



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT
362 INJUN HOLLOW ROAD • EAST HAMPTON, CT 06424-3099

MAY 29 2007
Docket No. 50-213
CY-07-089

Re: 10 CFR 50.82(a)(11)

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Haddam Neck Plant
Final Status Survey Final Report – Phase VII – Chapter 10

The Haddam Neck Plant (HNP) License Termination Plan (LTP) (Section 1.4) describes the process of releasing land from the HNP Operating License. The HNP LTP Section 5.9.2 states that the Final Status Survey (FSS) Final Report will be prepared and submitted in a phased approach.

Connecticut Yankee Atomic Power Company (CYAPCO) submitted the FSS Final Report for Phase VII on May 17, 2007¹. CYAPCO is hereby submitting the attached FSS Final Report – Phase VII – Chapter 10 Survey Unit Release Record. This Release Record was inadvertently misplaced in the process of copying and assembling the Phase VII report with the other survey unit release records. We apologize for any inconvenience this may have caused you.

A request to release the NRC license from FSS areas covered under Phases III through VII will be submitted under separate cover.

If you should have any questions regarding this submittal, please contact me at (860) 267-3196.

Sincerely,

G. P. van Noordennen
Director, Regulatory Affairs and Quality Assurance

5-29-07
Date

¹ Gerard P. van Noordennen (CYAPCO) to USNRC Document Control Desk, Final Status Survey (FSS) Final Report – Phase VII, May 17, 2007.

WMISSO1

Attachment: Final Status Survey (FSS) Final Report – Phase VII – Chapter 10
Survey Unit Release Record

cc: S. J. Collins, NRC Region 1 Administrator
T. B. Smith, NRC Project Manager, Haddam Neck Plant
R. Lorson, Chief, Decommissioning Branch, NRC Region 1
E. L. Wilds, Jr., Director, CT DEP Radiation Division



Final Status Survey Final Report Phase VII

**Appendix A9
Survey Unit Release Record
9312-0007, Radiologically Controlled
Area / RRF BLDG/115 kV East Footprint**

May 2007



CYAPCO
FINAL STATUS SURVEY RELEASE RECORD
RADIOLOGICALLY CONTROLLED AREA /
RRF BLDG. / 115KV EAST FOOTPRINT
SURVEY UNIT 9312-0007

Prepared By: *Dal Marshall*
FSS Engineer

Date: 3-15-07

Reviewed By: *Roger M*
FSS Engineer

Date: 3-19-07

Approved By: *Clyde J. Neuman*
Technical Support Manager

Date: 3/23/07

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1. SURVEY UNIT DESCRIPTION

Survey Unit 9312-0007 (Radiologically Controlled Area, Radwaste Reduction Facility (RRF), 115 kV East Footprint) is designated as Final Status Survey (FSS) Class 1 and consists of approximately one thousand five hundred sixty six square meters (1,566 m²) of uninhabited land and is located approximately sixteen hundred ninety four feet (1,694 ft) from the reference coordinate system benchmark used at Haddam Neck Plant (HNP) (see Attachment 1). The survey unit is bounded as follows: land Survey Unit 9312-0002 to the north (called north as oriented with the north to south flow of the Connecticut River), land Survey Unit 9312-0010 to the east, land Survey Units 9522-0006 and 9522-0007 to the south, and land Survey Unit 9312-0008 to the west. The survey unit is located along the south boundary of Survey Area 9312. As a result of demolition and remediation activities, the area topography is mostly flat and de-vegetated.

The reference coordinates associated with this survey unit are E011 through E013 by S070 through S072 (refer to "*HNP License Termination Plan*" (LTP) Section 5.4.4). The reference coordinates provide the maximum dimensions of a rectangle containing this survey unit. Some areas contained in this rectangle may not be part of this survey unit. The boundary of the survey unit was defined using a Global Positioning System (GPS) based on the Connecticut State Plane System North American Datum (NAD) 1927.

2. CLASSIFICATION BASIS

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

The "*Classification Basis Summary*" conducted for Survey Unit 9312-0007 consisted of:

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

A review of the "*Initial and Supplemental Characterization Reports*" as well as the previous "*Classification Basis Summaries*" was performed.

The source documents, the "*Connecticut Yankee Haddam Neck Characterization Report*" and "*Initial Classification for Survey Areas at Connecticut Yankee*", were incorporated by reference in LTP, Revision 0.

During plant operation, Survey Unit 9312-0007 was a part of the radiological controlled area and the location of significant, radiologically contaminated structures and systems. Structures included the primary water storage tank and

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backup primary water storage tank.

Major demolition and remediation activities began in 2002. All radioactive systems and components located inside the Containment Building, including the reactor vessel, were removed and appropriately packaged and shipped to an approved off-site disposal facility. Interior structural surfaces inside the Containment Building were decontaminated to ensure contamination levels were acceptable for controlled demolition. Interior walls and floors were then demolished and removed. The Containment liner was removed with the exception of the Incore Sump. The dose from residual radioactivity on the remaining steel and concrete in the sump was accounted for in the "Basement Fill Model". The Incore Sump was then filled with grout to the basement floor elevation. The remaining interior surfaces inside the Containment shell were decontaminated.

Following decontamination, the Containment basement was filled with clean soil to the grade of the exterior open land. The above grade portion of the Containment structure was then demolished and removed. Confirmatory radiological surveys were performed throughout the demolition process. No above grade structures currently reside within Survey Area 9312.

