



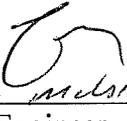
Final Status Survey Final Report Phase III

Appendix A4
Survey Unit Release Record
9527-0003, East Mountain Side

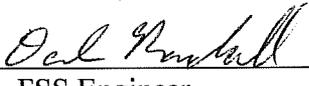
Revision 1, September 2006



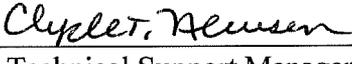
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FINAL STATUS SURVEY RELEASE RECORD
EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9527-0003 (East Mountain Side) is designated as Final Status Survey (FSS) Class 2 and consists of 8,200 m² (2.03 acres) of uninhabited open land located approximately 0.16 miles from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1, Figure 1). The survey unit is bounded by an unpaved road on the north (called north as oriented with the north to south flow of the Connecticut River) side, a fence to the east and south, and a partial fence to the west. The survey unit comprises wooded terrain with some steep rock ledge and rock outcroppings within the interior.

The soil of this survey unit meets the requirements for unrestricted release as a Class 2 survey unit under the criteria and requirements of the HNP License Termination Plan (LTP).

The reference coordinates associated with this survey unit are E014 through E022 by S067 through S076 (refer to License Termination Plan (LTP) Section 5.4.4). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS).

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 9527-0003 as Class 2 in September 2005.

The "Classification Basis Summary" conducted for Survey Unit 9527-0003 consisted of:

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

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- 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. The single piece of tent material was found in Survey Unit 9527-0005 along the fence and about five hundred fifty (550) feet from the nearest boundary of 9527-0003.
- 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 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.

Characterization was performed by Site Closure personnel in April 2005 to determine existing conditions and obtain radiological data for Final Status Survey (FSS). The reported concentrations of Cs-137 found in the soil were statistically consistent with 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.”* The average concentration was 0.653 pCi/g which was slightly lower than expected; however, one (1) sample reported Cs-137 at a concentration of 1.18 pCi/g. The basic statistical quantities (i.e., mean, standard deviation, median) for Cs-137 and Co-60 are provided in Table 1.

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

Parameter	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value:	3.11E-01	-6.84E-03
Maximum Value:	1.18E+00	1.29E-01
Mean:	6.53E-01	2.17E-02
Median:	6.46E-01	1.28E-02
Standard Deviation:	2.52E-01	3.29E-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.

The final designation was Class 2 based on historical information (HSA Supplement and LTP Table 2.10 and 2.11B) and characterization survey data which resulted in the expectation that no FSS sample would be reported in a concentration that that would exceed the LTP criteria.

3. DATA QUALITY OBJECTIVES (DQO)

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

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis. Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would 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 Survey Unit 9527-0003 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).

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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.

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

Equation 1:

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

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

This survey unit is affected by existing groundwater (reference CY memo ISC 06-024 and the Final Status Survey Final Report Phase III). The dose contribution from existing groundwater is bounded at 2 mrem/yr TEDE based on field data.

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

Equation 2:

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

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

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survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 to conservatively account for the contribution to the total dose from existing and future groundwater which had not been established at the time of planning the FSS.

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

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pCi/g) ⁽²⁾	Operational DCGL (pCi/g) ⁽³⁾	Required MDC (pCi/g) ⁽⁴⁾
H-3	4.12E+02	2.80E+02	1.65E+01
C-14	5.66E+00	3.85E+00	2.26E-01
Mn-54	1.74E+01	1.18E+01	6.96E-01
Fe-55	2.74E+04	1.86E+04	1.10E+03
Co-60	3.81E+00	2.59E+00	1.52E-01
Ag-108m	7.14E+00	4.86E+00	2.86E-01
Ni-63	7.23E+02	4.92E+02	2.89E+01
Sr-90	1.55E+00	1.05E+00	6.20E-02
Nb-94	7.12E+00	4.84E+00	2.85E-01
Tc-99	1.26E+01	8.57E+00	5.04E-01
Cs-134	4.67E+00	3.18E+00	1.87E-01
Cs-137	7.91E+00	5.38E+00	3.16E-01
Eu-152	1.01E+01	6.87E+00	4.04E-01
Eu-154	9.29E+00	6.32E+00	3.72E-01
Eu-155	3.92E+02	2.67E+02	1.57E+01
Pu-238	2.96E+01	2.01E+01	1.18E+00
Pu-239/240	2.67E+01	1.82E+01	1.07E+00
Pu-241	8.70E+02	5.92E+02	3.48E+01
Am-241 ⁽⁵⁾	2.58E+01	1.75E+01	1.03E+00
Cm-243/244	2.90E+01	1.97E+01	1.16E+00

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

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

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

(4) The required MDC is equivalent to 1 mrem/yr TEDE

(5) Americium-241 can be analyzed by gamma and alpha spectroscopy and is considered to be Easy to Detect (ETD). The preferred result is the alpha spectroscopy's when both analyses are performed.

Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Characterization was performed in April 2005 as discussed in Section 2. Cesium-137 was found to be the predominate radionuclide of concern. Cobalt-60 was included in the

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survey design based on the 1997 scoping survey results. The basic statistical quantities (i.e., mean, standard deviation, median) for Cs-137 and Co-60 are provided in Table 1.

Instrument DQOs included a verification of the ability of the survey instrument to detect the radiation(s) of interest relative to the DCGL. Survey instrument response checks were 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.

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.

Characterization was performed by Site Closure personnel in April 2005 to determine existing conditions and obtain radiological data for Final Status Survey (FSS). The DQO process determined that Cs-137 and Co-60 would be the radionuclides of concern (refer to Section 3). The sum of fractions or unity rule would be used with the individual Operational DCGLs because multiple radionuclides (Cs-137 and Co-60) were considered in the survey design. Other radionuclides identified during FSS would be evaluated to ensure adequate survey design and compliance with the unity rule.

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

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

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

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "*Determination of the Number of Surface Samples for Final Status Survey.*" The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 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 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
9527-0003-001F	237066.59	669086.55
9527-0003-002F	236929.20	669086.55
9527-0003-003F	236860.50	669046.89
9527-0003-004F	236860.50	669126.21
9527-0003-005F	236791.81	669007.23
9527-0003-006F	236791.81	669086.55
9527-0003-007F	236791.81	669165.88
9527-0003-008F	236723.11	669126.21
9527-0003-009F	236723.11	669205.54
9527-0003-010F	236723.11	669284.86
9527-0003-011F	236654.41	669165.88
9527-0003-012F	236654.41	669245.20
9527-0003-013F	236654.41	669324.52
9527-0003-014F	236585.72	669284.86
9527-0003-015F	236585.72	669364.19

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A minimum of two (2) judgmental or biased samples were to be collected at locations selected by FSS Supervision 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 13% percent 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, 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 "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 10% 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." Note, the survey design used a much smaller value for investigation than the Operational DCGL provided by Table 2 to conservatively account for the contribution to the total dose from existing and future groundwater which had not been established at the time of planning the FSS.

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Table 4 – Synopsis of the Survey Design ⁽¹⁾

Feature	Design Criteria	Basis
Survey Unit Land Area	8,200 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 0.103 pCi/g, the LBGR was adjusted to 0.79 to maintain Relative Shift in the range of 1 and 3, Relative Shift was 2
Grid Spacing	25.1	Based on triangular grid
Interval Spacing	21.7	Based on triangular grid
Design DCGL	2.53 pCi/g Cs-137 1.52 pCi/g Co-60	To achieve 8 mrem/yr TEDE
Operational DCGL	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	To achieve 17 mrem/yr TEDE ⁽²⁾ to demonstrate compliance with Equation 2 of this Release Record
Scan Survey unit Coverage	Approximately 25% of the area	The LTP requires >10% area coverage for Class 2 Survey Units
Soil Investigation Level	2.53 pCi/g Cs-137 1.52 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 2 survey unit
Scan Investigation Level	Detectable over background	The LTP specifies investigation at the MDC _{SCAN} for a Class 2 survey unit when the MDC _{SCAN} is greater than the Operational DCGL

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

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

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 1 through September 9, 2005.

The scan areas were marked out and scanned for elevated readings (see Attachment 2 for Scan Area Results). Scanning was performed with an

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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) samples (9527-0003-003F, 9527-0003-007F and 9527-0003-010F) were randomly selected for HTD radionuclide analysis by the off-site laboratory.

Two (2) biased soil samples (9527-0003-016F and 9527-003-017F) were taken. These samples were analyzed using gamma spectroscopy by the off-site laboratory.

The implementation of survey specific quality control measures included the collection of two (2) samples (9527-0003-008F and 9527-0000-011F) for "split sample" analysis by the off-site laboratory.

6. SURVEY RESULTS

The seventeen (17) sample measurement locations identified in the FSS plan 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.

Table 5- Scan Area Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
1	13.3	14.4	No
2	16.3	17.6	No
3	20.2	20.3	No
4	21.0	25.5	No
5	28.5	38.7	No
6	41.5	44.7	No
7	19.8	22.0	No
8	38.4	44.4	No

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Table 5- Scan Area Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
9	18.7	20.4	No
10	19.1	22.4	No
11	36.0	40.8	No
12	18.6	22.3	No
13	18.2	21.7	No
14	17.6	21.1	No
15	16.7	18.8	No
16	33.3	42.1	No
17	27.5	30.1	No

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

(2) Samples are collected from the location within the boundaries of the scan yielding a response above the action level

Twenty-two (22) 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 ⁽¹⁾ (kcpm)	Elevated Reading Identification ⁽²⁾	Investigation Sample
1	16.2	18.0	None – no elevated areas identified	None
2	17.3	18.0	None – no elevated areas identified	None
3	19.0	20.0	None – no elevated areas identified	None
4	20.5	23.0	None – no elevated areas identified	None
5	20.5	23.7	None – no elevated areas identified	None
6	19.8	29.5	None – no elevated areas identified	None

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Table 6- Scan Area Results

Scan Area	Highest Logged Reading (kcpm)	Action Level⁽¹⁾ (kcpm)	Elevated Reading Identification⁽²⁾	Investigation Sample
7	23.5	25.3	None – no elevated areas identified	None
8	21.6	30.3	None – no elevated areas identified	None
9	38.0	41.3	None – no elevated areas identified	None
10	54.1	54.7	ER-02-15-1	9527-0003-018F
11	21.3	21.7	None – no elevated areas identified	None
12	19.5	21.0	None – no elevated areas identified	None
13	19.0	21.5	None – no elevated areas identified	None
14	20.4	20.5	None – no elevated areas identified	None
15	19.2	28.3	None – no elevated areas identified	None
16	18.2	20.2	None – no elevated areas identified	None
17	15.8	16.7	SC-03-10-0	None ⁽³⁾
18	16.5	18.3	None – no elevated areas identified	None
19	18.1	20.0	None – no elevated areas identified	None
20	20.1	26.2	None – no elevated areas identified	None

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Table 6- Scan Area Results

Scan Area	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification ⁽²⁾	Investigation Sample
21	21.1	31.6	None – no elevated areas identified	None
22	35.5	42.5	None – no elevated areas identified	None

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

(2) ER and SC are abbreviations associated with the barcodes used in the field where ER stands for Elevated Reading and SC refers to Scan

(3) Refer to Section 8 for additional detail

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC, Charleston, South Carolina. The laboratory analyzed the fifteen (15) samples taken for non-parametric statistical testing, the associated duplicates, and the biased samples using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDC. Gamma spectroscopy results identified radionuclides other than Cs-137 and Co-60 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 of the fifteen (15) samples. The average gamma spectroscopy results for Cs-137 were slightly higher 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.

None of the samples exceeded 37% 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	Cs-137 pCi/g	Co-60 pCi/g	Fraction of the Operational DCGL ⁽¹⁾
9527-0003-001F	6.09E-01	1.55E-02	0.119
9527-0003-002F	5.75E-01	7.25E-03	0.110
9527-0003-003F	8.41E-01	3.86E-02	0.171
9527-0003-004F	1.83E+00	6.03E-02	0.363
9527-0003-005F	3.61E-01	2.23E-02	0.076
9527-0003-006F	5.09E-01	2.26E-03	0.095
9527-0003-007F	6.35E-01	1.53E-02	0.124
9527-0003-008F	1.62E+00	4.03E-02	0.317
9527-0003-009F	8.04E-01	0.00E+00	0.149

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Table 7- Summary of Soil Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Fraction of the Operational DCGL ⁽¹⁾
9527-0003-010F	1.28E+00	2.73E-02	0.248
9527-0003-011F	1.21E+00	4.53E-02	0.242
9527-0003-012F	9.49E-01	3.90E-02	0.191
9527-0003-013F	1.69E+00	5.26E-02	0.334
9527-0003-014F	9.92E-01	2.94E-02	0.196
9527-0003-015F	5.50E-01	3.11E-02	0.114

(1) The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 and are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE

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. Table 8 lists the results for those radionuclides meeting the accepted criteria for detection (i.e., a result greater than two standard deviations uncertainty) in more than one sample. Table 8 lists the results for the HTD radionuclides that could not be de-selected based on either the 5% and 10% rules.

Table 8-Hard-to-Detect Sample Results

Sample	Sr-90 (pCi/g)	C-14 (pCi/g)	Tc-99 (pCi/g)	Fraction of the Operational DCGL ⁽¹⁾
9527-0003-003F	3.82E-03	1.25E-01	3.96E-01	8.23E-02
9527-0003-007F	1.60E-02	-4.21E-02	2.01E-01	2.78E-02
9527-0003-010F	2.42E-02	1.09E-01	6.04E-01	1.22E-01

(1) The Operational DCGLs are 1.05 pCi/g for Sr-90, 3.85 pCi/g for C-14 and 8.57 pCi/g for Tc-99 used in conjunction with the unity rule

Two (2) biased samples were collected at locations selected by FSS Supervision based on professional judgment and observation. Gamma spectroscopy analysis was performed by the off-site laboratory to the required MDC. None of the samples exceeded 24% 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⁾
9527-0003-016F	1.12E+00	8.85E-02	0.242
9527-0003-017F	1.21E+00	2.31E-03	0.226

(1) The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 and are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

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7. QUALITY CONTROL

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. Thirteen percent (13%) of the samples were selected for analysis, which exceeds the 5% minimum required by the LTP. The data were evaluated using USNRC acceptance criteria specified in Inspection Procedure 84750 as detailed in HNP Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey.*" There was acceptable agreement between field split results.

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

8. INVESTIGATIONS AND RESULTS

One (1) localized area was found to verifiably exceed the investigation level during the scan area survey. A sample was collected from that location and was analyzed on-site using gamma spectroscopy. The analysis results for Cs-137 and C-60 are shown in Table 10.

Table 10- Confirmatory Sample Results

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Fraction of the Operational DCGL⁽¹⁾
9527-0003-18F	9.91E-01	7.84E-02	0.214

(1) The Operational DCGLs from Table 2 are 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 and are used in conjunction with the unity rule to achieve 17 mrem/yr TEDE

Additional scanning was performed in one (1) small location in February 2006 to obtain additional data relevant to the DQOs. The scanning was performed over an area of about six hundred square feet (600 ft²). No elevated readings were identified.

9. REMEDIATION AND RESULTS

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

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

The survey was designed to 8 mrem/yr TEDE which was conservative and necessary at the time of FSS planning. It is no longer required as the total dose from existing and future groundwater has been established. The dose for soil used to demonstrate compliance with the LTP criteria is 17 mrem/yr TEDE as discussed in Section 2 of this Release Record.

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Three HTD radionuclides were reported in concentrations exceeding either the 5% and 10% rule for de-selection. Therefore, the individual Operational DCGLs for these radionuclides were included into sample design to demonstrate compliance with the unity rule and ensure adequate survey design in accordance with the DQOs. The result of the COMPASS computer run showed adequate power for the revised survey design. The revised survey design 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).

The range of the data, about 2.9 standard deviations, was not unusually large. The difference between the mean and median was 14% of the standard deviation. The difference is enough to indicate skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot shows slight positive skewness as confirmed by the calculated skew of 0.5 and some bimodality 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 9527-0003 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

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit was properly designated as Class 2.

The dose contribution from soil is less than 3 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

This survey unit is affected by existing groundwater (reference CY memo ISC 06-024 and the Final Status Survey Final Report Phase III). The dose contribution from existing groundwater is bounded at 2 mrem/yr TEDE based on field data.

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

14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Sample and Statistical Data

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Attachment 1
Figures
(6 pages)

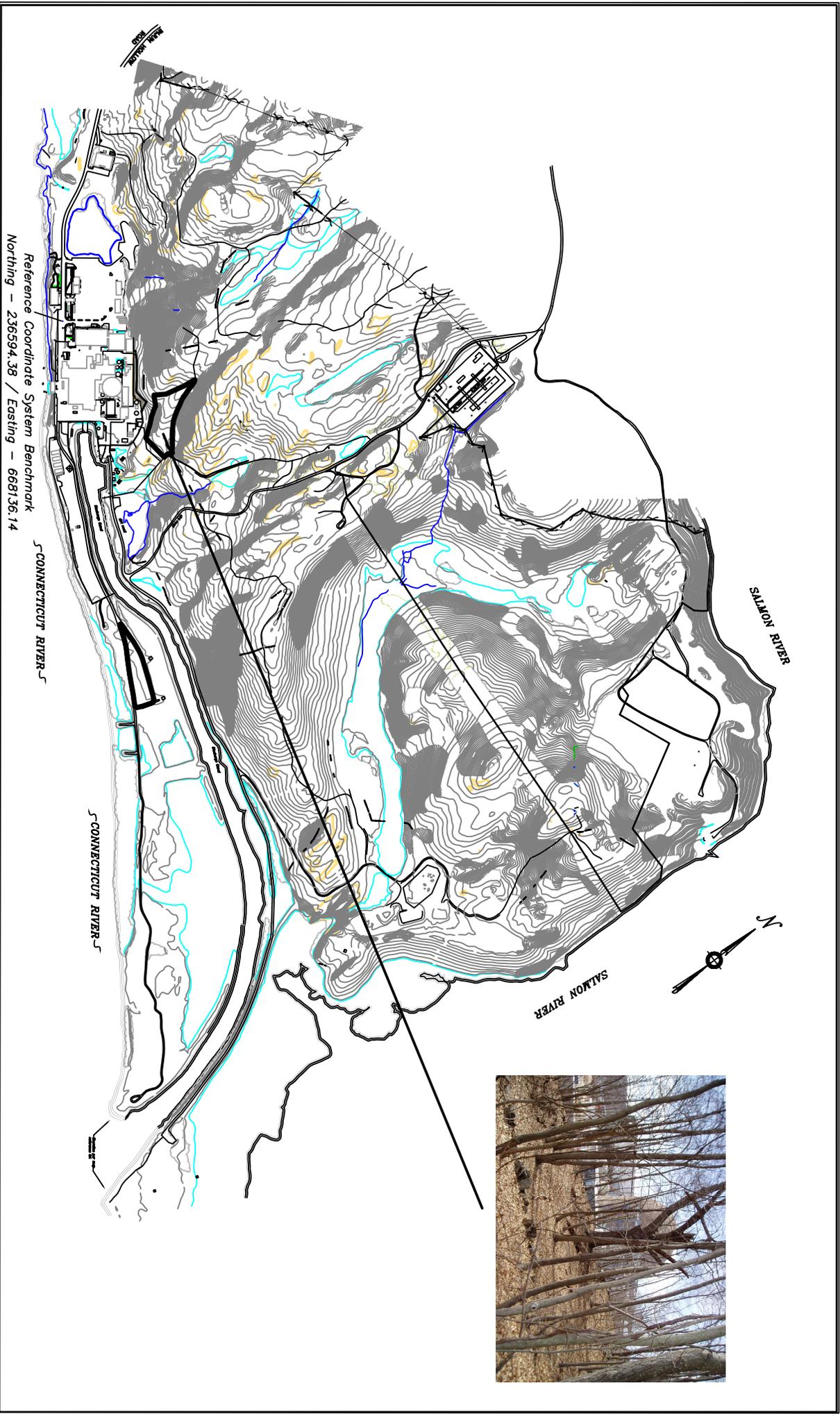
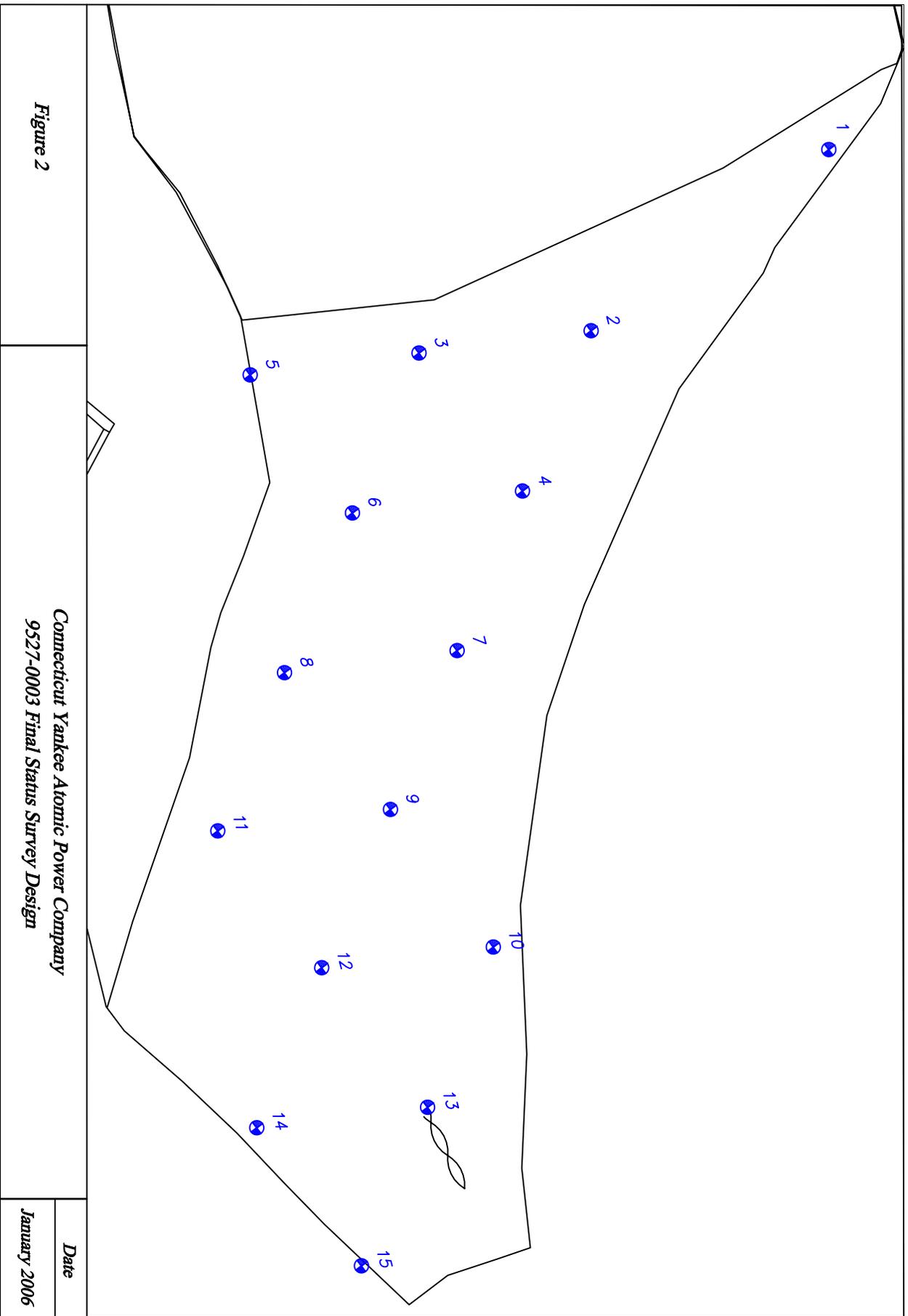


