: Results of scoping samples performed for decommissioning characterization data. Cesium-137 was the predominate radionuclide found in this survey unit during the scoping survey. No other plant-related radionuclides were identified in this survey unit.
- e) Event CR 05-0244: Tank farm material with low-level fixed contamination was found on the East Mountain Side in another survey unit of 9527. A single piece of tent material was found in Survey Unit 9527-0005 along the fence and about one hundred eight (180) feet from the nearest boundary of 9527-0001.
- f) Memo ISC 05-045: Periodic surveillance following final status survey. Surveillance is required periodically by the LTP to ensure the radiological condition does not significantly change from the FSS

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results. The memo documents no negative change in the radiological status.

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

A characterization survey plan was initiated and executed by Site Closure personnel in September 2005 to determine existing conditions and obtain radiological data for Final Status Survey (FSS). No areas of elevated radioactivity were identified in the survey unit.

Eleven (11) soil samples were taken initially and analyzed in accordance with the plan. The concentrations of Cs-137 found in the soil were slightly lower than those concentrations in wooded areas determined from off-site locations as documented by Health Physics Technical Support Document (TSD) BCY-HP-0063, "Background Cs-137 Concentration in Soil." Strontium-90 and Eu-154 were also identified in one (1) sample but not in sufficient quantities to be included with the characterization. The values for Cs-137 and Co-60 are provided in Table 1.

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

Parameter	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value:	9.66E-02	-4.93E-03
Maximum Value:	1.01E+00	3.02E-02
Mean:	4.87E-01	1.07E-02
Median:	4.35E-01	9.21E-03
Standard Deviation:	2.62E-01	1.29E-02

The FSS Engineer performed a visual inspection and walkdown during September 2005 to assess the physical condition of the survey unit, evaluate access points and travel paths and identify potentially hazardous conditions.

Assessment of the groundwater impact is discussed in Section 1 and Section 13. The classification basis shows that the expected residual radioactivity in the survey unit would be below the site remediation criteria and are consistent with procedural guidance, thereby sufficient to justify the final designation as Class 2.

3. DATA QUALITY OBJECTIVES (DQO)

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

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

The primary objective of the Final Status Survey Plan (FSSP) was to demonstrate that the level of residual radioactivity in this survey unit did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of Derived Concentration Guideline Values (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 additional future groundwater radioactivity from building basements and footings.

A reduction to the Base Case Soil DCGLs provided in Chapter 6 of the LTP must be performed to ensure compliance with the release criteria of twenty-five millirem (25 mrem) in a year Total Effective Dose Equivalent (TEDE) when all three pathways (soil, existing groundwater and future groundwater) are potentially present. Chapter 5 of the LTP shows a compliance formula, Equation 5-1, for including the total dose from the three media. The reduced DCGL is called the Operational DCGL whose relationship to the Base Case Soil DCGL is shown by Equation 5-3 of the LTP. The Base Case Soil DCGL for Cs-137 and the DCGLs for all the other radionuclides potentially present in soil were administratively reduced by about 70% to ensure compliance with the 25 mrem in a year TEDE criterion (Table 2).

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

Radionuclide	Base Case Soil DCGL (pCi/g) ⁽¹⁾	Operational DCGL (pCi/g) ⁽²⁾	Required MDC (pCi/g) ⁽³⁾
H-3	4.12E+02	1.32E+02	1.65E+01
C-14	5.66E+00	1.81E+00	2.26E-01
Mn-54	1.74E+01	5.57E+00	6.96E-01
Fe-55	2.74E+04	8.77E+03	1.10E+03
Co-60	3.81E+00	1.22E+00	1.52E-01
Ag-108m	7.14E+00	2.28E+00	2.86E-01
Ni-63	7.23E+02	2.31E+02	2.89E+01
Sr-90	1.55E+00	4.96E-01	6.20E-02
Nb-94	7.12E+00	2.28E+00	2.85E-01
Tc-99	1.26E+01	4.03E+00	5.04E-01
Cs-134	4.67E+00	1.49E+00	1.87E-01
Cs-137	7.91E+00	2.53E+00	3.16E-01
Eu-152	1.01E+01	3.23E+00	4.04E-01
Eu-154	9.29E+00	2.97E+00	3.72E-01
Eu-155	3.92E+02	1.25E+02	1.57E+01
Pu-238	2.96E+01	9.47E+00	1.18E+00
Pu-239/240	2.67E+01	8.54E+00	1.07E+00
Pu-241	8.70E+02	2.78E+02	3.48E+01
Am-241	2.58E+01	8.26E+00	1.03E+00
Cm-243/244	2.90E+01	9.28E+00	1.16E+00

(1) The Base Case Soil DCGLs for soil are specified by the LTP in Chapter 6

(2) The Operational DCGL is equivalent to achieving 8 mrem per year TEDE

(3) The required MDC was 12% of the Operational DCGL

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Eleven (11) soils samples were collected and analyzed during characterization as discussed in Section 2. The samples were collected through biased sampling. Characterization included analyses for Hard to Detect (HTD) radionuclides. Cesium-137 was found to be the predominate radionuclide of concern in soil. Cobalt-60 was included in the survey design based on the 1997 scoping survey results. The mean and variability of Cs-137 and Co-60 in soil in this survey unit was determined during characterization.

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 to be performed before issue and after the instrument had been used. Control and accountability of survey instruments was to be maintained to assure the quality and prevent the loss of data.

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

4. SURVEY DESIGN

The level of effort associated with planning a survey is based on the complexity of the survey and nature of the hazards. To assist the FSS Engineers when preparing survey plans for FSS, guidance is provided in Procedure RPM 5.1-11, *"Preparation of Final Status Survey Plans"*. By design, the FSSP meets the ALARA criteria for soils as specified in Chapter 4 of the LTP. The FSSP uses an integrated sample design that combines scanning surveys and sampling which can be either random or biased.

Eleven (11) data points from characterization were used to determine concentration variability. The samples were collected through biased sampling over a simple grid design. The DQO process determined that Cs-137 and Co-60 would be the radionuclide of concern for soil in this survey unit (refer to Section 3). The sum of fractions or unity rule will be used with the individual Operational DCGLs because multiple radionuclides (Cs-137 and Co-60) are considered in the survey design. Other radionuclides identified during FSS would be evaluated to ensure adequate survey design.

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

The Elevated Measurement Comparison (EMC) did not apply to this survey unit since 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 Samples for Final Status Survey."* The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 0.79 to maintain the relative shift (Δ/σ) in the range of 1 and 3. 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

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20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. Survey design specified fifteen (15) surface soil samples for non-parametric statistical testing.

The grid pattern and locations of the soil samples were determined using Visual Sample Plan (VSP) in accordance with Procedure RPM 5.1-14, *"Identifying, and Marking Surface Sample Locations for Final Status Survey."* Visual Sample Plan was created by Pacific Northwest National Laboratory (PNNL) for the United States Department of Energy. A systematic triangular grid pattern with a random starting point was selected for sample design, which is appropriate for a Class 2 area.

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
9527-0001-001F	237268.05	668668.64
9527-0001-002F	237268.05	668755.82
9527-0001-003F	237268.05	668843.00
9527-0001-004F	237192.55	668450.69
9527-0001-005F	237192.55	668537.87
9527-0001-006F	237192.55	668625.05
9527-0001-007F	237192.55	668712.23
9527-0001-008F	237192.55	668799.41
9527-0001-009F	237117.05	668494.28
9527-0001-010F	237117.05	668581.46
9527-0001-011F	237117.05	668668.64
9527-0001-012F	237117.05	668755.82
9527-0001-013F	237041.55	668625.05
9527-0001-014F	237041.55	668712.23
9527-0001-015F	236966.06	668668.64

There were to be three (3) judgmental samples total for soil sampling. The soil sample locations would be determined based on professional judgment and observation during characterization and walkdowns to determine areas having the potential for residual radioactivity (e.g., runoff and collection, area disturbance). The number of judgmental samples represented about 20% of the number of samples that would be used for non-parametric statistical testing.

Although Procedure RPM 5.1-11 only specified that 5% of the samples be selected for HTD analysis, at least three (3) soil samples or 20% 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

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“RANDBETWEEN” function. Each sample would be 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.”

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

The LTP specifies that scanning will be performed in a combination of systematic and judgmental measurements for a Class 2 land area and cover 10% to 100% of the area. The fraction of scanning coverage was determined during the DQO process with the total amount and location(s) based on the likelihood of finding elevated activity during FSS. Approximately 25% of the survey unit was to be scanned based on the characterization survey and sampling results.

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, “Investigation Levels.” Table 4 provides a synopsis of the survey design.

Table 4 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Survey Unit Land Area	8,600 m ²	Based on AutoCAD-Lt and Visual Sample Plan calculations
Number of Measurements	15	Type 1 and Type 2 errors were 0.05, sigma was 0.10, the LBGR was adjusted to 0.79 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 2
Grid Spacing	20.74	Based on triangular grid
Interval Spacing	17.96	Based on triangular grid
Operational DCGL	2.53 pCi/g Cs-137 1.22 pCi/g Co-60	Administratively set to achieve 8 mrem in a year TEDE
Scan Survey Area Coverage	25% of the area	The LTP requires >10% area coverage for Class 2 Survey Units.
Scan Investigation Level	Detectable over background	Based on achieving the Operational DCGL

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5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2005-0054. The WP&IR package included a detailed FSSP, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

Survey activities occurred September 13, 2005 through September 22, 2005.

The scan areas were marked out and scanned for elevated readings (see Attachment 2 for Scan Area 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.

Using GPS coordinates, sample measurement locations were identified and marked with a surveyor's flag for identification. At each sample measurement location, a one (1) meter radius around the sample flag was scanned for elevated radiation levels.

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

Three (3) soil samples (9527-0001-004F, 9527-0001-006F and 9527-0001-007F) were randomly selected for HTD radionuclide analysis by the off-site laboratory.

Three (3) biased soil samples (9527-0001-016F through 9527-0001-018F) were collected and analyzed by the off-site laboratory for gamma spectroscopy.

The implementation of survey specific quality control measures included the collection of two (2) samples (9527-0001-010F and 9527-0001-013F) for "split sample" analysis by the off-site laboratory.

6. SURVEY RESULTS

The eighteen (18) soil sample measurement locations identified in the FSS plan and Addendum were scanned about a one (1) meter radius for elevated radiation levels. Table 5 provides an overview of the scan area survey. Scan area results are provided in Attachment 2.

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Table 5- Scan Area Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level (kcpm)	Above Action Level ⁽¹⁾
1	8.87	8.91	No
2	7.67	8.63	No
3	8.94	10.5	No
4	7.93	9.43	No
5	10.4	12.9	No
6	9.12	12.2	No
7	8.42	9.57	No
8	8.20	9.92	No
9	10.7	12.4	No
10	10.1	11.7	No
11	9.97	10.9	No
12	11.1	12.2	No
13	12.7	13.9	No
14	11.3	13.5	No
15	13.6	14.7	No
16	9.27	10.0	No
17	9.10	9.27	No
18	9.90	11.2	No

(1) FSS sample plans require movement of the sample measurement location to the area within the 1 meter radius yielding the response above the action level

Twenty-two areas were scanned for elevated radiation levels. Several elevated areas were identified. Table 6 provides an overview of the scan area survey. Scan area results are provided in Attachment 2.

Table 6- Scan Area Results

Scan Area	Highest Logged Reading (kcpm)	Action Level (kcpm)	Elevated Reading Identification ⁽¹⁾	Investigation Sample
1	8.42	10.2	None – no elevated areas identified	None
2	8.46	9.61	None – no elevated areas identified	None
3	10.9	10.2	9527-01-SC-01-25-0	None ⁽¹⁾
4	11.3	12.6	None – no elevated areas identified	None
5	12.1	12.0	9527-01-SC-01-42-0	None ⁽¹⁾

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Table 6- Scan Area Results

Scan Area	Highest Logged Reading (kepm)	Action Level (kepm)	Elevated Reading Identification ⁽¹⁾	Investigation Sample
6	10.5	11.5	None – no elevated areas identified	None
7	9.84	10.5	None – no elevated areas identified	None
8	9.75	10.2	None – no elevated areas identified	None
9	10.1	11.3	None – no elevated areas identified	None
10	9.81	10.7	None – no elevated areas identified	None
11	9.52	10.9	None – no elevated areas identified	None
12	10.7	12.5	None – no elevated areas identified	None
13	11.1	12.6	None – no elevated areas identified	None
14	10.5	10.9	None – no elevated areas identified	None
15	10.7	11.3	None – no elevated areas identified	None
16	8.44	9.30	None – no elevated areas identified	None
17	7.50	8.23	None – no elevated areas identified	None
18	9.56	9.87	None – no elevated areas identified	None
19	8.48	8.90	None – no elevated areas identified	None
20	9.31	10.2	None – no elevated areas identified	None
21	11.3	11.7	None – no elevated areas identified	None
22	11.7	13.0	None – no elevated areas identified	None

(1) SC is nomenclature associated with the barcodes used in the field where SC refers to Scan

(2) Refer to Section 8 for additional details

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories (GEL) – Charleston, South Carolina. The laboratory analyzed the fifteen (15) samples taken for non-parametric statistical testing and the associated duplicates using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDC. Gamma

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spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty). All could be de-selected or excluded using the 5% and 10% rule described in Section 4.

Cesium-137 was identified in all fifteen (15) samples. The mean of the results of gamma spectrometry analysis for each of the samples indicated Cs-137 at levels lower than the concentrations of Cs-137 found in soil at off-site locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063. Cobalt-60 was only identified in one (1) of the fifteen (15) samples.

None of the samples exceeded 58% of the Operational DCGL. Sample analysis did not require further investigation. A summary of the sample results is provided in Table 7.

Table 7- Summary of Soil Sample Results

Sample Number ⁽¹⁾	Cs-137 pCi/g	Co-60 pCi/g	Fraction of the Operational DCGL ⁽²⁾
9527-0001-001F	5.19E-01	1.26E-02	0.215
9527-0001-002F	2.43E-01	2.43E-02	0.116
9527-0001-003F	8.83E-01	-4.47E-03	0.345
9527-0001-004F	4.40E-01	1.00E-02	0.182
9527-0001-005F	3.12E-01	4.45E-03	0.127
9527-0001-006F	5.55E-01	2.08E-02	0.236
9527-0001-007F	5.63E-01	-9.59E-03	0.215
9527-0001-008F	4.16E-01	1.91E-02	0.180
9527-0001-009F	8.07E-01	6.04E-03	0.324
9527-0001-010F	3.31E-01	2.50E-02	0.151
9527-0001-011F	5.02E-01	-1.63E-04	0.198
9527-0001-012F	1.48E+00	-5.98E-03	0.580
9527-0001-013F	4.05E-01	-1.63E-02	0.147
9527-0001-014F	4.50E-01	1.61E-02	0.191
9527-0001-015F	2.69E-01	1.19E-02	0.116

(1) The Operational DCGLs are 2.53 pCi/g for Cs-137 and 1.22 pCi/g for Co-60 used in conjunction with the unity rule

The off-site laboratory also processed three (3) samples for HTD analysis as required by the sample plan. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC. Two (2) of the HTD radionuclides met the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty) in more than one sample. A result greater than two standard deviations uncertainty was reported once for Sr-90. Table 8 lists the results for the HTD radionuclides that could not be de-selected based on the 5% and 10% rules.

EAST MOUNTAIN SIDE
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Table 8-Hard-to-Detect Sample Results

Sample	Sr-90 pCi/g	C-14 pCi/g	Tc-99 pCi/g	Fraction of the Operational Level ⁽¹⁾
9527-0001-004F	2.05E-02	1.15E-01	2.37E-01	0.164
9527-0001-006F	-1.88E-02	1.03E-01	2.00E-01	0.069
9527-0001-007F	-1.03E-03	1.36E-01	1.07E-01	0.100

(1) The Operational DCGLs are 0.496 pCi/g for Sr-90, 1.81 pCi/g for C-14 and 4.03 pCi/g for Tc-99 used in conjunction with the unity rule

Three (3) 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. None of the samples exceeded 25% of the Operational DCGL. No further action or investigations were required (see Table 9).

Table 9 – Biased Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Fraction of the Operational DCGL ⁽¹⁾
9527-0001-016F	5.95E-01	1.24E-02	0.245
9527-0001-017F	4.19E-01	-3.49E-03	0.163
9527-0001-018F	5.71E-01	-1.69E-03	0.224

(1) The Operational DCGLs are 2.53 pCi/g for Cs-137 and 1.22 pCi/g for Co-60 used in conjunction with the unity rule

7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Thirteen percent (13%) of the samples were selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey.*" There was acceptable agreement between the field split results for sample 9527-0001-013F. There was unacceptable agreement between field split results for Cs-137 in sample 9527-0001-010F which was identified under Condition Report (CR) 05-0781. Evaluation of the data using the reported results for NORM resulted in acceptable agreement. The source of the disagreement for Cs-137 is likely a disproportionate amount of organic material in the field splits. A review of the Daily Survey Journals (field notes) and interviews with FSS Supervision indicate this to be the apparent cause. Field Supervision recalls that the rocky terrain and undergrowth made sample collection difficult.

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

8. INVESTIGATIONS AND RESULTS

Additional scanning was performed in two (2) small locations in March 2006 to obtain additional data relevant to the DQOs. The scanning was performed in two (2) strips approximately three (3) feet wide by thirty (30) long in scan area 3 and scan area 5. No elevated readings were identified.

9. REMEDIATION AND RESULTS

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

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

Three (3) HTD radionuclides were reported in concentrations exceeding the 5% and 10% rule for de-selection. Therefore, the individual Operational DCGLs for Sr-90, C-14 and Tc-99 were 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. The sampling design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. The Sign Test shows that the survey unit passes FSS.

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

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

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The range of the data, about 3.7 standard deviations, was not unusually large. The difference between the mean and median was 30% of the standard deviation which indicates positive skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot shows significant positive skewness as confirmed by the calculated skew of 1.0 and is probably due to the differences in terrain and the collection of runoff.

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

12. ANOMALIES

No anomalies were noted.

13. CONCLUSION

Survey Unit 9527-0001 has met the final DQOs of the FSS. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

The sample data passed the Sign Test. The null hypothesis was rejected. Graphical representation of data indicates significant positive skewness as that is probably due to the differences in terrain and the collection of runoff. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit was properly designated as Class 2.

As discussed in Section 1, the survey data results for this release record address the dose contribution due to soil as provided in LTP Equation 5-1. This survey unit is considered impacted by existing groundwater radioactive contamination as the survey unit is within the capture zone perimeter for an affected monitoring well. The dose contribution from the existing groundwater contamination will be addressed later and will be included to show compliance with site unrestricted release criteria as required by the LTP. This survey unit is not considered impacted by future groundwater radioactive contamination, as there are no underground structures, systems or components containing residual radioactive material within the groundwater saturated zone in the area. The dose contribution from future groundwater, the third component of Equation 5-1, is therefore zero.