Outside of the containment shell, soil remediation began around the northeast, northwest and southeast quadrants of the survey unit. A large excavation was created to the north of the Containment that was designated as Excavation #1. This excavation included the area in the vicinity of the Refueling Water Storage Tank and the Primary Auxillary Building (PAB) corridor. A second large excavation, also designated as Excavation #2 was located over the Service Building footprint. A third excavation, designated as Excavation #3 was located in the area between the Containment Building and Spent Fuel Building (SFB). As adjacent structures were demolished, soil was excavated and removed. This process continued until bedrock was exposed. Subsurface structures and footings that remained following demolition and excavation include the Containment Mat, the Cable Vault wall, the Service Building east wall, a remnant of the PAB northwest wall, Waste Disposal Building footing and miscellaneous fragments of footings and slabs on the bedrock. As with the Containment basement shell, all excavations were backfilled with clean fill following the performance of a radiological assessment.

In Survey Area 9312, post-remediation soil samples were taken from the as-left surface soils under two (2) Survey and Sampling Work Plans, SSWP-06-08-000 and SSWP-06-12-001. Thirty-five (35) post remediation surface soil samples were collected from the various locations within Survey Area 9312. All samples were collected and analyzed by gamma spectroscopy by an approved off-site laboratory. Ten (10) of the thirty-five (35) post remediation samples collected were analyzed for the full suite of "Hard-to-Detect" (HTD) radionuclides

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specified in the LTP, Table 2-12, “*Radionuclides Potentially Present at Haddam Neck Plant*” and as provided in Table 3. Statistical quantities (mean, median and standard deviation) from the 2006 post-remediation survey conducted under SSWP-06-08-000 and SSWP-06-12-001 are provided in Table 1.

Table 1 – Basic Statistical Quantities for Cs-137 and Co-60 from the 2006 Post Remediation Survey		
	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value :	1.32E-02	-5.00E-02
Maximum Value :	1.70E+00	1.43E+00
Mean :	2.38E-01	1.08E-01
Median :	1.65E-01	1.46E-02
Standard Deviation :	3.10E-01	2.76E-01

A review of this sample data shows Cs-137 and Co-60 to be the primary radionuclides of concern, with both isotopes reported at fairly low concentrations. The sample population as a whole was evaluated to assess the distribution of the detected radionuclides. The radionuclide distribution percentage for each sample in the population was calculated by dividing the concentration of each detected radionuclide by the total activity concentration in the sample, expressing the abundance of the specific nuclide in the sample compared against the total activity. The mean radionuclide distribution was then calculated by taking the average of the individual sample distribution fractions. The results are provided in Table 2.

Table 2 – Distribution Fraction for Detectable Radionuclides in Soil Sample Population	
Detected Radionuclide	Distribution Fraction
Cs-137	0.689
Co-60	0.311

No HTD radionuclides were positively identified in concentrations meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). Radionuclide screening or de-selection is a process where an individual radionuclide or aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates. While Sr-90 was not identified in the soil characterization results, it was decided

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to include Sr-90 as a radionuclide of concern for this survey unit as Sr-90 was prevalent in the soils prior to remediation. Therefore, all volumetric soil samples taken as part of the survey design for this survey unit were subjected to direct analysis for Sr-90.

The FSS Engineer performed a visual inspection and walk-down during January 2007 to assess the physical condition of the survey unit, evaluate access points, travel paths and identify potentially hazardous conditions.

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

Based upon the identification of radioactive material above the Derived Concentration Guideline Levels (DCGLs), and the need for radiological remediation, it was concluded that there was some probability for residual radioactivity in concentrations greater than the DCGLs, justifying a final survey unit classification of Class 1 (refer to Section 3).

3. DATA QUALITY OBJECTIVES (DQO)

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

The DQO process incorporated hypothesis testing and probabilistic sampling distributions to control decision errors during data analysis. Hypothesis testing is a process based on the scientific method that compares a baseline condition to an alternate condition. The baseline condition is technically known as the null hypothesis.

Hypothesis testing rests on the premise that the null hypothesis is true and that sufficient evidence must be provided for rejection. In designing the survey plan, the underlying assumption, or null hypothesis was that residual activity in the survey unit exceeded the release criteria. Rejection of the null hypothesis would indicate that residual activity within the survey unit does not exceed the release criteria.

The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9312-0007 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

A fundamental precursor to survey design is to establish a relationship between the release criteria and some measurable quantity. This is done through the development of DCGLs. The DCGLs represent average levels of radioactivity above background levels and are presented in terms of surface or mass activity concentrations. Chapter 6 of the LTP describes in detail the modeling used to

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develop the DCGLs for soil (called Base Case Soil DCGL), existing groundwater radioactivity and future groundwater radioactivity that will be contributed by building basements and footings.

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

Equation 1

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

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

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

This survey unit is considered impacted by future groundwater radioactive contamination, as there are underground foundations 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 bounded by two (2) mrem/yr TEDE.

Equation 2

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

The allowable dose for soil in this survey unit is fifteen (15) mrem/yr TEDE as shown by Equation 2 above. The concentration of residual radioactivity resulting in fifteen (15) mrem/yr TEDE is designated as the Operational DCGL (DCGL_{op}), and has been established for the radionuclides of concern as provided in Table 3.