Figure 1



Connecticut Yankee Atomic Power Company
 Site Map With Reference To Survey Unit 9527-0003

Date	By
January 2006	J. Mac



Legend

 **Sample Location**

 **Stone wall**

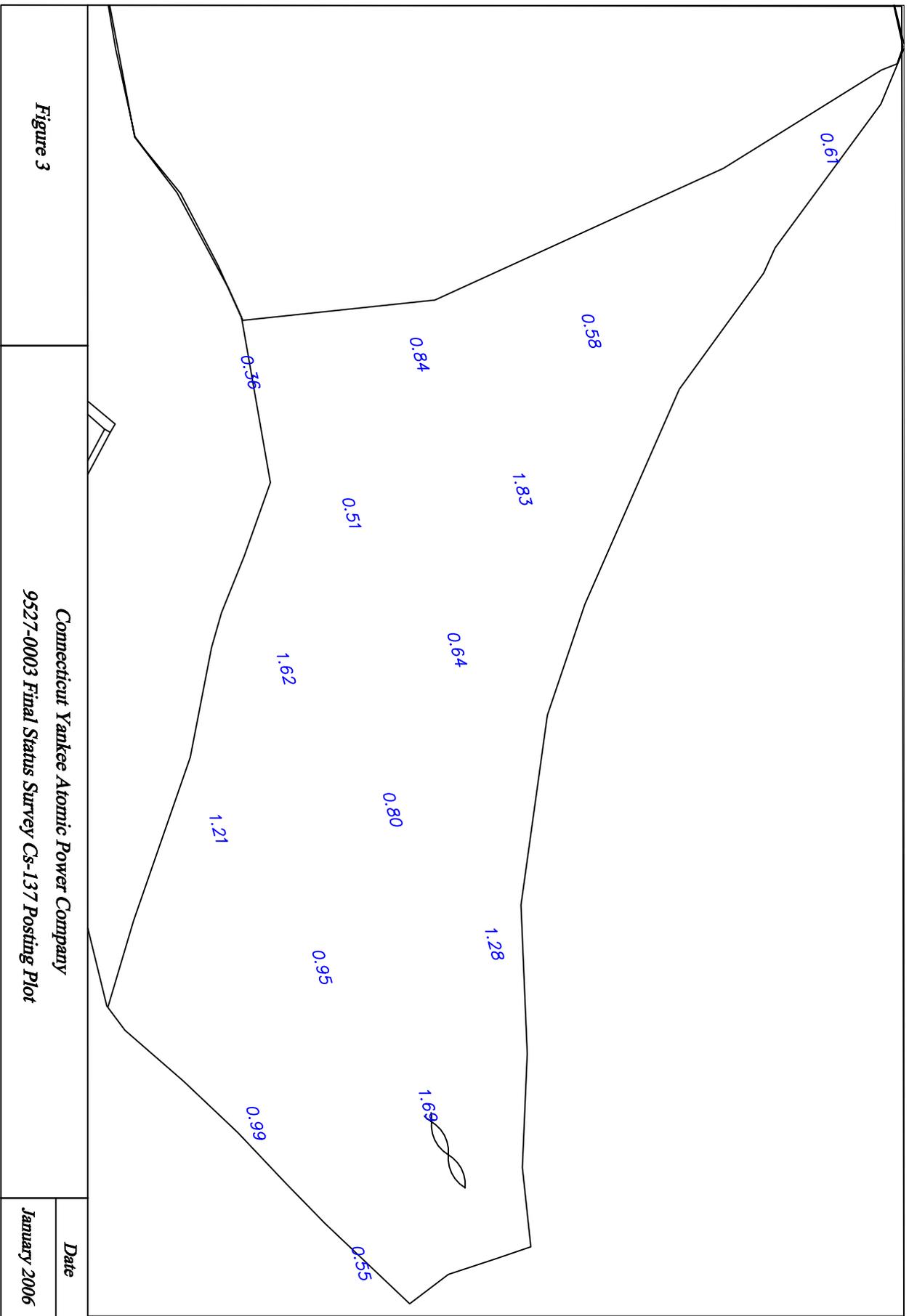
 **0 27 54 Feet**

Figure 2

Connecticut Yankee Atomic Power Company
9527-0003 Final Status Survey Design

Date
 January 2006

By
 J. McC.



Legend

 Stone wall

0 27 54
Feet

Notes

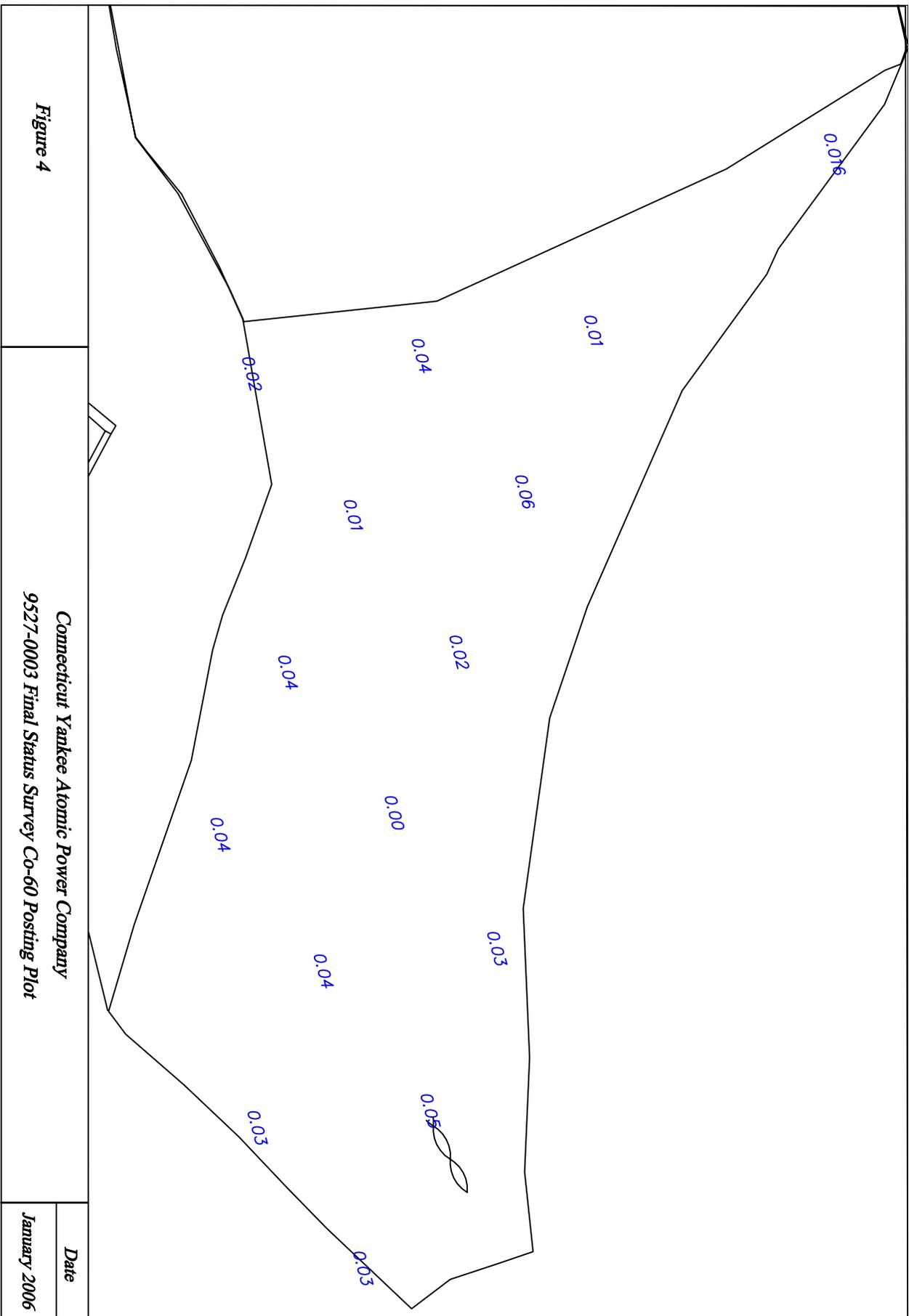
Reported cesium-137 concentrations in pCi/g

Figure 3

Connecticut Yankee Atomic Power Company
9527-0003 Final Status Survey Cs-137 Posting Plot

Date
January 2006

By
J. McC.



Legend

 Stone wall

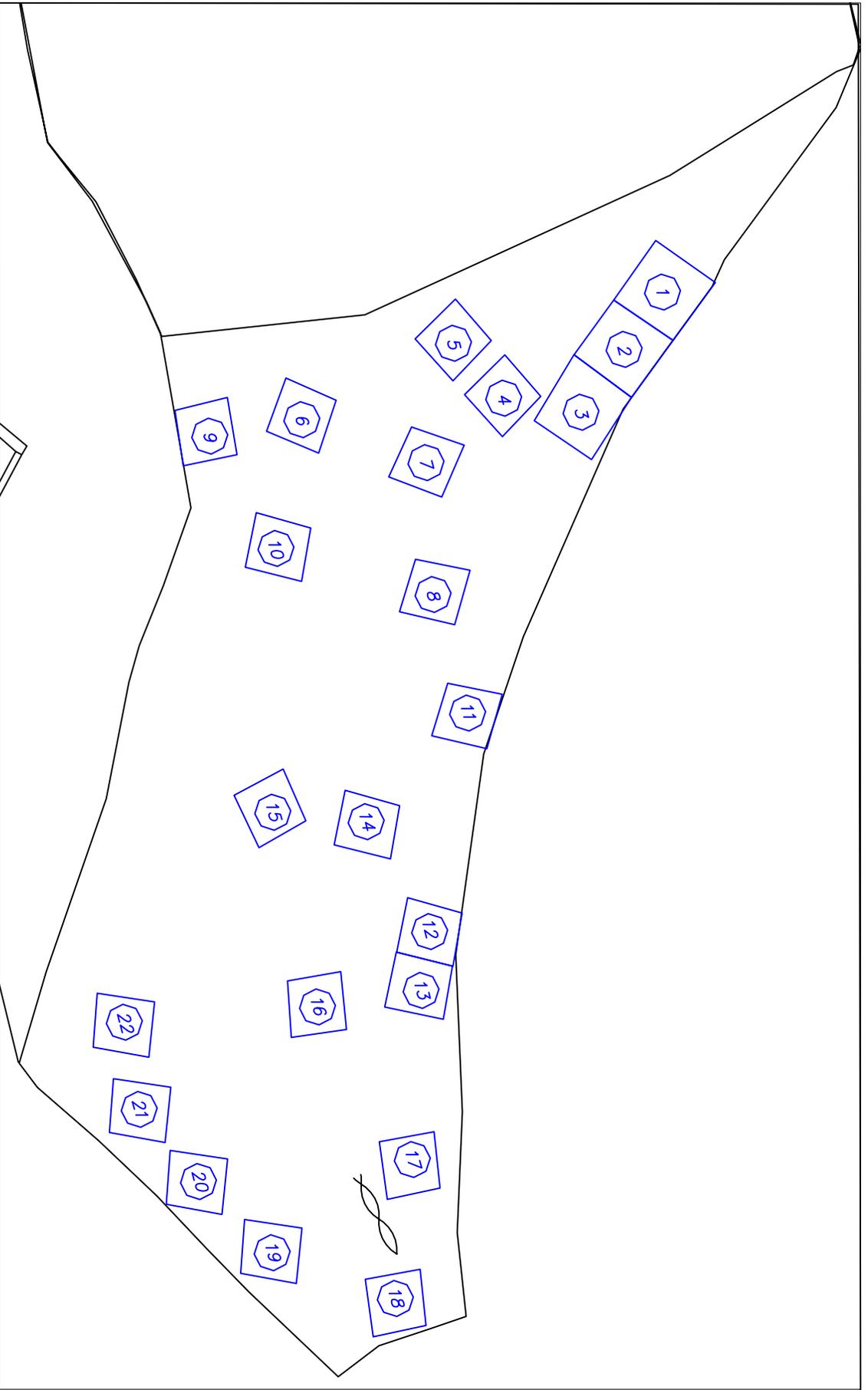


Notes
Reported cobalt-60 concentrations in pCi/g

Figure 4

Connecticut Yankee Atomic Power Company
9527-0003 Final Status Survey Co-60 Posting Plot

Date	By
January 2006	J. McC.



Legend

 Stone wall

 Feet

Notes

Background ranged from 13.2 kcpm to 53.9 kcpm as determined by an E-600 with SPA-3 Probed
 Refer to Table 6 for scan area results

<p>Figure 5</p> <p>Connecticut Yankee Atomic Power Company 9527-0003 Final Status Survey Scan Areas</p>	Date	By
	January 2006	J. McC.

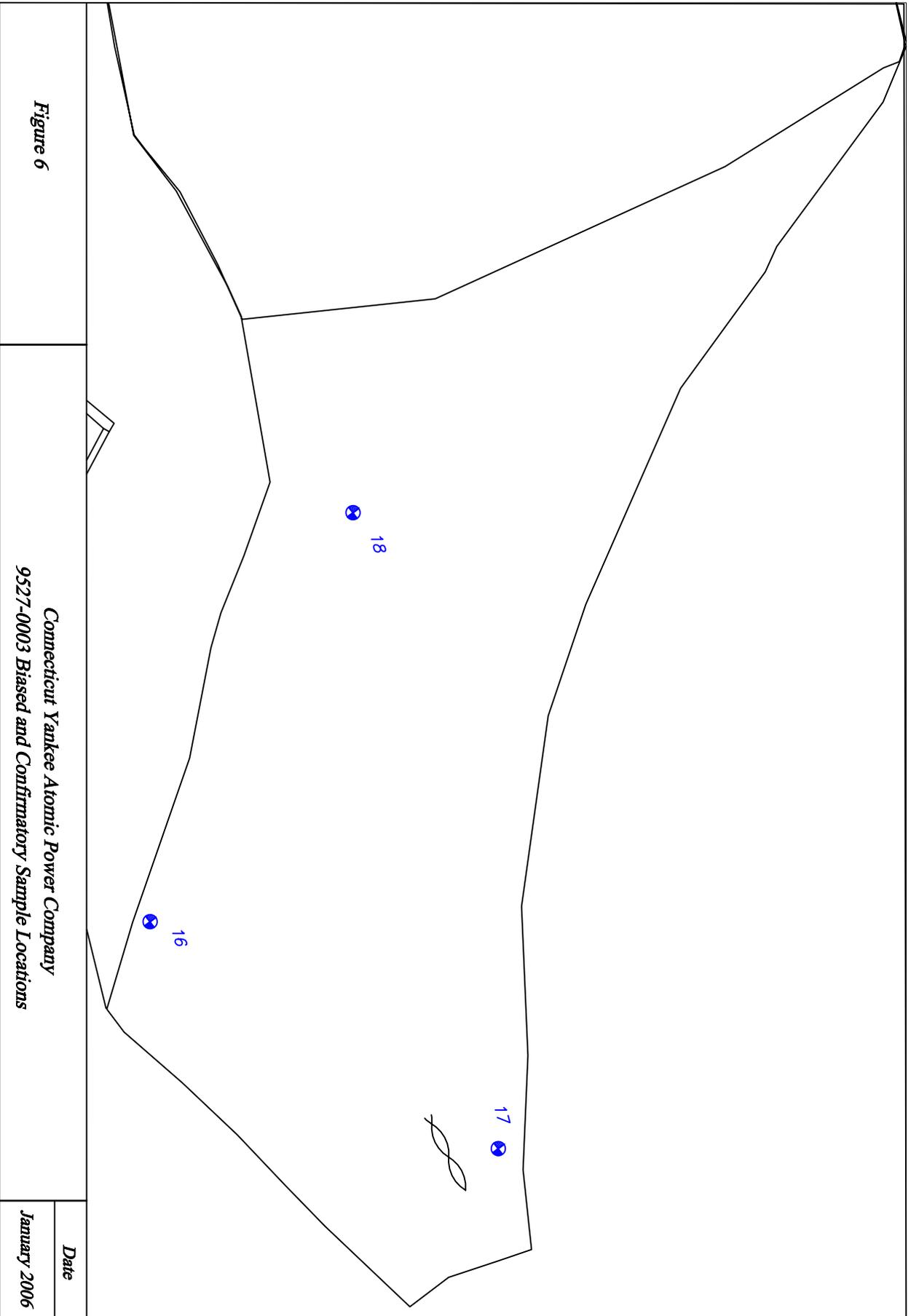


Figure 6

Connecticut Yankee Atomic Power Company
 9527-0003 Biased and Confirmatory Sample Locations

Date	By
January 2006	J. McC.



Legend

 Sample Location

 Stone wall

 0 27 54 feet

Notes
 Refer to Table 9 for biased sample results and Table 10 for the confirmatory sample results

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Attachment 2
Sample and Statistical Data

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

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Attachment 2a
Sample Data
(81 Pages)

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General Narrative

CASE NARRATIVE
For
CONNECTICUT YANKEE
RE: Soils
PO# 002332
Work Order: 145417
SDG: MSR #05-2244

October 10, 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 145417 arrived at General Engineering Laboratories, LLC, (GEL) in Charleston, South Carolina on September 14, 2005. All sample containers arrived without any visible signs of tampering or breakage. Although, the samples did contain live ants which, was documented on the Sample Receipt and Review form. 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>
145417001	9527-0003-008-F
145417002	9527-0003-008-FS
145417003	9527-0003-011-F
145417004	9527-0003-011-FS
145417005	9527-0003-012-F
145417006	9527-0003-013-F
145417007	9527-0003-014-F
145417008	9527-0003-015-F

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.

P.O. Box 30712 • Charleston, SC 29417 • 2040 Savage Road (29407)
Phone (843) 556-8171 • Fax (843) 766-1178 • www.gel.com

<u>Sample ID</u>	<u>Client Sample ID</u>
145417009	9527-0003-016-F
145417010	9527-0003-017-F
145417011	9527-0003-001-F
145417012	9527-0003-002-F
145417013	9527-0003-004-F
145417014	9527-0003-005-F
145417015	9527-0003-006-F
145417016	9527-0003-009-F
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F

Items of Note:

Live ants were present in the samples.