14. ATTACHMENTS

14.1 Attachment 1 – Figures

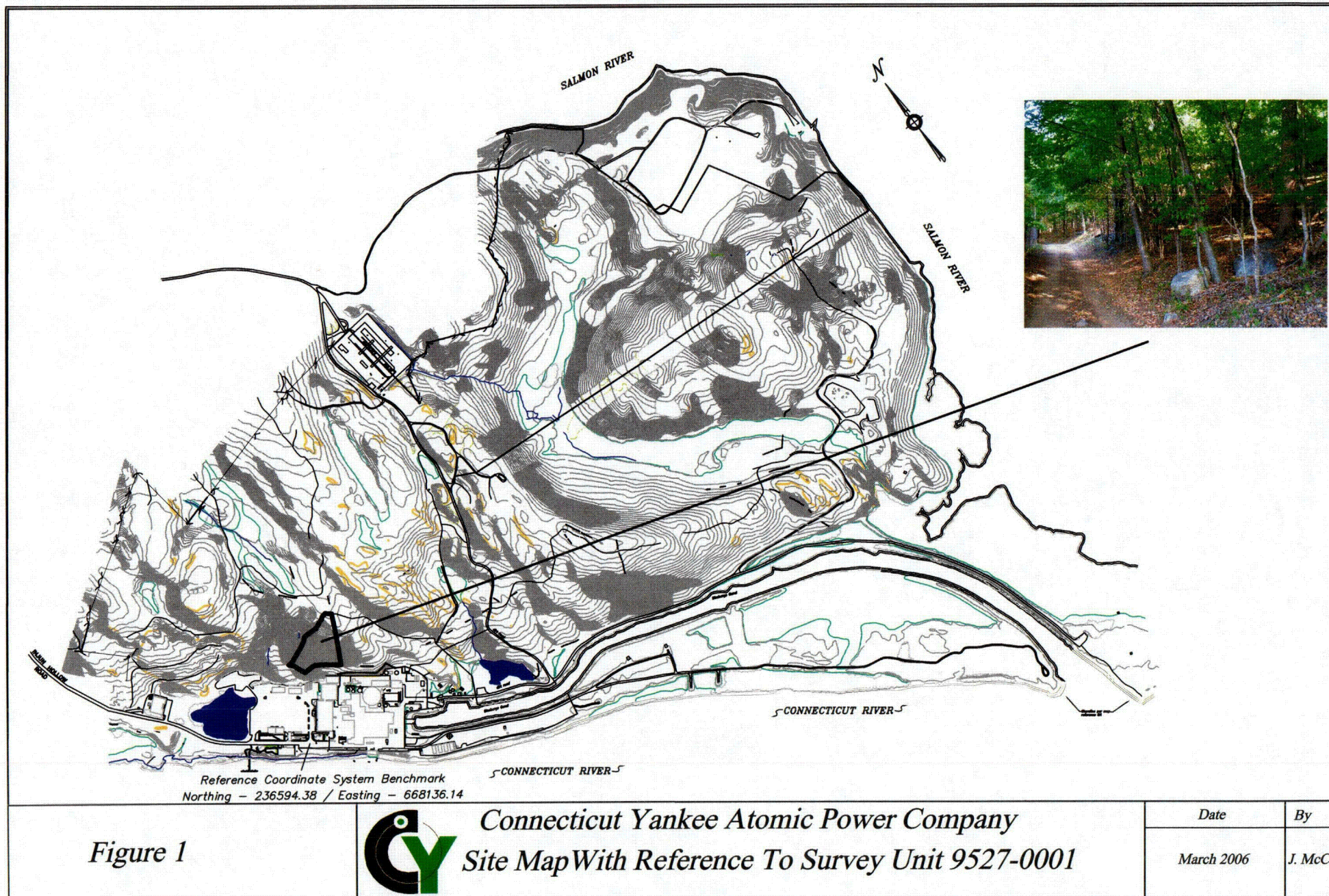
14.2 Attachment 2 – Sample and Statistical Data

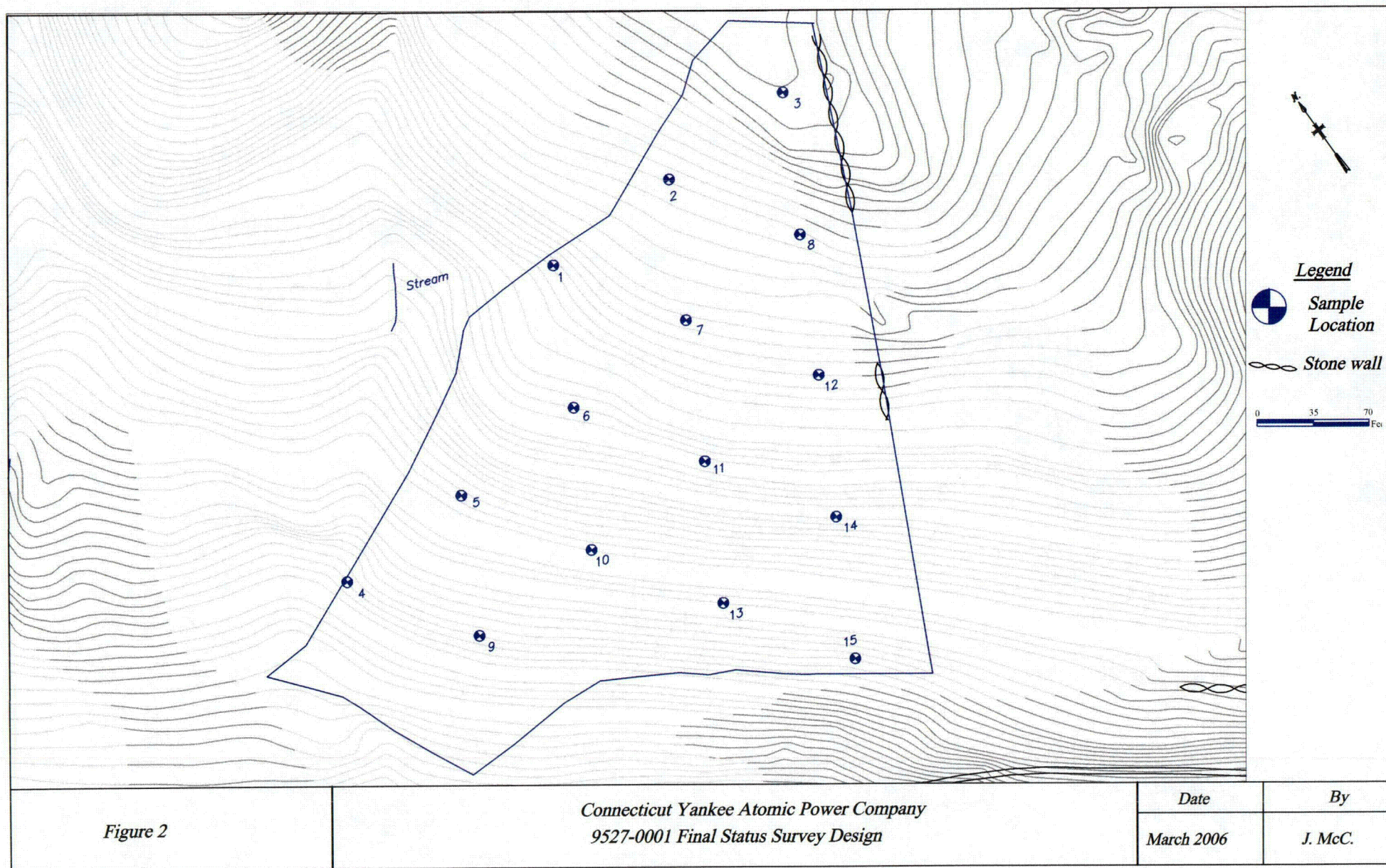
EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001

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Attachment 1
Figures
(5 pages)

col





C-05

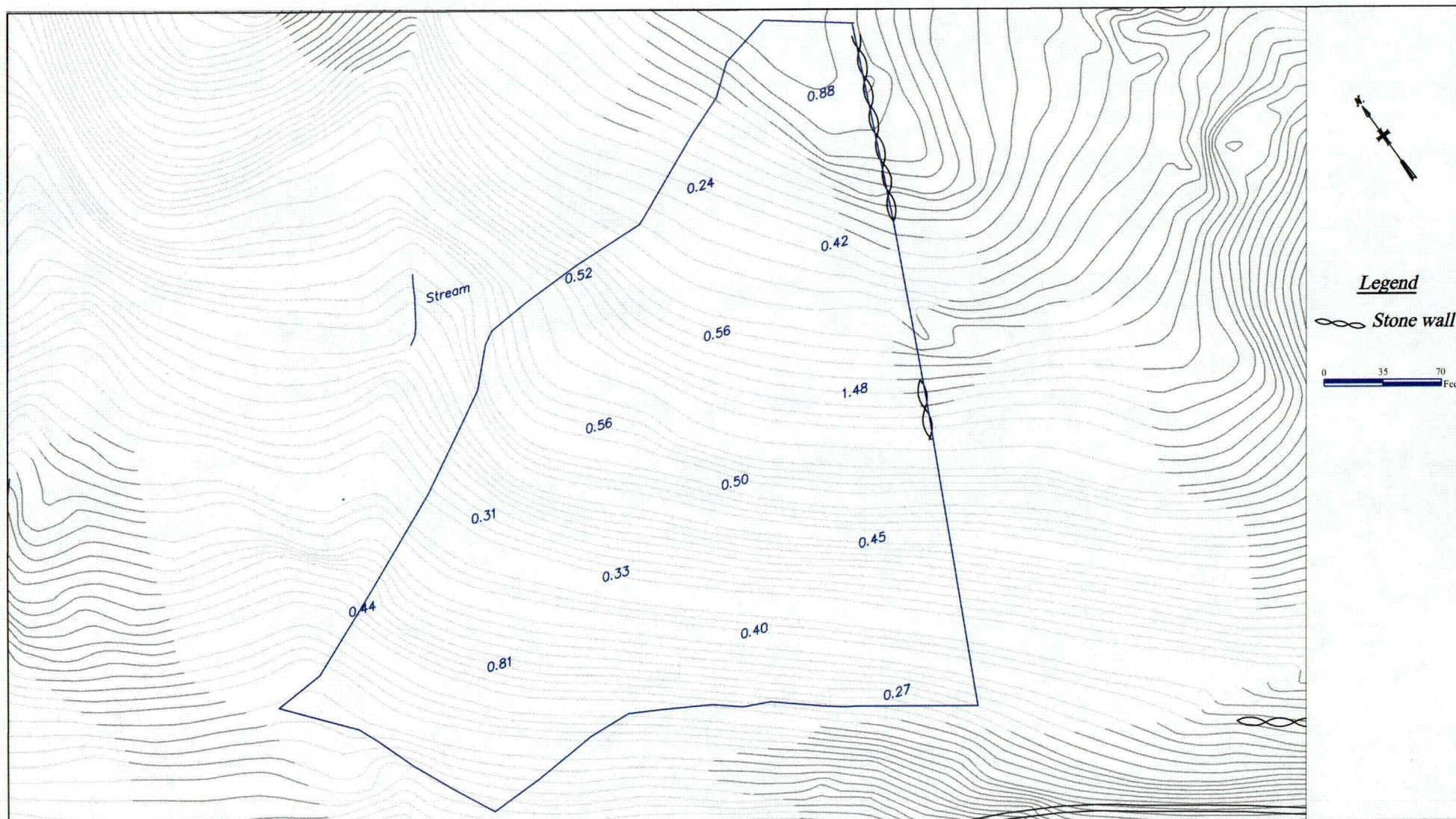


Figure 3

Connecticut Yankee Atomic Power Company
9527-0001 Final Status Survey Cs-137 Posting Plot

Date	By
March 2006	J. McC.

C-04

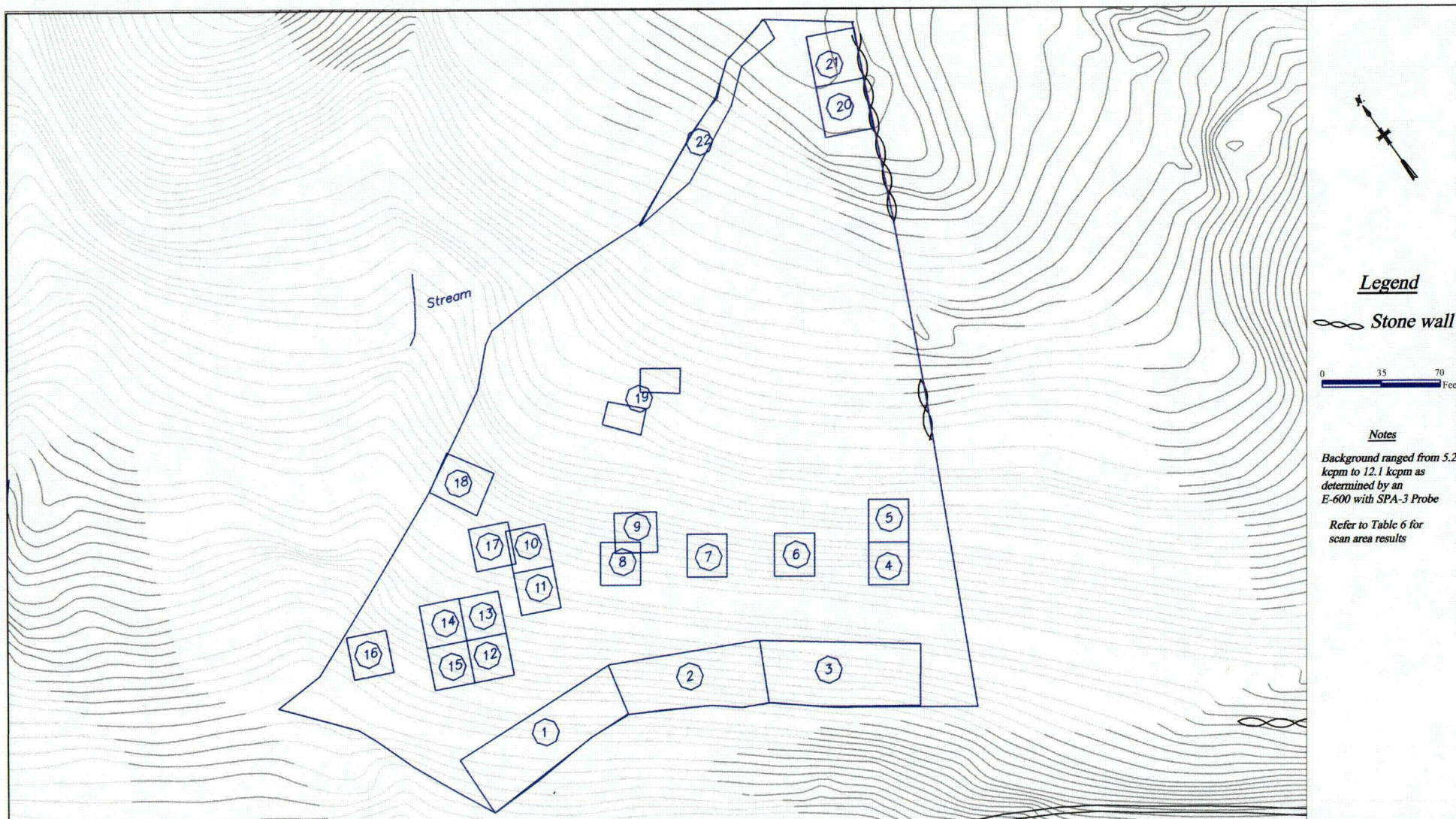


Figure 4

Connecticut Yankee Atomic Power Company
9527-0001 Final Status Survey Scan Areas

Date	By
March 2006	J. McC.

C-05

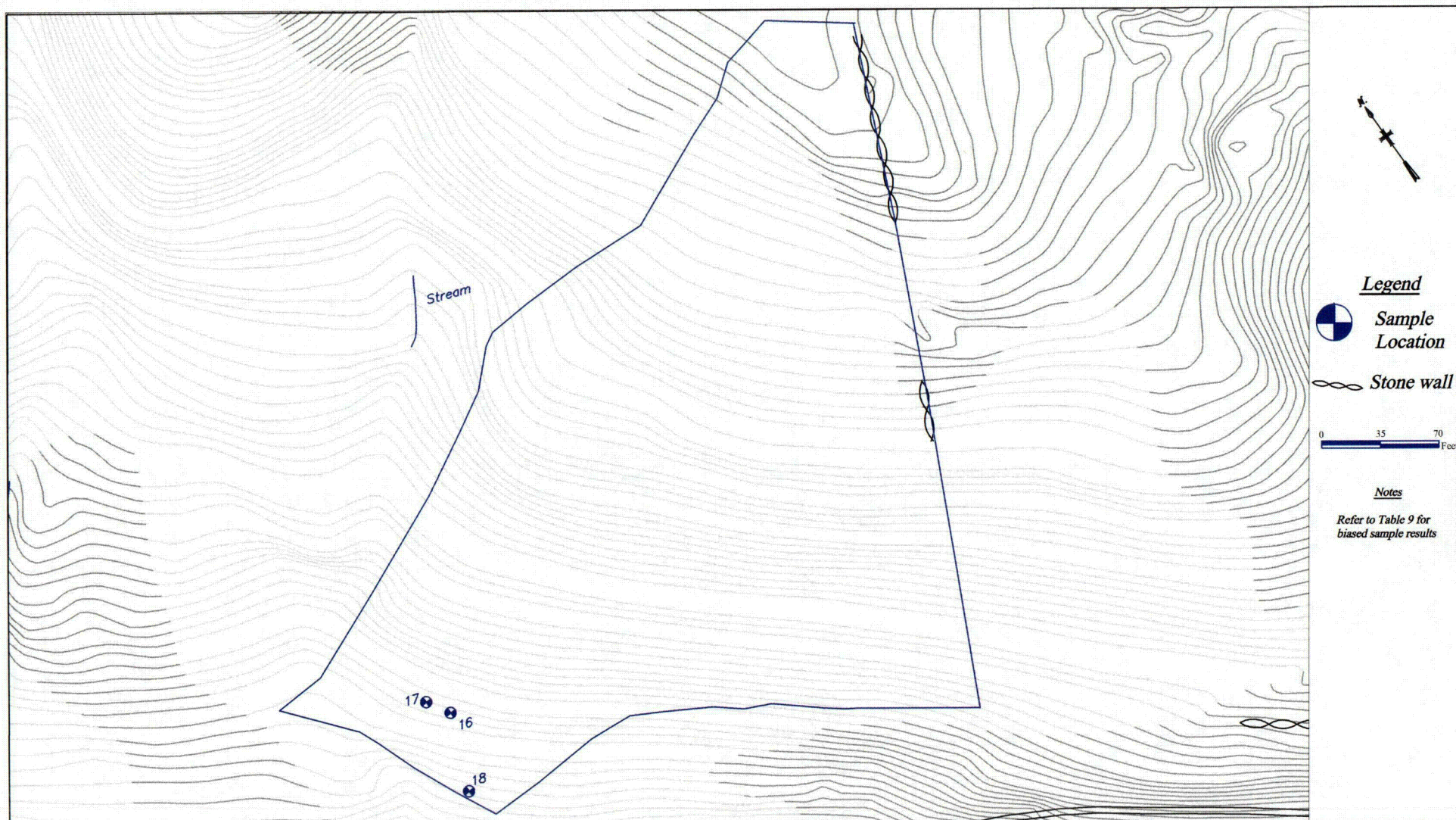


Figure 5

Connecticut Yankee Atomic Power Company
9527-0001 Biased and Investigation Sample Locations

Date	By
March 2006	J. McC.

EAST MOUNTAIN SIDE
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Attachment 2
Sample and Statistical Data

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Attachment 2a
Sample Data
(80 Pages)

Table of Contents

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General Narrative

**CASE NARRATIVE
For
CONNECTICUT YANKEE
RE: Soils
PO# 002332
Work Order: 146590
SDG: MSR #05-2329**

October 19, 2005

Laboratory Identification:

General Engineering Laboratories, LLC

Mailing Address:

P.O. Box 30712
Charleston, South Carolina 29417

Express Mail Delivery and Shipping Address:

2040 Savage Road
Charleston, South Carolina 29407

Telephone Number:

(843) 556-8171

Summary:

Sample receipt

The samples for the Soil Project for work order 146590 arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on September 28, 2005. All sample containers arrived without any visible signs of tampering or breakage. The chain of custody contained the proper documentation and signatures.

The laboratory received the following samples:

<u>Sample ID</u>	<u>Client Sample ID</u>
146590001	9527-0001-001F
146590002	9527-0001-002F
146590003	9527-0001-003F
146590004	9527-0001-005F
146590005	9527-0001-008F
146590006	9527-0001-009F
146590007	9527-0001-010F
146590008	9527-0001-010FS

<u>Sample ID</u>	<u>Client Sample ID</u>
146590009	9527-0001-011F
146590010	9527-0001-012F
146590011	9527-0001-013F
146590012	9527-0001-013FS
146590013	9527-0001-014F
146590014	9527-0001-015F
146590015	9527-0001-016F
146590016	9527-0001-017F
146590017	9527-0001-018F
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F

Items of Note:

There are no items of note.

Case Narrative:

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

Analytical Request:

Seventeen soil samples were analyzed for FSSGAM.
Three soil samples were analyzed for FSSALL

Internal Chain of Custody:

Custody was maintained for all the samples.