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Table 3 – Radionuclide Specific Base Case Soil DCGLs, Operational DCGLs and Required Minimum Detectable Concentrations (MDCs)

Radionuclide ⁽¹⁾	Base Case Soil DCGL (pC/g) ⁽²⁾	Operational DCGL (pC/g) ⁽³⁾	Required MDC (pC/g) ⁽⁴⁾
H-3	4.12E+02	2.47E+02	1.65E+01
C-14	5.66E+00	3.40E+00	2.26E-01
Mn-54	1.74E+01	1.04E+01	6.96E-01
Fe-55	2.74E+04	1.64E+04	1.10E+03
Co-60	3.81E+00	2.29E+00	1.52E-01
Ni-63	7.23E+02	4.34E+02	2.89E+01
Sr-90	1.55E+00	9.30E-01	6.20E-02
Nb-94	7.12E+00	4.27E+00	2.85E-01
Tc-99	1.26E+01	7.56E+00	5.04E-01
Ag-108m	7.14E+00	4.28E+00	2.86E-01
Cs-134	4.67E+00	2.80E+00	1.87E-01
Cs-137	7.91E+00	4.75E+00	3.16E-01
Eu-152	1.01E+01	6.06E+00	4.04E-01
Eu-154	9.29E+00	5.57E+00	3.72E-01
Eu-155	3.92E+02	2.35E+02	1.57E+01
Pu-238	2.96E+01	1.78E+01	1.18E+00
Pu-239/240	2.67E+01	1.60E+01	1.07E+00
Am-241 ⁽⁵⁾	2.58E+01	1.55E+01	1.03E+00
Pu-241	8.70E+02	5.22E+02	3.48E+01
Cm-243/244	2.90E+01	1.74E+01	1.16E+00

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

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Another important facet of the DQO process is to identify the radionuclides of concern and determine the concentration variability. Soil samples were collected in 2006 to establish the radiological condition of Survey Unit 9312-0007 for FSS. Cs-137 and Co-60 were the two (2) gamma emitting radionuclides reported in concentrations with the potential for exceeding the release criteria. Sr-90 was included as a radionuclide of concern due to its prevalence in the soil prior to remediation. The characterization data were used for the survey design and are provided in Table 1.

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

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

4. SURVEY DESIGN

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

The DQO process determined that Cs-137, Co-60 and Sr-90 would be the radionuclides of concern in Survey Unit 9312-0007 (refer to Section 3). The characterization survey did not include any other additional HTD radionuclides of concern for this survey unit. As Sr-90 concentrations were determined by direct analysis, surrogate DCGLs were not required as part of the survey design for this survey unit via screening under LTP Section 5.4.7.2, "*Gross Activity DCGLs*". Other radionuclides that were positively identified in concentrations greater than the screening criteria during the performance of this FSS would be evaluated to ensure adequate survey design.

As the survey unit is classified as a Class 1 surface soils area, and discrete, elevated areas of contamination was possible, the application of the Elevated Measurement Comparison (EMC) remained an option.

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.

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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 0.73 to achieve a relative shift (Δ/σ) in the range of 1 and 3. The resulting adjusted relative shift was 2.0. A Prospective Power Curve was generated using COMPASS, a software package developed under the sponsorship of the United States Nuclear Regulatory Commission (USNRC) for implementation of the MARSSIM in support of the decommissioning license termination rule (10CFR20, Subpart E). The result of the COMPASS computer run showed adequate power for the survey design. The survey design specified fifteen (15) surface soil samples for non-parametric statistical testing. Based upon a review of the historical information and Characterization Survey data, the acquisition of additional judgmental surface soil samples from within this survey unit was deemed unnecessary.

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 1 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 4.

Table 4 - Sample Measurement Locations with Associated GPS Coordinates

Designation	Northing	Easting
9312-0007-001F	236590.70	668931.54
9312-0007-002F	236590.70	668967.43
9312-0007-003F	236559.62	668913.60
9312-0007-004F	236559.62	668949.49
9312-0007-005F	236559.62	668985.38
9312-0007-006F	236528.54	668895.66
9312-0007-007F	236528.54	668931.54
9312-0007-008F	236528.54	668967.43

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Table 4 - (continued)

Designation	Northing	Easting
9312-0007-009F	236528.54	669003.32
9312-0007-010F	236497.46	668877.71
9312-0007-011F	236497.46	668913.60
9312-0007-012F	236497.46	668949.49
9312-0007-013F	236497.46	668985.38
9312-0007-014F	236466.38	668931.54
9312-0007-015F	236466.38	668967.43

Procedure RPM 5.1-11 specifies that 5% of the samples are required to be selected for HTD analysis. Two (2) soil samples, or about 10% of the number of samples that would be used for non-parametric statistical testing were randomly selected for HTD radionuclide analysis using the Microsoft Excel "RANDBETWEEN" function. Each sample was sent off-site for a full suite analysis of the HTD radionuclides specified in the LTP, Table 2-12, "*Radionuclides Potentially Present at Haddam Neck Plant*" and as provided in Table 3.

The LTP requires a minimum of 5% of the samples taken for non-parametric statistical testing be selected for QC evaluation. The implementation of quality control measures as referenced by Procedure RPM 5.1-24, "*Split Sample Assessment for Final Status Survey*," included the collection of one (1) soil sample for "split sample" analysis by the off-site laboratory. This location was selected randomly using the Microsoft Excel "RANDBETWEEN" function.

The LTP specifies a required scanning coverage of 100% for outdoor Class 1 areas.

For this Class 1 survey unit, the "Investigation Level" for area scanning and soil sample measurement results are those levels specified in LTP, Table 5-8. Table 5 provides a synopsis of the survey design.