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:

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

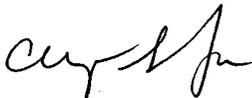
Internal Chain of Custody:

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

Chain of Custody Form

Connecticut Yankee Atomic Power Company
 362 Injun Hollow Road, East Hampton, CT 06424
 860-267-2556

No. 2005-00390

Project Name: Haddam Neck Decommissioning		Media Code		Sample Type Code		Container Size & Type Code		Analyses Requested		Lab Use Only	
								Comments:		Comment, Preservation	
Contact Name & Phone: Pete Hollenbeck 860-267-2556 Ext. 3923											
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:											
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	FSSGAM	FSSALL				
9527-0003-008-F	9/7/05	1406	TS	G	BP	X					
9527-0003-008-FS	9/7/05	1406	TS	G	BP	X					
9527-0003-011-F	9/7/05	1400	TS	G	BP	X					
9527-0003-011-FS	9/7/05	1400	TS	G	BP	X					
9527-0003-012-F	9/7/05	1423	TS	G	BP	X					
9527-0003-013-F	9/7/05	1453	TS	G	BP	X					
9527-0003-014-F	9/7/05	1435	TS	G	BP	X					
9527-0003-015-F	9/7/05	1440	TS	G	BP	X					
9527-0003-016-F	9/7/05	1352	TS	G	BP	X					
9527-0003-017-F	9/7/05	1345	TS	G	BP	X					
NOTES: PO #: 002332 MSR #: 05-2244 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											
1) Relinquished By			Date/Time		2) Received By		Date/Time		Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		
3) Relinquished By			Date/Time		4) Received By		Date/Time		Internal Container Temp.: ___ Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
5) Relinquished By			Date/Time		6) Received By		Date/Time		Bill of Lading # 7912 01857007		

Chain of Custody Form

Connecticut Yankee Atomic Power Company
 362 Injun Hollow Road, East Hampton, CT 06424
 860-267-2556

Project Name: Haddam Neck Decommissioning

Contact Name & Phone:
 Pete Hollenbeck 860-267-2556 Ext. 3923

Analytical Lab (Name, City, State):
 General Engineering Laboratories
 2040 Savage Road
 Charleston, SC 29407
 ATT: Cheryl Jones (843-556-8171)

Priority: 30 D. 14 D. 7 D.
 Other:

No. 2005-00391

Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested		Lab Use Only Comments:	Comment, Preservation	Lab Sample ID
						FSSGAM	FSSALL			
9527-0003-001-F	9/6/05	1425	TS	G	BP	X				
9527-0003-002-F	9/6/05	1430	TS	G	BP	X				
9527-0003-003-F	9/6/05	1435	TS	G	BP		X			
9527-0003-004-F	9/6/05	1440	TS	G	BP	X				
9527-0003-005-F	9/6/05	1440	TS	G	BP	X				
9527-0003-006-F	9/6/05	1455	TS	G	BP	X				
9527-0003-007-F	9/6/05	1450	TS	G	BP		X			
9527-0003-009-F	9/6/05	1500	TS	G	BP	X				
9527-0003-010-F	9/6/05	1505	TS	G	BP		X			

NOTES: PO #: 002332 MSR #: 05-2244 LTP QA Radwaste QA Non QA

1) Relinquished By: *[Signature]* Date/Time: 9/13/05 1345

3) Relinquished By: *[Signature]* Date/Time: _____

2) Received By: *[Signature]* Date/Time: 9/14/05 915

4) Received By: _____ Date/Time: _____

Samples Shipped Via:
 Fed Ex UPS Hand
 Other

Internal Container Temp.: _____ Deg. C
 Custody Sealed? Y N
 Custody Seal Intact? Y N

Bill of Lading # 791201857007

Figure 1. Sample Check-in List

Date/Time Received: 9/14/05 915

SDG#: MSR# 05-2244

Work Order Number: 145417

Shipping Container ID: 7912 0185 7007 Chain of Custody # 2005-00390-391

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Chain-of-Custody record present? Yes No
- 4. Cooler temperature 25°C
- 5. Vermiculite/packing materials is: Wet Dry
- 6. Number of samples in shipping container: _____
- 7. Sample holding times exceeded? Yes No

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

- 10. Were any anomalies identified in sample receipt? Yes No
- 11. Description of anomalies (include sample numbers): N/A
these sample have live Ants in them.

Sample Custodian/Laboratory: *[Signature]* Date: 9/14/05 915

Telephoned to: _____ On _____ By _____

COOLER RECEIPT CHECKLIST



SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCO/Work Order: <u>14547</u>
Date Received: <u>9/19/05</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>MAA</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Coolant # ice bags blue ice dry ice none other describe) <p style="text-align: center; font-size: 1.2em;">25°C</p>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8 Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maximum Counts Observed*: <u>CAN 600</u>
B PCB Regulated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: _____ Initials CS Date: 9/19/05



SAMPLE RECEIPT & REVIEW FORM

CONTINUATION FORM

these samples of soil have live ants in them!!!!!!

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Connecticut Yankee Atomic Power Co. (YANK)
SDG MSR#05-2244**

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:	467822
Prep Batch Number:	463017
Dry Soil Prep GL-RAD-A-021 Batch Number:	463013

Sample ID	Client ID
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
1200948302	Method Blank (MB)
1200948303	145417017(9527-0003-003-F) Sample Duplicate (DUP)
1200948304	145417017(9527-0003-003-F) Matrix Spike (MS)
1200948305	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: 145417017 (9527-0003-003-F).

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:	467823
Prep Batch Number:	463017
Dry Soil Prep GL-RAD-A-021 Batch Number:	463013

Sample ID	Client ID
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
1200948313	Method Blank (MB)
1200948314	145417017(9527-0003-003-F) Sample Duplicate (DUP)
1200948315	145417017(9527-0003-003-F) Matrix Spike (MS)
1200948316	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: 145417017 (9527-0003-003-F).

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 1200948314 (9527-0003-003-F) was recounted due to high negative area.

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:**

Analytical Method:

Prep Method:

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

Analytical Batch Number:

Prep Batch Number:

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

Liquid Scint Pu241, Solid-ALL FSS

DOE EML HASL-300, Pu-11-RC Modified

Ash Soil Prep

Dry Soil Prep

467827

463017

463013

Sample ID

145417017

145417018

145417019

1200948317

1200948318

1200948319

1200948320

Client ID

9527-0003-003-F

9527-0003-007-F

9527-0003-010-F

Method Blank (MB)

145417017(9527-0003-003-F) Sample Duplicate (DUP)

145417017(9527-0003-003-F) Matrix Spike (MS)

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: 145417017 (9527-0003-003-F).

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:

Gamma,Solid-FSS GAM & ALL FSS

Analytical Method:

EML HASL 300, 4.5.2.3

Prep Method:

Dry Soil Prep

Analytical Batch Number:

463112

Prep Batch Number:

463010

Sample ID

Client ID

145417001

9527-0003-008-F

145417002

9527-0003-008-FS

145417003

9527-0003-011-F

145417004

9527-0003-011-FS

145417005	9527-0003-012-F
145417006	9527-0003-013-F
145417007	9527-0003-014-F
145417008	9527-0003-015-F
145417009	9527-0003-016-F
145417010	9527-0003-017-F
145417011	9527-0003-001-F
145417012	9527-0003-002-F
145417013	9527-0003-004-F
145417014	9527-0003-005-F
145417015	9527-0003-006-F
145417016	9527-0003-009-F
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
1200936934	Method Blank (MB)
1200936935	145417001(9527-0003-008-F) Sample Duplicate (DUP)
1200936936	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: 145417001 (9527-0003-008-F).

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.

Additional Comments

The relative percent difference for Bi-214 and Ra-226 failed precision requirements for duplicate 1200936935 (9527-0003-008-F). However, when the relative error ratio is calculated for both isotopes (1.85444 for each) precision is demonstrated.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to interference.	Europium-155	145417015
		Manganese-54	145417005
			145417017
UI	Data rejected due to low abundance.	Cesium-134	145417001
			145417007
			145417008
			145417009
			145417010
			145417014
			145417015
			145417016
			145417017
		Cobalt-60	1200936935
			145417016
		Europium-155	145417008
		Niobium-94	145417003
		Silver-108m	145417014
UI	Data rejected due to no valid peak.	Americium-241	145417002
		Cobalt-60	145417002
		Potassium-40	1200936934

Method/Analysis Information

Product:

Analytical Method:

Prep Method:

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

Analytical Batch Number:

Prep Batch Number:

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

GFPC, Sr90, solid-ALL FSS

EPA 905.0 Modified

Ash Soil Prep

Dry Soil Prep

467346

463017

463013

Sample ID

145417017

145417018

145417019

1200947126

1200947127

1200947128

1200947129

Client ID

9527-0003-003-F

9527-0003-007-F

9527-0003-010-F

Method Blank (MB)

145495001(9802-0000-001RA-SBIV) Sample Duplicate (DUP)

145495001(9802-0000-001RA-SBIV) Matrix Spike (MS)

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: 145495001 (9802-0000-001RA-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 1200947126 (MB) and 1200947127 (9802-0000-001RA-SBIV) were recounted due to a negative result greater than three times the error.

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:**

Analytical Method:

Liquid Scint Tc99, Solid-ALL FSS

DOE EML HASL-300, Tc-02-RC Modified

Analytical Batch Number: 464785

Sample ID	Client ID
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
1200941136	Method Blank (MB)
1200941137	145417018(9527-0003-007-F) Sample Duplicate (DUP)
1200941138	145417018(9527-0003-007-F) Matrix Spike (MS)
1200941139	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: 145417018 (9527-0003-007-F).

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:	464797
Prep Batch Number:	463017
Dry Soil Prep GL-RAD-A-021 Batch Number:	463013

Sample ID	Client ID
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
1200941150	Method Blank (MB)
1200941151	145258021(9801-0000-Z2X 3-04) Sample Duplicate (DUP)
1200941152	145258021(9801-0000-Z2X 3-04) Matrix Spike (MS)
1200941153	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: 145258021 (9801-0000-Z2X 3-04).

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 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:	464799
Prep Batch Number:	463017
Dry Soil Prep GL-RAD-A-021 Batch Number:	463013

Sample ID	Client ID
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
1200941154	Method Blank (MB)
1200941155	145258021(9801-0000-Z2X 3-04) Sample Duplicate (DUP)
1200941156	145258021(9801-0000-Z2X 3-04) Matrix Spike (MS)
1200941157	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: 145258021 (9801-0000-Z2X 3-04).

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-HTD2,ALL FSS
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	467508

Sample ID	Client ID
145417017	9527-0003-003-F
145417018	9527-0003-007-F
145417019	9527-0003-010-F
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:

464786

Sample ID

Client ID

145417017

9527-0003-003-F

145417018

9527-0003-007-F

145417019

9527-0003-010-F

1200941140

Method Blank (MB)

1200941141

145417017(9527-0003-003-F) Sample Duplicate (DUP)

1200941142

145417017(9527-0003-003-F) Matrix Spike (MS)

1200941143

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 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#05-2244 GEL Work Order: 145417

The Qualifiers in this report are defined as follows:

- ** Indicates the analyte is a surrogate compound.
- < 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.
- 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.

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.



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 13, 2005

Client Sample ID:	9527-0003-008-F	Project:	YANK01204
Sample ID:	145417001	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	07-SEP-05		
Receive Date:	14-SEP-05		
Collector:	Client		
Moisture:	12.4%		

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		0.969	+/-0.286	0.0951	+/-0.280	0.202	pCi/g		MJH1	10/04/05	2340	463112 1
Americium-241	U	0.0305	+/-0.051	0.0435	+/-0.050	0.089	pCi/g					
Bismuth-212		0.605	+/-0.546	0.240	+/-0.535	0.504	pCi/g					
Bismuth-214		1.13	+/-0.178	0.057	+/-0.174	0.119	pCi/g					
Cesium-134	UUI	0.00	+/-0.064	0.0369	+/-0.0627	0.0773	pCi/g					
Cesium-137		1.62	+/-0.180	0.032	+/-0.176	0.067	pCi/g					
Cobalt-60	U	0.0403	+/-0.040	0.0355	+/-0.0392	0.0756	pCi/g					
Europium-152	U	-0.0406	+/-0.0963	0.0778	+/-0.0944	0.161	pCi/g					
Europium-154	U	-0.0161	+/-0.122	0.0855	+/-0.120	0.184	pCi/g					
Europium-155	U	0.0816	+/-0.0838	0.0706	+/-0.0821	0.145	pCi/g					
Lead-212		0.894	+/-0.119	0.0416	+/-0.117	0.0857	pCi/g					
Lead-214		1.11	+/-0.192	0.0528	+/-0.188	0.110	pCi/g					
Manganese-54	U	0.018	+/-0.0408	0.0342	+/-0.040	0.0717	pCi/g					
Niobium-94	U	0.00549	+/-0.0351	0.0293	+/-0.0344	0.0613	pCi/g					
Potassium-40		9.17	+/-1.13	0.233	+/-1.11	0.511	pCi/g					
Radium-226		1.13	+/-0.178	0.057	+/-0.174	0.119	pCi/g					
Silver-108m	U	-0.00168	+/-0.0371	0.030	+/-0.0364	0.0622	pCi/g					
Thallium-208		0.323	+/-0.083	0.031	+/-0.0813	0.0648	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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 13, 2005

Client Sample ID: 9527-0003-008-F
Sample ID: 145417001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID: 9527-0003-008-FS
 Sample ID: 145417002
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 10.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.989	+/-0.230	0.0722	+/-0.225	0.156	pCi/g		MJH1 10/04/05	2341	463112 1
Americium-241	UUI	0.00	+/-0.0476	0.0317	+/-0.0467	0.0651	pCi/g				
Bismuth-212		1.06	+/-0.348	0.165	+/-0.341	0.353	pCi/g				
Bismuth-214		0.936	+/-0.147	0.0439	+/-0.144	0.0926	pCi/g				
Cesium-134	U	0.0318	+/-0.033	0.0285	+/-0.0324	0.0604	pCi/g				
Cesium-137		1.37	+/-0.132	0.0242	+/-0.130	0.0511	pCi/g				
Cobalt-60	UUI	0.00	+/-0.0781	0.0227	+/-0.0766	0.0498	pCi/g				
Europium-152	U	-0.0433	+/-0.0785	0.064	+/-0.0769	0.133	pCi/g				
Europium-154	U	0.0337	+/-0.088	0.0748	+/-0.0863	0.162	pCi/g				
Europium-155	U	0.0449	+/-0.0672	0.0567	+/-0.0658	0.116	pCi/g				
Lead-212		0.959	+/-0.128	0.0347	+/-0.125	0.0717	pCi/g				
Lead-214		1.05	+/-0.166	0.0471	+/-0.162	0.0979	pCi/g				
Manganese-54	U	0.00751	+/-0.0289	0.0247	+/-0.0283	0.0525	pCi/g				
Niobium-94	U	-0.00932	+/-0.0267	0.021	+/-0.0261	0.0445	pCi/g				
Potassium-40		8.47	+/-1.09	0.189	+/-1.07	0.423	pCi/g				
Radium-226		0.936	+/-0.147	0.0439	+/-0.144	0.0926	pCi/g				
Silver-108m	U	-0.0146	+/-0.0283	0.0228	+/-0.0277	0.0475	pCi/g				
Thallium-208		0.353	+/-0.0792	0.0226	+/-0.0776	0.0479	pCi/g				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-008-FS
Sample ID: 145417002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-011-F
 Sample ID: 145417003
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 9.88%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.712	+/-0.141	0.0506	+/-0.138	0.107	pCi/g		MJH1 10/04/05	2341	463112 1
Americium-241	U	0.0335	+/-0.105	0.0875	+/-0.103	0.180	pCi/g				
Bismuth-212		0.553	+/-0.241	0.113	+/-0.236	0.238	pCi/g				
Bismuth-214		0.961	+/-0.0854	0.0271	+/-0.0837	0.0569	pCi/g				
Cesium-134	U	0.0267	+/-0.0348	0.0181	+/-0.0341	0.0379	pCi/g				
Cesium-137		1.21	+/-0.0631	0.0167	+/-0.0619	0.0348	pCi/g				
Cobalt-60		0.0453	+/-0.0377	0.015	+/-0.0369	0.0322	pCi/g				
Europium-152	U	-0.0158	+/-0.0497	0.0423	+/-0.0487	0.0877	pCi/g				
Europium-154	U	-0.0344	+/-0.0582	0.0446	+/-0.0571	0.0953	pCi/g				
Europium-155	U	0.0798	+/-0.0672	0.0491	+/-0.0658	0.101	pCi/g				
Lead-212		0.882	+/-0.0611	0.0275	+/-0.0599	0.0566	pCi/g				
Lead-214		1.08	+/-0.0915	0.0292	+/-0.0896	0.0607	pCi/g				
Manganese-54	U	0.0148	+/-0.0184	0.0135	+/-0.018	0.0285	pCi/g				
Niobium-94	UUI	0.00	+/-0.0227	0.0132	+/-0.0222	0.0277	pCi/g				
Potassium-40		14.9	+/-0.786	0.114	+/-0.770	0.250	pCi/g				
Radium-226		0.961	+/-0.0854	0.0271	+/-0.0837	0.0569	pCi/g				
Silver-108m	U	-6.080E-05	+/-0.0161	0.0136	+/-0.0158	0.0284	pCi/g				
Thallium-208		0.276	+/-0.0354	0.0142	+/-0.0347	0.0299	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.

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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 13, 2005

Client Sample ID: 9527-0003-011-F
Sample ID: 145417003

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	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.

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Certificate of Analysis

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 362 Injun Hollow Road
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 Contact: Mr. Pete Hollenbeck
 Project: Soils PO# 002332

Report Date: October 13, 2005

Client Sample ID: 9527-0003-011-FS
 Sample ID: 145417004
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 10.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.658	+/-0.183	0.0568	+/-0.179	0.122	pCi/g		MJH1 10/10/05	1126	463112 1
Americium-241	U	0.00577	+/-0.0245	0.0209	+/-0.024	0.043	pCi/g				
Bismuth-212		0.408	+/-0.264	0.134	+/-0.258	0.285	pCi/g				
Bismuth-214		0.833	+/-0.139	0.0308	+/-0.136	0.0653	pCi/g				
Cesium-134	U	0.0478	+/-0.0319	0.0251	+/-0.0312	0.0528	pCi/g				
Cesium-137		1.05	+/-0.110	0.0175	+/-0.108	0.0371	pCi/g				
Cobalt-60	U	0.0425	+/-0.0258	0.0242	+/-0.0253	0.0518	pCi/g				
Europium-152	U	-0.025	+/-0.0554	0.0441	+/-0.0543	0.092	pCi/g				
Europium-154	U	-0.0209	+/-0.0732	0.0579	+/-0.0718	0.125	pCi/g				
Europium-155	U	0.0679	+/-0.0626	0.0339	+/-0.0613	0.0701	pCi/g				
Lead-212		0.782	+/-0.100	0.0215	+/-0.098	0.0448	pCi/g				
Lead-214		0.949	+/-0.127	0.032	+/-0.125	0.0668	pCi/g				
Manganese-54	U	0.032	+/-0.0276	0.0176	+/-0.027	0.0376	pCi/g				
Niobium-94	U	0.0126	+/-0.0196	0.0168	+/-0.0192	0.0356	pCi/g				
Potassium-40		11.6	+/-1.10	0.139	+/-1.08	0.313	pCi/g				
Radium-226		0.833	+/-0.139	0.0308	+/-0.136	0.0653	pCi/g				
Silver-108m	U	0.000114	+/-0.0193	0.0166	+/-0.0189	0.0347	pCi/g				
Thallium-208		0.259	+/-0.0613	0.0165	+/-0.060	0.0351	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-011-FS
Sample ID: 145417004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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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 East Hampton, Connecticut 06424
 Contact: Mr. Pete Hollenbeck
 Project: Soils PO# 002332

Report Date: October 13, 2005

Client Sample ID: 9527-0003-012-F
 Sample ID: 145417005
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 9.95%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.726	+/-0.200	0.0806	+/-0.196	0.175	pCi/g		MJH1 10/10/05	1127	463112 1
Americium-241	U	0.0206	+/-0.0365	0.0308	+/-0.0358	0.0635	pCi/g				
Bismuth-212		0.634	+/-0.391	0.160	+/-0.383	0.346	pCi/g				
Bismuth-214		0.838	+/-0.136	0.0403	+/-0.133	0.0861	pCi/g				
Cesium-134	U	0.0404	+/-0.0433	0.0277	+/-0.0425	0.0594	pCi/g				
Cesium-137		0.949	+/-0.108	0.025	+/-0.105	0.0531	pCi/g				
Cobalt-60	U	0.039	+/-0.034	0.0317	+/-0.0334	0.0685	pCi/g				
Europium-152	U	0.0194	+/-0.0715	0.054	+/-0.0701	0.114	pCi/g				
Europium-154	U	0.0401	+/-0.0925	0.0775	+/-0.0907	0.169	pCi/g				
Europium-155	U	0.0508	+/-0.0589	0.049	+/-0.0577	0.102	pCi/g				
Lead-212		0.703	+/-0.0905	0.0302	+/-0.0887	0.0629	pCi/g				
Lead-214		0.854	+/-0.140	0.0385	+/-0.137	0.0811	pCi/g				
Manganese-54	UUI	0.00	+/-0.0448	0.0211	+/-0.0439	0.0458	pCi/g				
Niobium-94	U	-0.0065	+/-0.0256	0.021	+/-0.0251	0.0449	pCi/g				
Potassium-40		8.19	+/-1.12	0.193	+/-1.10	0.438	pCi/g				
Radium-226		0.838	+/-0.136	0.0403	+/-0.133	0.0861	pCi/g				
Silver-108m	U	0.0211	+/-0.0229	0.0195	+/-0.0224	0.0411	pCi/g				
Thallium-208		0.274	+/-0.0645	0.0243	+/-0.0632	0.0516	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-012-F
Sample ID: 145417005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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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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 13, 2005

Client Sample ID: 9527-0003-013-F
 Sample ID: 145417006
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 10.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.750	+/-0.195	0.0709	+/-0.191	0.152	pCi/g		MJH1 10/10/05	1159	463112 1
Americium-241	U	0.0235	+/-0.0415	0.0322	+/-0.0406	0.0658	pCi/g				
Bismuth-212		0.740	+/-0.358	0.149	+/-0.351	0.318	pCi/g				
Bismuth-214		0.748	+/-0.122	0.0365	+/-0.120	0.0772	pCi/g				
Cesium-134	U	0.0254	+/-0.0281	0.0244	+/-0.0275	0.0518	pCi/g				
Cesium-137		1.69	+/-0.149	0.0208	+/-0.146	0.0441	pCi/g				
Cobalt-60		0.0526	+/-0.0498	0.0207	+/-0.0488	0.0451	pCi/g				
Europium-152	U	-0.0203	+/-0.0689	0.0579	+/-0.0675	0.120	pCi/g				
Europium-154	U	-0.0197	+/-0.0804	0.0647	+/-0.0788	0.140	pCi/g				
Europium-155	U	0.0256	+/-0.060	0.0516	+/-0.0588	0.106	pCi/g				
Lead-212		0.783	+/-0.109	0.034	+/-0.107	0.0701	pCi/g				
Lead-214		0.919	+/-0.157	0.0424	+/-0.154	0.0881	pCi/g				
Manganese-54	U	-0.00172	+/-0.0283	0.0206	+/-0.0277	0.0439	pCi/g				
Niobium-94	U	-0.0149	+/-0.0236	0.0184	+/-0.0231	0.039	pCi/g				
Potassium-40		10.8	+/-1.13	0.188	+/-1.11	0.415	pCi/g				
Radium-226		0.748	+/-0.122	0.0365	+/-0.120	0.0772	pCi/g				
Silver-108m	U	0.00858	+/-0.024	0.0206	+/-0.0235	0.0429	pCi/g				
Thallium-208		0.282	+/-0.0571	0.0208	+/-0.056	0.0438	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-013-F
Sample ID: 145417006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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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 Address : Haddam Neck Plant
 362 Injun Hollow Road
 East Hampton, Connecticut 06424
 Contact: Mr. Pete Hollenbeck
 Project: Soils PO# 002332