Data Package:

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

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



Cheryl Jones
Project Manager

Chain of Custody and Supporting Documentation

Connecticut Yankee Atomic Power Company

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

Chain of Custody Form

No. 2005-00401

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Pete Hollenbeck 860-267-3923						FSSGAM	FSSALL						Comments: % 146590		
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)															
Priority: <input checked="" type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input type="checkbox"/> 7 D. Other: Per Pete Hollenbeck - 8/19/05															
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID		
9527-0001-001F	9/20/05	1010	TS	G	BP	X									
9527-0001-002F	9/19/05	0820	TS	G	BP	X									
9527-0001-003F	9/19/05	0825	TS	G	BP	X									
9527-0001-004F	9/19/05	1415	TS	G	BP		X								
9527-0001-005F	9/19/05	1410	TS	G	BP	X									
9527-0001-006F	9/19/05	0855	TS	G	BP		X								
9527-0001-007F	9/19/05	0907	TS	G	BP		X								
9527-0001-008F	9/20/05	1004	TS	G	BP	X									
9527-0001-009F	9/19/05	1405	TS	G	BP	X									
9527-0001-010F	9/19/05	1503	TS	G	BP	X									
9527-0001-010FS	9/19/05	1503	TS	G	BP	X									
NOTES: PO #: 002332 MSR #: 05-2329 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: 23 Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N Custody Seal Intact? Y <input checked="" type="checkbox"/> N	
1) Relinquished By <i>[Signature]</i>			Date/Time 9/27/05 1330			2) Received By <i>[Signature]</i>			Date/Time 9-28-05 0900			Bill of Lading # 7917 3970 7257			
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. 2005-00402		
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size-Type Code	Analyses Requested						Lab Use Only		
Contact Name & Phone: Pete Hollenbeck 860-267-3923						FSSGAM							Comments: <div style="text-align: right;">1 146590</div>	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input type="checkbox"/> 7 D. Other:														
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID	
9527-0001-011F	9/19/05	1050	TS	G	BP	X								
9527-0001-012F	9/19/05	1042	TS	G	BP	X								
9527-0001-013F	9/19/05	1508	TS	G	BP	X								
9527-0001-013FS	9/19/05	1508	TS	G	BP	X								
9527-0001-014F	9/19/05	1455	TS	G	BP	X								
9527-0001-015F	9/19/05	1451	TS	G	BP	X								
9527-0001-016F	9/19/05	1400	TS	G	BP	X								
9527-0001-017F	9/19/05	1356	TS	G	BP	X								
9527-0001-018F	9/19/05	1352	TS	G	BP	X								
NOTES: PO # 002332 MSR #: 05-2329 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: <u>23</u> Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N Custody Seal Intact?	
1) Relinquished By <u>[Signature]</u> Date/Time <u>9/27/05 1330</u>			2) Received By <u>[Signature]</u> Date/Time <u>9-28-05 0900</u>			Bill of Lading # <u>79173970 7257</u>						Y <input checked="" type="checkbox"/> N		
3) Relinquished By _____ Date/Time _____			4) Received By _____ Date/Time _____											
5) Relinquished By _____ Date/Time _____			6) Received By _____ Date/Time _____											

Figure 1. Sample Check-in List

Date/Time Received: 9-28-05 0900
SDG#: MSR#05-2329
Work Order Number: 146590
Shipping Container ID: FEB EX 7917 3970 7257 Chain of Custody # 2005-00401 + 00402
1. Custody Seals on shipping container intact? Yes ☐ No ☐ NAV
2. Custody Seals dated and signed? Yes ☐ No ☐ NAV
3. Chain-of-Custody record present? Yes ☒ No ☐
4. Cooler temperature 23° no ice
5. Vermiculite/packing materials is: Wet ☐ Dry ☐ NAV
6. Number of samples in shipping container: 20
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

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

9. Samples are:

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

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

Sample Custodian/Laboratory: Mike Kimbler Date: 9-28-05

Telephoned to: _____ On _____ By _____



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>CDW Yankee / RAD DATA</u>	SDG/ARCOC/Work Order: <u>146590</u>
Date Received: <u>9-28-05</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>IMK</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 40</u>
B PCB Regulated?	✓			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification: _____				Initials <u>CD</u> Date: <u>9/28/05</u>

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
SDG MSR#05-2329**

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:	471786
Prep Batch Number:	467615
Dry Soil Prep GL-RAD-A-021 Batch Number:	467614

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200957639	Method Blank (MB)
1200957640	146590018(9527-0001-004F) Sample Duplicate (DUP)
1200957641	146590018(9527-0001-004F) Matrix Spike (MS)
1200957642	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

Quality Control (QC) Information:

Blank Information

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

Designated QC

The following sample was used for QC: 146590018 (9527-0001-004F).

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. An NCR was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

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:	471787
Prep Batch Number:	467615
Dry Soil Prep GL-RAD-A-021 Batch Number:	467614

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200957643	Method Blank (MB)
1200957644	146590018(9527-0001-004F) Sample Duplicate (DUP)
1200957645	146590018(9527-0001-004F) Matrix Spike (MS)
1200957646	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 146590018 (9527-0001-004F).

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. An NCR was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

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:	471788
Prep Batch Number:	467615
Dry Soil Prep GL-RAD-A-021 Batch Number:	467614

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200957647	Method Blank (MB)
1200957648	146590018(9527-0001-004F) Sample Duplicate (DUP)
1200957649	146590018(9527-0001-004F) Matrix Spike (MS)
1200957650	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 7.

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: 146590018 (9527-0001-004F).

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. An NCR was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	GFPC, Sr90, solid - 0.025 pCi/g
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:	472639
Prep Batch Number:	467615
Dry Soil Prep GL-RAD-A-021 Batch Number:	467614

Sample ID Client ID

146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200959675	Method Blank (MB)
1200959676	146590019(9527-0001-006F) Sample Duplicate (DUP)
1200959677	146590019(9527-0001-006F) Matrix Spike (MS)
1200959678	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 9.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 146590019 (9527-0001-006F).

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. An NCR was not generated for this SDG.

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: 468332

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200949447	Method Blank (MB)
1200949448	146692033(9804-0000-Z12-4-01) Sample Duplicate (DUP)
1200949449	146692033(9804-0000-Z12-4-01) Matrix Spike (MS)
1200949450	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 12.

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 146692033 (9804-0000-Z12-4-01).

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. An NCR was not generated for this SDG.

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:	473150
Prep Batch Number:	467615
Dry Soil Prep GL-RAD-A-021 Batch Number:	467614

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200960974	Method Blank (MB)
1200960975	146692033(9804-0000-Z12-4-01) Sample Duplicate (DUP)
1200960976	146692033(9804-0000-Z12-4-01) Matrix Spike (MS)
1200960977	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 146692033 (9804-0000-Z12-4-01).

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 re-prepped due to the quench number being outside the calibration range.

Miscellaneous Information:**NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG:

NCR 260476 was generated due to Container scanning event for custody missed. 1. The analyst did not scan the samples 146590018, 146590019, 146590020, 146692033, and 146692034 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on the proper scanning procedures. 1. Reporting results.

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:	470704
Prep Batch Number:	467615
Dry Soil Prep GL-RAD-A-021 Batch Number:	467614

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200954979	Method Blank (MB)
1200954980	146692033(9804-0000-Z12-4-01) Sample Duplicate (DUP)
1200954981	146692033(9804-0000-Z12-4-01) Matrix Spike (MS)
1200954982	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 7.

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: 146692033 (9804-0000-Z12-4-01).

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. An NCR was not generated for this SDG.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: LSC, Tritium Dist, Solid - 1 to 2 pCi/g
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 467508

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200947551	Method Blank (MB)
1200947552	145495003(9802-0000-003RA-SBIV) Sample Duplicate (DUP)
1200947553	145495003(9802-0000-003RA-SBIV) Matrix Spike (MS)
1200947554	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 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: 145495003 (9802-0000-003RA-SBIV).

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 1200947553 (9802-0000-003RA-SBIV) and 1200947554 (LCS) were recounted due to low/high recovery.

Miscellaneous Information:**NCR Documentation**

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

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: 470741

Sample ID	Client ID
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200955096	Method Blank (MB)
1200955097	146692033(9804-0000-Z12-4-01) Sample Duplicate (DUP)
1200955098	146692033(9804-0000-Z12-4-01) Matrix Spike (MS)
1200955099	Laboratory Control Sample (LCS)

SOP Reference

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

Calibration Information:**Calibration Information**

All initial and continuing calibration requirements have been met.

Standards Information

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

Sample Geometry

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

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

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

Designated QC

The following sample was used for QC: 146692033 (9804-0000-Z12-4-01).

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. An NCR was not generated for this SDG.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information**Product:**

Gamma,Solid-FSS GAM & ALL FSS

Analytical Method:

EML HASL 300, 4.5.2.3

Prep Method:

Dry Soil Prep

Analytical Batch Number:

467961

Prep Batch Number:

467614

Sample ID	Client ID
146590001	9527-0001-001F
146590002	9527-0001-002F
146590003	9527-0001-003F
146590004	9527-0001-005F
146590005	9527-0001-008F
146590006	9527-0001-009F
146590007	9527-0001-010F
146590008	9527-0001-010FS
146590009	9527-0001-011F
146590010	9527-0001-012F
146590011	9527-0001-013F
146590012	9527-0001-013FS
146590013	9527-0001-014F
146590014	9527-0001-015F
146590015	9527-0001-016F
146590016	9527-0001-017F
146590017	9527-0001-018F
146590018	9527-0001-004F
146590019	9527-0001-006F
146590020	9527-0001-007F
1200948602	Method Blank (MB)
1200948603	146590001(9527-0001-001F) Sample Duplicate (DUP)
1200948604	Laboratory Control Sample (LCS)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 146590001 (9527-0001-001F).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

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

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Sample 146590001 (9527-0001-001F) was recounted due to high relative percent difference/relative error ratio.

Miscellaneous Information:**NCR Documentation**

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

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to interference.	Europium-155	146590008
UI	Data rejected due to low abundance.	Actinium-228	146590002
		Cesium-134	1200948603
			146590001
			146590003
			146590004
			146590007
			146590008
			146590009
			146590014
			146590016
		Lead-214	1200948602
		Silver-108m	1200948602

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: At Puel E Cwue 10/28/05

COMPANY - WIDE NONCONFORMANCE REPORT			
Mo.Day Yr. 27-OCT-05	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: GAMMA SPECTROMETER	Test / Method: EML HASL 300, 4.5.2.3	Matrix Type: Solid	Client Code: YANK
Batch ID: 467961	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 146590(MSR#05-2329) Application Issues: Failed RPD for DUP			
Specification and Requirements Nonconformance Description:		NRG Disposition:	
1. The relative percent difference for Bi-214 and Ra-226 does not meet the client requirements. Bi-214 and Ra-226 are naturally occurring isotopes.		1. Reporting results.	

Originator's Name:
Jodi Cummings 28-OCT-05

Data Validator/Group Leader:
Melanie Aycock 28-OCT-05

Quality Review:

Director:

COMPANY - WIDE NONCONFORMANCE REPORT			
Mo. Day Yr. 20-OCT-05	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: LSC	Test / Method: DOE RESL Fe-1, Modified	Matrix Type: Solid	Client Code: YANK
Batch ID: 473150	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 146590(MSR#05-2329), 146692(MSR#05-2332) Application Issues: Container scanning event for custody missed			
Specification and Requirements Nonconformance Description:		NRG Disposition:	
1. The analyst did not scan the samples 146590018, 146590019, 146590020, 146692033, and 146692034 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on the proper scanning procedures.		1. Reporting results.	

Originator's Name:
Melanie Aycock 20-OCT-05

Data Validator/Group Leader:
Theresa Parrotte 20-OCT-05

Quality Review:

Director:

SAMPLE DATA SUMMARY

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#05-2329 GEL Work Order: 146590

The Qualifiers in this report are defined as follows:

- * Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- < Result is less than amount reported.
- > Result is greater than amount reported.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- D Sample has been diluted and reanalyzed after initially exceeding inst. calibration range
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- P The response between the confirmation and the primary columns is >40% Different.
- R Sample results are rejected.
- U Target analyte was analyzed for but not detected above the MDL or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- Y QC Samples were not spiked with this compound.
- Z Paint Filter qualifier: Particulates passed through the filter. No free liquids were observed.
- d The 2:1 depletion requirement was not met for this sample
- h Sample preparation or preservation holding time exceeded.
- ND The analyte concentration is not detected above the reporting limit.

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.

** Indicates the analyte is a surrogate compound.

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

Heidi G. Chew

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID:	9527-0001-001F	Project:	YANK01204
Sample ID:	146590001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	20-SEP-05		
Receive Date:	28-SEP-05		
Collector:	Client		
Moisture:	13.6%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS</i>													
Actinium-228		1.12	+/-0.193	0.0612	+/-0.189	0.131	pCi/g						
Americium-241	U	-0.053	+/-0.166	0.105	+/-0.163	0.218	pCi/g						
Bismuth-212		0.750	+/-0.345	0.132	+/-0.338	0.280	pCi/g						
Bismuth-214		0.946	+/-0.108	0.036	+/-0.106	0.0757	pCi/g						
Cesium-134	UI	0.00	+/-0.0391	0.0242	+/-0.0383	0.0509	pCi/g						
Cesium-137		0.519	+/-0.0524	0.0186	+/-0.0514	0.0394	pCi/g						
Cobalt-60	U	0.0126	+/-0.0229	0.0194	+/-0.0224	0.0421	pCi/g						
Europium-152	U	-0.0189	+/-0.0591	0.0497	+/-0.0579	0.104	pCi/g						
Europium-154	U	-0.00297	+/-0.0691	0.0554	+/-0.0678	0.119	pCi/g						
Europium-155	U	0.0476	+/-0.0952	0.0569	+/-0.0933	0.118	pCi/g						
Lead-212		1.05	+/-0.0788	0.0305	+/-0.0772	0.0634	pCi/g						
Lead-214		1.16	+/-0.109	0.035	+/-0.107	0.0733	pCi/g						
Manganese-54	U	0.0246	+/-0.0268	0.0192	+/-0.0262	0.0408	pCi/g						
Niobium-94	U	0.0102	+/-0.0208	0.0174	+/-0.0204	0.0366	pCi/g						
Potassium-40		11.0	+/-0.888	0.168	+/-0.870	0.369	pCi/g						
Radium-226		0.946	+/-0.108	0.036	+/-0.106	0.0757	pCi/g						
Silver-108m	U	-0.0139	+/-0.0195	0.0157	+/-0.0192	0.0331	pCi/g						
Thallium-208		0.323	+/-0.0531	0.016	+/-0.052	0.034	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	AXP2	09/29/05	1619	467614

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3
2	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-001F
Sample ID: 146590001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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BD Results below the MDC or low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-002F
Sample ID: 146590002
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 22%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS</i>												
Actinium-228	UUI	0.00	+/-0.333	0.199	+/-0.326	0.414	pCi/g					
Americium-241	U	0.00512	+/-0.0542	0.0455	+/-0.0531	0.0937	pCi/g					
Bismuth-212	U	0.568	+/-0.433	0.285	+/-0.424	0.602	pCi/g					
Bismuth-214		0.840	+/-0.169	0.057	+/-0.166	0.121	pCi/g					
Cesium-134	U	-0.00964	+/-0.0486	0.0392	+/-0.0476	0.0833	pCi/g					
Cesium-137		0.243	+/-0.0769	0.0368	+/-0.0754	0.0777	pCi/g					
Cobalt-60	U	0.0243	+/-0.0493	0.0375	+/-0.0484	0.0813	pCi/g					
Europium-152	U	-0.0335	+/-0.104	0.0842	+/-0.102	0.176	pCi/g					
Europium-154	U	-0.123	+/-0.126	0.0928	+/-0.123	0.203	pCi/g					
Europium-155	U	-0.028	+/-0.0895	0.072	+/-0.0877	0.149	pCi/g					
Lead-212		0.575	+/-0.108	0.0457	+/-0.106	0.095	pCi/g					
Lead-214		0.838	+/-0.155	0.0615	+/-0.152	0.129	pCi/g					
Manganese-54	U	0.00959	+/-0.0439	0.0364	+/-0.043	0.0774	pCi/g					
Niobium-94	U	0.010	+/-0.0375	0.0316	+/-0.0368	0.0668	pCi/g					
Potassium-40		6.63	+/-1.13	0.319	+/-1.11	0.701	pCi/g					
Radium-226		0.840	+/-0.169	0.057	+/-0.166	0.121	pCi/g					
Silver-108m	U	-0.0132	+/-0.0361	0.0285	+/-0.0354	0.060	pCi/g					
Thallium-208		0.238	+/-0.0731	0.0341	+/-0.0717	0.072	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-002F
Sample ID: 146590002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-003F
Sample ID: 146590003
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
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
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS</i>												
Actinium-228		0.648	+/-0.189	0.0626	+/-0.185	0.136	pCi/g					
Americium-241	U	0.0315	+/-0.152	0.118	+/-0.149	0.246	pCi/g					
Bismuth-212		0.392	+/-0.296	0.167	+/-0.290	0.355	pCi/g					
Bismuth-214		1.08	+/-0.134	0.0405	+/-0.132	0.0856	pCi/g					
Cesium-134	UUI	0.00	+/-0.0292	0.024	+/-0.0286	0.0511	pCi/g					
Cesium-137		0.883	+/-0.0807	0.0207	+/-0.0791	0.0441	pCi/g					
Cobalt-60	U	-0.00447	+/-0.0283	0.022	+/-0.0277	0.0481	pCi/g					
Europium-152	U	-0.0847	+/-0.0666	0.0513	+/-0.0652	0.108	pCi/g					
Europium-154	U	-0.00969	+/-0.0926	0.0625	+/-0.0908	0.136	pCi/g					
Europium-155	U	0.0147	+/-0.0789	0.0663	+/-0.0774	0.138	pCi/g					
Lead-212		0.641	+/-0.0755	0.0353	+/-0.074	0.0734	pCi/g					
Lead-214		1.26	+/-0.124	0.0396	+/-0.122	0.0834	pCi/g					
Manganese-54	U	0.000602	+/-0.0281	0.0232	+/-0.0275	0.0494	pCi/g					
Niobium-94	U	0.0301	+/-0.0361	0.0194	+/-0.0354	0.0411	pCi/g					
Potassium-40		7.42	+/-0.860	0.225	+/-0.842	0.491	pCi/g					
Radium-226		1.08	+/-0.134	0.0405	+/-0.132	0.0856	pCi/g					
Silver-108m	U	-0.00766	+/-0.0264	0.0186	+/-0.0259	0.0392	pCi/g					
Thallium-208		0.154	+/-0.0511	0.0219	+/-0.0501	0.0464	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-003F
Sample ID: 146590003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-005F
Sample ID: 146590004
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		1.09	+/-0.204	0.0493	+/-0.200	0.106	pCi/g						
Americium-241	U	-0.0228	+/-0.0698	0.0611	+/-0.0684	0.126	pCi/g						
Bismuth-212		0.730	+/-0.318	0.130	+/-0.312	0.274	pCi/g						
Bismuth-214		0.834	+/-0.131	0.0328	+/-0.129	0.0687	pCi/g						
Cesium-134	UUI	0.00	+/-0.0287	0.0229	+/-0.0281	0.0478	pCi/g						
Cesium-137		0.312	+/-0.050	0.0173	+/-0.049	0.0364	pCi/g						
Cobalt-60	U	0.00445	+/-0.0192	0.016	+/-0.0189	0.0346	pCi/g						
Europium-152	U	-0.0148	+/-0.0627	0.0452	+/-0.0614	0.094	pCi/g						
Europium-154	U	-0.0476	+/-0.0659	0.0501	+/-0.0645	0.107	pCi/g						
Europium-155	U	0.0659	+/-0.0673	0.0504	+/-0.0659	0.104	pCi/g						
Lead-212		1.17	+/-0.119	0.0265	+/-0.116	0.0549	pCi/g						
Lead-214		1.11	+/-0.138	0.0305	+/-0.135	0.0636	pCi/g						
Manganese-54	U	-0.00853	+/-0.0242	0.0192	+/-0.0237	0.0403	pCi/g						
Niobium-94	U	0.00267	+/-0.0197	0.0164	+/-0.0193	0.0343	pCi/g						
Potassium-40		11.5	+/-1.04	0.141	+/-1.02	0.308	pCi/g						
Radium-226		0.834	+/-0.131	0.0328	+/-0.129	0.0687	pCi/g						
Silver-108m	U	-0.00179	+/-0.019	0.0155	+/-0.0186	0.0323	pCi/g						
Thallium-208		0.378	+/-0.0625	0.0158	+/-0.0612	0.0333	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Address : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-005F
Sample ID: 146590004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-008F
Sample ID: 146590005
Matrix: TS
Collect Date: 20-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS</i>												
Actinium-228		0.740	+/-0.197	0.0687	+/-0.193	0.149	pCi/g					
Americium-241	U	0.00329	+/-0.113	0.089	+/-0.111	0.184	pCi/g					
Bismuth-212		0.444	+/-0.317	0.179	+/-0.311	0.379	pCi/g					
Bismuth-214		0.909	+/-0.138	0.0381	+/-0.135	0.0809	pCi/g					
Cesium-134	U	0.0248	+/-0.0296	0.026	+/-0.029	0.0553	pCi/g					
Cesium-137		0.416	+/-0.0689	0.0214	+/-0.0675	0.0455	pCi/g					
Cobalt-60	U	0.0191	+/-0.0271	0.024	+/-0.0265	0.0525	pCi/g					
Europium-152	U	-0.038	+/-0.0647	0.0521	+/-0.0634	0.110	pCi/g					
Europium-154	U	-0.0432	+/-0.0894	0.0699	+/-0.0877	0.152	pCi/g					
Europium-155	U	0.0462	+/-0.0689	0.0598	+/-0.0675	0.124	pCi/g					
Lead-212		0.652	+/-0.0887	0.0311	+/-0.087	0.0646	pCi/g					
Lead-214		0.976	+/-0.141	0.0356	+/-0.138	0.0751	pCi/g					
Manganese-54	U	0.0294	+/-0.0284	0.0252	+/-0.0279	0.0534	pCi/g					
Niobium-94	U	0.0186	+/-0.0227	0.0201	+/-0.0223	0.0426	pCi/g					
Potassium-40		12.1	+/-1.32	0.204	+/-1.30	0.453	pCi/g					
Radium-226		0.909	+/-0.138	0.0381	+/-0.135	0.0809	pCi/g					
Silver-108m	U	-0.00402	+/-0.023	0.0186	+/-0.0225	0.0392	pCi/g					
Thallium-208		0.235	+/-0.0517	0.0212	+/-0.0507	0.0449	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-008F
Sample ID: 146590005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Address : Haddam Neck Plant
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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-009F
Sample ID: 146590006
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 10.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		0.980	+/-0.282	0.0904	+/-0.276	0.197	pCi/g						
Americium-241	U	0.0379	+/-0.0581	0.0437	+/-0.057	0.0897	pCi/g						
Bismuth-212		0.992	+/-0.498	0.238	+/-0.488	0.507	pCi/g						
Bismuth-214		1.14	+/-0.176	0.0512	+/-0.172	0.109	pCi/g						
Cesium-134	U	0.0671	+/-0.064	0.0364	+/-0.0627	0.0774	pCi/g						
Cesium-137		0.807	+/-0.110	0.0294	+/-0.107	0.0627	pCi/g						
Cobalt-60	U	0.00604	+/-0.0313	0.0262	+/-0.0306	0.0585	pCi/g						
Europium-152	U	0.150	+/-0.158	0.0761	+/-0.155	0.159	pCi/g						
Europium-154	U	0.00525	+/-0.106	0.0874	+/-0.104	0.191	pCi/g						
Europium-155	U	-0.034	+/-0.0825	0.0666	+/-0.0808	0.137	pCi/g						
Lead-212		1.25	+/-0.164	0.0411	+/-0.161	0.0855	pCi/g						
Lead-214		1.07	+/-0.175	0.0548	+/-0.172	0.115	pCi/g						
Manganese-54	U	-0.0215	+/-0.037	0.0295	+/-0.0363	0.0633	pCi/g						
Niobium-94	U	0.0189	+/-0.0311	0.0264	+/-0.0305	0.0563	pCi/g						
Potassium-40		10.8	+/-1.35	0.296	+/-1.33	0.653	pCi/g						
Radium-226		1.14	+/-0.176	0.0512	+/-0.172	0.109	pCi/g						
Silver-108m	U	-0.0154	+/-0.0317	0.0253	+/-0.0311	0.0534	pCi/g						
Thallium-208		0.370	+/-0.0855	0.0307	+/-0.0837	0.0649	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Address : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-009F
Sample ID: 146590006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-010F
Sample ID: 146590007
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 8.93%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
Gamma, Solid-FSS GAM & ALL FSS													
Actinium-228		1.32	+/-0.181	0.0515	+/-0.178	0.111	pCi/g						
Americium-241	U	0.126	+/-0.127	0.103	+/-0.125	0.212	pCi/g		MJH1	10/23/05	1741	467961	1
Bismuth-212		0.813	+/-0.300	0.122	+/-0.294	0.260	pCi/g						
Bismuth-214		0.924	+/-0.104	0.0334	+/-0.102	0.0702	pCi/g						
Cesium-134	UUI	0.00	+/-0.0389	0.0228	+/-0.0381	0.0478	pCi/g						
Cesium-137		0.331	+/-0.0439	0.0174	+/-0.0431	0.0367	pCi/g						
Cobalt-60	U	0.025	+/-0.0538	0.018	+/-0.0527	0.0389	pCi/g						
Europium-152	U	-0.0146	+/-0.0543	0.0465	+/-0.0532	0.097	pCi/g						
Europium-154	U	0.0234	+/-0.0619	0.0519	+/-0.0606	0.112	pCi/g						
Europium-155	U	0.0335	+/-0.0653	0.0588	+/-0.064	0.121	pCi/g						
Lead-212		1.19	+/-0.0799	0.0346	+/-0.0783	0.0713	pCi/g						
Lead-214		1.12	+/-0.0993	0.0327	+/-0.0973	0.0683	pCi/g						
Manganese-54	U	0.0159	+/-0.022	0.0195	+/-0.0216	0.041	pCi/g						
Niobium-94	U	0.0318	+/-0.0426	0.0158	+/-0.0417	0.0333	pCi/g						
Potassium-40		11.6	+/-0.814	0.140	+/-0.798	0.309	pCi/g						
Radium-226		0.924	+/-0.104	0.0334	+/-0.102	0.0702	pCi/g						
Silver-108m	U	-0.00016	+/-0.0175	0.0149	+/-0.0172	0.0313	pCi/g						
Thallium-208		0.396	+/-0.055	0.0174	+/-0.0539	0.0366	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Company : Connecticut Yankee Atomic Power