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Table 5 – Synopsis of the Survey Design

Feature	Design Criteria	Basis
Survey Unit Land Area	1,566 m ²	Based on AutoCAD-LT
Number of Measurements	15 (15 systematic grid)	Type 1 and Type 2 errors were 0.05, sigma was 0.14 the LBGR was set at 0.73 to achieve a Relative Shift in the range of 1 and 3
Grid Spacing	10.98 m	Based on triangular grid
Operational DCGL	4.75 pCi/g Cs-137 2.29 pCi/g Co-60	Administratively set to achieve fifteen (15) mrem/yr TEDE ⁽¹⁾
Soil Investigation Level	4.75 pCi/g Cs-137 2.29 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 1 survey unit
Scan Survey Area Coverage	Approximately 100% of the area	The LTP requires 100% area coverage for Class 1 survey units
Scan Investigation Level	An instrument response greater than the Scan MDC(DCGL _{EMC}) of 2,590 cpm plus ambient background	Based upon a Minimum Detectable Count Rate (MDCR) of 2,020 cpm and a corresponding MDC _{scan} of 12.07 pCi/g Cs-137 and 2.98 pCi/g Co-60

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

5. SURVEY IMPLEMENTATION

Final status survey field activities were conducted under the Final Status Survey Plan (FSSP). The FSSP a 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.

A single scan area was established that constituted approximately 100% of the surface area of Survey Unit 9312-0007. Grid lines, one (1) meter wide, were painted on the ground of the scan area. A background survey was performed around the survey unit and it was determined that, using an Eberline E-600 with a SPA-3 sodium iodide detector, background ranged from 7,220 counts per minute (cpm) up to 12,400 cpm.

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The scan area was established and scanned for elevated readings (see Attachment 2 for all scan results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 100% of the survey unit was scanned.

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

Two (2) samples (9312-0007-002F and 9312-0007-014F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of one (1) sample (9312-0007-003F) for "split sample" analysis.

6. SURVEY RESULTS

All field survey activities were conducted on January 23, 2007.

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

Table 5 - Scan Results for Sample Measurement Locations

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
1	11.40	12.50	NO
2	11.70	13.03	NO
3	8.03	11.33	NO
4	11.70	13.03	NO

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Table 5 - (continued)

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	> Action Level ⁽²⁾
5	8.03	11.33	NO
6	11.90	13.46	NO
7	8.03	11.33	NO
8	11.90	13.46	NO
9	10.80	12.50	NO
10	11.90	13.46	NO
11	10.80	12.50	NO
12	8.41	11.00	NO
13	10.80	12.50	NO
14	8.41	11.00	NO
15	9.24	10.08	NO

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

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

The scan areas, that comprised approximately 100% of the total surface area for the survey unit, were scanned for elevated radiation levels. The areas were scanned in accordance with the FSS plan on January 23, 2007.

Sixty (60) scan strips were initially established in this survey unit. No elevated measurement locations were identified during scanning. Table 6 provides an overview of the scan area survey. Scan results are provided in Attachment 2.

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Table 6 - Scan Area Results

Scan Strips	Highest Logged Reading (kcpm)	Action Level ⁽¹⁾ (kcpm)	Elevated Reading Identification	Investigation Sample
1 thru 60	12.20	15.00	N/A	N/A

- (1) The action level is based on a measurement above ambient background plus a conservative estimate of DCGL_{EMC} equivalent of 2,590 cpm
- (2) ER is an abbreviation associated with the barcodes used in the field where ER stands for Elevated Reading.

The off-site laboratory employed for the radiological analyses of samples was General Engineering Laboratories, LLC. The laboratory analyzed the fifteen (15) samples collected for non-parametric statistical testing, the associated field splits using gamma spectroscopy. Gamma spectroscopy analysis was performed to the required MDCs. Gamma spectroscopy results identified some radionuclides meeting the accepted criteria for detection (i.e., a result greater than two (2) standard deviations uncertainty). However, Cs-137 was the only gamma-emitting radionuclides reported in concentrations exceeding the de-selection criteria.

Cs-137 was identified in five (5) and Co-60 was identified in none (0) of the fifteen (15) samples collected for non-parametric statistical testing. The mean of the gamma spectroscopic analysis results for the sample population indicated that Cs-137 was present at levels slightly higher than expected environmental levels for Cs-137 within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063. A summary of the fifteen (15) samples collected for non-parametric statistical testing results is provided in Table 7.

Table 7 - Summary of Gamma Spectroscopy Results for Surface Soil Samples Comprising the Statistical Sample Population

Sample Number	Cs-137 pCi/g	Co-60 pCi/g
9312-0007-001F	-3.33E-03	1.19E-02
9312-0007-002F	7.16E-03	5.11E-04
9312-0007-003F	2.04E-02	4.25E-03
9312-0007-004F	-2.83E-04	2.58E-02
9312-0007-005F	8.94E-02	-1.42E-02
9312-0007-006F	2.49E-03	5.87E-03

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Table 7 - Summary of Gamma Spectroscopy Results for Surface Soil Samples Comprising the Statistical Sample Population

Sample Number	Cs-137 pCi/g	Co-60 pCi/g
9312-0007-007F	0.00E+00	5.87E-03
9312-0007-008F	1.26E-02	-3.06E-03
9312-0007-009F	1.51E-02	-8.56E-03
9312-0007-010F	3.10E-02	-1.07E-02
9312-0007-011F	-1.07E-02	-3.76E-03
9312-0007-012F	-3.70E-03	1.07E-02
9312-0007-013F	7.54E-02	1.40E-02
9312-0007-014F	1.01E-02	-1.17E-03
9312-0007-015F	8.77E-02	3.15E-02

In addition to Cs-137 and Co-60, Sr-90 was also identified during the DQO process as a radionuclide of concern. Subsequently, all samples were subjected to analysis by gas proportional counting for Sr-90. All analyses met the required minimum MDC.

Sr-90 was positively identified (i.e., a result greater than two (2) standard deviations uncertainty) in one (1) of the fifteen (15) samples collected for non-parametric statistical testing. The results of the Sr-90 analysis for the statistical sample population are provided below in Table 8.