Report Date: October 13, 2005

Client Sample ID: 9527-0003-014-F
 Sample ID: 145417007
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 12%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.990	+/-0.152	0.055	+/-0.149	0.116	pCi/g		MJH1 10/10/05	1201	463112 1
Americium-241	U	0.0764	+/-0.115	0.0961	+/-0.113	0.198	pCi/g				
Bismuth-212		0.654	+/-0.314	0.111	+/-0.308	0.234	pCi/g				
Bismuth-214		1.05	+/-0.107	0.0287	+/-0.105	0.060	pCi/g				
Cesium-134	UUU	0.00	+/-0.0292	0.0208	+/-0.0286	0.0435	pCi/g				
Cesium-137		0.992	+/-0.0632	0.0158	+/-0.062	0.0331	pCi/g				
Cobalt-60	U	0.0294	+/-0.0293	0.0206	+/-0.0287	0.0435	pCi/g				
Europium-152	U	-0.0465	+/-0.0508	0.0419	+/-0.0498	0.0871	pCi/g				
Europium-154	U	-0.014	+/-0.056	0.0441	+/-0.0549	0.0945	pCi/g				
Europium-155	U	0.0463	+/-0.0604	0.0541	+/-0.0592	0.111	pCi/g				
Lead-212		0.986	+/-0.0658	0.0274	+/-0.0645	0.0564	pCi/g				
Lead-214		1.22	+/-0.0953	0.0316	+/-0.0934	0.0655	pCi/g				
Manganese-54	U	-0.00829	+/-0.021	0.0172	+/-0.0206	0.0362	pCi/g				
Niobium-94	U	0.0133	+/-0.017	0.0144	+/-0.0167	0.0303	pCi/g				
Potassium-40		11.8	+/-0.760	0.153	+/-0.745	0.330	pCi/g				
Radium-226		1.05	+/-0.107	0.0287	+/-0.105	0.060	pCi/g				
Silver-108m	U	0.00581	+/-0.0178	0.0152	+/-0.0174	0.0316	pCi/g				
Thallium-208		0.294	+/-0.0431	0.016	+/-0.0422	0.0334	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-014-F
Sample ID: 145417007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID: 9527-0003-015-F
 Sample ID: 145417008
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 11.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.959	+/-0.173	0.0444	+/-0.170	0.0939	pCi/g		MJH1 10/10/05	1202	463112 1
Americium-241	U	-0.00712	+/-0.0584	0.0518	+/-0.0573	0.106	pCi/g				
Bismuth-212		0.583	+/-0.297	0.109	+/-0.291	0.228	pCi/g				
Bismuth-214		1.04	+/-0.142	0.0279	+/-0.139	0.0581	pCi/g				
Cesium-134	UUI	0.00	+/-0.0342	0.0192	+/-0.0336	0.0399	pCi/g				
Cesium-137		0.550	+/-0.0676	0.0131	+/-0.0662	0.0274	pCi/g				
Cobalt-60	U	0.0311	+/-0.0179	0.0155	+/-0.0176	0.0328	pCi/g				
Europium-152	U	-0.0257	+/-0.0466	0.0381	+/-0.0456	0.0788	pCi/g				
Europium-154	U	0.0316	+/-0.0585	0.0433	+/-0.0573	0.0918	pCi/g				
Europium-155	UUI	0.00	+/-0.0814	0.048	+/-0.0798	0.0981	pCi/g				
Lead-212		1.02	+/-0.104	0.0229	+/-0.102	0.047	pCi/g				
Lead-214		1.07	+/-0.130	0.0265	+/-0.128	0.0549	pCi/g				
Manganese-54	U	-0.000186	+/-0.0193	0.0157	+/-0.0189	0.0328	pCi/g				
Niobium-94	U	-0.00168	+/-0.0157	0.0129	+/-0.0154	0.0269	pCi/g				
Potassium-40		11.7	+/-0.975	0.124	+/-0.955	0.268	pCi/g				
Radium-226		1.04	+/-0.142	0.0279	+/-0.139	0.0581	pCi/g				
Silver-108m	U	0.000447	+/-0.0158	0.013	+/-0.0155	0.027	pCi/g				
Thallium-208		0.286	+/-0.0485	0.0146	+/-0.0476	0.0305	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-015-F
Sample ID: 145417008

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID: 9527-0003-016-F
 Sample ID: 145417009
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 6.49%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.833	+/-0.210	0.071	+/-0.206	0.155	pCi/g		MJH1 10/10/05	1713	463112 1
Americium-241	U	0.0183	+/-0.103	0.0882	+/-0.101	0.182	pCi/g				
Bismuth-212		0.479	+/-0.325	0.157	+/-0.319	0.338	pCi/g				
Bismuth-214		0.752	+/-0.113	0.0395	+/-0.111	0.084	pCi/g				
Cesium-134	UUI	0.00	+/-0.0389	0.0276	+/-0.0381	0.0587	pCi/g				
Cesium-137		1.12	+/-0.0873	0.0208	+/-0.0856	0.0445	pCi/g				
Cobalt-60		0.0885	+/-0.0523	0.0203	+/-0.0512	0.0456	pCi/g				
Europium-152	U	0.00156	+/-0.065	0.0553	+/-0.0637	0.116	pCi/g				
Europium-154	U	0.0179	+/-0.0746	0.0636	+/-0.0732	0.141	pCi/g				
Europium-155	U	0.0755	+/-0.071	0.0621	+/-0.0696	0.128	pCi/g				
Lead-212		0.922	+/-0.0748	0.0311	+/-0.0733	0.0648	pCi/g				
Lead-214		0.816	+/-0.120	0.0418	+/-0.118	0.0876	pCi/g				
Manganese-54	U	-0.0077	+/-0.0256	0.0199	+/-0.025	0.0432	pCi/g				
Niobium-94	U	-0.0045	+/-0.0239	0.0192	+/-0.0234	0.041	pCi/g				
Potassium-40		10.6	+/-0.994	0.153	+/-0.974	0.356	pCi/g				
Radium-226		0.752	+/-0.113	0.0395	+/-0.111	0.084	pCi/g				
Silver-108m	U	0.0187	+/-0.0236	0.0209	+/-0.0232	0.0439	pCi/g				
Thallium-208		0.257	+/-0.0583	0.0206	+/-0.0572	0.0441	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-016-F
Sample ID: 145417009

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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
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 East Hampton, Connecticut 06424
 Contact: Mr. Pete Hollenbeck
 Project: Soils PO# 002332

Report Date: October 13, 2005

Client Sample ID: 9527-0003-017-F
 Sample ID: 145417010
 Matrix: TS
 Collect Date: 07-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 7.26%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.991	+/-0.226	0.0711	+/-0.222	0.153	pCi/g		MJH1 10/10/05	1714	463112 1
Americium-241	U	0.0558	+/-0.101	0.0906	+/-0.0989	0.187	pCi/g				
Bismuth-212		0.741	+/-0.311	0.160	+/-0.304	0.340	pCi/g				
Bismuth-214		0.948	+/-0.140	0.0398	+/-0.138	0.0842	pCi/g				
Cesium-134	UUU	0.00	+/-0.0437	0.0285	+/-0.0429	0.0602	pCi/g				
Cesium-137		1.21	+/-0.117	0.0221	+/-0.114	0.0469	pCi/g				
Cobalt-60	U	0.00231	+/-0.030	0.0248	+/-0.0294	0.0539	pCi/g				
Europium-152	U	0.0249	+/-0.0685	0.0587	+/-0.0671	0.123	pCi/g				
Europium-154	U	0.0408	+/-0.0828	0.0716	+/-0.0811	0.155	pCi/g				
Europium-155	U	0.0411	+/-0.0742	0.0646	+/-0.0727	0.133	pCi/g				
Lead-212		1.01	+/-0.119	0.0323	+/-0.117	0.0669	pCi/g				
Lead-214		1.10	+/-0.160	0.0383	+/-0.156	0.0802	pCi/g				
Manganese-54	U	0.0154	+/-0.0264	0.0228	+/-0.0259	0.0485	pCi/g				
Niobium-94	U	0.0397	+/-0.0404	0.0221	+/-0.0396	0.0465	pCi/g				
Potassium-40		12.0	+/-1.25	0.201	+/-1.22	0.444	pCi/g				
Radium-226		0.948	+/-0.140	0.0398	+/-0.138	0.0842	pCi/g				
Silver-108m	U	-0.00558	+/-0.0245	0.020	+/-0.0241	0.0419	pCi/g				
Thallium-208		0.308	+/-0.0566	0.0196	+/-0.0554	0.0417	pCi/g				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-017-F
Sample ID: 145417010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID:	9527-0003-001-F	Project:	YANK01204
Sample ID:	145417011	Client ID:	YANK001
Matrix:	TS	Vol. Recv.:	
Collect Date:	06-SEP-05		
Receive Date:	14-SEP-05		
Collector:	Client		
Moisture:	13.6%		

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		1.05	+/-0.216	0.0658	+/-0.212	0.140	pCi/g		MJH1	10/10/05	1715 463112 1
Americium-241	U	0.0926	+/-0.139	0.113	+/-0.136	0.233	pCi/g				
Bismuth-212		0.904	+/-0.312	0.137	+/-0.306	0.291	pCi/g				
Bismuth-214		1.13	+/-0.150	0.0318	+/-0.147	0.0672	pCi/g				
Cesium-134	U	0.0397	+/-0.0261	0.0231	+/-0.0255	0.0488	pCi/g				
Cesium-137		0.609	+/-0.0773	0.0187	+/-0.0758	0.0394	pCi/g				
Cobalt-60	U	0.0155	+/-0.0223	0.0195	+/-0.0218	0.0424	pCi/g				
Europium-152	U	0.025	+/-0.0659	0.0482	+/-0.0646	0.100	pCi/g				
Europium-154	U	-0.0391	+/-0.0709	0.0548	+/-0.0695	0.119	pCi/g				
Europium-155	U	0.0512	+/-0.0651	0.0572	+/-0.0638	0.118	pCi/g				
Lead-212		1.21	+/-0.130	0.0278	+/-0.128	0.0574	pCi/g				
Lead-214		1.25	+/-0.152	0.0363	+/-0.149	0.0754	pCi/g				
Manganese-54	U	0.00598	+/-0.0257	0.0203	+/-0.0252	0.043	pCi/g				
Niobium-94	U	0.0014	+/-0.0233	0.0167	+/-0.0228	0.0353	pCi/g				
Potassium-40		12.6	+/-1.29	0.176	+/-1.26	0.385	pCi/g				
Radium-226		1.13	+/-0.150	0.0318	+/-0.147	0.0672	pCi/g				
Silver-108m	U	-0.00077	+/-0.0187	0.0158	+/-0.0184	0.0331	pCi/g				
Thallium-208		0.352	+/-0.0626	0.0169	+/-0.0614	0.0358	pCi/g				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-001-F
Sample ID: 145417011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID: 9527-0003-002-F
 Sample ID: 145417012
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 8.13%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		1.33	+/-0.307	0.0871	+/-0.300	0.189	pCi/g		MJH1 10/10/05	1715	463112 1
Americium-241	U	-0.0426	+/-0.0522	0.0429	+/-0.0511	0.088	pCi/g				
Bismuth-212		1.42	+/-0.557	0.210	+/-0.546	0.448	pCi/g				
Bismuth-214		1.18	+/-0.173	0.0495	+/-0.169	0.105	pCi/g				
Cesium-134	U	0.0815	+/-0.0591	0.0397	+/-0.0579	0.0837	pCi/g				
Cesium-137		0.575	+/-0.0805	0.0274	+/-0.0788	0.0584	pCi/g				
Cobalt-60	U	0.00725	+/-0.034	0.0286	+/-0.0333	0.0628	pCi/g				
Europium-152	U	-0.0393	+/-0.088	0.0722	+/-0.0863	0.151	pCi/g				
Europium-154	U	0.067	+/-0.101	0.0794	+/-0.0986	0.174	pCi/g				
Europium-155	U	0.0639	+/-0.0805	0.0687	+/-0.0789	0.141	pCi/g				
Lead-212		1.19	+/-0.159	0.0389	+/-0.156	0.0808	pCi/g				
Lead-214		1.20	+/-0.171	0.0548	+/-0.168	0.114	pCi/g				
Manganese-54	U	0.000401	+/-0.0377	0.0274	+/-0.0369	0.0588	pCi/g				
Niobium-94	U	0.025	+/-0.0322	0.0276	+/-0.0315	0.0585	pCi/g				
Potassium-40		10.7	+/-1.23	0.244	+/-1.20	0.544	pCi/g				
Radium-226		1.18	+/-0.173	0.0495	+/-0.169	0.105	pCi/g				
Silver-108m	U	0.00536	+/-0.0312	0.0262	+/-0.0305	0.055	pCi/g				
Thallium-208		0.398	+/-0.0833	0.0275	+/-0.0816	0.0584	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-002-F
Sample ID: 145417012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID: 9527-0003-004-F
 Sample ID: 145417013
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 19.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		1.12	+/-0.247	0.0944	+/-0.242	0.205	pCi/g		MJH1 10/10/05	1716	463112 1
Americium-241	U	-0.0318	+/-0.152	0.114	+/-0.149	0.236	pCi/g				
Bismuth-212		1.03	+/-0.394	0.201	+/-0.386	0.433	pCi/g				
Bismuth-214		0.980	+/-0.162	0.0544	+/-0.158	0.115	pCi/g				
Cesium-134	U	0.0174	+/-0.0402	0.0335	+/-0.0394	0.0715	pCi/g				
Cesium-137		1.83	+/-0.124	0.0308	+/-0.121	0.0653	pCi/g				
Cobalt-60	U	0.0603	+/-0.0781	0.029	+/-0.0765	0.0642	pCi/g				
Europium-152	U	-0.0226	+/-0.0987	0.0764	+/-0.0967	0.160	pCi/g				
Europium-154	U	-0.0517	+/-0.094	0.0716	+/-0.0921	0.160	pCi/g				
Europium-155	U	0.0359	+/-0.0907	0.076	+/-0.0888	0.157	pCi/g				
Lead-212		1.13	+/-0.107	0.0468	+/-0.105	0.0967	pCi/g				
Lead-214		1.17	+/-0.147	0.051	+/-0.144	0.107	pCi/g				
Manganese-54	U	0.0159	+/-0.0383	0.0283	+/-0.0376	0.061	pCi/g				
Niobium-94	U	0.0141	+/-0.0349	0.0259	+/-0.0342	0.0553	pCi/g				
Potassium-40		9.76	+/-1.14	0.217	+/-1.12	0.496	pCi/g				
Radium-226		0.980	+/-0.162	0.0544	+/-0.158	0.115	pCi/g				
Silver-108m	U	0.017	+/-0.0361	0.0288	+/-0.0354	0.0603	pCi/g				
Thallium-208		0.327	+/-0.0815	0.0305	+/-0.0799	0.0645	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	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-004-F
Sample ID: 145417013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-005-F
 Sample ID: 145417014
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 5.26%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.812	+/-0.204	0.0599	+/-0.199	0.130	pCi/g		MJH1 10/10/05	1716	463112 1
Americium-241	U	-0.00449	+/-0.0968	0.0753	+/-0.0949	0.156	pCi/g				
Bismuth-212		0.571	+/-0.257	0.134	+/-0.252	0.289	pCi/g				
Bismuth-214		0.597	+/-0.0979	0.0335	+/-0.096	0.0713	pCi/g				
Cesium-134	UUI	0.00	+/-0.0424	0.0219	+/-0.0415	0.0469	pCi/g				
Cesium-137		0.361	+/-0.050	0.0174	+/-0.049	0.0373	pCi/g				
Cobalt-60	U	0.0223	+/-0.0215	0.0201	+/-0.021	0.0442	pCi/g				
Europium-152	U	0.0671	+/-0.0533	0.0481	+/-0.0522	0.101	pCi/g				
Europium-154	U	-0.00352	+/-0.067	0.0551	+/-0.0657	0.121	pCi/g				
Europium-155	U	0.0657	+/-0.0554	0.0525	+/-0.0542	0.109	pCi/g				
Lead-212		0.852	+/-0.0652	0.0267	+/-0.0639	0.0556	pCi/g				
Lead-214		0.847	+/-0.0929	0.0336	+/-0.091	0.0707	pCi/g				
Manganese-54	U	0.0216	+/-0.0348	0.0167	+/-0.0341	0.0363	pCi/g				
Niobium-94	U	0.00176	+/-0.0197	0.0165	+/-0.0193	0.0353	pCi/g				
Potassium-40		9.82	+/-0.883	0.195	+/-0.865	0.429	pCi/g				
Radium-226		0.597	+/-0.0979	0.0335	+/-0.096	0.0713	pCi/g				
Silver-108m	UUI	0.00	+/-0.0392	0.0173	+/-0.0384	0.0365	pCi/g				
Thallium-208		0.271	+/-0.0465	0.0198	+/-0.0456	0.042	pCi/g				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1501	463010

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 :

- ** Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-005-F
Sample ID: 145417014

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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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 East Hampton, Connecticut 06424
 Contact: Mr. Pete Hollenbeck
 Project: Soils PO# 002332

Report Date: October 13, 2005

Client Sample ID: 9527-0003-006-F
 Sample ID: 145417015
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 8.68%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.965	+/-0.255	0.0797	+/-0.250	0.172	pCi/g		MJH1 10/10/05	1717	463112 1
Americium-241	U	0.00226	+/-0.0308	0.026	+/-0.0302	0.0536	pCi/g				
Bismuth-212		0.812	+/-0.393	0.162	+/-0.386	0.347	pCi/g				
Bismuth-214		0.945	+/-0.147	0.0391	+/-0.144	0.0832	pCi/g				
Cesium-134	UUI	0.00	+/-0.0471	0.028	+/-0.0461	0.0596	pCi/g				
Cesium-137		0.509	+/-0.0738	0.0228	+/-0.0723	0.0485	pCi/g				
Cobalt-60	U	0.00226	+/-0.0284	0.0232	+/-0.0278	0.0512	pCi/g				
Europium-152	U	-0.0493	+/-0.0646	0.0497	+/-0.0633	0.105	pCi/g				
Europium-154	U	-0.0277	+/-0.0904	0.0709	+/-0.0886	0.155	pCi/g				
Europium-155	UUI	0.00	+/-0.0673	0.0414	+/-0.0659	0.086	pCi/g				
Lead-212		1.11	+/-0.138	0.0294	+/-0.135	0.0612	pCi/g				
Lead-214		1.00	+/-0.146	0.0405	+/-0.143	0.0848	pCi/g				
Manganese-54	U	0.020	+/-0.047	0.0252	+/-0.046	0.0538	pCi/g				
Niobium-94	U	0.00397	+/-0.0261	0.019	+/-0.0255	0.0406	pCi/g				
Potassium-40		10.5	+/-1.13	0.192	+/-1.10	0.432	pCi/g				
Radium-226		0.945	+/-0.147	0.0391	+/-0.144	0.0832	pCi/g				
Silver-108m	U	0.0101	+/-0.0217	0.0191	+/-0.0212	0.0402	pCi/g				
Thallium-208		0.331	+/-0.0702	0.0219	+/-0.0688	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	TC1	09/15/05	1501	463010

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

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Certificate of Analysis

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-006-F
Sample ID: 145417015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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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 Contact: Mr. Pete Hollenbeck
 Project: Soils PO# 002332

Report Date: October 13, 2005

Client Sample ID: 9527-0003-009-F
 Sample ID: 145417016
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 7.74%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		1.05	+/-0.178	0.0562	+/-0.174	0.120	pCi/g		MJH1 10/10/05	1717	463112 1
Americium-241	U	0.0271	+/-0.129	0.0989	+/-0.126	0.205	pCi/g				
Bismuth-212		0.876	+/-0.385	0.127	+/-0.377	0.269	pCi/g				
Bismuth-214		0.947	+/-0.0998	0.0326	+/-0.0978	0.0687	pCi/g				
Cesium-134	UUI	0.00	+/-0.0391	0.0222	+/-0.0383	0.0467	pCi/g				
Cesium-137		0.804	+/-0.057	0.0199	+/-0.0559	0.0417	pCi/g				
Cobalt-60	UUI	0.00	+/-0.0356	0.0212	+/-0.0349	0.0453	pCi/g				
Europium-152	U	-0.00478	+/-0.0539	0.0464	+/-0.0528	0.0969	pCi/g				
Europium-154	U	-0.0154	+/-0.0601	0.0472	+/-0.0589	0.102	pCi/g				
Europium-155	U	0.0822	+/-0.0685	0.0628	+/-0.0671	0.130	pCi/g				
Lead-212		0.998	+/-0.0723	0.0294	+/-0.0709	0.0608	pCi/g				
Lead-214		1.19	+/-0.112	0.0333	+/-0.110	0.0697	pCi/g				
Manganese-54	U	-0.00369	+/-0.0224	0.0187	+/-0.022	0.0396	pCi/g				
Niobium-94	U	0.0029	+/-0.0193	0.0159	+/-0.019	0.0334	pCi/g				
Potassium-40		11.4	+/-0.872	0.153	+/-0.855	0.335	pCi/g				
Radium-226		0.947	+/-0.0998	0.0326	+/-0.0978	0.0687	pCi/g				
Silver-108m	U	0.0235	+/-0.0207	0.0155	+/-0.0202	0.0325	pCi/g				
Thallium-208		0.263	+/-0.0517	0.0181	+/-0.0507	0.0381	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	TC1	09/15/05	1501	463010

The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

Notes:

The Qualifiers in this report are defined as follows :

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- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.