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362 Injun Hollow Road
East Hampton, Connecticut 06424

Contact: Mr. Pete Hollenbeck

Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-010F
Sample ID: 146590007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-010FS
Sample ID: 146590008
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 11.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Gamma Spec Analysis												
<i>Gamma, Solid-FSS GAM & ALL FSS</i>												
Actinium-228		1.08	+/-0.209	0.0563	+/-0.205	0.120	pCi/g					
Americium-241	U	0.0553	+/-0.0748	0.061	+/-0.0733	0.126	pCi/g					
Bismuth-212		0.620	+/-0.261	0.137	+/-0.256	0.289	pCi/g					
Bismuth-214		0.851	+/-0.136	0.0324	+/-0.133	0.0679	pCi/g					
Cesium-134	UUI	0.00	+/-0.0319	0.022	+/-0.0312	0.0462	pCi/g					
Cesium-137		0.697	+/-0.0879	0.0185	+/-0.0861	0.0388	pCi/g					
Cobalt-60	U	0.000998	+/-0.0224	0.0182	+/-0.022	0.0391	pCi/g					
Europium-152	U	0.031	+/-0.0722	0.0462	+/-0.0708	0.0961	pCi/g					
Europium-154	U	0.0307	+/-0.0657	0.0555	+/-0.0644	0.119	pCi/g					
Europium-155	UUI	0.00	+/-0.0837	0.0481	+/-0.082	0.0995	pCi/g					
Lead-212		1.13	+/-0.118	0.0272	+/-0.115	0.0562	pCi/g					
Lead-214		1.10	+/-0.131	0.031	+/-0.129	0.0648	pCi/g					
Manganese-54	U	0.00703	+/-0.0227	0.0188	+/-0.0222	0.0396	pCi/g					
Niobium-94	U	0.0183	+/-0.0193	0.0168	+/-0.0189	0.0352	pCi/g					
Potassium-40		10.7	+/-0.993	0.131	+/-0.973	0.290	pCi/g					
Radium-226		0.851	+/-0.136	0.0324	+/-0.133	0.0679	pCi/g					
Silver-108m	U	0.00316	+/-0.0219	0.0157	+/-0.0214	0.0329	pCi/g					
Thallium-208		0.303	+/-0.0572	0.0178	+/-0.0561	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-010FS
Sample ID: 146590008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-011F
Sample ID: 146590009
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 16.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
Gamma, Solid- FSS GAM & ALL FSS													
Actinium-228		0.699	+/-0.221	0.0766	+/-0.216	0.168	pCi/g						
Americium-241	U	0.0707	+/-0.136	0.084	+/-0.134	0.175	pCi/g		MJH1	10/23/05	1957	467961	1
Bismuth-212		0.600	+/-0.277	0.145	+/-0.271	0.319	pCi/g						
Bismuth-214		0.725	+/-0.123	0.0366	+/-0.120	0.079	pCi/g						
Cesium-134	UUI	0.00	+/-0.0647	0.030	+/-0.0634	0.0642	pCi/g						
Cesium-137		0.502	+/-0.0724	0.0208	+/-0.0709	0.0449	pCi/g						
Cobalt-60	U	-0.000163	+/-0.0285	0.0233	+/-0.0279	0.0523	pCi/g						
Europium-152	U	0.0223	+/-0.0694	0.0591	+/-0.068	0.125	pCi/g						
Europium-154	U	-0.0153	+/-0.0739	0.0588	+/-0.0724	0.133	pCi/g						
Europium-155	U	0.063	+/-0.0786	0.0663	+/-0.077	0.137	pCi/g						
Lead-212		0.772	+/-0.0811	0.031	+/-0.0795	0.065	pCi/g						
Lead-214		0.809	+/-0.111	0.0417	+/-0.109	0.0879	pCi/g						
Manganese-54	U	-0.00576	+/-0.0301	0.0235	+/-0.0295	0.051	pCi/g						
Niobium-94	U	-0.0152	+/-0.0261	0.0199	+/-0.0256	0.0428	pCi/g						
Potassium-40		9.85	+/-1.08	0.170	+/-1.05	0.398	pCi/g						
Radium-226		0.725	+/-0.123	0.0366	+/-0.120	0.079	pCi/g						
Silver-108m	U	0.00303	+/-0.0253	0.0211	+/-0.0248	0.0447	pCi/g						
Thallium-208		0.212	+/-0.0543	0.0215	+/-0.0532	0.0461	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-011F
Sample ID: 146590009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time 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. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-012F
Sample ID: 146590010
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 17.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		0.942	+/-0.265	0.0904	+/-0.260	0.197	pCi/g						
Americium-241		0.379	+/-0.231	0.133	+/-0.226	0.278	pCi/g						
Bismuth-212		1.03	+/-0.486	0.165	+/-0.476	0.360	pCi/g						
Bismuth-214		0.879	+/-0.153	0.0462	+/-0.150	0.0989	pCi/g						
Cesium-134	U	0.00759	+/-0.0341	0.0279	+/-0.0334	0.0605	pCi/g						
Cesium-137		1.48	+/-0.151	0.0271	+/-0.148	0.0581	pCi/g						
Cobalt-60	U	-0.00598	+/-0.0349	0.0276	+/-0.0342	0.0616	pCi/g						
Europium-152	U	0.0669	+/-0.0874	0.0726	+/-0.0857	0.153	pCi/g						
Europium-154	U	0.0523	+/-0.0921	0.0806	+/-0.0903	0.178	pCi/g						
Europium-155	U	0.0596	+/-0.0877	0.0761	+/-0.086	0.158	pCi/g						
Lead-212		0.874	+/-0.124	0.039	+/-0.121	0.0814	pCi/g						
Lead-214		1.24	+/-0.193	0.0429	+/-0.189	0.0911	pCi/g						
Manganese-54	U	-0.00525	+/-0.0373	0.0254	+/-0.0365	0.0551	pCi/g						
Niobium-94	U	0.0125	+/-0.0281	0.0236	+/-0.0276	0.0507	pCi/g						
Potassium-40		11.5	+/-1.54	0.200	+/-1.51	0.462	pCi/g						
Radium-226		0.879	+/-0.153	0.0462	+/-0.150	0.0989	pCi/g						
Silver-108m	U	0.00773	+/-0.0298	0.0253	+/-0.0292	0.0534	pCi/g						
Thallium-208		0.308	+/-0.0707	0.0236	+/-0.0693	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-012F
Sample ID: 146590010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Certificate of Analysis

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Address : Haddam Neck Plant
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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-013F
Sample ID: 146590011
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
Gamma, Solid-FSS GAM & ALL FSS													
Actinium-228		0.829	+/-0.226	0.073	+/-0.222	0.158	pCi/g						
Americium-241	U	0.092	+/-0.101	0.0893	+/-0.0987	0.184	pCi/g		MJH1	10/23/05	1957	467961	1
Bismuth-212		0.658	+/-0.411	0.149	+/-0.403	0.321	pCi/g						
Bismuth-214		0.834	+/-0.124	0.0422	+/-0.122	0.0893	pCi/g						
Cesium-134	U	0.0583	+/-0.0379	0.0276	+/-0.0372	0.0586	pCi/g						
Cesium-137		0.405	+/-0.060	0.0226	+/-0.0588	0.0482	pCi/g						
Cobalt-60	U	-0.0163	+/-0.0235	0.0172	+/-0.0231	0.0389	pCi/g						
Europium-152	U	-0.023	+/-0.066	0.055	+/-0.0647	0.116	pCi/g						
Europium-154	U	0.00557	+/-0.0776	0.0643	+/-0.0761	0.141	pCi/g						
Europium-155	U	-0.00598	+/-0.0727	0.061	+/-0.0713	0.126	pCi/g						
Lead-212		0.932	+/-0.109	0.0339	+/-0.107	0.0705	pCi/g						
Lead-214		1.06	+/-0.154	0.0378	+/-0.151	0.0796	pCi/g						
Manganese-54	U	0.0365	+/-0.0369	0.0201	+/-0.0361	0.0434	pCi/g						
Niobium-94	U	0.0117	+/-0.0238	0.0201	+/-0.0233	0.0428	pCi/g						
Potassium-40		12.0	+/-1.31	0.184	+/-1.28	0.414	pCi/g						
Radium-226		0.834	+/-0.124	0.0422	+/-0.122	0.0893	pCi/g						
Silver-108m	U	-0.00293	+/-0.022	0.0183	+/-0.0216	0.0387	pCi/g						
Thallium-208		0.277	+/-0.0659	0.0223	+/-0.0645	0.0472	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Certificate of Analysis

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Address : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-013F
Sample ID: 146590011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-013FS
Sample ID: 146590012
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 11.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		0.945	+/-0.227	0.0661	+/-0.222	0.144	pCi/g						
Americium-241	U	0.000425	+/-0.0286	0.0242	+/-0.028	0.050	pCi/g						
Bismuth-212		0.664	+/-0.347	0.172	+/-0.340	0.367	pCi/g						
Bismuth-214		0.819	+/-0.148	0.0347	+/-0.145	0.0742	pCi/g						
Cesium-134	U	0.0556	+/-0.041	0.0288	+/-0.0401	0.061	pCi/g						
Cesium-137		0.405	+/-0.0703	0.0239	+/-0.0689	0.0507	pCi/g						
Cobalt-60	U	0.0031	+/-0.0282	0.0231	+/-0.0276	0.0509	pCi/g						
Europium-152	U	-0.0161	+/-0.0622	0.0498	+/-0.0609	0.105	pCi/g						
Europium-154	U	-0.0508	+/-0.0832	0.0626	+/-0.0815	0.138	pCi/g						
Europium-155	U	-0.0124	+/-0.0528	0.0423	+/-0.0517	0.0876	pCi/g						
Lead-212		0.974	+/-0.124	0.0286	+/-0.122	0.0597	pCi/g						
Lead-214		0.955	+/-0.148	0.0365	+/-0.145	0.0768	pCi/g						
Manganese-54	U	0.020	+/-0.0295	0.0251	+/-0.0289	0.0535	pCi/g						
Niobium-94	U	-0.0155	+/-0.0238	0.0184	+/-0.0233	0.0393	pCi/g						
Potassium-40		11.7	+/-1.27	0.196	+/-1.25	0.439	pCi/g						
Radium-226		0.819	+/-0.148	0.0347	+/-0.145	0.0742	pCi/g						
Silver-108m	U	0.002	+/-0.0208	0.0179	+/-0.0203	0.0379	pCi/g						
Thallium-208		0.350	+/-0.0645	0.0184	+/-0.0632	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Address : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-013FS
Sample ID: 146590012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	N
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H Analytical holding time exceeded.

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis.

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Certificate of Analysis

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Address : Haddam Neck Plant
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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-014F
Sample ID: 146590013
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 7.62%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS</i>													
Actinium-228		0.827	+/-0.216	0.0664	+/-0.212	0.144	pCi/g						
Americium-241	U	-0.0635	+/-0.105	0.0798	+/-0.103	0.165	pCi/g						
Bismuth-212		0.772	+/-0.323	0.150	+/-0.317	0.321	pCi/g						
Bismuth-214		0.666	+/-0.114	0.0362	+/-0.112	0.077	pCi/g						
Cesium-134	U	0.0176	+/-0.0464	0.0241	+/-0.0455	0.0515	pCi/g						
Cesium-137		0.450	+/-0.0605	0.0195	+/-0.0592	0.0418	pCi/g						
Cobalt-60	U	0.0161	+/-0.0268	0.0235	+/-0.0263	0.0515	pCi/g						
Europium-152	U	0.0294	+/-0.0616	0.0531	+/-0.0604	0.111	pCi/g						
Europium-154	U	0.00452	+/-0.0813	0.0674	+/-0.0797	0.147	pCi/g						
Europium-155	U	0.0211	+/-0.0684	0.0587	+/-0.0671	0.121	pCi/g						
Lead-212		0.715	+/-0.0934	0.0336	+/-0.0915	0.0697	pCi/g						
Lead-214		0.726	+/-0.122	0.036	+/-0.120	0.0758	pCi/g						
Manganese-54	U	0.00786	+/-0.0258	0.0218	+/-0.0253	0.0466	pCi/g						
Niobium-94	U	0.0165	+/-0.022	0.0194	+/-0.0216	0.0412	pCi/g						
Potassium-40		9.64	+/-1.18	0.209	+/-1.16	0.462	pCi/g						
Radium-226		0.666	+/-0.114	0.0362	+/-0.112	0.077	pCi/g						
Silver-108m	U	-0.00527	+/-0.0222	0.0179	+/-0.0217	0.0378	pCi/g						
Thallium-208		0.236	+/-0.0558	0.0194	+/-0.0546	0.0413	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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Address : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-014F
Sample ID: 146590013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Address : Haddam Neck Plant
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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-015F
Sample ID: 146590014
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		0.956	+/-0.223	0.0865	+/-0.219	0.186	pCi/g						
Americium-241	U	0.0738	+/-0.0487	0.0392	+/-0.0477	0.0804	pCi/g						
Bismuth-212		0.984	+/-0.378	0.187	+/-0.370	0.401	pCi/g						
Bismuth-214		0.852	+/-0.161	0.0489	+/-0.158	0.103	pCi/g						
Cesium-134	UUJ	0.00	+/-0.0629	0.0332	+/-0.0616	0.0704	pCi/g						
Cesium-137		0.269	+/-0.0596	0.0237	+/-0.0584	0.0507	pCi/g						
Cobalt-60	U	0.0119	+/-0.0289	0.0251	+/-0.0284	0.0553	pCi/g						
Europium-152	U	-0.0664	+/-0.0719	0.0576	+/-0.0705	0.121	pCi/g						
Europium-154	U	0.0237	+/-0.0858	0.073	+/-0.0841	0.160	pCi/g						
Europium-155	U	0.0819	+/-0.0651	0.0589	+/-0.0638	0.121	pCi/g						
Lead-212		1.09	+/-0.140	0.0409	+/-0.137	0.0846	pCi/g						
Lead-214		1.10	+/-0.174	0.0432	+/-0.171	0.0907	pCi/g						
Manganese-54	U	0.00992	+/-0.0303	0.0263	+/-0.0297	0.0563	pCi/g						
Niobium-94	U	0.0103	+/-0.0266	0.0224	+/-0.026	0.0478	pCi/g						
Potassium-40		11.1	+/-1.20	0.175	+/-1.17	0.401	pCi/g						
Radium-226		0.852	+/-0.161	0.0489	+/-0.158	0.103	pCi/g						
Silver-108m	U	0.0386	+/-0.0266	0.0243	+/-0.0261	0.0509	pCi/g						
Thallium-208		0.357	+/-0.0731	0.0261	+/-0.0717	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.

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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 : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-015F
Sample ID: 146590014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis.