Table 8 - Summary of Sr-90 Analysis Results for Surface Soil Samples Comprising the Statistical Sample Population

Sample Number	Sr-90 pCi/g
9312-0007-001F	-7.12E-03
9312-0007-002F	4.39E-03
9312-0007-003F	8.79E-03
9312-0007-004F	1.94E-03
9312-0007-005F	4.24E-03
9312-0007-006F	1.25E-02

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**Table 8 - Summary of Sr-90 Analysis Results for Surface Soil
Samples Comprising the Statistical Sample Population**

Sample Number	Sr-90 pCi/g
9312-0007-007F	1.43E-03
9312-0007-008F	2.36E-03
9312-0007-009F	-2.61E-03
9312-0007-010F	-2.13E-04
9312-0007-011F	1.38E-02
9312-0007-012F	1.71E-04
9312-0007-013F	1.36E-02
9312-0007-014F	1.10E-02
9312-0007-015F	1.46E-02

In addition to Sr-90, the off-site laboratory also processed, as required by the sample plan, two (2) samples for the full suite of HTD radionuclides as specified in LTP, Table 2-12, “*Radionuclides Potentially Present at Haddam Neck Plant*” and as provided in Table 3. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses performed met the required minimum MDC. In one (1) Tritium (H-3) was detected at 0.2 Percent of the DCGL which is below the selection criteria discussed in Section 2. No additional HTD radionuclides were positively identified (i.e., a result greater than two (2) standard deviations uncertainty). The “sum-of-fractions” or “unity rule” is the mathematical test used to evaluate compliance with radiological criteria for license termination when more than one radionuclide has been determined to be potentially present. The combination of the fractions of each detected radionuclide against their respective Operational DCGL must be less than or equal to one (1). The unity rule is:

Equation 3

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

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

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The results of the unity rule calculation for the radionuclides of concern in the statistical sample population for Survey Unit 9312-0007 are provided in Table 9 below. Note that since there were no positive detections for Co-60 (i.e., a result greater than two (2) standard deviations uncertainty). This isotope has been de-selected and is not included in the unity calculations.

**Table 9 – Results of Unity Calculation for Surface Soil Samples
Comprising the Statistical Sample Population**

Sample Number	Fraction of the Operational DCGL ⁽¹⁾⁽²⁾		Unity
	Cs-137	Sr-90	
9312-0007-001F	-	-	0.00E+00
9312-0007-002F	1.51E-03	4.72E-03	6.23E-03
9312-0007-003F	4.30E-03	9.45E-03	1.37E-02
9312-0007-004F	-	2.09E-03	2.09E-03
9312-0007-005F	1.88E-02	4.56E-03	2.34E-02
9312-0007-006F	5.25E-04	1.34E-02	1.40E-02
9312-0007-007F	0.00E+00	1.54E-03	1.54E-03
9312-0007-008F	2.65E-03	2.54E-03	5.19E-03
9312-0007-009F	3.18E-03	-	3.18E-03
9312-0007-010F	6.53E-03	-	6.53E-03
9312-0007-011F	-	1.48E-02	1.48E-02
9312-0007-012F	-	1.84E-04	1.84E-04
9312-0007-013F	1.59E-02	1.46E-02	3.05E-02
9312-0007-014F	2.13E-03	1.18E-02	1.40E-02
9312-0007-015F	1.85E-02	1.57E-02	3.42E-02

(1) The Operational DCGL from Table 2 is 4.75 pCi/g for Cs-137 and 0.93 pCi/g for Sr-90 to achieve seventeen (15) mrem/yr TEDE respectively.

(2) Blank cells indicate that the radionuclide result was less than zero.

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7. QUALITY CONTROL

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

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

8. INVESTIGATIONS AND RESULTS

No investigative surveys were required or performed based on the sample and scan results.

9. REMEDIATION AND RESULTS

Radiological remedial action as described by MARSSIM Section 5.4 was performed in this survey unit prior to FSS. All excavations were characterized and backfilled with "clean" fill prior to performing FSS. In the area where remediation occurred, the ground area is comprised of barren dirt with no vegetation, and the soils have been graded relatively flat to the corresponding elevation of the adjacent survey units. The results for Cs-137 following remediation were well below the Operational DCGL provided in Table 3. Health Physics TSD BCY-HP-0078, "*ALARA Evaluation of Soil Remediation in Support of Final Status Survey*," determined that remediation beyond that required to meet the release criteria is unnecessary and that the remaining residual radioactivity in soil was ALARA.

10. CHANGES FROM THE FINAL STATUS SURVEY PLAN

The only change to the Final Status Survey Plan was to de-select Co-60 as a nuclide of concern from the Data Quality Assessment based on the fact that it was not positively identified in any of the samples.

11. DATA QUALITY ASSESSMENT (DQA)

The DQO sample design and data were reviewed in accordance with Procedure RPM 5.1-23, "*Data Quality Assessment*," for completeness and consistency. The sampling design had adequate power as indicated by the Retrospective Power Curve. The Sign Test was performed on the data and compared to the original assumptions of the DQOs. The evaluation of the Sign Test results demonstrates that the survey unit passes the unrestricted release criteria, thus, the null hypothesis is rejected.

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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 1.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The mean and median values are well below the Operational DCGL. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs. The basic statistical quantities for the statistical sample population are provided below in Table 22.