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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 13, 2005

Client Sample ID: 9527-0003-009-F
Sample ID: 145417016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
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- 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 13, 2005

Client Sample ID: 9527-0003-003-F
 Sample ID: 145417017
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 12.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Alpha Spec Analysis											
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>											
Americium-241	U	0.0905	+/-0.131	0.0912	+/-0.131	0.259	pCi/g		BJB1	10/08/05	1538 467822 1
Curium-242	U	0.0169	+/-0.0673	0.0524	+/-0.0673	0.193	pCi/g				
Curium-243/244	U	0.101	+/-0.129	0.0792	+/-0.129	0.235	pCi/g				
<i>Alphaspec Pu, Solid-ALL FSS</i>											
Plutonium-238	U	0.0365	+/-0.0824	0.0563	+/-0.0825	0.190	pCi/g		BJB1	10/08/05	1538 467823 2
Plutonium-239/240	U	-0.133	+/-0.123	0.184	+/-0.124	0.444	pCi/g				
<i>Liquid Scint Pu241, Solid-ALL FSS</i>											
Plutonium-241	U	-5.83	+/-8.59	7.45	+/-8.62	15.5	pCi/g		BJB1	10/11/05	1047 467827 3
Rad Gamma Spec Analysis											
<i>Gamma,Solid-FSS GAM & ALL FSS</i>											
Actinium-228		1.15	+/-0.229	0.0671	+/-0.225	0.143	pCi/g		MJH1	10/10/05	1718 463112 4
Americium-241	U	0.0385	+/-0.0842	0.0717	+/-0.0825	0.148	pCi/g				
Bismuth-212		0.645	+/-0.414	0.155	+/-0.405	0.328	pCi/g				
Bismuth-214		0.969	+/-0.159	0.0394	+/-0.156	0.0827	pCi/g				
Cesium-134	UUI	0.00	+/-0.0326	0.0269	+/-0.032	0.0566	pCi/g				
Cesium-137		0.841	+/-0.111	0.0195	+/-0.109	0.0412	pCi/g				
Cobalt-60	U	0.0386	+/-0.0267	0.0243	+/-0.0261	0.0521	pCi/g				
Europium-152	U	0.0658	+/-0.0746	0.0527	+/-0.0731	0.110	pCi/g				
Europium-154	U	0.00216	+/-0.0789	0.0636	+/-0.0773	0.137	pCi/g				
Europium-155	U	0.0131	+/-0.0712	0.0585	+/-0.0697	0.121	pCi/g				
Lead-212		1.01	+/-0.118	0.0302	+/-0.115	0.0627	pCi/g				
Lead-214		1.09	+/-0.155	0.0392	+/-0.152	0.0818	pCi/g				
Manganese-54	UUI	0.00	+/-0.0704	0.0195	+/-0.069	0.0416	pCi/g				
Niobium-94	U	0.0047	+/-0.0239	0.0196	+/-0.0234	0.0412	pCi/g				
Potassium-40		11.0	+/-1.13	0.190	+/-1.11	0.414	pCi/g				
Radium-226		0.969	+/-0.159	0.0394	+/-0.156	0.0827	pCi/g				
Silver-108m	U	0.00166	+/-0.0237	0.019	+/-0.0232	0.0397	pCi/g				
Thallium-208		0.281	+/-0.0618	0.0187	+/-0.0606	0.0396	pCi/g				
Rad Gas Flow Proportional Counting											
<i>GFPC, Sr90, solid-ALL FSS</i>											
Strontium-90	U	0.00382	+/-0.0107	0.0102	+/-0.0107	0.0212	pCi/g		EXW1	10/06/05	2222 467346 5
Rad Liquid Scintillation Analysis											
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>											
Tritium	U	-0.611	+/-6.09	5.14	+/-6.09	10.7	pCi/g		BXF1	10/11/05	1352 467508 6
<i>Liquid Scint C14, Solid All,FSS</i>											

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-003-F
 Sample ID: 145417017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	0.125	+/-0.106	0.0873	+/-0.106	0.177	pCi/g		SLN1	09/22/05	0752	464786 7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	-33.6	+/-50.1	34.4	+/-50.1	71.0	pCi/g		BXF1	09/24/05	0410	464797 8
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	-5.74	+/-8.17	7.12	+/-8.17	14.9	pCi/g		BXF1	09/24/05	1931	464799 9
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99		0.396	+/-0.171	0.168	+/-0.171	0.348	pCi/g		BXF1	09/27/05	0500	464785 10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	TC1	09/16/05	1531	463017
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1456	463013

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	94	(15%–125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	100	(15%–125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	89	(25%–125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	65	(25%–125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	79	(15%–125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	94	(25%–125%)

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-003-F
Sample ID: 145417017

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			88		(15%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- ** Indicates the analyte is a surrogate compound.
- 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 13, 2005

Client Sample ID: 9527-0003-007-F
 Sample ID: 145417018
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 10.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Alpha Spec Analysis											
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>											
Americium-241	U	-0.0321	+/-0.0411	0.0792	+/-0.0414	0.243	pCi/g		BJB1	10/08/05	1121 467822 1
Curium-242	U	-0.00856	+/-0.0719	0.0407	+/-0.072	0.178	pCi/g				
Curium-243/244	U	0.0636	+/-0.110	0.071	+/-0.110	0.226	pCi/g				
<i>Alphaspec Pu, Solid-ALL FSS</i>											
Plutonium-238	U	0.0239	+/-0.0634	0.0358	+/-0.0634	0.157	pCi/g		BJB1	10/08/05	1538 467823 2
Plutonium-239/240	U	-0.0578	+/-0.105	0.143	+/-0.105	0.371	pCi/g				
<i>Liquid Scint Pu241, Solid-ALL FSS</i>											
Plutonium-241	U	-10.4	+/-8.42	7.51	+/-8.53	15.6	pCi/g		BJB1	10/11/05	1103 467827 3
Rad Gamma Spec Analysis											
<i>Gamma,Solid-FSS GAM & ALL FSS</i>											
Actinium-228		0.694	+/-0.181	0.0828	+/-0.178	0.179	pCi/g		MJH1	10/10/05	1718 463112 4
Americium-241	U	-0.0606	+/-0.144	0.117	+/-0.141	0.242	pCi/g				
Bismuth-212		0.774	+/-0.353	0.159	+/-0.346	0.347	pCi/g				
Bismuth-214		0.756	+/-0.107	0.0464	+/-0.105	0.0988	pCi/g				
Cesium-134	U	0.0392	+/-0.0319	0.0291	+/-0.0312	0.0624	pCi/g				
Cesium-137		0.635	+/-0.0858	0.0239	+/-0.0841	0.0514	pCi/g				
Cobalt-60	U	0.0153	+/-0.0299	0.0262	+/-0.0293	0.0577	pCi/g				
Europium-152	U	0.0997	+/-0.109	0.0659	+/-0.107	0.139	pCi/g				
Europium-154	U	-0.0209	+/-0.0813	0.0652	+/-0.0797	0.145	pCi/g				
Europium-155	U	0.0424	+/-0.0873	0.0725	+/-0.0856	0.150	pCi/g				
Lead-212		0.929	+/-0.097	0.042	+/-0.0951	0.0874	pCi/g				
Lead-214		0.959	+/-0.151	0.0499	+/-0.148	0.105	pCi/g				
Manganese-54	U	0.0157	+/-0.0355	0.0266	+/-0.0348	0.0571	pCi/g				
Niobium-94	U	0.0086	+/-0.0264	0.0225	+/-0.0259	0.0481	pCi/g				
Potassium-40		7.72	+/-0.928	0.231	+/-0.909	0.513	pCi/g				
Radium-226		0.756	+/-0.107	0.0464	+/-0.105	0.0988	pCi/g				
Silver-108m	U	0.0113	+/-0.0287	0.0239	+/-0.0282	0.0506	pCi/g				
Thallium-208		0.268	+/-0.0662	0.0254	+/-0.0649	0.0541	pCi/g				
Rad Gas Flow Proportional Counting											
<i>GFPC, Sr90, solid-ALL FSS</i>											
Strontium-90	U	0.016	+/-0.0125	0.0112	+/-0.0125	0.0234	pCi/g		EXW1	10/06/05	2222 467346 5
Rad Liquid Scintillation Analysis											
<i>LSC, Tritium Dist, Solid-HTD2,ALL FSS</i>											
Tritium	U	2.79	+/-5.82	4.77	+/-5.82	9.93	pCi/g		BXF1	10/11/05	1424 467508 6
<i>Liquid Scint C14, Solid All,FSS</i>											

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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 13, 2005

Client Sample ID: 9527-0003-007-F
 Sample ID: 145417018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	-0.0421	+/-0.0977	0.0826	+/-0.0977	0.167	pCi/g		SLN1	09/22/05	0926	464786 7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	8.63	+/-59.0	39.7	+/-59.0	81.9	pCi/g		BXF1	09/24/05	0427	464797 8
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	-1.86	+/-8.21	6.98	+/-8.21	14.6	pCi/g		BXF1	09/24/05	1948	464799 9
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99	U	0.201	+/-0.170	0.178	+/-0.170	0.369	pCi/g		BXF1	09/27/05	0517	464785 10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	TC1	09/16/05	1531	463017
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1456	463013

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	87	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	85	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	88	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	49	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	75	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	95	(25%-125%)

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

Report Date: October 13, 2005

Client Sample ID: 9527-0003-007-F
Sample ID: 145417018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			83		(15%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- ** Indicates the analyte is a surrogate compound.
- 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 13, 2005

Client Sample ID: 9527-0003-010-F
 Sample ID: 145417019
 Matrix: TS
 Collect Date: 06-SEP-05
 Receive Date: 14-SEP-05
 Collector: Client
 Moisture: 14.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Rad Alpha Spec Analysis											
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>											
Americium-241	U	0.0932	+/-0.111	0.0356	+/-0.112	0.156	pCi/g		BJB1	10/08/05	1121 467822 1
Curium-242	U	0.0359	+/-0.0704	0.00	+/-0.0705	0.0973	pCi/g				
Curium-243/244	U	0.0163	+/-0.0649	0.0505	+/-0.0649	0.186	pCi/g				
<i>Alphaspec Pu, Solid-ALL FSS</i>											
Plutonium-238	U	-0.0668	+/-0.153	0.190	+/-0.153	0.471	pCi/g		BJB1	10/08/05	1537 467823 2
Plutonium-239/240	U	-0.0361	+/-0.131	0.157	+/-0.131	0.404	pCi/g				
<i>Liquid Scint Pu241, Solid-ALL FSS</i>											
Plutonium-241	U	-2.67	+/-8.66	7.38	+/-8.67	15.4	pCi/g		BJB1	10/11/05	1120 467827 3
Rad Gamma Spec Analysis											
<i>Gamma, Solid-FSS GAM & ALL FSS</i>											
Actinium-228		1.25	+/-0.392	0.140	+/-0.385	0.298	pCi/g		MJH1	10/10/05	1719 463112 4
Americium-241	U	0.0126	+/-0.0631	0.0527	+/-0.0618	0.108	pCi/g				
Bismuth-212		1.28	+/-0.607	0.339	+/-0.595	0.712	pCi/g				
Bismuth-214		0.990	+/-0.220	0.0697	+/-0.215	0.147	pCi/g				
Cesium-134	U	0.0502	+/-0.0657	0.0482	+/-0.0644	0.102	pCi/g				
Cesium-137		1.28	+/-0.155	0.0399	+/-0.152	0.084	pCi/g				
Cobalt-60	U	0.0273	+/-0.0488	0.0422	+/-0.0478	0.0909	pCi/g				
Europium-152	U	0.0819	+/-0.110	0.0979	+/-0.108	0.204	pCi/g				
Europium-154	U	-0.0586	+/-0.143	0.113	+/-0.140	0.243	pCi/g				
Europium-155	U	0.0823	+/-0.105	0.0872	+/-0.103	0.180	pCi/g				
Lead-212		1.40	+/-0.170	0.0509	+/-0.166	0.106	pCi/g				
Lead-214		1.32	+/-0.219	0.067	+/-0.215	0.140	pCi/g				
Manganese-54	U	-0.0293	+/-0.0457	0.0352	+/-0.0448	0.0751	pCi/g				
Niobium-94	U	-0.0253	+/-0.0394	0.031	+/-0.0387	0.0658	pCi/g				
Potassium-40		12.6	+/-1.50	0.367	+/-1.47	0.800	pCi/g				
Radium-226		0.990	+/-0.220	0.0697	+/-0.215	0.147	pCi/g				
Silver-108m	U	-0.00432	+/-0.0417	0.0334	+/-0.0409	0.070	pCi/g				
Thallium-208		0.455	+/-0.117	0.0371	+/-0.115	0.0782	pCi/g				
Rad Gas Flow Proportional Counting											
<i>GFPC, Sr90, solid-ALL FSS</i>											
Strontium-90		0.0242	+/-0.00947	0.00775	+/-0.00948	0.0163	pCi/g		EXW1	10/06/05	2222 467346 5
Rad Liquid Scintillation Analysis											
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>											
Tritium	U	5.11	+/-5.78	4.63	+/-5.78	9.67	pCi/g		BXF1	10/09/05	2119 467508 6
<i>Liquid Scint C14, Solid All, FSS</i>											

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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 13, 2005

Client Sample ID: 9527-0003-010-F
 Sample ID: 145417019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch
Rad Liquid Scintillation Analysis												
<i>Liquid Scint C14, Solid All, FSS</i>												
Carbon-14	U	0.109	+/-0.0981	0.0808	+/-0.0981	0.164	pCi/g		SLN1	09/22/05	1100	464786 7
<i>Liquid Scint Fe55, Solid-ALL FSS</i>												
Iron-55	U	-3.09	+/-54.3	36.7	+/-54.3	75.7	pCi/g		BXF1	09/24/05	0444	464797 8
<i>Liquid Scint Ni63, Solid-ALL FSS</i>												
Nickel-63	U	-4.83	+/-8.34	7.22	+/-8.34	15.1	pCi/g		BXF1	09/24/05	2005	464799 9
<i>Liquid Scint Tc99, Solid-ALL FSS</i>												
Technetium-99		0.604	+/-0.189	0.177	+/-0.189	0.366	pCi/g		BXF1	09/27/05	0534	464785 10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	TC1	09/16/05	1531	463017
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	TC1	09/15/05	1456	463013

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	81	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	89	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Pu241, Solid-ALL FS	91	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	67	(25%-125%)
Carrier/Tracer Recovery	Liquid Scint Fe55, Solid-ALL FS	75	(15%-125%)
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL FS	92	(25%-125%)

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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 13, 2005

Client Sample ID: 9527-0003-010-F
Sample ID: 145417019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	AnalystDate	Time	Batch M
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			83		(15%-125%)				

Notes:

The Qualifiers in this report are defined as follows :

- ** Indicates the analyte is a surrogate compound.
- 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.

QUALITY CONTROL DATA

GENERAL ENGINEERING LABORATORIES, LLC

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

QC Summary

Report Date: October 13, 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: 145417

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	467822										
QC1200948303	145417017 DUP										
Americium-241	U	0.0905	U	-0.0395	pCi/g	N/A		(0% - 100%)	BJB1	10/08/05	15:38
	Uncert:	+/-0.131		+/-0.046							
	TPU:	+/-0.131		+/-0.0463							
Curium-242	U	0.0169	U	-0.00877	pCi/g	N/A		(0% - 100%)			
	Uncert:	+/-0.0673		+/-0.0172							
	TPU:	+/-0.0673		+/-0.0172							
Curium-243/244	U	0.101	U	-0.0306	pCi/g	N/A		(0% - 100%)			
	Uncert:	+/-0.129		+/-0.030							
	TPU:	+/-0.129		+/-0.0303							
QC1200948305	LCS										
Americium-241	12.6			13.1	pCi/g		104	(75%-125%)			
	Uncert:			+/-1.17							
	TPU:			+/-1.97							
Curium-242			U	-0.00664	pCi/g						
	Uncert:			+/-0.013							
	TPU:			+/-0.013							
Curium-243/244	15.3			15.2	pCi/g		99	(75%-125%)			
	Uncert:			+/-1.26							
	TPU:			+/-2.22							
QC1200948302	MB										
Americium-241			U	-0.0244	pCi/g						
	Uncert:			+/-0.0544							
	TPU:			+/-0.0545							
Curium-242			U	-0.0136	pCi/g						
	Uncert:			+/-0.0189							
	TPU:			+/-0.019							
Curium-243/244			U	0.00	pCi/g						
	Uncert:			+/-0.0544							
	TPU:			+/-0.0544							
QC1200948304	145417017 MS										
Americium-241	12.8	U	0.0905	11.8	pCi/g		92	(75%-125%)			
	Uncert:		+/-0.131	+/-1.13							
	TPU:		+/-0.131	+/-1.82							
Curium-242		U	0.0169	0.00	pCi/g						
	Uncert:		+/-0.0673	+/-0.0631							
	TPU:		+/-0.0673	+/-0.0631							
Curium-243/244	15.7	U	0.101	15.0	pCi/g		96	(75%-125%)			
	Uncert:		+/-0.129	+/-1.27							
	TPU:		+/-0.129	+/-2.23							
Batch	467823										
QC1200948314	145417017 DUP										
Plutonium-238	U	0.0365	U	-0.0225	pCi/g	N/A		(0% - 100%)	BJB1	10/11/05	14:16

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QC Summary

Workorder: 145417

Page 2 of 9

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec									
Batch	467823								
Plutonium-239/240									
	Uncert:	+/-0.0824	+/-0.104						
	TPU:	+/-0.0825	+/-0.104						
	U	-0.133	U	0.0673	pCi/g	N/A	(0% - 100%)		
	Uncert:	+/-0.123	+/-0.0924						
	TPU:	+/-0.124	+/-0.0926						
QC1200948316	LCS								
Plutonium-238			U	0.0182	pCi/g		(75%-125%)		10/08/05 15:37
	Uncert:			+/-0.122					
	TPU:			+/-0.122					
Plutonium-239/240	11.6			10.3	pCi/g	89	(75%-125%)		
	Uncert:			+/-1.07					
	TPU:			+/-1.62					
QC1200948313	MB								
Plutonium-238			U	0.0229	pCi/g				10/08/05 15:38
	Uncert:			+/-0.0607					
	TPU:			+/-0.0607					
Plutonium-239/240			U	-0.113	pCi/g				
	Uncert:			+/-0.108					
	TPU:			+/-0.109					
QC1200948315	145417017	MS							
Plutonium-238	U	0.0365	U	0.0564	pCi/g		(75%-125%)		10/08/05 15:37
	Uncert:	+/-0.0824		+/-0.162					
	TPU:	+/-0.0825		+/-0.163					
Plutonium-239/240	11.8	U	-0.133	12.0	pCi/g	102	(75%-125%)		
	Uncert:	+/-0.123		+/-1.26					
	TPU:	+/-0.124		+/-1.94					
Batch	467827								
QC1200948318	145417017	DUP							
Plutonium-241	U	-5.83	U	-1.87	pCi/g	N/A	(0% - 100%)	BJB1	10/11/05 11:54
	Uncert:	+/-8.59		+/-9.21					
	TPU:	+/-8.62		+/-9.21					
QC1200948320	LCS								
Plutonium-241		131		101	pCi/g	78	(75%-125%)		10/11/05 12:28
	Uncert:			+/-12.1					
	TPU:			+/-17.7					
QC1200948317	MB								
Plutonium-241			U	-8.5	pCi/g				10/11/05 11:37
	Uncert:			+/-7.78					
	TPU:			+/-7.86					
QC1200948319	145417017	MS							
Plutonium-241	133	U	-5.83	99.9	pCi/g	75	(75%-125%)		10/11/05 12:11
	Uncert:	+/-8.59		+/-12.0					
	TPU:	+/-8.62		+/-17.4					
Rad Gamma Spec									
Batch	463112								
QC1200936935	145417001	DUP							
Actinium-228		0.969		0.812	pCi/g	18	(0% - 100%)	MJH1	10/10/05 17:25
	Uncert:	+/-0.286		+/-0.215					
				+/-0.211					