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-016F
Sample ID: 146590015
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		1.05	+/-0.194	0.0586	+/-0.190	0.125	pCi/g						
Americium-241	U	0.0423	+/-0.129	0.108	+/-0.127	0.222	pCi/g						
Bismuth-212		0.742	+/-0.348	0.130	+/-0.341	0.276	pCi/g						
Bismuth-214		0.869	+/-0.108	0.0343	+/-0.106	0.0721	pCi/g						
Cesium-134	U	0.0364	+/-0.0334	0.024	+/-0.0327	0.0503	pCi/g						
Cesium-137		0.595	+/-0.0561	0.019	+/-0.055	0.0399	pCi/g						
Cobalt-60	U	0.0124	+/-0.0218	0.0186	+/-0.0214	0.0402	pCi/g						
Europium-152	U	0.0145	+/-0.0553	0.0484	+/-0.0542	0.101	pCi/g						
Europium-154	U	0.0314	+/-0.0603	0.0513	+/-0.0591	0.111	pCi/g						
Europium-155	U	0.0821	+/-0.101	0.0588	+/-0.099	0.122	pCi/g						
Lead-212		1.22	+/-0.0775	0.0286	+/-0.076	0.0593	pCi/g						
Lead-214		1.12	+/-0.108	0.0334	+/-0.106	0.0698	pCi/g						
Manganese-54	U	0.00844	+/-0.0218	0.0188	+/-0.0213	0.0398	pCi/g						
Niobium-94	U	0.00756	+/-0.0212	0.0176	+/-0.0208	0.0369	pCi/g						
Potassium-40		12.5	+/-0.861	0.172	+/-0.844	0.373	pCi/g						
Radium-226		0.869	+/-0.108	0.0343	+/-0.106	0.0721	pCi/g						
Silver-108m	U	0.0237	+/-0.0241	0.0177	+/-0.0236	0.037	pCi/g						
Thallium-208		0.326	+/-0.0471	0.0179	+/-0.0461	0.0377	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
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362 Injun Hollow Road

East Hampton, Connecticut 06424

Contact: Mr. Pete Hollenbeck

Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-016F

Sample ID: 146590015

Project: YANK01204

Client ID: YANK001

Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch N
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H Analytical holding time exceeded.

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis.

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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-017F
Sample ID: 146590016
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 10.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		1.04	+/-0.213	0.0591	+/-0.209	0.125	pCi/g						
Americium-241	U	-0.0516	+/-0.0647	0.0561	+/-0.0634	0.116	pCi/g						
Bismuth-212		0.935	+/-0.298	0.105	+/-0.292	0.223	pCi/g						
Bismuth-214		0.782	+/-0.123	0.0303	+/-0.121	0.0635	pCi/g						
Cesium-134	UUI	0.00	+/-0.0282	0.0209	+/-0.0276	0.0438	pCi/g						
Cesium-137		0.419	+/-0.0611	0.0178	+/-0.0599	0.0374	pCi/g						
Cobalt-60	U	-0.00349	+/-0.0222	0.015	+/-0.0217	0.0325	pCi/g						
Europium-152	U	-0.027	+/-0.0587	0.0418	+/-0.0576	0.0872	pCi/g						
Europium-154	U	-0.0517	+/-0.0664	0.0505	+/-0.065	0.108	pCi/g						
Europium-155	U	0.0618	+/-0.0819	0.0474	+/-0.0802	0.0978	pCi/g						
Lead-212		1.08	+/-0.112	0.0255	+/-0.110	0.0526	pCi/g						
Lead-214		1.00	+/-0.123	0.0306	+/-0.120	0.0636	pCi/g						
Manganese-54	U	-0.00121	+/-0.0246	0.0172	+/-0.0241	0.0363	pCi/g						
Niobium-94	U	-0.00708	+/-0.0181	0.0147	+/-0.0178	0.0309	pCi/g						
Potassium-40		11.4	+/-1.00	0.149	+/-0.983	0.322	pCi/g						
Radium-226		0.782	+/-0.123	0.0303	+/-0.121	0.0635	pCi/g						
Silver-108m	U	-0.00233	+/-0.0181	0.0148	+/-0.0178	0.0309	pCi/g						
Thallium-208		0.370	+/-0.057	0.0156	+/-0.0559	0.0329	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	AXP2	09/29/05	1619	467614

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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362 Injun Hollow Road

East Hampton, Connecticut 06424

Contact: Mr. Pete Hollenbeck

Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-017F

Sample ID: 146590016

Project: YANK01204

Client ID: YANK001

Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch #
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H Analytical holding time exceeded.

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis.

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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-018F
Sample ID: 146590017
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS</i>													
Actinium-228		0.973	+/-0.215	0.0751	+/-0.210	0.164	pCi/g						
Americium-241	U	0.0116	+/-0.104	0.0902	+/-0.102	0.187	pCi/g						
Bismuth-212		0.766	+/-0.390	0.184	+/-0.382	0.395	pCi/g						
Bismuth-214		0.853	+/-0.137	0.044	+/-0.134	0.0937	pCi/g						
Cesium-134	U	0.0307	+/-0.052	0.0282	+/-0.051	0.0606	pCi/g						
Cesium-137		0.571	+/-0.0661	0.0202	+/-0.0648	0.0438	pCi/g						
Cobalt-60	U	-0.00169	+/-0.0287	0.0233	+/-0.0281	0.0521	pCi/g						
Europium-152	U	-0.059	+/-0.0716	0.0564	+/-0.0701	0.119	pCi/g						
Europium-154	U	0.0045	+/-0.0904	0.0749	+/-0.0886	0.165	pCi/g						
Europium-155	U	0.101	+/-0.0899	0.0614	+/-0.0881	0.128	pCi/g						
Lead-212		0.929	+/-0.0911	0.0348	+/-0.0892	0.0726	pCi/g						
Lead-214		0.955	+/-0.125	0.0423	+/-0.122	0.0891	pCi/g						
Manganese-54	U	0.00589	+/-0.0355	0.0257	+/-0.0348	0.0552	pCi/g						
Niobium-94	U	-0.0102	+/-0.0253	0.0203	+/-0.0248	0.0435	pCi/g						
Potassium-40		10.2	+/-1.14	0.215	+/-1.12	0.484	pCi/g						
Radium-226		0.853	+/-0.137	0.044	+/-0.134	0.0937	pCi/g						
Silver-108m	U	0.0187	+/-0.025	0.0216	+/-0.0245	0.0457	pCi/g						
Thallium-208		0.320	+/-0.061	0.0237	+/-0.0598	0.0506	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	AXP2	09/29/05	1619	467614

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 :

- B Target analyte was detected in the sample as well as the associated blank.
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- E Concentration of the target analyte exceeds the instrument calibration range.

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Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-018F
Sample ID: 146590017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
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H Analytical holding time exceeded.
J Indicates an estimated value.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
The above sample is reported on a dry weight basis.

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Address : Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-004F
Sample ID: 146590018
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 13.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0834	+/-0.0893	0.133	+/-0.090	0.331	pCi/g		HOB1	10/15/05	1042	471786	1
Curium-242	U	0.0139	+/-0.0552	0.043	+/-0.0553	0.158	pCi/g						
Curium-243/244	U	0.0641	+/-0.133	0.116	+/-0.133	0.296	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0419	+/-0.154	0.151	+/-0.154	0.364	pCi/g		HOB1	10/15/05	1042	471787	2
Plutonium-239/240	U	0.0418	+/-0.0947	0.0778	+/-0.0949	0.217	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-2.5	+/-7.59	6.47	+/-7.60	13.5	pCi/g		HOB1	10/21/05	0037	471788	3
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS</i>													
Actinium-228		0.763	+/-0.252	0.095	+/-0.247	0.208	pCi/g		MJH1	10/24/05	2039	467961	4
Americium-241	U	0.00782	+/-0.0407	0.0339	+/-0.0399	0.0704	pCi/g						
Bismuth-212		0.600	+/-0.573	0.208	+/-0.562	0.450	pCi/g						
Bismuth-214		0.594	+/-0.140	0.0451	+/-0.137	0.0974	pCi/g						
Cesium-134	U	0.0432	+/-0.0899	0.031	+/-0.0881	0.0672	pCi/g						
Cesium-137		0.440	+/-0.093	0.0269	+/-0.0911	0.0581	pCi/g						
Cobalt-60	U	0.010	+/-0.0312	0.0274	+/-0.0306	0.0616	pCi/g						
Europium-152	U	0.053	+/-0.0709	0.0617	+/-0.0695	0.131	pCi/g						
Europium-154	U	-0.0316	+/-0.117	0.0897	+/-0.115	0.198	pCi/g						
Europium-155	U	0.0238	+/-0.0654	0.0536	+/-0.0641	0.112	pCi/g						
Lead-212		0.625	+/-0.0941	0.0325	+/-0.0922	0.0683	pCi/g						
Lead-214		0.605	+/-0.148	0.0434	+/-0.145	0.0922	pCi/g						
Manganese-54	U	-0.011	+/-0.0346	0.0276	+/-0.0339	0.0601	pCi/g						
Niobium-94	U	-0.00686	+/-0.028	0.0229	+/-0.0274	0.0497	pCi/g						
Potassium-40		10.7	+/-1.33	0.267	+/-1.30	0.604	pCi/g						
Radium-226		0.594	+/-0.140	0.0451	+/-0.137	0.0974	pCi/g						
Silver-108m	U	0.00608	+/-0.0274	0.0226	+/-0.0268	0.0482	pCi/g						
Thallium-208		0.275	+/-0.0813	0.0268	+/-0.0797	0.0576	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid - 0.025 pCi/g</i>													
Strontium-90	U	0.0205	+/-0.0138	0.0108	+/-0.0139	0.0225	pCi/g		EXW1	10/18/05	2227	472639	5
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 1 to 2 pCi/g</i>													
Tritium	U	0.586	+/-0.869	0.703	+/-0.869	1.47	pCi/g		BXF1	10/10/05	0243	467508	6
<i>Liquid Scint C14, Solid All, FSS</i>													

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Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-004F
Sample ID: 146590018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.115	+/-0.0778	0.0632	+/-0.0778	0.129	pCi/g		SLN1	10/12/05	0801	470741	7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	27.6	+/-49.4	33.3	+/-49.4	69.0	pCi/g		BXF1	10/20/05	1218	473150	8
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	0.667	+/-5.60	4.68	+/-5.60	9.67	pCi/g		BXF1	10/14/05	0340	470704	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.237	+/-0.152	0.122	+/-0.152	0.250	pCi/g		BXF1	10/08/05	1541	468332	11

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	PD	09/30/05	0554	467615
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AXP2	09/29/05	1619	467614

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	84	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	104	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	95	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid - 0.025 pCi/g	45	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	73	(15%-125%)

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Contact: Mr. Pete Hollenbeck

Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-004F

Sample ID: 146590018

Project: YANK01204

Client ID: YANK001

Vol. Recv.:

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			91		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			89		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

B Target analyte was detected in the sample as well as the associated blank.

BD Results below the MDC or low tracer recovery.

E Concentration of the target analyte exceeds the instrument calibration range.

H Analytical holding time exceeded.

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis.

GENERAL ENGINEERING LABORATORIES, LLC

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

Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-006F
Sample ID: 146590019
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 12.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0513	+/-0.0919	0.0635	+/-0.0921	0.194	pCi/g		HOB1	10/15/05	1042	471786	1
Curium-242	U	-0.00557	+/-0.062	0.071	+/-0.062	0.217	pCi/g						
Curium-243/244	U	-0.0689	+/-0.102	0.139	+/-0.103	0.346	pCi/g						
<i>Alphaspec Pu, Solid- ALL FSS</i>													
Plutonium-238	U	-0.0449	+/-0.113	0.135	+/-0.113	0.322	pCi/g		HOB1	10/15/05	1042	471787	2
Plutonium-239/240	U	-0.0175	+/-0.045	0.0613	+/-0.0451	0.174	pCi/g						
<i>Liquid Scint Pu241, Solid- ALL FSS</i>													
Plutonium-241	U	-1.47	+/-7.22	6.12	+/-7.23	12.7	pCi/g		HOB1	10/21/05	0054	471788	3
Rad Gamma Spec Analysis													
<i>Gamma, Solid- FSS GAM & ALL FSS</i>													
Actinium-228		0.805	+/-0.176	0.0502	+/-0.172	0.108	pCi/g		MJH1	10/24/05	2039	467961	4
Americium-241	U	0.0609	+/-0.0892	0.0553	+/-0.0874	0.115	pCi/g						
Bismuth-212		0.507	+/-0.306	0.124	+/-0.300	0.264	pCi/g						
Bismuth-214		0.545	+/-0.108	0.0348	+/-0.106	0.0729	pCi/g						
Cesium-134	U	0.0144	+/-0.0224	0.019	+/-0.0219	0.0404	pCi/g						
Cesium-137		0.555	+/-0.0784	0.0154	+/-0.0768	0.0326	pCi/g						
Cobalt-60	U	0.0208	+/-0.0207	0.0184	+/-0.0202	0.0397	pCi/g						
Europium-152	U	0.0152	+/-0.058	0.0429	+/-0.0568	0.0898	pCi/g						
Europium-154	U	-0.0528	+/-0.0621	0.0458	+/-0.0609	0.0994	pCi/g						
Europium-155	U	0.026	+/-0.0576	0.0493	+/-0.0565	0.102	pCi/g						
Lead-212		0.702	+/-0.0875	0.026	+/-0.0858	0.054	pCi/g						
Lead-214		0.699	+/-0.114	0.031	+/-0.112	0.0649	pCi/g						
Manganese-54	U	-0.00571	+/-0.0203	0.016	+/-0.0199	0.0341	pCi/g						
Niobium-94	U	-0.00238	+/-0.0193	0.0157	+/-0.0189	0.0332	pCi/g						
Potassium-40		8.96	+/-0.973	0.156	+/-0.953	0.341	pCi/g						
Radium-226		0.545	+/-0.108	0.0348	+/-0.106	0.0729	pCi/g						
Silver-108m	U	-0.00399	+/-0.0188	0.015	+/-0.0184	0.0315	pCi/g						
Thallium-208		0.230	+/-0.0523	0.0159	+/-0.0512	0.0337	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid - 0.025 pCi/g</i>													
Strontium-90	U	-0.0188	+/-0.013	0.0116	+/-0.013	0.0241	pCi/g		EXW1	10/18/05	2227	472639	5
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 1 to 2 pCi/g</i>													
Tritium	U	0.913	+/-0.882	0.700	+/-0.882	1.46	pCi/g		BXF1	10/10/05	0316	467508	6
<i>Liquid Scint C14, Solid All, FSS</i>													

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Certificate of Analysis

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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-006F
Sample ID: 146590019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Liquid Scintillation Analysis													
Liquid Scint C14, Solid All,FSS													
Carbon-14	U	0.103	+/-0.0755	0.0615	+/-0.0755	0.125	pCi/g		SLN1	10/12/05	1101	470741	7
Liquid Scint Fe55, Solid-ALL FSS													
Iron-55	U	12.9	+/-47.8	32.3	+/-47.8	66.9	pCi/g		BXF1	10/20/05	1235	473150	8
Liquid Scint Ni63, Solid-ALL FSS													
Nickel-63	U	-4.85	+/-6.05	5.24	+/-6.05	10.8	pCi/g		BXF1	10/14/05	0412	470704	10
Liquid Scint Tc99, Solid-ALL FSS													
Technetium-99	U	0.200	+/-0.142	0.114	+/-0.142	0.234	pCi/g		BXF1	10/08/05	1613	468332	11

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	PD	09/30/05	0554	467615
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AXP2	09/29/05	1619	467614

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	84	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	101	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	104	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid - 0.025 pCi/g	48	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	83	(15%-125%)

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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-006F
Sample ID: 146590019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			86		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			91		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

- B Target analyte was detected in the sample as well as the associated blank.
 - BD Results below the MDC or low tracer recovery.
 - E Concentration of the target analyte exceeds the instrument calibration range.
 - H Analytical holding time exceeded.
 - J Indicates an estimated value.
 - U Target analyte was analyzed for but not detected above the MDL or LOD.
 - UI Uncertain identification for gamma spectroscopy.
 - X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
 - d The 2:1 depletion requirement was not met for this sample
 - h Sample preparation or preservation holding time exceeded.
- The above sample is reported on a dry weight basis.

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Certificate of Analysis

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

Report Date: October 28, 2005

Client Sample ID: 9527-0001-007F
Sample ID: 146590020
Matrix: TS
Collect Date: 19-SEP-05
Receive Date: 28-SEP-05
Collector: Client
Moisture: 18%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Alpha Spec Analysis													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.061	+/-0.0782	0.00	+/-0.0786	0.0707	pCi/g		HOB1	10/15/05	1042	471786	1
Curium-242	U	-0.014	+/-0.0604	0.047	+/-0.0604	0.173	pCi/g						
Curium-243/244	U	-0.00523	+/-0.0581	0.0666	+/-0.0581	0.204	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0554	+/-0.122	0.109	+/-0.122	0.273	pCi/g		HOB1	10/15/05	1042	471787	2
Plutonium-239/240	U	0.0619	+/-0.082	0.0464	+/-0.0823	0.148	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-4.02	+/-7.86	6.76	+/-7.87	14.1	pCi/g		HOB1	10/21/05	0111	471788	3
Rad Gamma Spec Analysis													
<i>Gamma, Solid-FSS GAM & ALL FSS</i>													
Actinium-228		0.378	+/-0.141	0.049	+/-0.139	0.106	pCi/g		MJH1	10/24/05	2044	467961	4
Americium-241	U	0.030	+/-0.109	0.085	+/-0.107	0.177	pCi/g						
Bismuth-212		0.309	+/-0.245	0.107	+/-0.240	0.229	pCi/g						
Bismuth-214		0.465	+/-0.0767	0.0285	+/-0.0752	0.0603	pCi/g						
Cesium-134	U	0.0076	+/-0.0178	0.0156	+/-0.0174	0.0335	pCi/g						
Cesium-137		0.563	+/-0.0489	0.0152	+/-0.0479	0.0324	pCi/g						
Cobalt-60	U	-0.00959	+/-0.0181	0.0135	+/-0.0177	0.0299	pCi/g						
Europium-152	U	-0.0151	+/-0.047	0.0401	+/-0.0461	0.0842	pCi/g						
Europium-154	U	-0.0371	+/-0.0568	0.0426	+/-0.0556	0.0928	pCi/g						
Europium-155	U	0.0461	+/-0.0542	0.0498	+/-0.0531	0.103	pCi/g						
Lead-212		0.436	+/-0.0532	0.0241	+/-0.0521	0.0503	pCi/g						
Lead-214		0.581	+/-0.0825	0.0275	+/-0.0808	0.0579	pCi/g						
Manganese-54	U	0.0144	+/-0.0188	0.0168	+/-0.0184	0.0356	pCi/g						
Niobium-94	U	0.00156	+/-0.0165	0.0135	+/-0.0162	0.0287	pCi/g						
Potassium-40		5.13	+/-0.647	0.129	+/-0.634	0.286	pCi/g						
Radium-226		0.465	+/-0.0767	0.0285	+/-0.0752	0.0603	pCi/g						
Silver-108m	U	-0.0134	+/-0.015	0.0119	+/-0.0147	0.0254	pCi/g						
Thallium-208		0.165	+/-0.0446	0.0139	+/-0.0437	0.0297	pCi/g						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, solid - 0.025 pCi/g</i>													
Strontium-90	U	-0.00103	+/-0.0125	0.0106	+/-0.0125	0.0221	pCi/g		EXW1	10/18/05	2228	472639	5
Rad Liquid Scintillation Analysis													
<i>LSC, Tritium Dist, Solid - 1 to 2 pCi/g</i>													
Tritium	U	0.333	+/-0.860	0.707	+/-0.860	1.48	pCi/g		BXF1	10/10/05	0348	467508	6
<i>Liquid Scint C14, Solid All, FSS</i>													

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Certificate of Analysis

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East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-007F
Sample ID: 146590020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Rad Liquid Scintillation Analysis													
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14		0.136	+/-0.0779	0.063	+/-0.078	0.128	pCi/g		SLN1	10/12/05	1235	470741	7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	6.73	+/-41.5	28.0	+/-41.5	57.9	pCi/g		BXF1	10/20/05	1252	473150	8
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-4.77	+/-5.39	4.68	+/-5.39	9.66	pCi/g		BXF1	10/14/05	0444	470704	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.107	+/-0.144	0.119	+/-0.144	0.243	pCi/g		BXF1	10/08/05	1645	468332	11

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	PD	09/30/05	0554	467615
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	AXP2	09/29/05	1619	467614

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	83	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	103	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	89	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid - 0.025 pCi/g	44	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	91	(15%-125%)

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Certificate of Analysis

Company : Connecticut Yankee Atomic Power
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362 Injun Hollow Road
East Hampton, Connecticut 06424
Contact: Mr. Pete Hollenbeck
Project: Soils PO# 002332

Report Date: October 28, 2005

Client Sample ID: 9527-0001-007F
Sample ID: 146590020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	M
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			91		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			90		(15%-125%)						

Notes:

The Qualifiers in this report are defined as follows :

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 - BD Results below the MDC or low tracer recovery.
 - E Concentration of the target analyte exceeds the instrument calibration range.
 - H Analytical holding time exceeded.
 - J Indicates an estimated value.
 - U Target analyte was analyzed for but not detected above the MDL or LOD.
 - UI Uncertain identification for gamma spectroscopy.
 - X Lab-specific qualifier—please see case narrative, data summary package or contact your project manager for details.
 - d The 2:1 depletion requirement was not met for this sample
 - h Sample preparation or preservation holding time exceeded.
- The above sample is reported on a dry weight basis.