Table 10 – Basic Statistical Quantities for Cs-137 and Sr-90 from the Final Status Survey

	Cs-137 pCi/g	Sr-90 pCi/g
DCGL _{op} :	4.75	0.93
Minimum Value:	-1.07E-02	-7.12E-03
Maximum Value:	8.94E-02	1.46E-02
Mean:	2.22E-02	5.26E-03
Median:	1.01E-02	4.24E-03
Standard Deviation:	3.38E-02	6.73E-03

The range of the data, about 3.0 to 3.2 standard deviations for both radionuclides, was not a particularly large variation. The difference between the mean and median was about 15% to 36% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot indicates a slight to diminishing skewness as confirmed by the calculated skew of 1.34 and -0.04 for Cs-137 and Sr-90 respectively.

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

12. ANOMALIES

No anomalies were noted in the performance of this Final Status Survey.

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13. CONCLUSION

Survey Unit 9312-0007 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved.

With the exception of Co-60 which was not positively identified in the sample results, all identified radionuclides of concern were used for statistical testing to determine the adequacy of the survey unit for FSS.

The sample data passed the Sign Test. The null hypothesis was rejected. The Retrospective Power Curve generated using COMPASS shows adequate power was achieved. The survey unit is properly designated as Class 1.

The dose contribution from soil is 0.17 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

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

This survey unit is considered impacted by future groundwater radioactive contamination, as there are underground foundations 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 bounded by two (2) mrem/yr TEDE.

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity will not exceed 4.17 mrem/yr TEDE. Therefore, Survey Unit 9312-0007 is acceptable for unrestricted release

14. ATTACHMENTS

14.1 Attachment 1 – Figures

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

14.4 Attachment 4 – DQA Results

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ATTACHMENT 1 (FIGURES)

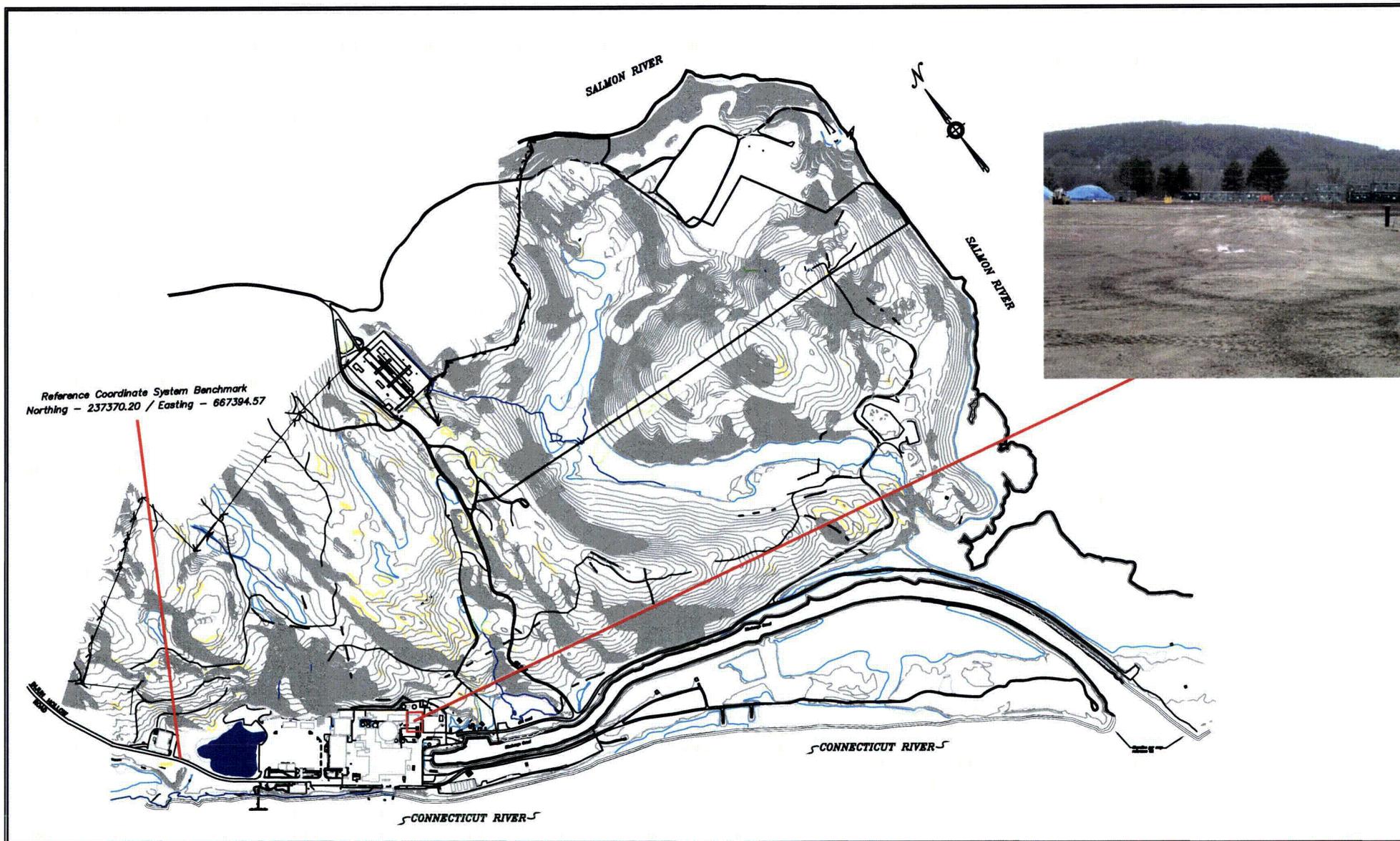
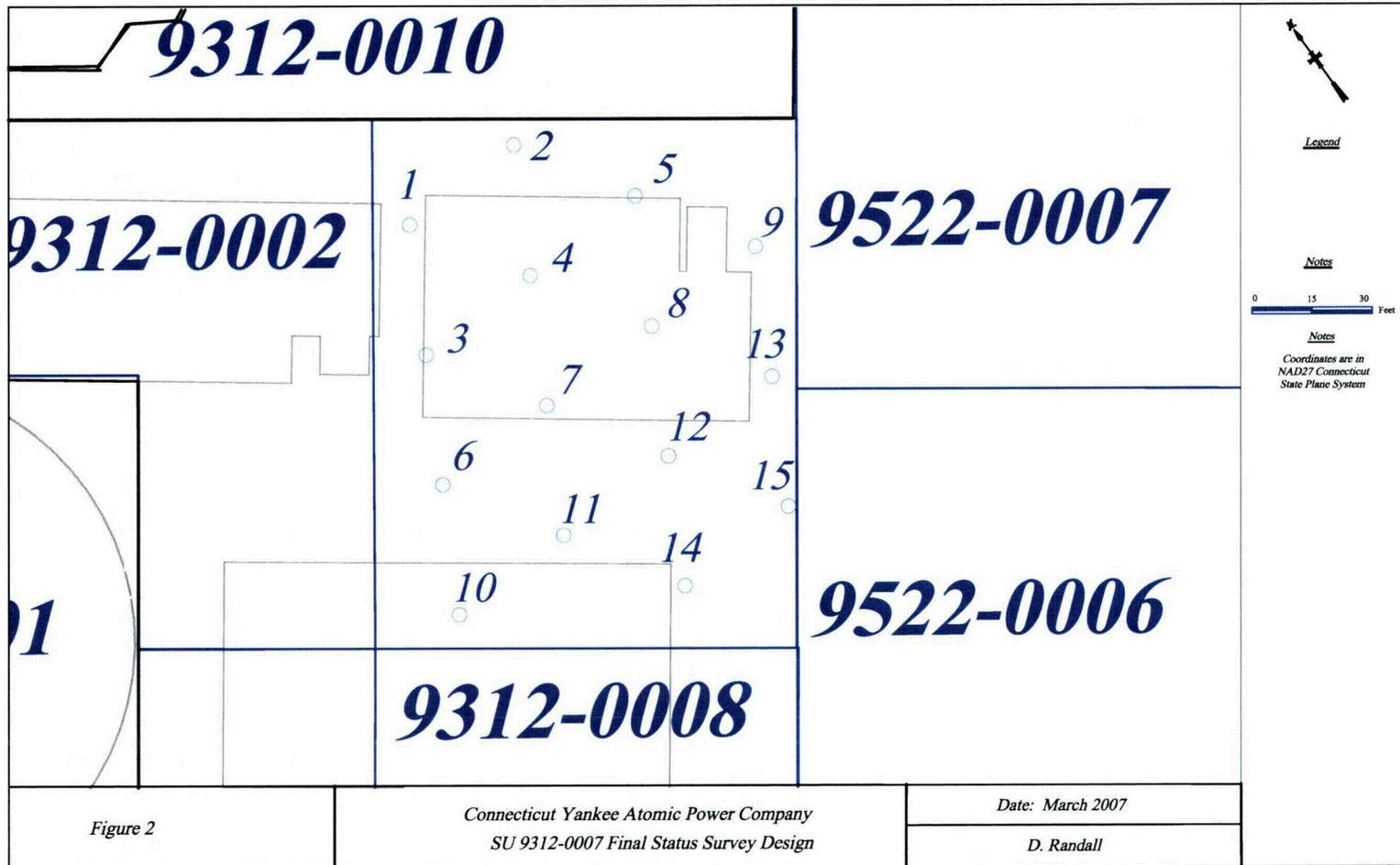