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QC Summary

Workorder: 145417

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	463112										
Americium-241		TPU:	+/-0.280								
	U	0.0305	U	-0.0231	pCi/g	N/A		(0% - 100%)			
		Uncert:	+/-0.051								
Bismuth-212		TPU:	+/-0.050								
		0.605		0.468	pCi/g	26		(0% - 100%)			
		Uncert:	+/-0.546								
Bismuth-214		TPU:	+/-0.535								
		1.13		0.919	pCi/g	21*					
		Uncert:	+/-0.178								
Cesium-134		TPU:	+/-0.174								
	UUI	0.00	U	0.0135	pCi/g	148		(0% - 100%)			
		Uncert:	+/-0.064								
Cesium-137		TPU:	+/-0.0627								
		1.62		1.55	pCi/g	4		(0% - 20%)			
		Uncert:	+/-0.180								
Cobalt-60		TPU:	+/-0.176								
	U	0.0403	UUI	0.00	pCi/g	42		(0% - 100%)			
		Uncert:	+/-0.040								
Europium-152		TPU:	+/-0.0392								
	U	-0.0406	U	-0.00881	pCi/g	N/A		(0% - 100%)			
		Uncert:	+/-0.0963								
Europium-154		TPU:	+/-0.0944								
	U	-0.0161	U	-0.0262	pCi/g	N/A		(0% - 100%)			
		Uncert:	+/-0.122								
Europium-155		TPU:	+/-0.120								
	U	0.0816	U	0.0249	pCi/g	106		(0% - 100%)			
		Uncert:	+/-0.0838								
Lead-212		TPU:	+/-0.0821								
		0.894		0.927	pCi/g	4		(0% - 20%)			
		Uncert:	+/-0.119								
Lead-214		TPU:	+/-0.117								
		1.11		1.02	pCi/g	8		(0% - 20%)			
		Uncert:	+/-0.192								
Manganese-54		TPU:	+/-0.188								
	U	0.018	U	0.00343	pCi/g	136		(0% - 100%)			
		Uncert:	+/-0.0408								
Niobium-94		TPU:	+/-0.040								
	U	0.00549	U	0.0198	pCi/g	113		(0% - 100%)			
		Uncert:	+/-0.0351								
Potassium-40		TPU:	+/-0.0344								
		9.17		8.54	pCi/g	7		(0% - 20%)			
		Uncert:	+/-1.13								
Radium-226		TPU:	+/-1.11								
		1.13		0.919	pCi/g	21		(0% - 100%)			
		Uncert:	+/-0.178								
Silver-108m		TPU:	+/-0.174								
	U	-0.00168	U	-0.00309	pCi/g	N/A		(0% - 100%)			
		Uncert:	+/-0.0371								

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	463112								
Thallium-208		TPU: +/-0.0364	+/-0.0209						
		0.323	0.319	pCi/g	1		(0% - 100%)		
		Uncert: +/-0.083	+/-0.0622						
		TPU: +/-0.0813	+/-0.061						
QC1200936936	LCS								
Actinium-228			U 0.998	pCi/g					10/10/05 11:27
		Uncert: +/-1.01							
		TPU: +/-0.993							
Americium-241	24.4		24.3	pCi/g		100	(75%-125%)		
		Uncert: +/-0.972							
		TPU: +/-0.952							
Bismuth-212			U 1.18	pCi/g					
		Uncert: +/-1.61							
		TPU: +/-1.58							
Bismuth-214			U 0.00375	pCi/g					
		Uncert: +/-0.370							
		TPU: +/-0.363							
Cesium-134			U 0.194	pCi/g					
		Uncert: +/-0.243							
		TPU: +/-0.238							
Cesium-137	9.39		10.1	pCi/g		107	(75%-125%)		
		Uncert: +/-0.628							
		TPU: +/-0.616							
Cobalt-60	14.3		15.2	pCi/g		107	(75%-125%)		
		Uncert: +/-0.866							
		TPU: +/-0.848							
Europium-152			U -0.197	pCi/g					
		Uncert: +/-0.426							
		TPU: +/-0.418							
Europium-154			U 0.337	pCi/g					
		Uncert: +/-0.462							
		TPU: +/-0.452							
Europium-155			U -0.148	pCi/g					
		Uncert: +/-0.465							
		TPU: +/-0.456							
Lead-212			U 0.295	pCi/g					
		Uncert: +/-0.228							
		TPU: +/-0.223							
Lead-214			U 0.014	pCi/g					
		Uncert: +/-0.305							
		TPU: +/-0.299							
Manganese-54			U 0.182	pCi/g					
		Uncert: +/-0.215							
		TPU: +/-0.211							
Niobium-94			U -0.0783	pCi/g					
		Uncert: +/-0.179							
		TPU: +/-0.176							
Potassium-40			U 0.0345	pCi/g					

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QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	463112									
			Uncert:							
			TPU:							
Radium-226		U	0.00375	pCi/g			(75%-125%)			
			Uncert:							
			TPU:							
Silver-108m		U	-0.0313	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	0.0438	pCi/g						
			Uncert:							
			TPU:							
QC1200936934	MB									
Actinium-228		U	0.0454	pCi/g					10/10/05	17:19
			Uncert:							
			TPU:							
Americium-241		U	-0.0224	pCi/g						
			Uncert:							
			TPU:							
Bismuth-212		U	0.0816	pCi/g						
			Uncert:							
			TPU:							
Bismuth-214		U	0.0459	pCi/g						
			Uncert:							
			TPU:							
Cesium-134		U	-0.000772	pCi/g						
			Uncert:							
			TPU:							
Cesium-137		U	0.00609	pCi/g						
			Uncert:							
			TPU:							
Cobalt-60		U	0.0144	pCi/g						
			Uncert:							
			TPU:							
Europium-152		U	0.000976	pCi/g						
			Uncert:							
			TPU:							
Europium-154		U	0.002	pCi/g						
			Uncert:							
			TPU:							
Europium-155		U	-0.0285	pCi/g						
			Uncert:							
			TPU:							
Lead-212		U	0.0217	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.022	pCi/g						
			Uncert:							
			TPU:							

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	463112										
Manganese-54				U	-3.220E-05						
	Uncert:				+/-0.0187						
	TPU:				+/-0.0183						
Niobium-94				U	0.00618						
	Uncert:				+/-0.015						
	TPU:				+/-0.0147						
Potassium-40				UUI	0.00						
	Uncert:				+/-0.237						
	TPU:				+/-0.232						
Radium-226				U	0.0459						
	Uncert:				+/-0.0533						
	TPU:				+/-0.0523						
Silver-108m				U	0.00302						
	Uncert:				+/-0.0167						
	TPU:				+/-0.0164						
Thallium-208				U	0.0256						
	Uncert:				+/-0.0179						
	TPU:				+/-0.0175						
Rad Gas Flow											
Batch	467346										
QC1200947127	145495001	DUP									
Strontium-90			U	-0.00109	U	-0.00366		N/A	(0% - 100%)	3XW1	10/12/05 19:34
	Uncert:			+/-0.0095		+/-0.0076					
	TPU:			+/-0.0095		+/-0.0076					
QC1200947129	LCS										
Strontium-90			1.18			1.21		102	(75%-125%)		10/07/05 19:14
	Uncert:					+/-0.0755					
	TPU:					+/-0.0836					
QC1200947126	MB										
Strontium-90				U	0.00261						10/12/05 19:34
	Uncert:				+/-0.00407						
	TPU:				+/-0.00407						
QC1200947128	145495001	MS									
Strontium-90			1.18	U	-0.00109			105	(75%-125%)		10/07/05 19:13
	Uncert:				+/-0.0095						
	TPU:				+/-0.0095						
Rad Liquid Scintillation											
Batch	464785										
QC1200941137	145417018	DUP									
Technetium-99			U	0.201	U	0.0721		0	(0% - 100%)	BXF1	09/27/05 06:25
	Uncert:			+/-0.170		+/-0.163					
	TPU:			+/-0.170		+/-0.163					
QC1200941139	LCS										
Technetium-99			12.7			11.3		89	(75%-125%)		09/27/05 07:00
	Uncert:					+/-0.432					
	TPU:					+/-0.513					
QC1200941136	MB										
Technetium-99				U	0.194						09/27/05 06:08

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation									
Batch	464785								
QC1200941138	145417018	MS							
Technetium-99									
			Uncert:						
			TPU:						
			12.7	U	0.201		11.5	pCi/g	90 (75%-125%) 09/27/05 06:43
			Uncert:		+/-0.170		+/-0.466		
			TPU:		+/-0.170		+/-0.546		
Batch	464786								
QC1200941141	145417017	DUP							
Carbon-14									
				U	0.125	U	0.0911	pCi/g	0 (0% - 100%) SLN1 09/22/05 15:41
			Uncert:		+/-0.106		+/-0.0952		
			TPU:		+/-0.106		+/-0.0952		
QC1200941143	LCS								
Carbon-14									
			6.80				6.48	pCi/g	95 (75%-125%) 09/22/05 18:49
			Uncert:				+/-0.162		
			TPU:				+/-0.191		
QC1200941140	MB								
Carbon-14				U			-0.0611	pCi/g	09/22/05 14:07
			Uncert:				+/-0.0937		
			TPU:				+/-0.0937		
QC1200941142	145417017	MS							
Carbon-14									
			7.05	U	0.125		6.07	pCi/g	86 (75%-125%) 09/22/05 17:15
			Uncert:		+/-0.106		+/-0.171		
			TPU:		+/-0.106		+/-0.196		
Batch	464797								
QC1200941151	145258021	DUP							
Iron-55				U	-24.8	U	-7.41	pCi/g	N/A (0% - 100%) BXF1 09/24/05 05:36
			Uncert:		+/-49.7		+/-57.3		
			TPU:		+/-49.8		+/-57.3		
QC1200941153	LCS								
Iron-55									
			777				698	pCi/g	90 (75%-125%) 09/24/05 06:10
			Uncert:				+/-74.7		
			TPU:				+/-86.0		
QC1200941150	MB								
Iron-55				U			20.3	pCi/g	09/24/05 05:18
			Uncert:				+/-53.6		
			TPU:				+/-53.6		
QC1200941152	145258021	MS							
Iron-55									
			788	U	-24.8		737	pCi/g	94 (75%-125%) 09/24/05 05:53
			Uncert:		+/-49.7		+/-75.1		
			TPU:		+/-49.8		+/-87.7		
Batch	464799								
QC1200941155	145258021	DUP							
Nickel-63				U	-4.8	U	-2.29	pCi/g	N/A (0% - 100%) BXF1 09/24/05 20:55
			Uncert:		+/-7.84		+/-8.07		
			TPU:		+/-7.85		+/-8.07		
QC1200941157	LCS								
Nickel-63									
			577				532	pCi/g	92 (75%-125%) 09/24/05 21:28
			Uncert:				+/-23.8		
			TPU:				+/-30.0		

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation										
Batch	464799									
QC1200941154	MB									
Nickel-63			U	0.688	pCi/g				09/24/05	20:38
				Uncert:						
				TPU:						
QC1200941156	145258021	MS								
Nickel-63		582	U	-4.8	502	pCi/g	86 (75%-125%)		09/24/05	21:11
				Uncert:	+/-7.84					
				TPU:	+/-7.85					
Batch	467508									
QC1200947552	145495003	DUP								
Tritium			U	3.73	U	5.48	pCi/g	0 (0% - 100%)	BXF1	10/10/05 04:53
				Uncert:	+/-6.27					
				TPU:	+/-6.27					
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	pCi/g				10/10/05	04:21
				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					
				TPU:	+/-6.27					

Notes:

The Qualifiers in this report are defined as follows:

- ** Indicates the analyte is a surrogate compound.
- 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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<u>Parmname</u>	<u>NOM</u>	<u>Sample Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
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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.



Analysis Report for 9527-0003-018F
Elevated Reading Investigation.

GAMMA SPECTRUM ANALYSIS

Sample Identification : 9527-0003-018F
Sample Description : Elevated Reading Investigation.
Sample Type : Final Status Survey Soil Sample
Sample Size : 1.229E+03 grams
Facility : CY-FSS-Gamma
Sample Taken On : 9/9/2005 11:25:00AM
Acquisition Started : 9/9/2005 12:06:56PM
Procedure : Soil 1L Marinelli
Operator : Ricardo sosa
Detector Name : DET-04
Geometry : 1 liter Marinelli Sand
Live Time : 600.0 seconds
Real Time : 600.5 seconds
Dead Time : 0.08 %
Peak Locate Threshold : 5.00
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 100 - 4096
Identification Energy Tolerance : 1.000 keV
Energy Calibration Used Done On : 3/31/2005
Efficiency Calibration Used Done On : 4/6/2005
Efficiency Calibration Description : 1 liter Marinelli Sand
Sample Number : 1442

Handwritten mark resembling a stylized 'G' or '6'.

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 9/9/2005 12:17:01PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Table with 8 columns: Peak No., Energy (keV), ROI start, ROI end, Net Peak Area, Net Area Uncertainty, Continuum Counts, Critical Level. Contains 7 rows of peak data.

Analysis Report for 9527-0003-018F

Elevated Reading Investigation.

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
8	339.37	670 -	681	4.73E+01	21.18	7.79E+01	1.37E+01
9	352.07	700 -	710	9.86E+01	23.97	5.76E+01	1.17E+01
10	583.29	1160 -	1171	4.55E+01	16.37	2.84E+01	8.10E+00
11	609.35	1214 -	1223	7.63E+01	19.24	2.50E+01	7.38E+00
12	661.60	1315 -	1327	1.80E+02	28.13	2.96E+01	8.40E+00
13	911.29	1816 -	1827	4.73E+01	15.34	1.71E+01	6.15E+00
14	968.82	1932 -	1941	2.07E+01	11.89	2.02E+01	6.61E+00
15	1120.31	2234 -	2242	1.65E+01	9.41	8.82E+00	4.20E+00
16	1460.84	2914 -	2927	9.15E+01	19.32	6.92E+00	3.93E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.960 sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	1.000	8.16E+00	1.74E+00	
CS-137	1.000	9.91E-01	1.58E-01	
TL-208	0.837	2.22E-01	8.04E-02	
PB-212	0.640	9.37E-01	1.34E-01	
BI-214	0.608	7.30E-01	1.70E-01	
PB-214	0.874	7.33E-01	1.37E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.960 sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 9/9/2005 12:17:01PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Rate (CPS)	Peak Rate (%) Uncertainty
2	94.43	3.68E-02	74-234 82.41

Analysis Report for 9527-0003-018F
Elevated Reading Investigation.

Peak No.	Energy (keV)	Peak Rate (CPS)	Peak Rate (%)	Uncertainty
3	209.45	4.90E-02	Ac-228	42.68
8	339.37	7.88E-02	Ac-228	22.87
13	911.29	7.88E-02	Ac-228	16.56
14	968.82	3.45E-02	Ac-228	29.35

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 1.960 sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\GAMMASPEC\ApexRoot\CY-FSS-Gamma\Library\FSS Soil.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MN-54	834.83	99.98	1.46E-01	1.46E-01	5.41E-02	6.49E-02
CO-60	1173.22	100.00	1.11E-01	1.11E-01	-2.42E-02	4.50E-02
	1332.49	100.00	1.83E-01		7.84E-02	7.94E-02
NB-94	702.63	100.00	9.34E-02	9.34E-02	-4.41E-02	4.00E-02
	871.10	100.00	1.10E-01		-5.03E-02	4.67E-02
AG-108M	433.93	89.90	1.08E-01	1.08E-01	-3.02E-02	4.94E-02
	614.37	90.40	1.88E-01		-2.47E-01	8.73E-02
	722.95	90.50	1.46E-01		5.45E-02	6.55E-02
CS-134	563.23	8.38	1.21E+00	1.50E-01	4.14E-01	5.38E-01
	569.32	15.43	5.79E-01		-2.46E-01	2.54E-01
	604.70	97.60	1.82E-01		-2.80E-01	8.48E-02
	795.84	85.40	1.50E-01		7.89E-04	6.61E-02
	801.93	8.73	1.37E+00		-1.18E-01	5.98E-01
+ CS-137	661.65	* 85.12	1.07E-01	1.07E-01	9.91E-01	4.63E-02
EU-152	121.78	28.40	2.60E-01	2.60E-01	-3.09E-03	1.23E-01
	344.27	26.50	3.36E-01		-8.01E-01	1.55E-01
	1407.95	20.70	7.77E-01		6.81E-02	3.28E-01
EU-154	123.07	40.50	1.83E-01	1.83E-01	-5.46E-02	8.67E-02
	723.30	19.70	6.84E-01		3.38E-01	3.07E-01
	1274.45	35.50	4.16E-01		1.37E-01	1.76E-01
EU-155	86.54	30.90	4.22E-01	4.19E-01	1.27E-01	2.02E-01
	105.31	20.70	4.19E-01		-5.98E-02	1.99E-01
AM-241	59.54	35.90	5.89E-01	5.89E-01	1.42E-01	2.79E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Benny 1/17/06 Repair

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

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

Survey Release Record Scan Area Results

Survey Unit 9527-0003

SAMPLE LOCATION SCANS 9527-0003

<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>
9527-03-SL-00-01-0	12800	14415	13300		09/06/2005	2:19 PM	1109	1005
9527-03-SL-00-02-0	15800	17594	16300		09/06/2005	2:24 PM	1109	1005
9527-03-SL-00-03-0	18400	20336	20200		09/06/2005	2:27 PM	1109	1005
9527-03-SL-00-04-0	23300	25478	21000		09/06/2005	2:29 PM	1109	1005
9527-03-SL-00-05-0	36000	38708	28500		09/06/2005	2:32 PM	1109	1005
9527-03-SL-00-06-0	41800	44718	41500		09/06/2005	2:36 PM	1109	1005
9527-03-SL-00-07-0	20000	22018	19800		09/06/2005	2:46 PM	1109	1005
9527-03-SL-00-08-0	41500	44407	38400		09/07/2005	1:33 PM	1109	1005
9527-03-SL-00-09-0	18500	20441	18700		09/06/2005	2:49 PM	1109	1005
9527-03-SL-00-10-0	20400	22438	19100		09/06/2005	2:53 PM	1109	1005
9527-03-SL-00-11-0	38000	40782	36000		09/07/2005	1:30 PM	1109	1005
9527-03-SL-00-12-0	20200	22228	18600		09/07/2005	11:22 AM	1109	1005
9527-03-SL-00-13-0	19700	21703	18200		09/07/2005	11:16 AM	1109	1005
9527-03-SL-00-14-0	19100	21072	17600		09/07/2005	11:20 AM	1109	1005
9527-03-SL-00-15-0	16900	18755	16700		09/07/2005	11:18 AM	1109	1005
9527-03-SL-00-16-0	39300	42129	33300		09/07/2005	1:39 PM	1109	1005
9527-03-SL-00-17-0	27700	30075	27500		09/07/2005	1:42 PM	1109	1005

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREAS 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>
9527-03-SC-01-01-0	14700	16430	14700		09/07/2005	8:25 AM	1105	1006
9527-03-SC-01-02-0	14600	16324	15100		09/07/2005	8:27 AM	1105	1006
9527-03-SC-01-03-0	14200	15901	14700		09/07/2005	8:29 AM	1105	1006
9527-03-SC-01-04-0	14600	16324	14800		09/07/2005	8:31 AM	1105	1006
9527-03-SC-01-05-0	14200	15901	15400		09/07/2005	8:36 AM	1105	1006
9527-03-SC-01-06-0	15200	16960	15800		09/07/2005	8:38 AM	1105	1006
9527-03-SC-01-07-0	15600	17383	15900		09/07/2005	8:39 AM	1105	1006
9527-03-SC-01-08-0	16200	18016	16200		09/07/2005	8:41 AM	1105	1006
9527-03-SC-01-09-0	16200	18016	15800		09/07/2005	8:42 AM	1105	1006
9527-03-SC-01-10-0	15200	16960	14400		09/07/2005	8:44 AM	1105	1006
9527-03-SC-01-11-0	15100	16854	15600		09/07/2005	8:46 AM	1105	1006
9527-03-SC-01-12-0	15000	16748	16100		09/07/2005	8:48 AM	1105	1006
9527-03-SC-01-13-0	15500	17277	15200		09/07/2005	8:51 AM	1105	1006
9527-03-SC-01-14-0	15200	16960	16400		09/07/2005	8:53 AM	1105	1006
9527-03-SC-01-15-0	14700	16430	15800		09/07/2005	8:55 AM	1105	1006
9527-03-SC-01-16-0	17200	19072	15500		09/07/2005	8:57 AM	1105	1006
9527-03-SC-01-17-0	18100	20020	15100		09/07/2005	8:58 AM	1105	1006
9527-03-SC-01-18-0	16200	18016	17300		09/07/2005	9:01 AM	1105	1006
9527-03-SC-01-19-0	19900	21913	16200		09/07/2005	9:02 AM	1105	1006
9527-03-SC-01-20-0	16400	18228	17000		09/07/2005	9:04 AM	1105	1006
9527-03-SC-01-21-0	19000	20967	15600		09/07/2005	10:35 AM	1105	1006
9527-03-SC-01-22-0	16800	18650	17200		09/07/2005	10:38 AM	1105	1006
9527-03-SC-01-23-0	19300	21283	16600		09/07/2005	10:40 AM	1105	1006
9527-03-SC-01-24-0	15300	17065	16600		09/07/2005	10:42 AM	1105	1006
9527-03-SC-01-25-0	18900	20862	14400		09/07/2005	10:47 AM	1105	1006
9527-03-SC-01-26-0	17500	19388	16400		09/07/2005	10:48 AM	1105	1006
9527-03-SC-01-27-0	16500	18333	15900		09/07/2005	10:50 AM	1105	1006
9527-03-SC-01-28-0	17100	18966	18500		09/07/2005	10:51 AM	1105	1006
9527-03-SC-01-29-0	18100	20020	15900		09/07/2005	10:53 AM	1105	1006
9527-03-SC-01-30-0	18100	20020	19000		09/07/2005	10:54 AM	1105	1006
9527-03-SC-01-31-0	17900	19809	16700		09/07/2005	11:05 AM	1105	1006
9527-03-SC-01-32-0	18900	20862	17400		09/07/2005	11:06 AM	1105	1006
9527-03-SC-01-33-0	19600	21598	17300		09/07/2005	11:08 AM	1105	1006