QUALITY CONTROL DATA

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: October 28, 2005
Page 1 of 9

Client : Connecticut Yankee Atomic Power
Haddam Neck Plant
362 Injun Hollow Road
East Hampton, Connecticut
Contact: Mr. Pete Hollenbeck
Workorder: 146590

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec Batch 471786											
QC1200957640 146590018 DUP Americium-241	U	-0.0834	U	0.0189	pCi/g	N/A		(0% - 100%)	HOB1	10/15/05	10:42
	Uncert:	+/-0.0893		+/-0.131							
	TPU:	+/-0.090		+/-0.131							
Curium-242	U	0.0139	U	0.0191	pCi/g	32		(0% - 100%)			
	Uncert:	+/-0.0552		+/-0.076							
	TPU:	+/-0.0553		+/-0.076							
Curium-243/244	U	0.0641	U	-0.0933	pCi/g	N/A		(0% - 100%)			
	Uncert:	+/-0.133		+/-0.0893							
	TPU:	+/-0.133		+/-0.0902							
QC1200957642 LCS Americium-241	8.88			8.08	pCi/g		91	(75%-125%)		10/15/05	10:42
	Uncert:			+/-0.761							
	TPU:			+/-1.32							
Curium-242			U	0.0052	pCi/g						
	Uncert:			+/-0.0394							
	TPU:			+/-0.0394							
Curium-243/244	10.8			10.1	pCi/g		94	(75%-125%)			
	Uncert:			+/-0.849							
	TPU:			+/-1.59							
QC1200957639 MB Americium-241			U	0.0167	pCi/g					10/15/05	10:42
	Uncert:			+/-0.0832							
	TPU:			+/-0.0832							
Curium-242			U	-0.00623	pCi/g						
	Uncert:			+/-0.0523							
	TPU:			+/-0.0524							
Curium-243/244			U	0.075	pCi/g						
	Uncert:			+/-0.142							
	TPU:			+/-0.143							
QC1200957641 146590018 MS Americium-241	9.05	U	-0.0834	8.56	pCi/g		95	(75%-125%)			
	Uncert:		+/-0.0893	+/-0.866							
	TPU:		+/-0.090	+/-1.37							
Curium-242		U	0.0139	-0.0112	pCi/g						
	Uncert:		+/-0.0552	+/-0.0579							
	TPU:		+/-0.0553	+/-0.0579							
Curium-243/244	11.1	U	0.0641	9.81	pCi/g		88	(75%-125%)			
	Uncert:		+/-0.133	+/-0.930							
	TPU:		+/-0.133	+/-1.53							
Batch 471787											
QC1200957644 146590018 DUP Plutonium-238	U	0.0419	U	0.0496	pCi/g	17		(0% - 100%)	HOB1	10/15/05	10:42

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QC Summary

Workorder: 146590

Page 2 of 9

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	471787										
Plutonium-239/240	Uncert:	+/-0.154		+/-0.113		pCi/g	28	(0% - 100%)			
	TPU:	+/-0.154		+/-0.113							
	U	0.0418	U	0.0317							
	Uncert:	+/-0.0947		+/-0.0728							
	TPU:	+/-0.0949		+/-0.0729							
QC1200957646	LCS										
Plutonium-238			U	0.0393	pCi/g		(75%-125%)			10/15/05	10:42
Plutonium-239/240	Uncert:			+/-0.118		pCi/g	109	(75%-125%)			
	TPU:			+/-0.118							
	8.20			8.95							
	Uncert:			+/-0.825							
	TPU:			+/-1.32							
QC1200957643	MB										
Plutonium-238			U	-0.0405	pCi/g					10/15/05	10:42
Plutonium-239/240	Uncert:			+/-0.0659		pCi/g					
	TPU:			+/-0.066							
				0.00545							
	Uncert:			+/-0.0413							
	TPU:			+/-0.0413							
QC1200957645	146590018	MS									
Plutonium-238		U	0.0419	U	-0.175	pCi/g		(75%-125%)			
Plutonium-239/240	Uncert:	+/-0.154		+/-0.0785		pCi/g	83	(75%-125%)			
	TPU:	+/-0.154		+/-0.0808							
	8.36	U	0.0418	6.95							
	Uncert:	+/-0.0947		+/-0.702							
	TPU:	+/-0.0949		+/-1.04							
Batch	471788										
QC1200957648	146590018	DUP									
Plutonium-241		U	-2.5	U	-2.06	pCi/g	N/A	(0% - 100%)	HOB1	10/21/05	01:45
Plutonium-241	Uncert:	+/-7.59		+/-8.17		pCi/g	90	(75%-125%)			
	TPU:	+/-7.60		+/-8.17							
	120			108							
	Uncert:			+/-11.8							
	TPU:			+/-16.2							
QC1200957647	MB										
Plutonium-241			U	-4.72	pCi/g					10/21/05	01:28
Plutonium-241	Uncert:			+/-7.05		pCi/g	83	(75%-125%)			
	TPU:			+/-7.07							
	123	U	-2.5	102							
	Uncert:	+/-7.59		+/-11.0							
	TPU:	+/-7.60		+/-15.0							
Rad Gamma Spec											
Batch	467961										
QC1200948603	146590001	DUP									
Actinium-228			1.12		0.964	pCi/g	15	(0% - 100%)	MJH1	10/25/05	07:02
			Uncert:	+/-0.193							
					+/-0.191						
					+/-0.187						

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 467961											
Americium-241		TPU:		+/-0.189							
	U			-0.053	U						
		Uncert:		+/-0.166							
Bismuth-212		TPU:		+/-0.163							
				0.750							
		Uncert:		+/-0.345							
Bismuth-214		TPU:		+/-0.338							
				0.946							
		Uncert:		+/-0.108							
Cesium-134		TPU:		+/-0.106							
	UUI		UUI	0.00							
		Uncert:		+/-0.0391							
Cesium-137		TPU:		+/-0.0383							
				0.519							
		Uncert:		+/-0.0524							
Cobalt-60		TPU:		+/-0.0514							
	U		U	0.0126							
		Uncert:		+/-0.0229							
Europium-152		TPU:		+/-0.0224							
	U		U	-0.0189							
		Uncert:		+/-0.0591							
Europium-154		TPU:		+/-0.0579							
	U		U	-0.00297							
		Uncert:		+/-0.0691							
Europium-155		TPU:		+/-0.0678							
	U		U	0.0476							
		Uncert:		+/-0.0952							
Lead-212		TPU:		+/-0.0933							
				1.05							
		Uncert:		+/-0.0788							
Lead-214		TPU:		+/-0.0772							
				1.16							
		Uncert:		+/-0.109							
Manganese-54		TPU:		+/-0.107							
	U		U	0.0246							
		Uncert:		+/-0.0268							
Niobium-94		TPU:		+/-0.0262							
	U		U	0.0102							
		Uncert:		+/-0.0208							
Potassium-40		TPU:		+/-0.0204							
				11.0							
		Uncert:		+/-0.888							
Radium-226		TPU:		+/-0.870							
				0.946							
		Uncert:		+/-0.108							
Silver-108m		TPU:		+/-0.106							
	U		U	-0.0139							
		Uncert:		+/-0.0195							

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Farmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 467961											
Thallium-208	TPU:	+/-0.0192		+/-0.0154							
		0.323		0.277	pCi/g	15		(0% - 100%)			
	Uncert:	+/-0.0531		+/-0.0473							
QC1200948604 LCS Actinium-228	TPU:	+/-0.052		+/-0.0464							
			U	-0.0977	pCi/g					10/21/05	18:05
	Uncert:			+/-0.779							
Americium-241	TPU:			+/-0.763							
	24.4			24.7	pCi/g		101	(75%-125%)			
	Uncert:			+/-1.12							
Bismuth-212	TPU:			+/-1.10							
			U	-0.813	pCi/g						
	Uncert:			+/-1.51							
Bismuth-214	TPU:			+/-1.48							
			U	0.0847	pCi/g						
	Uncert:			+/-0.334							
Cesium-134	TPU:			+/-0.328							
			U	-0.0724	pCi/g						
	Uncert:			+/-0.223							
Cesium-137	TPU:			+/-0.218							
	9.39			10.2	pCi/g		109	(75%-125%)			
	Uncert:			+/-0.651							
Cobalt-60	TPU:			+/-0.638							
	14.2			14.9	pCi/g		105	(75%-125%)			
	Uncert:			+/-0.878							
Europium-152	TPU:			+/-0.861							
			U	-0.0803	pCi/g						
	Uncert:			+/-0.410							
Europium-154	TPU:			+/-0.402							
			U	-0.165	pCi/g						
	Uncert:			+/-0.465							
Europium-155	TPU:			+/-0.456							
			U	-0.0932	pCi/g						
	Uncert:			+/-0.446							
Lead-212	TPU:			+/-0.437							
			U	0.250	pCi/g						
	Uncert:			+/-0.219							
Lead-214	TPU:			+/-0.215							
			U	0.0478	pCi/g						
	Uncert:			+/-0.304							
Manganese-54	TPU:			+/-0.298							
			U	0.107	pCi/g						
	Uncert:			+/-0.198							
Niobium-94	TPU:			+/-0.194							
			U	-0.0767	pCi/g						
	Uncert:			+/-0.196							
Potassium-40	TPU:			+/-0.192							
			U	-0.989	pCi/g						

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec Batch 467961										
			Uncert: +/-1.49							
			TPU: +/-1.46							
Radium-226		U	0.0847	pCi/g			(75%-125%)			
			Uncert: +/-0.334							
			TPU: +/-0.328							
Silver-108m		U	0.0266	pCi/g						
			Uncert: +/-0.157							
			TPU: +/-0.154							
Thallium-208		U	0.000906	pCi/g						
			Uncert: +/-0.192							
			TPU: +/-0.188							
QC1200948602 MB Actinium-228		U	0.0201	pCi/g					10/25/05	07:01
			Uncert: +/-0.102							
			TPU: +/-0.100							
Americium-241		U	0.0105	pCi/g						
			Uncert: +/-0.0736							
			TPU: +/-0.0722							
Bismuth-212		U	0.00349	pCi/g						
			Uncert: +/-0.0959							
			TPU: +/-0.094							
Bismuth-214		U	0.031	pCi/g						
			Uncert: +/-0.0279							
			TPU: +/-0.0273							
Cesium-134		U	0.00892	pCi/g						
			Uncert: +/-0.0123							
			TPU: +/-0.012							
Cesium-137		U	0.000391	pCi/g						
			Uncert: +/-0.0128							
			TPU: +/-0.0126							
Cobalt-60		U	-0.00275	pCi/g						
			Uncert: +/-0.013							
			TPU: +/-0.0127							
Europium-152		U	0.0114	pCi/g						
			Uncert: +/-0.0342							
			TPU: +/-0.0335							
Europium-154		U	0.0161	pCi/g						
			Uncert: +/-0.0328							
			TPU: +/-0.0322							
Europium-155		U	0.00413	pCi/g						
			Uncert: +/-0.0343							
			TPU: +/-0.0336							
Lead-212		U	0.0138	pCi/g						
			Uncert: +/-0.030							
			TPU: +/-0.0294							
Lead-214		UUI	0.00	pCi/g						
			Uncert: +/-0.059							
			TPU: +/-0.0578							

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	467961										
Manganese-54			U	0.00689	pCi/g						
	Uncert:			+/-0.0123							
	TPU:			+/-0.0121							
Niobium-94			U	0.00302	pCi/g						
	Uncert:			+/-0.0117							
	TPU:			+/-0.0114							
Potassium-40			U	0.0254	pCi/g						
	Uncert:			+/-0.130							
	TPU:			+/-0.127							
Radium-226			U	0.031	pCi/g						
	Uncert:			+/-0.0279							
	TPU:			+/-0.0273							
Silver-108m			UUI	0.00	pCi/g						
	Uncert:			+/-0.0249							
	TPU:			+/-0.0244							
Thallium-208			U	0.022	pCi/g						
	Uncert:			+/-0.0129							
	TPU:			+/-0.0126							
Rad Gas Flow											
Batch	472639										
QC1200959676	146590019	DUP									
Strontium-90			U	-0.0188	U	-0.00423	pCi/g	N/A	(0% - 100%) EXWI	10/18/05	23:07
	Uncert:			+/-0.013		+/-0.00989					
	TPU:			+/-0.013		+/-0.00989					
QC1200959678	LCS										
Strontium-90		1.30				1.26	pCi/g		97 (75%-125%)	10/19/05	10:56
	Uncert:					+/-0.0792					
	TPU:					+/-0.0875					
QC1200959675	MB										
Strontium-90			U	0.000421		0.000421	pCi/g			10/18/05	22:28
	Uncert:			+/-0.00651		+/-0.00651					
	TPU:			+/-0.00651		+/-0.00651					
QC1200959677	146590019	MS									
Strontium-90		2.70	U	-0.0188		2.22	pCi/g		82 (75%-125%)	10/19/05	10:56
	Uncert:			+/-0.013		+/-0.214					
	TPU:			+/-0.013		+/-0.224					
Rad Liquid Scintillation											
Batch	467508										
QC1200947552	145495003	DUP									
Tritium			U	3.73	U	5.48	pCi/g	0	(0% - 100%) BXFI	10/10/05	04:53
	Uncert:			+/-6.27		+/-5.58					
	TPU:			+/-6.27		+/-5.58					
QC1200947554	LCS										
Tritium		3.03				2.43	pCi/g		80 (75%-125%)	10/13/05	02:10
	Uncert:					+/-0.368					
	TPU:					+/-0.370					
QC1200947551	MB										
Tritium			U	0.341		0.341	pCi/g			10/10/05	04:21

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	467508										
		Uncert:		+/-0.435							
		TPU:		+/-0.435							
QC1200947553	145495003	MS									
Tritium		67.2	U	3.73	50.9	pCi/g	76	(75%-125%)		10/13/05	01:38
		Uncert:		+/-6.27	+/-9.06						
		TPU:		+/-6.27	+/-9.10						
Batch	468332										
QC1200949448	146692033	DUP									
Technetium-99			U	0.0779	U	0.116	pCi/g	0	(0% - 100%)	BXF1	10/08/05 21:04
		Uncert:		+/-0.163	+/-0.153						
		TPU:		+/-0.163	+/-0.153						
QC1200949450	LCS										
Technetium-99		13.1			12.6	pCi/g	96	(75%-125%)		10/08/05	22:09
		Uncert:			+/-0.382						
		TPU:			+/-0.478						
QC1200949447	MB										
Technetium-99				U	0.126	pCi/g				10/08/05	20:32
		Uncert:			+/-0.159						
		TPU:			+/-0.159						
QC1200949449	146692033	MS									
Technetium-99		12.9	U	0.0779	11.5	pCi/g	89	(75%-125%)		10/08/05	21:36
		Uncert:		+/-0.163	+/-0.327						
		TPU:		+/-0.163	+/-0.418						
Batch	470704										
QC1200954980	146692033	DUP									
Nickel-63			U	-5.55	U	-5.8	pCi/g	N/A	(0% - 100%)	BXF1	10/14/05 06:54
		Uncert:		+/-6.92	+/-6.42						
		TPU:		+/-6.93	+/-6.42						
QC1200954982	LCS										
Nickel-63		490			451	pCi/g	92	(75%-125%)		10/14/05	07:58
		Uncert:			+/-15.5						
		TPU:			+/-21.1						
QC1200954979	MB										
Nickel-63				U	-4.7	pCi/g				10/14/05	06:21
		Uncert:			+/-5.32						
		TPU:			+/-5.32						
QC1200954981	146692033	MS									
Nickel-63		575	U	-5.55	515	pCi/g	90	(75%-125%)		10/14/05	07:26
		Uncert:		+/-6.92	+/-20.2						
		TPU:		+/-6.93	+/-26.9						
Batch	470741										
QC1200955097	146692033	DUP									
Carbon-14			U	0.0819	U	0.00819	pCi/g	0	(0% - 100%)	SLN1	10/12/05 18:55
		Uncert:		+/-0.0775	+/-0.0747						
		TPU:		+/-0.0776	+/-0.0747						
QC1200955099	LCS										
Carbon-14		6.94			6.93	pCi/g	100	(75%-125%)		10/12/05	20:44
		Uncert:			+/-0.388						
		TPU:			+/-0.403						

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	470741										
QC1200955096	MB										
Carbon-14			U	0.0653	pCi/g					10/12/05	17:18
		Uncert:		+/-0.0756							
		TPU:		+/-0.0756							
QC1200955098	146692033	MS									
Carbon-14		6.95	U	0.0819	6.72	pCi/g	97	(75%-125%)		10/12/05	20:27
		Uncert:		+/-0.0775	+/-0.381						
		TPU:		+/-0.0776	+/-0.395						
Batch	473150										
QC1200960975	146692033	DUP									
Iron-55			U	4.18	U	-2.57	pCi/g	N/A	(0% - 100%)	BXF1	10/20/05 14:00
		Uncert:		+/-51.5	+/-44.0						
		TPU:		+/-51.5	+/-44.0						
QC1200960977	LCS										
Iron-55		641		609	pCi/g		95	(75%-125%)		10/20/05	14:34
		Uncert:		+/-63.9							
		TPU:		+/-76.0							
QC1200960974	MB										
Iron-55			U	20.1	pCi/g					10/20/05	13:43
		Uncert:		+/-39.2							
		TPU:		+/-39.3							
QC1200960976	146692033	MS									
Iron-55		750	U	4.18	733	pCi/g	98	(75%-125%)		10/20/05	14:17
		Uncert:		+/-51.5	+/-70.1						
		TPU:		+/-51.5	+/-85.9						

Notes:

The Qualifiers in this report are defined as follows:

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- U Target analyte was analyzed for but not detected above the MDL or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- d The 2:1 depletion requirement was not met for this sample
- h Sample preparation or preservation holding time exceeded.

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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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 MOUNTAIN SIDE
SURVEY UNIT 9527-0001

RELEASE RECORD

Attachment 2b
Sample and Scan Area Data
(9 Pages)

Survey Release Record Scan Area Results

Survey Unit 9527-0001

<u>Sample Name</u>	<u>Background (cpm)</u>	<u>Action Level (cpm)</u>	<u>Results (cpm)</u>	<u>Above AL</u>	<u>Log Date</u>	<u>Log Time</u>	<u>E600 S/N</u>	<u>Probe S/N</u>
9527-01-SL-00-01-0	7660	8909	8870		9/20/2005	10:08 AM	1107	1010
9527-01-SL-00-02-0	7400	8628	7670		9/19/2005	8:35 AM	1105	1001
9527-01-SL-00-03-0	9180	10547	8940		9/19/2005	8:21 AM	1105	1001
9527-01-SL-00-04-0	8140	9428	7930		9/19/2005	2:09 PM	1105	1001
9527-01-SL-00-05-0	11400	12924	10400		9/19/2005	2:05 PM	1105	1001
9527-01-SL-00-06-0	10700	12176	9120		9/19/2005	8:49 AM	1105	1001
9527-01-SL-00-07-0	8270	9568	8420		9/19/2005	9:03 AM	1105	1001
9527-01-SL-00-08-0	8600	9923	8200		9/20/2005	10:01 AM	1107	1010
9527-01-SL-00-09-0	10900	12390	10700		9/19/2005	1:59 PM	1105	1001
9527-01-SL-00-10-0	10300	11748	10100		9/19/2005	2:59 PM	1105	1001
9527-01-SL-00-11-0	9550	10945	9970		9/19/2005	10:45 AM	1105	1001
9527-01-SL-00-12-0	10700	12176	11100		9/19/2005	10:37 AM	1105	1001
9527-01-SL-00-13-0	12300	13883	12700		9/19/2005	3:04 PM	1105	1001
9527-01-SL-00-14-0	11900	13457	11300		9/19/2005	2:53 PM	1105	1001
9527-01-SL-00-15-0	13100	14733	13600		9/19/2005	2:48 PM	1105	1001
9527-01-SL-00-16-0	8670	9999	9270		9/19/2005	1:56 PM	1105	1001
9527-01-SL-00-17-0	7990	9266	9100		9/19/2005	1:52 PM	1105	1001
9527-01-SL-00-18-0	9800	11213	9900		9/19/2005	1:48 PM	1105	1001

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 1 SECTIONS 1 THROUGH 8

<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>
9527-01-SC-01-01-0	7340	8563	7320		9/14/2005	10:08 AM	1107	1010
9527-01-SC-01-02-0	8900	10246	8420		9/14/2005	10:10 AM	1107	1010
9527-01-SC-01-03-0	7870	9136	6940		9/14/2005	10:12 AM	1107	1010
9527-01-SC-01-04-0	7380	8606	7440		9/14/2005	10:15 AM	1107	1010
9527-01-SC-01-05-0	7420	8649	7820		9/14/2005	10:19 AM	1107	1010
9527-01-SC-01-06-0	7990	9266	6980		9/14/2005	10:22 AM	1107	1010
9527-01-SC-01-07-0	7830	9093	7900		9/14/2005	10:24 AM	1107	1010
9527-01-SC-01-08-0	7540	8779	6460		9/14/2005	10:27 AM	1107	1010
9527-01-SC-01-09-0	8200	9492	7630		9/14/2005	10:31 AM	1107	1010
9527-01-SC-01-10-0	6420	7564	7140		9/14/2005	10:33 AM	1107	1010
9527-01-SC-01-11-0	8590	9913	7450		9/14/2005	10:35 AM	1107	1010
9527-01-SC-01-12-0	8310	9611	8460		9/14/2005	10:38 AM	1107	1010
9527-01-SC-01-13-0	7420	8649	5830		9/14/2005	10:41 AM	1107	1010
9527-01-SC-01-14-0	7080	8281	6820		9/14/2005	10:44 AM	1107	1010
9527-01-SC-01-15-0	9310	10687	7800		9/14/2005	10:45 AM	1107	1010
9527-01-SC-01-16-0	8630	9956	6730		9/14/2005	10:48 AM	1107	1010
9527-01-SC-01-17-0	9110	10472	6970		9/14/2005	10:51 AM	1107	1010
9527-01-SC-01-18-0	7920	9190	6070		9/14/2005	10:53 AM	1107	1010
9527-01-SC-01-19-0	7950	9222	6610		9/14/2005	10:54 AM	1107	1010
9527-01-SC-01-20-0	6940	8129	7250		9/14/2005	10:56 AM	1107	1010
9527-01-SC-01-21-0	8590	9913	8530		9/14/2005	1:30 PM	1107	1010
9527-01-SC-01-22-0	8130	9417	6640		9/14/2005	1:33 PM	1107	1010
9527-01-SC-01-23-0	6990	8183	6230		9/14/2005	1:34 PM	1107	1010
9527-01-SC-01-24-0	8240	9535	6600		9/14/2005	1:36 PM	1107	1010
9527-01-SC-01-25-0	8890	10236	10900	+	9/14/2005	1:46 PM	1107	1010
9527-01-SC-01-26-0	10900	12390	7620		9/14/2005	1:50 PM	1107	1010
9527-01-SC-01-27-0	10500	11962	6810		9/14/2005	1:54 PM	1107	1010
9527-01-SC-01-28-0	10500	11962	7430		9/14/2005	1:56 PM	1107	1010
9527-01-SC-01-29-0	10300	11748	10100		9/14/2005	2:21 PM	1107	1010
9527-01-SC-01-30-0	11300	12817	9680		9/14/2005	2:23 PM	1107	1010

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 1 SECTIONS 1 THROUGH 8

<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>
9527-01-SC-01-31-0	10200	11641	10600		9/14/2005	2:25 PM	1107	1010
9527-01-SC-01-32-0	11100	12604	11300		9/14/2005	2:27 PM	1107	1010
9527-01-SC-01-33-0	10300	11748	10000		9/14/2005	2:53 PM	1107	1010
9527-01-SC-01-34-0	11400	12924	9810		9/14/2005	2:56 PM	1107	1010
9527-01-SC-01-35-0	9450	10837	10400		9/14/2005	2:59 PM	1107	1010
9527-01-SC-01-36-0	10600	12069	9130		9/14/2005	3:01 PM	1107	1010
9527-01-SC-01-37-0	8740	10074	9970		9/14/2005	3:06 PM	1107	1010
9527-01-SC-01-38-0	9750	11159	8970		9/14/2005	3:09 PM	1107	1010
9527-01-SC-01-39-0	10700	12176	9770		9/14/2005	3:11 PM	1107	1010
9527-01-SC-01-40-0	10200	11641	8550		9/14/2005	3:13 PM	1107	1010
9527-01-SC-01-41-0	10900	12390	8880		9/14/2005	2:50 PM	1105	1001
9527-01-SC-01-42-0	10600	12069	12100	+	9/14/2005	2:53 PM	1105	1001
9527-01-SC-01-43-0	12100	13670	8960		9/14/2005	2:55 PM	1105	1001
9527-01-SC-01-44-0	10400	11855	10300		9/14/2005	2:58 PM	1105	1001
9527-01-SC-01-45-0	11300	12817	11700		9/14/2005	3:01 PM	1105	1001
9527-01-SC-01-46-0	11200	12710	11500		9/14/2005	3:03 PM	1105	1001
9527-01-SC-01-47-0	11400	12924	11700		9/14/2005	3:05 PM	1105	1001
9527-01-SC-01-48-0	11500	13030	11100		9/14/2005	3:07 PM	1105	1001
9527-01-SC-01-49-0	10500	11962	10900		9/14/2005	3:10 PM	1105	1001
9527-01-SC-01-50-0	12100	13670	11300		9/14/2005	3:12 PM	1105	1001
9527-01-SC-01-51-0	10200	11641	10300		9/20/2005	8:23 AM	1107	1010
9527-01-SC-01-52-0	9750	11159	10400		9/20/2005	8:29 AM	1107	1010
9527-01-SC-01-53-0	11700	13244	10200		9/20/2005	8:33 AM	1107	1010
9527-01-SC-01-54-0	11100	12604	9910		9/20/2005	8:37 AM	1107	1010
9527-01-SC-01-55-0	10100	11534	10500		9/20/2005	8:39 AM	1107	1010
9527-01-SC-01-56-0	10900	12390	9570		9/20/2005	8:40 AM	1107	1010
9527-01-SC-01-57-0	9980	11406	9670		9/20/2005	8:42 AM	1107	1010
9527-01-SC-01-58-0	10500	11962	10300		9/20/2005	8:45 AM	1107	1010
9527-01-SC-01-59-0	10200	11641	9890		9/20/2005	8:46 AM	1107	1010
9527-01-SC-01-60-0	10800	12283	9250		9/20/2005	8:48 AM	1107	1010

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 1 SECTIONS 1 THROUGH 8

<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>
9527-01-SC-01-61-0	9100	10461	9520		9/20/2005	8:54 AM	1107	1010
9527-01-SC-01-62-0	10400	11855	9010		9/20/2005	8:55 AM	1107	1010
9527-01-SC-01-63-0	10200	11641	9330		9/20/2005	8:57 AM	1107	1010
9527-01-SC-01-64-0	8960	10311	9260		9/20/2005	8:58 AM	1107	1010
9527-01-SC-01-65-0	10100	11534	8970		9/20/2005	9:00 AM	1107	1010
9527-01-SC-01-66-0	9140	10504	9840		9/20/2005	9:01 AM	1107	1010
9527-01-SC-01-67-0	9360	10741	9190		9/20/2005	9:02 AM	1107	1010
9527-01-SC-01-68-0	9020	10375	9330		9/20/2005	9:04 AM	1107	1010
9527-01-SC-01-69-0	8700	10031	8050		9/20/2005	9:06 AM	1107	1010
9527-01-SC-01-70-0	9160	10526	8150		9/20/2005	9:07 AM	1107	1010
9527-01-SC-01-71-0	8870	10214	8350		9/20/2005	10:21 AM	1107	1010
9527-01-SC-01-72-0	8620	9945	8790		9/20/2005	10:23 AM	1107	1010
9527-01-SC-01-73-0	9380	10762	9020		9/20/2005	10:25 AM	1107	1010
9527-01-SC-01-74-0	9020	10375	8870		9/20/2005	10:27 AM	1107	1010
9527-01-SC-01-75-0	9280	10655	8930		9/20/2005	10:28 AM	1107	1010
9527-01-SC-01-76-0	8640	9967	8850		9/20/2005	10:29 AM	1107	1010
9527-01-SC-01-77-0	9090	10451	8740		9/20/2005	10:30 AM	1107	1010
9527-01-SC-01-78-0	8570	9891	8770		9/20/2005	10:31 AM	1107	1010
9527-01-SC-01-79-0	8850	10193	9750		9/20/2005	10:33 AM	1107	1010
9527-01-SC-01-80-0	9810	11224	9620		9/20/2005	10:34 AM	1107	1010

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 2 SECTIONS 9 THROUGH 16

<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>
9527-01-SC-02-01-0	7880	9147	7860		9/20/2005	10:40 AM	1107	1010
9527-01-SC-02-02-0	9590	10988	9770		9/20/2005	10:42 AM	1107	1010
9527-01-SC-02-03-0	8330	9633	8430		9/20/2005	10:43 AM	1107	1010
9527-01-SC-02-04-0	8470	9783	8430		9/20/2005	10:44 AM	1107	1010
9527-01-SC-02-05-0	9300	10676	9110		9/20/2005	10:45 AM	1107	1010
9527-01-SC-02-06-0	8930	10279	9040		9/20/2005	10:47 AM	1107	1010
9527-01-SC-02-07-0	9870	11288	10100		9/20/2005	10:49 AM	1107	1010
9527-01-SC-02-08-0	9520	10912	9440		9/20/2005	10:50 AM	1107	1010
9527-01-SC-02-09-0	10000	11427	9780		9/20/2005	10:51 AM	1107	1010
9527-01-SC-02-10-0	9410	10794	10100		9/20/2005	10:53 AM	1107	1010
9527-01-SC-02-11-0	9110	10472	8050		9/20/2005	10:56 AM	1107	1010
9527-01-SC-02-12-0	9350	10730	9810		9/20/2005	10:57 AM	1107	1010
9527-01-SC-02-13-0	8560	9880	8270		9/20/2005	10:59 AM	1107	1010
9527-01-SC-02-14-0	8690	10020	9450		9/20/2005	11:00 AM	1107	1010
9527-01-SC-02-15-0	9060	10418	8600		9/20/2005	11:01 AM	1107	1010
9527-01-SC-02-16-0	8340	9643	8960		9/20/2005	11:03 AM	1107	1010
9527-01-SC-02-17-0	9520	10912	7720		9/20/2005	11:05 AM	1107	1010
9527-01-SC-02-18-0	8810	10150	9410		9/20/2005	11:07 AM	1107	1010
9527-01-SC-02-19-0	9670	11073	9120		9/20/2005	11:08 AM	1107	1010
9527-01-SC-02-20-0	10100	11534	8900		9/20/2005	11:09 AM	1107	1010
9527-01-SC-02-21-0	9510	10902	9520		9/20/2005	11:12 AM	1107	1010
9527-01-SC-02-22-0	10100	11534	9520		9/20/2005	11:14 AM	1107	1010
9527-01-SC-02-23-0	8350	9654	8550		9/20/2005	11:15 AM	1107	1010
9527-01-SC-02-24-0	8620	9945	8880		9/20/2005	11:17 AM	1107	1010
9527-01-SC-02-25-0	8210	9503	8940		9/20/2005	11:18 AM	1107	1010
9527-01-SC-02-26-0	8320	9622	7010		9/20/2005	11:20 AM	1107	1010
9527-01-SC-02-27-0	7200	8411	8340		9/20/2005	11:22 AM	1107	1010
9527-01-SC-02-28-0	8010	9287	5660		9/20/2005	11:23 AM	1107	1010
9527-01-SC-02-29-0	6760	7933	7260		9/20/2005	11:24 AM	1107	1010
9527-01-SC-02-30-0	7790	9050	5390		9/20/2005	11:26 AM	1107	1010

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 2 SECTIONS 9 THROUGH 16

<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>
9527-01-SC-02-31-0	10800	12283	10300		9/20/2005	1:19 PM	1105	1001
9527-01-SC-02-32-0	9730	11138	9060		9/20/2005	1:21 PM	1105	1001
9527-01-SC-02-33-0	9490	10880	10200		9/20/2005	1:22 PM	1105	1001
9527-01-SC-02-34-0	10200	11641	9230		9/20/2005	1:23 PM	1105	1001
9527-01-SC-02-35-0	8790	10128	9950		9/20/2005	1:26 PM	1105	1001
9527-01-SC-02-36-0	10500	11962	9620		9/20/2005	1:27 PM	1105	1001
9527-01-SC-02-37-0	11000	12497	10700		9/20/2005	1:29 PM	1105	1001
9527-01-SC-02-38-0	9060	10418	9870		9/20/2005	1:31 PM	1105	1001
9527-01-SC-02-39-0	10400	11855	9880		9/20/2005	1:32 PM	1105	1001
9527-01-SC-02-40-0	10200	11641	10400		9/20/2005	1:33 PM	1105	1001
9527-01-SC-02-41-0	11100	12604	11100		9/20/2005	1:36 PM	1105	1001
9527-01-SC-02-42-0	10900	12390	9760		9/20/2005	1:38 PM	1105	1001
9527-01-SC-02-43-0	10700	12176	10800		9/20/2005	1:39 PM	1105	1001
9527-01-SC-02-44-0	10200	11641	9940		9/20/2005	1:40 PM	1105	1001
9527-01-SC-02-45-0	10600	12069	9460		9/20/2005	1:42 PM	1105	1001
9527-01-SC-02-46-0	10400	11855	9820		9/20/2005	1:43 PM	1105	1001
9527-01-SC-02-47-0	10200	11641	10200		9/20/2005	1:45 PM	1105	1001
9527-01-SC-02-48-0	10600	12069	9790		9/20/2005	1:46 PM	1105	1001
9527-01-SC-02-49-0	10700	12176	9420		9/20/2005	1:48 PM	1105	1001
9527-01-SC-02-50-0	10900	12390	10300		9/20/2005	1:49 PM	1105	1001
9527-01-SC-02-51-0	10000	11427	10100		9/20/2005	1:54 PM	1105	1001
9527-01-SC-02-52-0	9800	11213	9690		9/20/2005	1:55 PM	1105	1001
9527-01-SC-02-53-0	10800	12283	9100		9/20/2005	1:56 PM	1105	1001
9527-01-SC-02-54-0	10400	11855	9550		9/20/2005	1:58 PM	1105	1001
9527-01-SC-02-55-0	10100	11534	8480		9/20/2005	2:00 PM	1105	1001
9527-01-SC-02-56-0	9080	10440	9180		9/20/2005	2:02 PM	1105	1001
9527-01-SC-02-57-0	9940	11363	10200		9/20/2005	2:03 PM	1105	1001
9527-01-SC-02-58-0	9720	11127	9770		9/20/2005	2:05 PM	1105	1001
9527-01-SC-02-59-0	9530	10923	10500		9/20/2005	2:06 PM	1105	1001
9527-01-SC-02-60-0	8840	10182	9930		9/20/2005	2:07 PM	1105	1001

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 2 SECTIONS 9 THROUGH 16

<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>
9527-01-SC-02-61-0	11000	12497	8300		9/20/2005	2:09 PM	1105	1001
9527-01-SC-02-62-0	9380	10762	9590		9/20/2005	2:11 PM	1105	1001
9527-01-SC-02-63-0	11100	12604	9900		9/20/2005	2:12 PM	1105	1001
9527-01-SC-02-64-0	11000	12497	10600		9/20/2005	2:13 PM	1105	1001
9527-01-SC-02-65-0	9870	11288	10700		9/20/2005	2:15 PM	1105	1001
9527-01-SC-02-66-0	9940	11363	10600		9/20/2005	2:16 PM	1105	1001
9527-01-SC-02-67-0	10400	11855	10100		9/20/2005	2:17 PM	1105	1001
9527-01-SC-02-68-0	9940	11363	9190		9/20/2005	2:18 PM	1105	1001
9527-01-SC-02-69-0	9290	10666	9480		9/20/2005	2:20 PM	1105	1001
9527-01-SC-02-70-0	10700	12176	8860		9/20/2005	2:21 PM	1105	1001
9527-01-SC-02-71-0	8670	9999	7250		9/20/2005	2:36 PM	1105	1001
9527-01-SC-02-72-0	8020	9298	8440		9/20/2005	2:39 PM	1105	1001
9527-01-SC-02-73-0	8620	9945	6710		9/20/2005	2:39 PM	1105	1001
9527-01-SC-02-74-0	7090	8292	7940		9/20/2005	2:43 PM	1105	1001
9527-01-SC-02-75-0	9620	11020	6340		9/20/2005	2:44 PM	1105	1001
9527-01-SC-02-76-0	10200	11641	5220		9/20/2005	2:46 PM	1105	1001
9527-01-SC-02-77-0	11100	12604	5090		9/20/2005	2:47 PM	1105	1001
9527-01-SC-02-78-0	8750	10085	6010		9/20/2005	2:49 PM	1105	1001
9527-01-SC-02-79-0	9490	10880	5130		9/20/2005	2:50 PM	1105	1001
9527-01-SC-02-80-0	9760	11170	8230		9/20/2005	2:51 PM	1105	1001

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 3 SECTIONS 17 THROUGH 22

<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>
9527-01-SC-03-01-0	7350	8574	6910		9/21/2005	8:31 AM	1107	1010
9527-01-SC-03-02-0	6490	7640	6590		9/21/2005	8:32 AM	1107	1010
9527-01-SC-03-03-0	6180	7302	5300		9/21/2005	8:34 AM	1107	1010
9527-01-SC-03-04-0	6320	7455	7030		9/21/2005	8:36 AM	1107	1010
9527-01-SC-03-05-0	7310	8530	3820		9/21/2005	8:37 AM	1107	1010
9527-01-SC-03-06-0	5210	6240	5970		9/21/2005	8:41 AM	1107	1010
9527-01-SC-03-07-0	6720	7890	4290		9/21/2005	8:43 AM	1107	1010
9527-01-SC-03-08-0	7240	8454	6300		9/21/2005	8:43 AM	1107	1010
9527-01-SC-03-09-0	6380	7520	5820		9/21/2005	8:45 AM	1107	1010
9527-01-SC-03-10-0	7030	8227	7500		9/21/2005	8:46 AM	1107	1010
9527-01-SC-03-11-0	7340	8563	7440		9/21/2005	8:48 AM	1107	1010
9527-01-SC-03-12-0	9110	10472	8380		9/21/2005	8:50 AM	1107	1010
9527-01-SC-03-13-0	8500	9816	9340		9/21/2005	8:51 AM	1107	1010
9527-01-SC-03-14-0	8550	9870	9560		9/21/2005	8:54 AM	1107	1010
9527-01-SC-03-15-0	9930	11352	8220		9/21/2005	8:55 AM	1107	1010
9527-01-SC-03-16-0	8900	10246	9480		9/21/2005	8:57 AM	1107	1010
9527-01-SC-03-17-0	8960	10311	9370		9/21/2005	8:59 AM	1107	1010
9527-01-SC-03-18-0	7810	9071	8000		9/21/2005	9:00 AM	1107	1010
9527-01-SC-03-19-0	8040	9320	6500		9/21/2005	9:01 AM	1107	1010
9527-01-SC-03-20-0	8190	9482	8070		9/21/2005	9:03 AM	1107	1010
9527-01-SC-03-21-0	7300	8519	7470		9/21/2005	9:07 AM	1107	1010
9527-01-SC-03-22-0	7210	8422	7850		9/21/2005	9:08 AM	1107	1010
9527-01-SC-03-23-0	7640	8887	7040		9/21/2005	9:10 AM	1107	1010
9527-01-SC-03-24-0	7650	8898	8480		9/21/2005	9:12 AM	1107	1010
9527-01-SC-03-25-0	8280	9579	7940		9/21/2005	9:13 AM	1107	1010
9527-01-SC-03-26-0	7360	8584	7090		9/21/2005	9:14 AM	1107	1010
9527-01-SC-03-27-0	7480	8714	7890		9/21/2005	9:15 AM	1107	1010
9527-01-SC-03-28-0	7130	8335	5320		9/21/2005	9:16 AM	1107	1010
9527-01-SC-03-29-0	6450	7596	7530		9/21/2005	9:18 AM	1107	1010
9527-01-SC-03-30-0	7520	8758	5260		9/21/2005	9:19 AM	1107	1010