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREAS 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>
9527-03-SC-01-34-0	17500	19388	18800		09/07/2005	11:10 AM	1105	1006
9527-03-SC-01-35-0	20500	22543	18400		09/07/2005	11:11 AM	1105	1006
9527-03-SC-01-36-0	18900	20862	19200		09/07/2005	11:13 AM	1105	1006
9527-03-SC-01-37-0	21100	23173	18500		09/07/2005	11:15 AM	1105	1006
9527-03-SC-01-38-0	19800	21808	19600		09/07/2005	11:16 AM	1105	1006
9527-03-SC-01-39-0	20900	22963	20500		09/07/2005	11:19 AM	1105	1006
9527-03-SC-01-40-0	20700	22753	20000		09/07/2005	11:21 AM	1105	1006
9527-03-SC-01-41-0	16600	18439	16400		09/07/2005	1:28 PM	1105	1006
9527-03-SC-01-42-0	18800	20757	18100		09/07/2005	1:30 PM	1105	1006
9527-03-SC-01-43-0	18300	20231	17200		09/07/2005	1:32 PM	1105	1006
9527-03-SC-01-44-0	16900	18755	17200		09/07/2005	1:38 PM	1105	1006
9527-03-SC-01-45-0	20100	22123	16200		09/07/2005	1:39 PM	1105	1006
9527-03-SC-01-46-0	18600	20546	17300		09/07/2005	1:41 PM	1105	1006
9527-03-SC-01-47-0	21600	23697	17800		09/07/2005	1:43 PM	1105	1006
9527-03-SC-01-48-0	17300	19177	18900		09/07/2005	1:45 PM	1105	1006
9527-03-SC-01-49-0	20900	22963	18200		09/07/2005	1:46 PM	1105	1006
9527-03-SC-01-50-0	21600	23697	20500		09/07/2005	1:48 PM	1105	1006
9527-03-SC-01-51-0	23600	25792	17800		09/07/2005	1:55 PM	1105	1006
9527-03-SC-01-52-0	25100	27361	18000		09/07/2005	1:57 PM	1105	1006
9527-03-SC-01-53-0	27200	29554	17500		09/07/2005	1:59 PM	1105	1006
9527-03-SC-01-54-0	24700	26943	17500		09/07/2005	2:00 PM	1105	1006
9527-03-SC-01-55-0	26900	29241	18400		09/07/2005	2:03 PM	1105	1006
9527-03-SC-01-56-0	28100	30492	19300		09/07/2005	2:04 PM	1105	1006
9527-03-SC-01-57-0	27900	30284	19500		09/07/2005	2:07 PM	1105	1006
9527-03-SC-01-58-0	25600	27883	19400		09/07/2005	2:10 PM	1105	1006
9527-03-SC-01-59-0	26700	29032	17200		09/07/2005	2:12 PM	1105	1006
9527-03-SC-01-60-0	27100	29449	19800		09/07/2005	2:14 PM	1105	1006
9527-03-SC-01-61-0	23200	25374	23500		09/07/2005	2:37 PM	1105	1006
9527-03-SC-01-62-0	25200	27466	20000		09/07/2005	2:39 PM	1105	1006
9527-03-SC-01-63-0	22700	24850	22100		09/07/2005	2:41 PM	1105	1006
9527-03-SC-01-64-0	25200	27466	22300		09/07/2005	2:42 PM	1105	1006
9527-03-SC-01-65-0	24100	26316	21700		09/07/2005	2:44 PM	1105	1006
9527-03-SC-01-66-0	25600	27883	20000		09/07/2005	2:45 PM	1105	1006

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREAS 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>
9527-03-SC-01-67-0	22400	24536	21400		09/07/2005	2:47 PM	1105	1006
9527-03-SC-01-68-0	26400	28719	21100		09/07/2005	2:47 PM	1105	1006
9527-03-SC-01-69-0	22400	24536	22500		09/07/2005	2:49 PM	1105	1006
9527-03-SC-01-70-0	29400	31847	19100		09/07/2005	2:50 PM	1105	1006
9527-03-SC-01-71-0	31100	33617	21500		09/07/2005	2:52 PM	1105	1006
9527-03-SC-01-72-0	30500	32992	21200		09/07/2005	2:53 PM	1105	1006
9527-03-SC-01-73-0	29100	31535	21300		09/07/2005	2:55 PM	1105	1006
9527-03-SC-01-74-0	23600	25792	20100		09/07/2005	2:57 PM	1105	1006
9527-03-SC-01-75-0	32200	34761	20700		09/07/2005	2:58 PM	1105	1006
9527-03-SC-01-76-0	27900	30284	21600		09/07/2005	2:59 PM	1105	1006
9527-03-SC-01-77-0	28900	31326	20400		09/07/2005	3:01 PM	1105	1006
9527-03-SC-01-78-0	29800	32264	19000		09/07/2005	3:02 PM	1105	1006
9527-03-SC-01-79-0	26600	28928	18800		09/07/2005	3:03 PM	1105	1006
9527-03-SC-01-80-0	35000	37670	19800		09/07/2005	3:05 PM	1105	1006

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREA 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>
9527-03-SC-02-01-0	41800	44718	26700		09/08/2005	8:48 AM	1105	1006
9527-03-SC-02-02-0	34700	37358	27900		09/08/2005	8:50 AM	1105	1006
9527-03-SC-02-03-0	33800	36424	27800		09/08/2005	8:53 AM	1105	1006
9527-03-SC-02-04-0	37800	40575	29200		09/08/2005	8:55 AM	1105	1006
9527-03-SC-02-05-0	37300	40056	33300		09/08/2005	8:57 AM	1105	1006
9527-03-SC-02-06-0	38500	41300	29600		09/08/2005	9:00 AM	1105	1006
9527-03-SC-02-07-0	38300	41093	30800		09/08/2005	9:02 AM	1105	1006
9527-03-SC-02-08-0	38500	41300	38000		09/08/2005	9:05 AM	1105	1006
9527-03-SC-02-09-0	39500	42336	32600		09/08/2005	9:09 AM	1105	1006
9527-03-SC-02-10-0	45400	48441	37200		09/08/2005	9:13 AM	1105	1006
9527-03-SC-02-11-0	50500	53707	36500		09/08/2005	9:17 AM	1105	1006
9527-03-SC-02-12-0	48400	51540	32900		09/08/2005	9:21 AM	1105	1006
9527-03-SC-02-13-0	52800	56079	34200		09/08/2005	9:24 AM	1105	1006
9527-03-SC-02-14-0	49500	52675	42300		09/08/2005	9:29 AM	1105	1006
9527-03-SC-02-15-0	51500	54739	43100		09/08/2005	9:32 AM	1105	1006
9527-03-ER-02-15-1	51500	54739	54100		09/08/2005	1:26 PM	1105	1006
9527-03-SC-02-16-0	52700	55976	33100		09/08/2005	9:36 AM	1105	1006
9527-03-SC-02-17-0	51700	54945	37800		09/08/2005	9:38 AM	1105	1006
9527-03-SC-02-18-0	53900	57213	40900		09/08/2005	9:42 AM	1105	1006
9527-03-SC-02-19-0	52900	56182	41000		09/08/2005	9:47 AM	1105	1006
9527-03-SC-02-20-0	52500	55770	42300		09/08/2005	9:50 AM	1105	1006
9527-03-SC-02-21-0	19000	20967	18200		09/08/2005	10:06 AM	1105	1006
9527-03-SC-02-22-0	17700	19599	18700		09/08/2005	10:09 AM	1105	1006
9527-03-SC-02-23-0	18500	20441	18100		09/08/2005	10:11 AM	1105	1006
9527-03-SC-02-24-0	18900	20862	19500		09/08/2005	10:13 AM	1105	1006
9527-03-SC-02-25-0	19800	21808	17400		09/08/2005	10:15 AM	1105	1006
9527-03-SC-02-26-0	19400	21388	20300		09/08/2005	10:17 AM	1105	1006
9527-03-SC-02-27-0	20000	22018	19500		09/08/2005	10:19 AM	1105	1006
9527-03-SC-02-28-0	19700	21703	21300		09/08/2005	10:21 AM	1105	1006
9527-03-SC-02-29-0	19500	21493	18200		09/08/2005	10:25 AM	1105	1006
9527-03-SC-02-30-0	20100	22123	20300		09/08/2005	10:28 AM	1105	1006
9527-03-SC-02-31-0	19900	21913	18300		09/08/2005	10:44 AM	1105	1006
9527-03-SC-02-32-0	18800	20757	18400		09/08/2005	10:46 AM	1105	1006

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREA 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>
9527-03-SC-02-33-0	19100	21072	17600		09/08/2005	10:48 AM	1105	1006
9527-03-SC-02-34-0	19000	20967	19500		09/08/2005	10:50 AM	1105	1006
9527-03-SC-02-35-0	19500	21493	18900		09/08/2005	10:52 AM	1105	1006
9527-03-SC-02-36-0	18400	20336	19200		09/08/2005	10:53 AM	1105	1006
9527-03-SC-02-37-0	19000	20967	18300		09/08/2005	10:58 AM	1105	1006
9527-03-SC-02-38-0	18400	20336	18500		09/08/2005	10:59 AM	1105	1006
9527-03-SC-02-39-0	18100	20020	17300		09/08/2005	11:01 AM	1105	1006
9527-03-SC-02-40-0	17100	18966	18100		09/08/2005	11:03 AM	1105	1006
9527-03-SC-02-41-0	19600	21598	17000		09/08/2005	11:05 AM	1105	1006
9527-03-SC-02-42-0	18200	20125	18300		09/08/2005	11:06 AM	1105	1006
9527-03-SC-02-43-0	19000	20967	17500		09/08/2005	11:07 AM	1105	1006
9527-03-SC-02-44-0	19600	21598	17400		09/08/2005	11:08 AM	1105	1006
9527-03-SC-02-45-0	18600	20546	18300		09/08/2005	11:10 AM	1105	1006
9527-03-SC-02-46-0	18300	20231	18800		09/08/2005	11:12 AM	1105	1006
9527-03-SC-02-47-0	17900	19809	18700		09/08/2005	11:13 AM	1105	1006
9527-03-SC-02-48-0	19500	21493	19000		09/08/2005	11:14 AM	1105	1006
9527-03-SC-02-49-0	17000	18861	18000		09/08/2005	11:15 AM	1105	1006
9527-03-SC-02-50-0	18100	20020	18800		09/08/2005	11:17 AM	1105	1006
9527-03-SC-02-51-0	19000	20967	18900		09/08/2005	1:56 PM	1105	1006
9527-03-SC-02-52-0	18500	20441	20400		09/08/2005	1:57 PM	1105	1006
9527-03-SC-02-53-0	18600	20546	18400		09/08/2005	1:59 PM	1105	1006
9527-03-SC-02-54-0	18500	20441	17300		09/08/2005	2:00 PM	1105	1006
9527-03-SC-02-55-0	17700	19599	17600		09/08/2005	2:02 PM	1105	1006
9527-03-SC-02-56-0	18200	20125	17900		09/08/2005	2:03 PM	1105	1006
9527-03-SC-02-57-0	17900	19809	17100		09/08/2005	2:05 PM	1105	1006
9527-03-SC-02-58-0	18200	20125	18900		09/08/2005	2:06 PM	1105	1006
9527-03-SC-02-59-0	18400	20336	17700		09/08/2005	2:07 PM	1105	1006
9527-03-SC-02-60-0	18200	20125	18800		09/08/2005	2:10 PM	1105	1006
9527-03-SC-02-61-0	26600	28928	19000		09/08/2005	2:13 PM	1105	1006
9527-03-SC-02-62-0	24800	27047	18000		09/08/2005	2:14 PM	1105	1006
9527-03-SC-02-63-0	26000	28301	17400		09/08/2005	2:16 PM	1105	1006
9527-03-SC-02-64-0	26600	28928	17800		09/08/2005	2:18 PM	1105	1006
9527-03-SC-02-65-0	27000	29345	18400		09/08/2005	2:19 PM	1105	1006

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREA 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>
9527-03-SC-02-66-0	29100	31535	17300		09/08/2005	2:21 PM	1105	1006
9527-03-SC-02-67-0	26000	28301	19200		09/08/2005	2:23 PM	1105	1006
9527-03-SC-02-68-0	27700	30075	17700		09/08/2005	2:25 PM	1105	1006
9527-03-SC-02-69-0	25900	28197	15800		09/08/2005	2:26 PM	1105	1006
9527-03-SC-02-70-0	27400	29762	18800		09/08/2005	2:28 PM	1105	1006
9527-03-SC-02-71-0	18300	20231	18200		09/08/2005	2:41 PM	1105	1006
9527-03-SC-02-72-0	17700	19599	17000		09/08/2005	2:43 PM	1105	1006
9527-03-SC-02-73-0	19500	21493	16300		09/08/2005	2:45 PM	1105	1006
9527-03-SC-02-74-0	17800	19704	17500		09/08/2005	2:46 PM	1105	1006
9527-03-SC-02-75-0	18400	20336	15900		09/08/2005	2:47 PM	1105	1006
9527-03-SC-02-76-0	17900	19809	17400		09/08/2005	2:50 PM	1105	1006
9527-03-SC-02-77-0	18900	20862	15600		09/08/2005	2:52 PM	1105	1006
9527-03-SC-02-78-0	15000	16748	15100		09/08/2005	2:54 PM	1105	1006
9527-03-SC-02-79-0	16400	18228	14900		09/08/2005	2:56 PM	1105	1006
9527-03-SC-02-80-0	15400	17171	16600		09/08/2005	2:59 PM	1105	1006

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREAS 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>
9527-03-SC-03-01-0	16000	17805	15200		09/08/2005	3:01 PM	1105	1006
9527-03-SC-03-02-0	16500	18333	13000		09/08/2005	3:03 PM	1105	1006
9527-03-SC-03-03-0	16600	18439	14900		09/08/2005	3:04 PM	1105	1006
9527-03-SC-03-04-0	15600	17383	16800		09/08/2005	3:05 PM	1105	1006
9527-03-SC-03-05-0	14600	16324	14800		09/08/2005	3:08 PM	1105	1006
9527-03-SC-03-06-0	15900	17700	14300		09/08/2005	3:09 PM	1105	1006
9527-03-SC-03-07-0	15000	16748	15800		09/08/2005	3:10 PM	1105	1006
9527-03-SC-03-08-0	14000	15689	15300		09/08/2005	3:12 PM	1105	1006
9527-03-SC-03-09-0	17800	19704	15600		09/08/2005	3:14 PM	1105	1006
9527-03-SC-03-10-0	13200	14840	14900	+	09/08/2005	3:16 PM	1105	1006
9527-03-SC-03-11-0	15500	17277	16300		09/09/2005	8:13 AM	1105	1006
9527-03-SC-03-12-0	15800	17594	15200		09/09/2005	8:15 AM	1105	1006
9527-03-SC-03-13-0	16500	18333	15600		09/09/2005	8:18 AM	1105	1006
9527-03-SC-03-14-0	16500	18333	16500		09/09/2005	8:20 AM	1105	1006
9527-03-SC-03-15-0	14700	16430	15500		09/09/2005	8:22 AM	1105	1006
9527-03-SC-03-16-0	16000	17805	15200		09/09/2005	8:24 AM	1105	1006
9527-03-SC-03-17-0	16300	18122	16500		09/09/2005	8:26 AM	1105	1006
9527-03-SC-03-18-0	16300	18122	14100		09/09/2005	8:28 AM	1105	1006
9527-03-SC-03-19-0	15000	16748	16000		09/09/2005	8:31 AM	1105	1006
9527-03-SC-03-20-0	17000	18861	14900		09/09/2005	8:32 AM	1105	1006
9527-03-SC-03-21-0	18800	20757	18000		09/09/2005	8:37 AM	1105	1006
9527-03-SC-03-22-0	18000	19915	16400		09/09/2005	8:38 AM	1105	1006
9527-03-SC-03-23-0	17500	19388	15800		09/09/2005	8:40 AM	1105	1006
9527-03-SC-03-24-0	18600	20546	16200		09/09/2005	8:42 AM	1105	1006
9527-03-SC-03-25-0	18400	20336	16900		09/09/2005	8:44 AM	1105	1006
9527-03-SC-03-26-0	18900	20862	16100		09/09/2005	8:46 AM	1105	1006
9527-03-SC-03-27-0	17800	19704	16200		09/09/2005	8:48 AM	1105	1006
9527-03-SC-03-28-0	17400	19283	15200		09/09/2005	8:50 AM	1105	1006
9527-03-SC-03-29-0	17800	19704	15900		09/09/2005	8:53 AM	1105	1006
9527-03-SC-03-30-0	18100	20020	18100		09/09/2005	8:54 AM	1105	1006
9527-03-SC-03-31-0	25100	27361	18800		09/09/2005	9:39 AM	1105	1006
9527-03-SC-03-32-0	24400	26629	17600		09/09/2005	9:40 AM	1105	1006
9527-03-SC-03-33-0	21600	23697	18100		09/09/2005	9:42 AM	1105	1006

AL - Action Level

Survey Release Record Scan Area Results

Survey Unit 9527-0003

9527-0003 SCAN AREAS 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>
9527-03-SC-03-34-0	22600	24745	18900		09/09/2005	9:43 AM	1105	1006
9527-03-SC-03-35-0	25100	27361	16900		09/09/2005	9:45 AM	1105	1006
9527-03-SC-03-36-0	24300	26525	18000		09/09/2005	9:47 AM	1105	1006
9527-03-SC-03-37-0	24000	26211	20100		09/09/2005	9:48 AM	1105	1006
9527-03-SC-03-38-0	20000	22018	17400		09/09/2005	9:50 AM	1105	1006
9527-03-SC-03-39-0	24900	27152	17200		09/09/2005	9:52 AM	1105	1006
9527-03-SC-03-40-0	23300	25478	15700		09/09/2005	9:54 AM	1105	1006
9527-03-SC-03-41-0	26300	28614	19600		09/09/2005	9:56 AM	1105	1006
9527-03-SC-03-42-0	26600	28928	20000		09/09/2005	9:58 AM	1105	1006
9527-03-SC-03-43-0	29400	31847	19400		09/09/2005	10:00 AM	1105	1006
9527-03-SC-03-44-0	31300	33825	19200		09/09/2005	10:02 AM	1105	1006
9527-03-SC-03-45-0	31500	34033	19200		09/09/2005	10:04 AM	1105	1006
9527-03-SC-03-46-0	29200	31639	21100		09/09/2005	10:07 AM	1105	1006
9527-03-SC-03-47-0	30500	32992	18400		09/09/2005	10:08 AM	1105	1006
9527-03-SC-03-48-0	32200	34761	18500		09/09/2005	10:10 AM	1105	1006
9527-03-SC-03-49-0	30700	33201	20000		09/09/2005	10:11 AM	1105	1006
9527-03-SC-03-50-0	31800	34345	20200		09/09/2005	10:13 AM	1105	1006
9527-03-SC-03-51-0	39700	42544	35500		09/09/2005	10:53 AM	1105	1006
9527-03-SC-03-52-0	35100	37774	34400		09/09/2005	10:55 AM	1105	1006
9527-03-SC-03-53-0	39500	42336	28600		09/09/2005	10:57 AM	1105	1006
9527-03-SC-03-54-0	37300	40056	29400		09/09/2005	11:00 AM	1105	1006
9527-03-SC-03-55-0	36400	39123	35400		09/09/2005	11:02 AM	1105	1006
9527-03-SC-03-56-0	34900	37566	26800		09/09/2005	11:04 AM	1105	1006
9527-03-SC-03-57-0	33800	36424	32000		09/09/2005	11:07 AM	1105	1006
9527-03-SC-03-58-0	31200	33721	28500		09/09/2005	11:09 AM	1105	1006
9527-03-SC-03-59-0	32600	35177	25800		09/09/2005	11:11 AM	1105	1006
9527-03-SC-03-60-0	32800	35385	24700		09/09/2005	11:13 AM	1105	1006

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Attachment 2c
Split Sample Assessment Forms
(2 Pages)

Split Sample Assessment Form

Survey Area#: 9527		Survey Unit #: 0003		Survey Unit name: East Mountain Side																
Sample Plan or WPIR#: 2005-0054						SML#: 9527-0003-008														
Sample Description: Comparison of split samples collected from sample measurement location #8 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9527-0003-008F, the comparison sample was 9527-0003-008FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	1.62	9.0E-2	18	0.75 – 1.33	1.37	6.6E-2	0.9	Y												
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples.															
					<table border="0"> <tr> <td><u>Resolution</u></td> <td><u>Agreement Range</u></td> </tr> <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> </table>				<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
<u>Resolution</u>	<u>Agreement Range</u>																			
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed By: <i>Jack McLaughlin</i>		Date: <i>3/16/06</i>		Reviewed By: <i>Don Revell</i>		Date: <i>3-16-06</i>														

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Split Sample Assessment Form

Survey Area#: 9527		Survey Unit #: 0003		Survey Unit name: East Mountain Side																
Sample Plan or WPIR#: 2005-0054						SML#: 9527-0003-011														
Sample Description: Comparison of split samples collected from sample measurement location #11 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9527-0003-011F, the comparison sample was 9527-0003-011FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	1.21	3.1E-2	38	0.75 - 1.33	1.05	5.5E-2	0.9	Y												
Comments/Corrective Actions: N/A					Table is provided to show acceptance criteria used to assess split samples. <table style="margin-left: auto; margin-right: auto; border: none;"> <tr> <td style="text-align: center;"><u>Resolution</u></td> <td style="text-align: center;"><u>Agreement Range</u></td> </tr> <tr> <td style="text-align: center;">4 - 7</td> <td style="text-align: center;">0.5 - 2.0</td> </tr> <tr> <td style="text-align: center;">8 - 15</td> <td style="text-align: center;">0.6 - 1.66</td> </tr> <tr> <td style="text-align: center;">16 - 50</td> <td style="text-align: center;">0.75 - 1.33</td> </tr> <tr> <td style="text-align: center;">51 - 200</td> <td style="text-align: center;">0.80 - 1.25</td> </tr> <tr> <td style="text-align: center;">>200</td> <td style="text-align: center;">0.85 - 1.18</td> </tr> </table>				<u>Resolution</u>	<u>Agreement Range</u>	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
<u>Resolution</u>	<u>Agreement Range</u>																			
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed By: <i>JACK McCARTHY</i>		Date: <i>3/16/06</i>		Reviewed By: <i>Bob Ruskell</i>			Date: <i>3-16-06</i>													