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0001

9527-0001 SCAN AREA 3 SECTIONS 17 THROUGH 22

<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>
9527-01-SC-03-31-0	8990	10343	6210		9/21/2005	10:26 AM	1107	1010
9527-01-SC-03-32-0	8640	9967	7900		9/21/2005	10:30 AM	1107	1010
9527-01-SC-03-33-0	9510	10902	5390		9/21/2005	10:32 AM	1107	1010
9527-01-SC-03-34-0	8850	10193	6670		9/21/2005	10:34 AM	1107	1010
9527-01-SC-03-35-0	7580	8823	4470		9/21/2005	10:36 AM	1107	1010
9527-01-SC-03-36-0	8860	10203	9310		9/21/2005	10:39 AM	1107	1010
9527-01-SC-03-37-0	8690	10020	8220		9/21/2005	10:40 AM	1107	1010
9527-01-SC-03-38-0	8260	9557	7430		9/21/2005	10:42 AM	1107	1010
9527-01-SC-03-39-0	7930	9201	7580		9/21/2005	10:43 AM	1107	1010
9527-01-SC-03-40-0	8480	9794	8730		9/21/2005	10:45 AM	1107	1010
9527-01-SC-03-41-0	9730	11138	9740		9/21/2005	1:16 PM	1105	1001
9527-01-SC-03-42-0	9020	10375	9530		9/21/2005	1:18 PM	1105	1001
9527-01-SC-03-43-0	9340	10719	10200		9/21/2005	1:20 PM	1105	1001
9527-01-SC-03-44-0	9660	11063	8010		9/21/2005	1:22 PM	1105	1001
9527-01-SC-03-45-0	7480	8714	7930		9/21/2005	1:24 PM	1105	1001
9527-01-SC-03-46-0	11100	12604	9470		9/21/2005	1:25 PM	1105	1001
9527-01-SC-03-47-0	8200	9492	9160		9/21/2005	1:28 PM	1105	1001
9527-01-SC-03-48-0	9860	11277	8870		9/21/2005	1:29 PM	1105	1001
9527-01-SC-03-49-0	10500	11962	10300		9/21/2005	1:31 PM	1105	1001
9527-01-SC-03-50-0	10300	11748	11300		9/21/2005	1:33 PM	1105	1001
9527-01-SC-03-51-0	9660	11063	10800		9/21/2005	1:37 PM	1105	1001
9527-01-SC-03-52-0	11000	12497	10600		9/21/2005	1:39 PM	1105	1001
9527-01-SC-03-53-0	10400	11855	10900		9/21/2005	1:40 PM	1105	1001
9527-01-SC-03-54-0	11500	13030	11700		9/21/2005	1:43 PM	1105	1001
9527-01-SC-03-55-0	10700	12176	10700		9/21/2005	1:44 PM	1105	1001
9527-01-SC-03-56-0	11400	12924	8360		9/21/2005	1:46 PM	1105	1001
9527-01-SC-03-57-0	10000	11427	10400		9/21/2005	1:48 PM	1105	1001
9527-01-SC-03-58-0	11300	12817	10200		9/21/2005	1:49 PM	1105	1001
9527-01-SC-03-59-0	11500	13030	11700		9/21/2005	1:51 PM	1105	1001
9527-01-SC-03-60-0	9970	11395	10500		9/21/2005	1:53 PM	1105	1001

AL - Action Level

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001

RELEASE RECORD

Attachment 2c
Split Sample Assessment Forms
(2 Page)

Split Sample Assessment Form

Survey Area#: 9527		Survey Unit #: 0001		Survey Unit name: East Mountain Side																
Sample Plan or WPIR#: 2005-0054						SML#: 9527-0001-010														
Sample Description: Comparison of split samples collected from sample measurement location #10 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9527-0001-010F, the comparison sample was 9527-0001-010FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	3.31E-1	2.20E-2	15	0.6 - 1.66	6.97E-1	4.40E-2	2.1	N												
Ra-226	9.24E-1	5.20E-2	18	0.75 - 1.33	8.51E-1	6.80E-2	0.9	Y												
Pb-214	1.12	5.00E-2	23	0.75 - 1.33	1.10	6.55E-2	1.0	Y												
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples. <table border="1"> <thead> <tr> <th>Resolution</th> <th>Agreement Range</th> </tr> </thead> <tbody> <tr> <td>4 - 7</td> <td>0.5 - 2.0</td> </tr> <tr> <td>8 - 15</td> <td>0.6 - 1.66</td> </tr> <tr> <td>16 - 50</td> <td>0.75 - 1.33</td> </tr> <tr> <td>51 - 200</td> <td>0.80 - 1.25</td> </tr> <tr> <td>>200</td> <td>0.85 - 1.18</td> </tr> </tbody> </table>				Resolution	Agreement Range	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
									Resolution	Agreement Range										
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed By: JACK McARTHUR Date: 3/16/06					Reviewed By: [Signature] Date: 3-16-06															

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Split Sample Assessment Form

Survey Area#: 9527		Survey Unit #: 0001		Survey Unit name: East Mountain Side						
Sample Plan or WPIR#: 2005-0054						SML#: 9527-0001-013				
Sample Description: Comparison of split samples collected from sample measurement location #13 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9527-0001-013F, the comparison sample was 9527-0001-013FS.										
STANDARD					COMPARISON					
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)		
Cs-137	4.05E-1	3.00E-2	14	0.6 - 1.66	4.05E-1	3.51E-2	1.0	Y		
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples.					
							Resolution	Agreement Range		
							4 - 7	0.5 - 2.0		
							8 - 15	0.6 - 1.66		
							16 - 50	0.75 - 1.33		
							51 - 200	0.80 - 1.25		
							>200	0.85 - 1.18		
Performed By: JACK McLAUGHLIN		Date 3/16/06		Reviewed By: [Signature]			Date: 3-16-06			

07

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001

RELEASE RECORD

Attachment 2d
Preliminary Data Forms
(2 Pages)

PRELIMINARY DATA REVIEW FORM

WP&IR No. : 2005-0054
 Survey Unit : 9527-0001
 Survey Unit Name : East Mountain Side
 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	Co-60
RANGE Target Level (pCi/g) :	2.53E+00	1.22E+00
Minimum Value :	2.43E-01	-1.63E-02
Maximum Value :	1.48E+00	2.50E-02
Mean :	5.45E-01	7.59E-03
Median :	4.50E-01	1.00E-02
Standard Deviation :	3.14E-01	1.28E-02

Reported Results

	Cs-137	Co-60	
Sample Identification	Concentration (pCi/g)	Concentration (pCi/g)	Fraction of Target Level
9527-0001-001F	5.19E-01	1.26E-02	0.215
9527-0001-002F	2.43E-01	2.43E-02	0.116
9527-0001-003F	8.83E-01	-4.47E-03	0.345
9527-0001-004F	4.40E-01	1.00E-02	0.182
9527-0001-005F	3.12E-01	4.45E-03	0.127
9527-0001-006F	5.55E-01	2.08E-02	0.236
9527-0001-007F	5.63E-01	-9.59E-03	0.215
9527-0001-008F	4.16E-01	1.91E-02	0.180
9527-0001-009F	8.07E-01	6.04E-03	0.324
9527-0001-010F	3.31E-01	2.50E-02	0.151
9527-0001-011F	5.02E-01	-1.63E-04	0.198
9527-0001-012F	1.48E+00	-5.98E-03	0.580
9527-0001-013F	4.05E-01	-1.63E-02	0.147
9527-0001-014F	4.50E-01	1.61E-02	0.191
9527-0001-015F	2.69E-01	1.19E-02	0.116

Reported results for the listed radionuclides did not always meet the accepted level of detection
 (i.e., a result greater than two standard deviations uncertainty)


 Submitted by/Date 3/16/06

Reviewed Dal Marshall 3-16-06
 1 of 1

PRELIMINARY DATA REVIEW FORM

WP&IR No. : 2005-0054
 Survey Unit : 9527-0001
 Survey Unit Name : East Mountain Side
 Classification : 2
 Survey Media : Soil
 Type of Survey : Final Status Survey - Biased
 Type of Measurement : Radionuclide Specific
 Number of Measurements : 3


BASIC STATISTICAL QUANTITIES

	Cs-137	Co-60
Target Level (pCi/g) :	2.53E+00	1.22E+00
Minimum Value :	4.19E-01	-3.49E-03
Maximum Value :	5.95E-01	1.24E-02
Mean :	5.28E-01	2.41E-03
Median :	5.71E-01	-1.69E-03
Standard Deviation :	9.54E-02	8.70E-03

Reported Results

Sample Identification	Reported Results		Fraction of Target Level
	Cs-137 Concentration (pCi/g)	Co-60 Concentration (pCi/g)	
9527-0001-016F	5.95E-01	1.24E-02	0.245
9527-0001-017F	4.19E-01	-3.49E-03	0.163
9527-0001-018F	5.71E-01	-1.69E-03	0.224

Reported results for the listed radionuclides did not always meet the accepted level of detection
 (i.e., a result greater than two standard deviations uncertainty)


 Submitted by/Date 3/16/06

Reviewed  3-16-06
 1 of 1

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001

RELEASE RECORD

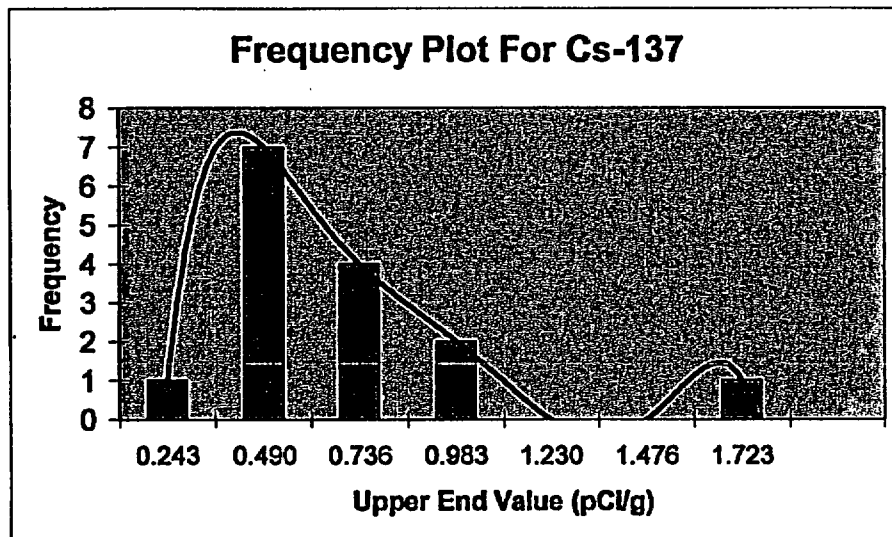
Attachment 2e
Graphical Representation of Data
(2 Pages)

FREQUENCY PLOT FOR CESIUM-137

Survey Unit: 9527-0001

Survey Unit Name: East Mountain Side

Mean: 5.45E-01 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.243	1	7%
0.490	7	47%
0.736	4	27%
0.983	2	13%
1.230	0	0%
1.476	0	0%
1.723	1	7%
0.000	0	0%
Total:	15	100%

Jack McGarry 3/16/06
Submitted By/Date

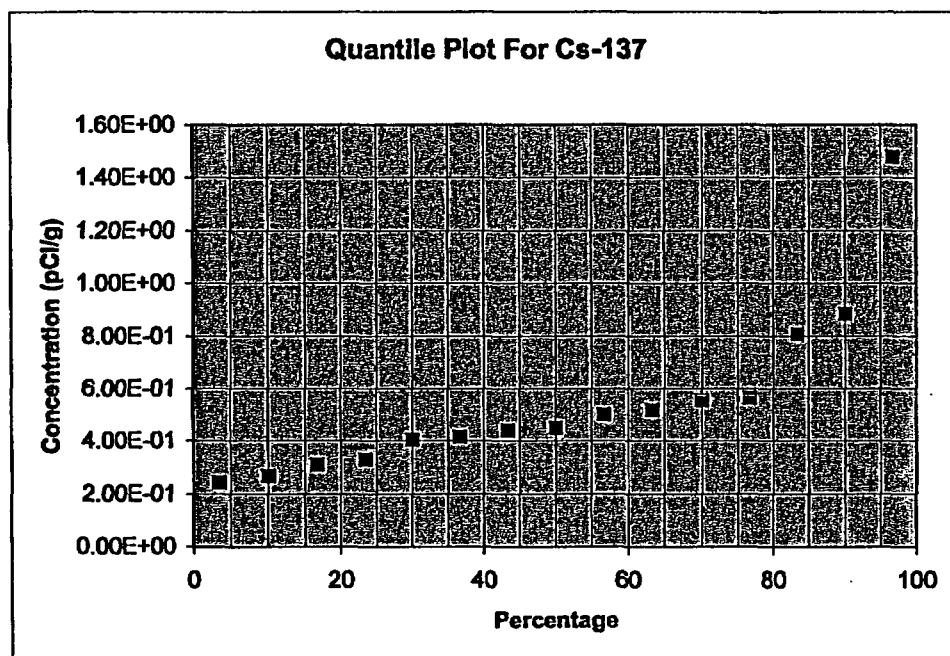
Paul Runkell 3-16-06
Reviewed By/Date

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9527-0001

Survey Unit Name: East Mountain Side

Mean: 5.45E-01 pCi/g



Cs-137	Rank	Percentage
2.43E-01	1	3%
2.69E-01	2	10%
3.12E-01	3	17%
3.31E-01	4	23%
4.05E-01	5	30%
4.16E-01	6	37%
4.40E-01	7	43%
4.50E-01	8	50%
5.02E-01	9	57%
5.19E-01	10	63%
5.55E-01	11	70%
5.63E-01	12	77%
8.07E-01	13	83%
8.83E-01	14	90%
1.48E+00	15	97%

Jack McCarthy 3/16/06
Submitted By/Date

Pat Rendell 3-8-06
Reviewed By/Date

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001

RELEASE RECORD

Attachment 2f
Sign Test Calculation
(1 Page)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Area Number: 9527		Survey Unit Number: 0001		WPIR#: 2005-0054			
Survey Area Name: East Mountain Side		Classification: 2		TYPE I (α error): 0.05		N: 15	
Radionuclides:		Cs-137	Co-60	Sr-90	C-14	Tc-99	
DCGL:		2.53E+00	1.220E+00	4.96E-01	1.81E+00	4.03E+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
5.19E-01	1.26E-02				0.215	0.785	+
2.43E-01	2.43E-02				0.116	0.884	+
8.83E-01	-4.47E-03				0.345	0.655	+
4.40E-01	1.00E-02	2.05E-02	1.15E-01	2.37E-01	0.346	0.654	+
3.12E-01	4.45E-03				0.127	0.873	+
5.55E-01	2.08E-02	-1.88E-02	1.03E-01	2.00E-01	0.305	0.695	+
5.63E-01	-9.59E-03	-1.03E-03	1.36E-01	1.07E-01	0.314	0.686	+
4.16E-01	1.91E-02				0.180	0.820	+
8.07E-01	6.04E-03				0.324	0.676	+
3.31E-01	2.50E-02				0.151	0.849	+
5.02E-01	-1.63E-04				0.198	0.802	+
1.48E+00	-5.98E-03				0.580	0.420	+
4.05E-01	-1.63E-02				0.147	0.853	+
4.50E-01	1.61E-02				0.191	0.809	+
2.69E-01	1.19E-02				0.116	0.884	+
Number of positive differences (S+):							15

Critical Value: 11

Survey Unit Meets Acceptance Criterion

Performed by:

Jack McCarthy

Date:

3/16/06

**EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0001**

RELEASE RECORD

**Attachment 2g
COMPASS DQA Surface Soil Report with
Retrospective Power Curve
(4 Pages)**

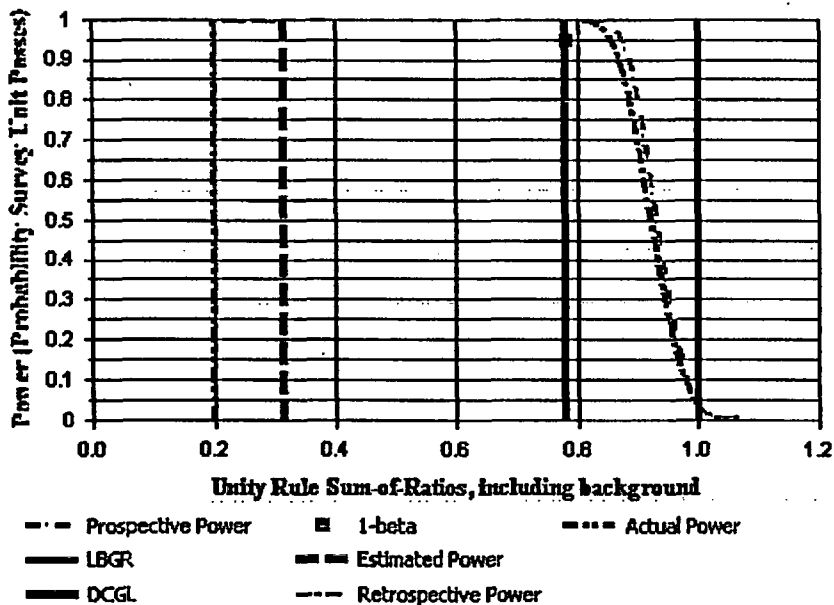


DQA Surface Soil Report

Assessment Summary

Site: 9527-0001 FSS
Planner(s): McCarthy *Bunny* 3/16/06 *Reviewed Dal Kendall 3-16-06*
Survey Unit Name: East Mountain Side
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





DQA Surface Soil Report

Survey Unit Data

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

Sample Number	Type	C-14 (pCi/g)	Co-60 (pCi/g)	Cs-137 (pCi/g)
9527-0001-001F	S	0	0.01	0.52
9527-0001-002F	S	0	0.02	0.24
9527-0001-003F	S	0	0	0.88
9527-0001-004F	S	0.12	0.01	0.44
9527-0001-005F	S	0	0	0.31
9527-0001-006F	S	0.1	0.02	0.56
9527-0001-007F	S	0.14	-0.01	0.56
9527-0001-008F	S	0	0.02	0.42
9527-0001-009F	S	0	0.01	0.81
9527-0001-010F	S	0	0.02	0.33
9527-0001-011F	S	0	0	0.5
9527-0001-012F	S	0	-0.01	1.48
9527-0001-013F	S	0	-0.02	0.4
9527-0001-014F	S	0	0.02	0.45
9527-0001-015F	S	0	0.01	0.27

Sample Number	Type	SrY-90 (pCi/g)	Tc-99 (pCi/g)
9527-0001-001F	S	0	0
9527-0001-002F	S	0	0
9527-0001-003F	S	0	0
9527-0001-004F	S	0.02	0.24
9527-0001-005F	S	0	0
9527-0001-006F	S	-0.02	0.2
9527-0001-007F	S	0	0.11
9527-0001-008F	S	0	0
9527-0001-009F	S	0	0
9527-0001-010F	S	0	0
9527-0001-011F	S	0	0
9527-0001-012F	S	0	0
9527-0001-013F	S	0	0
9527-0001-014F	S	0	0
9527-0001-015F	S	0	0



DQA Surface Soil Report

Modified Data (Unity Rule SOR)

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

Sample Number	Type	Sum-of-Ratios (SOR)
9527-0001-001F	S	0.22
9527-0001-002F	S	0.12
9527-0001-003F	S	0.35
9527-0001-004F	S	0.35
9527-0001-005F	S	0.13
9527-0001-006F	S	0.31
9527-0001-007F	S	0.31
9527-0001-008F	S	0.18
9527-0001-009F	S	0.32
9527-0001-010F	S	0.15
9527-0001-011F	S	0.2
9527-0001-012F	S	0.58
9527-0001-013F	S	0.15
9527-0001-014F	S	0.19
9527-0001-015F	S	0.12



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=15
Mean (SOR)	0.25	N/A	0.31
Median (SOR)	0.20	N/A	N/A
Std Dev (SOR)	0.13	N/A	0.11
High Value (SOR)	0.58	N/A	N/A
Low Value (SOR)	0.12	N/A	N/A