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EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Attachment 2d
Preliminary Data Forms
(2 Pages)

PRELIMINARY DATA REVIEW FORM

Survey Unit : 9527-0003
 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

RANGE

Target Level (pCi/g) :	5.38E+00	2.59E+00	1.05E+00	3.85E+00	8.57E+00
Minimum Value :	3.61E-01	6.03E-02	2.42E-02	1.25E-01	6.04E-01
Maximum Value :	1.83E+00	6.03E-02	2.42E-02	1.25E-01	6.04E-01
Mean :	9.64E-01	2.84E-02	1.47E-02	6.40E-02	4.00E-01
Median :	8.41E-01	2.94E-02	1.60E-02	1.09E-01	3.96E-01
Standard Deviation :	4.66E-01	1.81E-02	1.03E-02	9.22E-02	2.02E-01

Reported Results

Sample Identification	Cs-137 Concentration (pCi/g)	Co-60 Concentration (pCi/g)	Sr-90 Concentration (pCi/g)	C-14 Concentration (pCi/g)	Tc-99 Concentration (pCi/g)	Fraction of Target Level
9527-0003-001F	6.09E-01	1.55E-02	1.47E-02	6.40E-02	4.00E-01	0.196
9527-0003-002F	5.75E-01	7.25E-03	1.47E-02	6.40E-02	4.00E-01	0.187
9527-0003-003F	8.41E-01	3.86E-02	3.82E-03	1.25E-01	3.96E-01	0.254
9527-0003-004F	1.83E+00	6.03E-02	1.47E-02	6.40E-02	4.00E-01	0.441
9527-0003-005F	3.61E-01	2.22E-02	1.47E-02	6.40E-02	4.00E-01	0.153
9527-0003-006F	5.09E-01	2.26E-03	1.47E-02	6.40E-02	4.00E-01	0.173
9527-0003-007F	6.35E-01	1.53E-02	1.60E-02	-4.21E-02	2.01E-01	0.152
9527-0003-008F	1.62E+00	4.03E-02	1.47E-02	6.40E-02	4.00E-01	0.394

Tack McCarty
 Submitted by/Date 9/15/26

PRELIMINARY DATA REVIEW FORM

Sample Identification	Reported Results					Fraction of Target Level
	Cs-137 Concentration (pCi/g)	Co-60 Concentration (pCi/g)	Sr-90 Concentration (pCi/g)	C-14 Concentration (pCi/g)	Tc-99 Concentration (pCi/g)	
9527-0003-009F	8.04E-01	0.00E+00	1.47E-02	6.40E-02	4.00E-01	0.227
9527-0003-010F	1.28E+00	2.73E-02	2.42E-02	1.09E-01	6.04E-01	0.370
9527-0003-011F	1.21E+00	4.53E-02	1.47E-02	6.40E-02	4.00E-01	0.320
9527-0003-012F	9.49E-01	3.90E-02	1.47E-02	6.40E-02	4.00E-01	0.269
9527-0003-013F	1.69E+00	5.26E-02	1.47E-02	6.40E-02	4.00E-01	0.412
9527-0003-014F	9.92E-01	2.94E-02	1.47E-02	6.40E-02	4.00E-01	0.273
9527-0003-015F	5.50E-01	3.11E-02	1.47E-02	6.40E-02	4.00E-01	0.192

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)

Actual HTD results were used for 9527-0003-003F, 9527-0003-007F and 9527-0003-010F to demonstrate compliance; average values for these HTDs were used for the rest of the samples


 Tack *not clear*
 Submitted by/Date 9/15/06

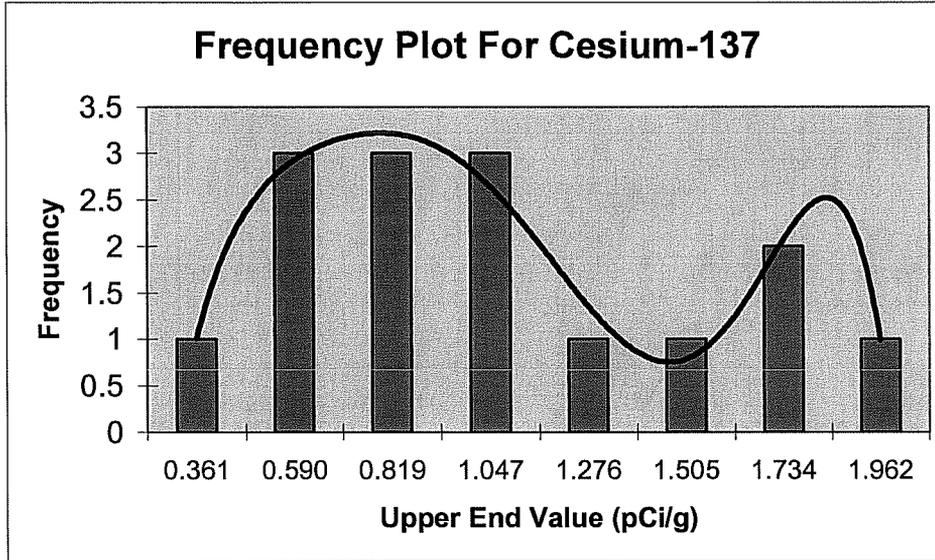
EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Attachment 2e
Graphical Representation of Data
(4 Pages)

FREQUENCY PLOT FOR CESIUM-137

Survey Unit: 9527-0003
 Survey Unit Name: East Mountain Side
 Mean: 9.64E-01 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
0.361	1	7%
0.590	3	20%
0.819	3	20%
1.047	3	20%
1.276	1	7%
1.505	1	7%
1.734	2	13%
1.962	1	7%
Total:	15	100%

Jack McCarthy
 Submitted By/Date 3/16/06

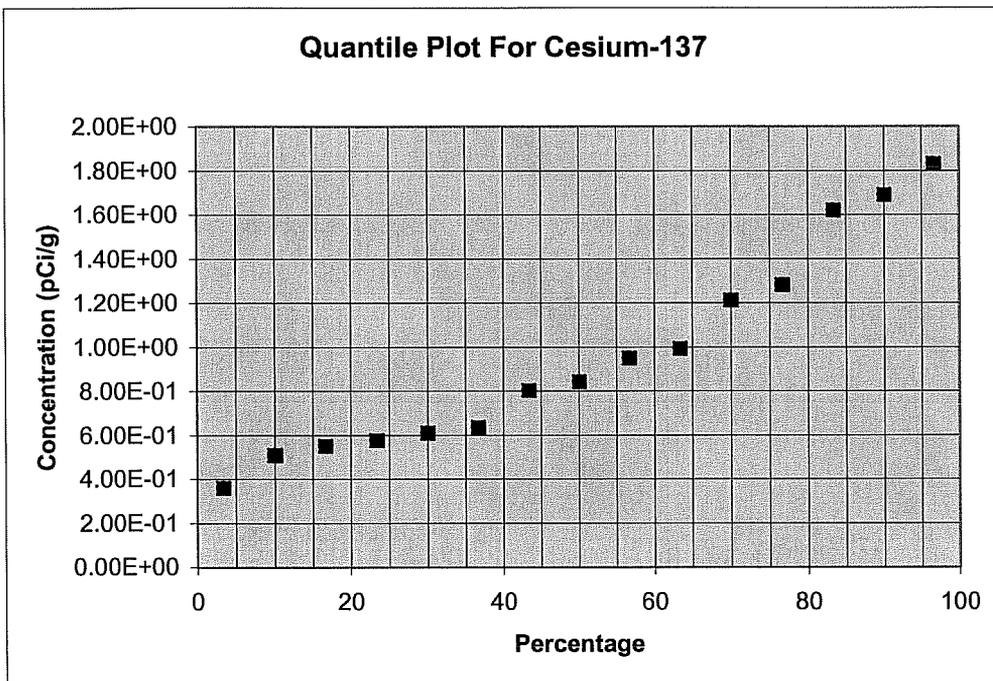
Del Randall
 Reviewed By/Date 3-16-06

QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9527-0003

Survey Unit Name: East Mountain Side

Mean: 9.64E-01 pCi/g



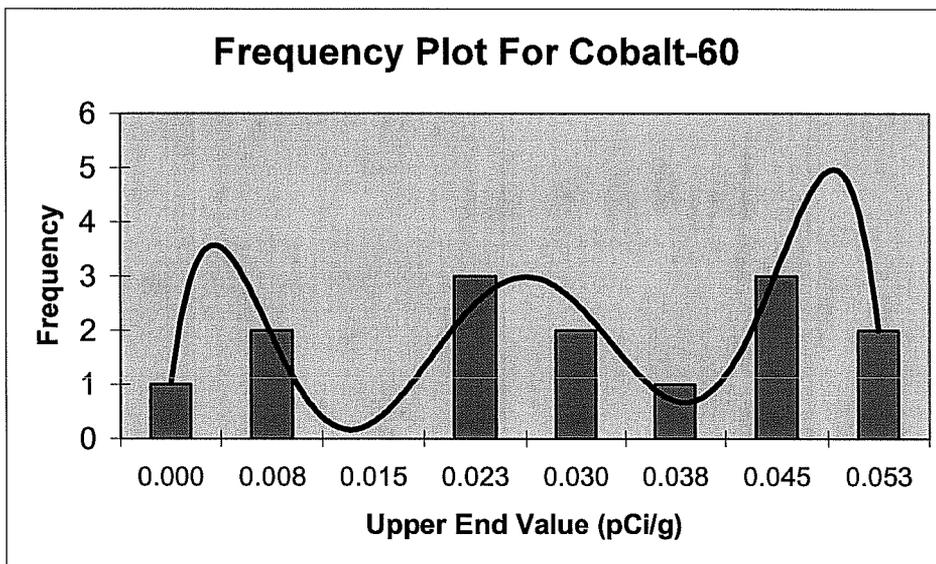
Cs-137	Rank	Percentage
3.61E-01	1	3%
5.09E-01	2	10%
5.50E-01	3	17%
5.75E-01	4	23%
6.09E-01	5	30%
6.35E-01	6	37%
8.04E-01	7	43%
8.41E-01	8	50%
9.49E-01	9	57%
9.92E-01	10	63%
1.21E+00	11	70%
1.28E+00	12	77%
1.62E+00	13	83%
1.69E+00	14	90%
1.83E+00	15	97%

Jack McLaughlin
 Submitted By/Date 3/16/06

Don Randall
 Reviewed By/Date 3-16-06

FREQUENCY PLOT FOR COBALT-60

Survey Unit: 9527-0003
 Survey Unit Name: East Mountain Side
 Mean: 2.84E-02 pCi/g



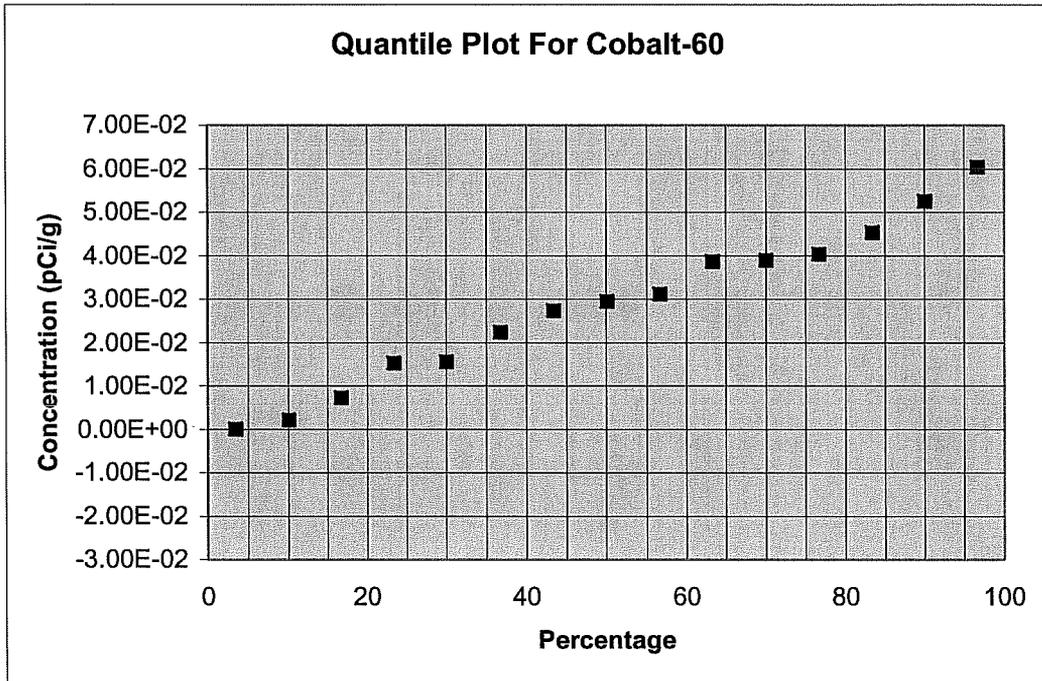
Upper End Value	Observation Frequency	Observation Frequency
0.000	1	7%
0.008	2	14%
0.015	0	0%
0.023	3	21%
0.030	2	14%
0.038	1	7%
0.045	3	21%
0.053	2	14%
Total:	14	100%

JACK McLAUGHLIN 3/16/06
 Submitted By/Date

Paul Rowland 3-16-06
 Reviewed By/Date

QUANTILE PLOT FOR COBALT-60

Survey Unit: 9527-0003
 Survey Unit Name: East Mountain Side
 Mean: 2.84E-02 pCi/g



Co-60	Rank	Percentage
0.00E+00	1	3%
2.26E-03	2	10%
7.25E-03	3	17%
1.53E-02	4	23%
1.55E-02	5	30%
2.23E-02	6	37%
2.73E-02	7	43%
2.94E-02	8	50%
3.11E-02	9	57%
3.86E-02	10	63%
3.90E-02	11	70%
4.03E-02	12	77%
4.53E-02	13	83%
5.26E-02	14	90%
6.03E-02	15	97%

Jack McLaughlin
 Submitted By/Date 3/16/06

Paul Randall 3-16-06
 Reviewed By/Date

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

Attachment 2f
Sign Test Calculation
(1 Page)

Sign Test Calculation Sheet For Multiple Radionuclides

Survey Area Number: 9527		Survey Unit Number: 0003		WP/IR#: 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:		5.38	2.59	1.05	3.85	8.57	
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 Radionuclid e (pCi/g)	Weighted Sum (W_s)	1 - W_s	Sign
6.09E-01	1.55E-02	1.47E-02	6.40E-02	4.00E-01	1.96E-01	8.04E-01	+
5.75E-01	7.25E-03	1.47E-02	6.40E-02	4.00E-01	1.87E-01	8.13E-01	+
8.41E-01	3.86E-02	3.82E-03	1.25E-01	3.96E-01	2.54E-01	7.46E-01	+
1.83E+00	6.03E-02	1.47E-02	6.40E-02	4.00E-01	4.41E-01	5.59E-01	+
3.61E-01	2.23E-02	1.47E-02	6.40E-02	4.00E-01	1.53E-01	8.47E-01	+
5.09E-01	2.26E-03	1.47E-02	6.40E-02	4.00E-01	1.73E-01	8.27E-01	+
6.35E-01	1.53E-02	1.60E-02	-4.21E-02	2.01E-01	1.52E-01	8.48E-01	+
1.62E+00	4.03E-02	1.47E-02	6.40E-02	4.00E-01	3.94E-01	6.06E-01	+
8.04E-01	0.00E+00	1.47E-02	6.40E-02	4.00E-01	2.27E-01	7.73E-01	+
1.28E+00	2.73E-02	2.42E-02	1.09E-01	6.04E-01	3.70E-01	6.30E-01	+
1.21E+00	4.53E-02	1.47E-02	6.40E-02	4.00E-01	3.20E-01	6.80E-01	+
9.49E-01	3.90E-02	1.47E-02	6.40E-02	4.00E-01	2.69E-01	7.31E-01	+
1.69E+00	5.26E-02	1.47E-02	6.40E-02	4.00E-01	4.12E-01	5.88E-01	+
9.92E-01	2.94E-02	1.47E-02	6.40E-02	4.00E-01	2.73E-01	7.27E-01	+
5.50E-01	3.11E-02	1.47E-02	6.40E-02	4.00E-01	1.92E-01	8.08E-01	+
Number of positive differences (S+):							15

Critical Value: 11

Survey Unit Meets Acceptance Criterion

Performed by:

Jack MacIntyre

9/15/06

Date:

Bill MacIntyre 9-15-06

EAST MOUNTAIN SIDE
SURVEY UNIT 9527-0003

RELEASE RECORD

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

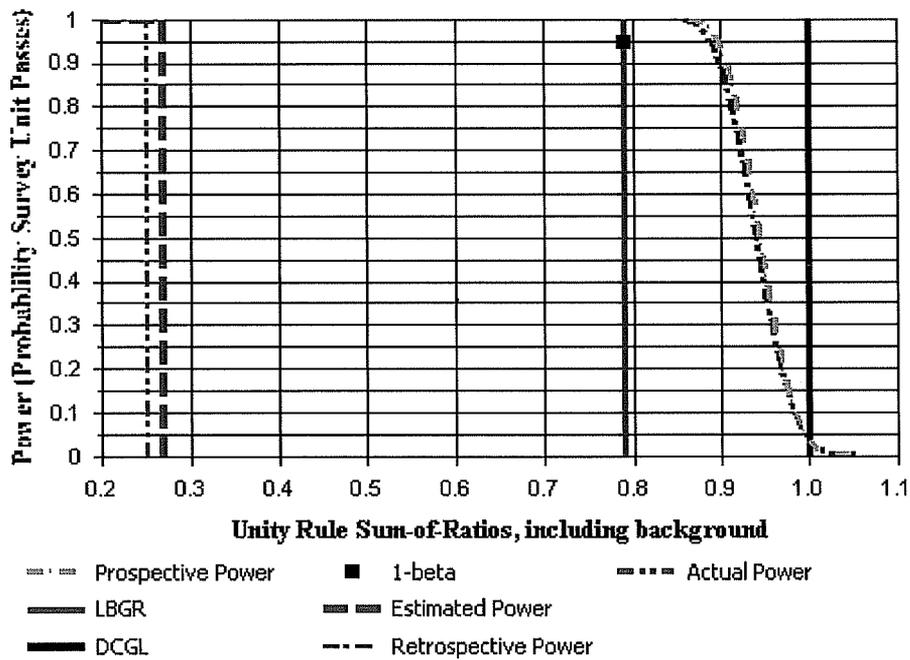


DQA Surface Soil Report

Assessment Summary

Site: 9527-0003 FSS (retrospective)
Planner(s): McCarthy  9/15/06
Survey Unit Name: East Mountainside
Report Number: 1
Survey Unit Samples: 15
Reference Area Samples: 0
Test Performed: Sign Test Result: Not Performed
Judgmental Samples: 0 EMC Result: Not Performed
Assessment Conclusion: **Reject Null Hypothesis (Survey Unit PASSES)**

Retrospective Power Curve





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)
9527-0003-001F	S	0.06	0.02	0.61
9527-0003-002F	S	0.06	0.01	0.57
9527-0003-003F	S	0.12	0.04	0.84
9527-0003-004F	S	0.06	0.06	1.83
9527-0003-005F	S	0.06	0.02	0.36
9527-0003-006F	S	0.06	0	0.51
9527-0003-007F	S	-0.04	0.02	0.64
9527-0003-008F	S	0.06	0.04	1.62
9527-0003-009F	S	0.06	0	0.8
9527-0003-010F	S	0.11	0.03	1.28
9527-0003-011F	S	0.06	0.05	1.21
9527-0003-012F	S	0.06	0.04	0.95
9527-0003-013F	S	0.06	0.05	1.69
9527-0003-014F	S	0.06	0.03	0.99
9527-0003-015F	S	0.06	0.03	0.55

Sample Number	Type	SrY-90 (pCi/g)	Tc-99 (pCi/g)
9527-0003-001F	S	0.01	0.4
9527-0003-002F	S	0.01	0.4
9527-0003-003F	S	0	0.4
9527-0003-004F	S	0.01	0.4
9527-0003-005F	S	0.01	0.4
9527-0003-006F	S	0.01	0.4
9527-0003-007F	S	0.02	0.2
9527-0003-008F	S	0.01	0.4
9527-0003-009F	S	0.01	0.4
9527-0003-010F	S	0.02	0.6
9527-0003-011F	S	0.01	0.4
9527-0003-012F	S	0.01	0.4
9527-0003-013F	S	0.01	0.4
9527-0003-014F	S	0.01	0.4
9527-0003-015F	S	0.01	0.4



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)
9527-0003-001F	S	0.2
9527-0003-002F	S	0.19
9527-0003-003F	S	0.25
9527-0003-004F	S	0.44
9527-0003-005F	S	0.15
9527-0003-006F	S	0.17
9527-0003-007F	S	0.15
9527-0003-008F	S	0.39
9527-0003-009F	S	0.23
9527-0003-010F	S	0.37
9527-0003-011F	S	0.32
9527-0003-012F	S	0.27
9527-0003-013F	S	0.41
9527-0003-014F	S	0.27
9527-0003-015F	S	0.19



DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	15	N/A	N=15
Mean (SOR)	0.27	N/A	0.27
Median (SOR)	0.25	N/A	N/A
Std Dev (SOR)	0.10	N/A	0.09
High Value (SOR)	0.44	N/A	N/A
Low Value (SOR)	0.15	N/A	N/A