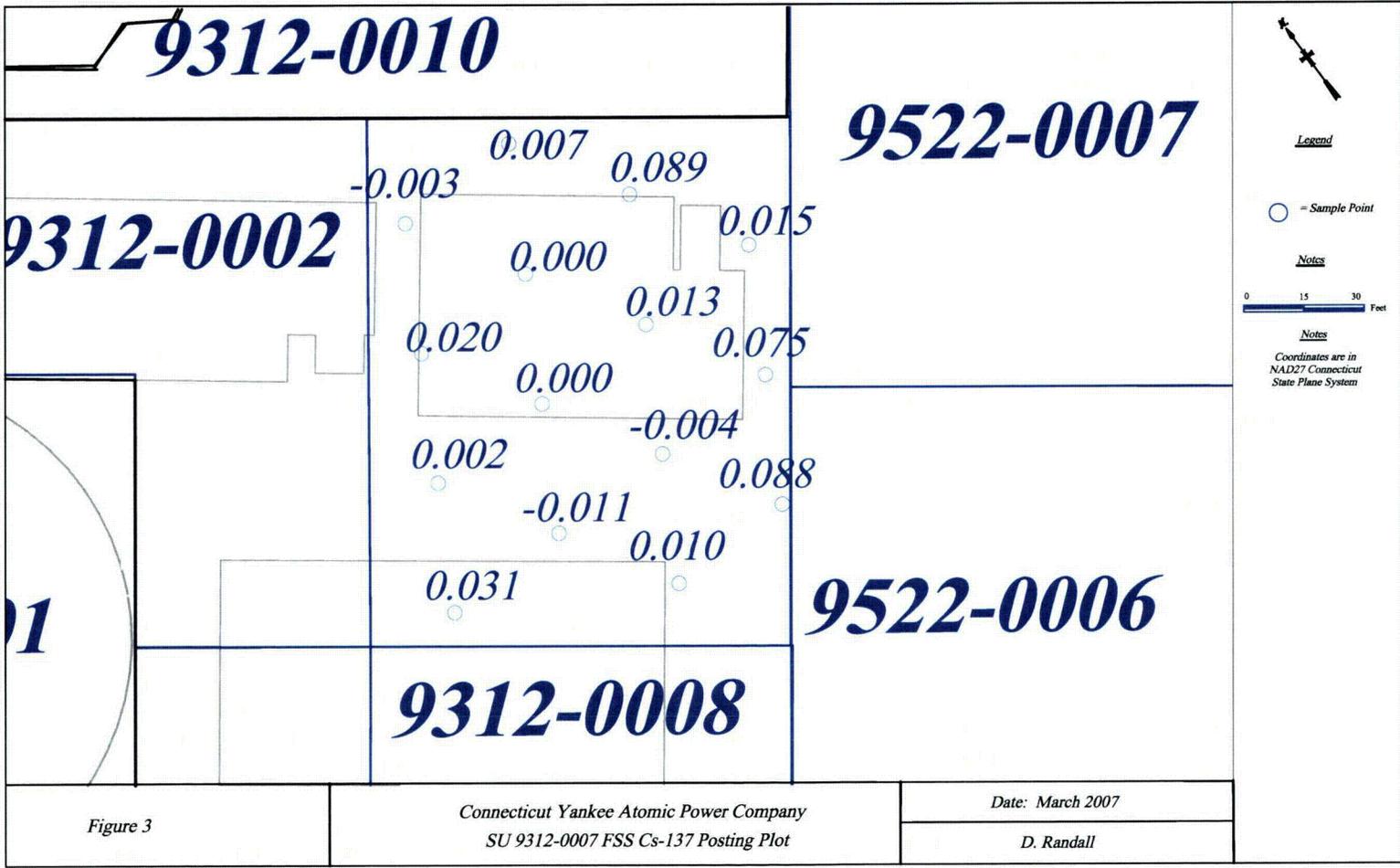
Figure 1

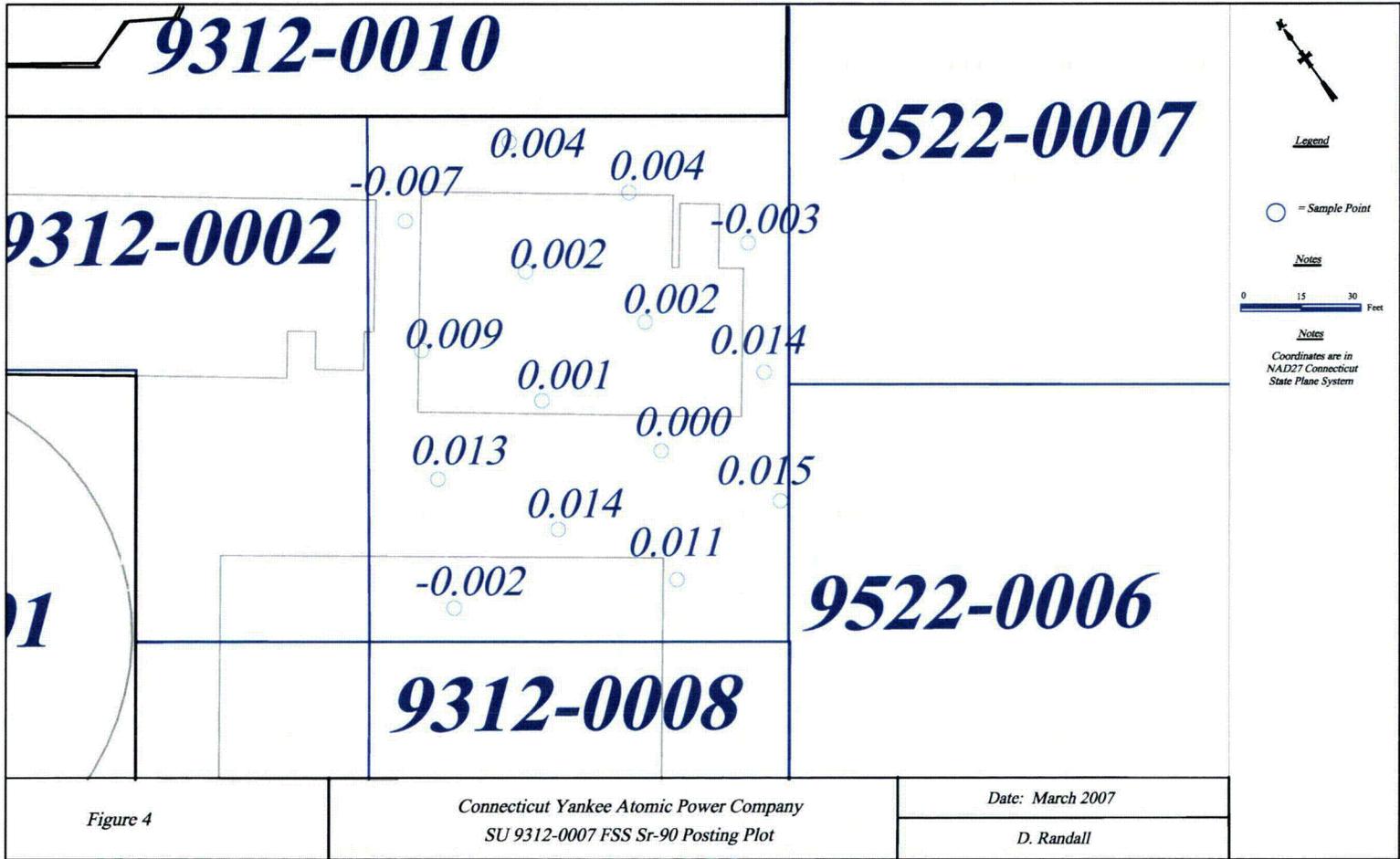


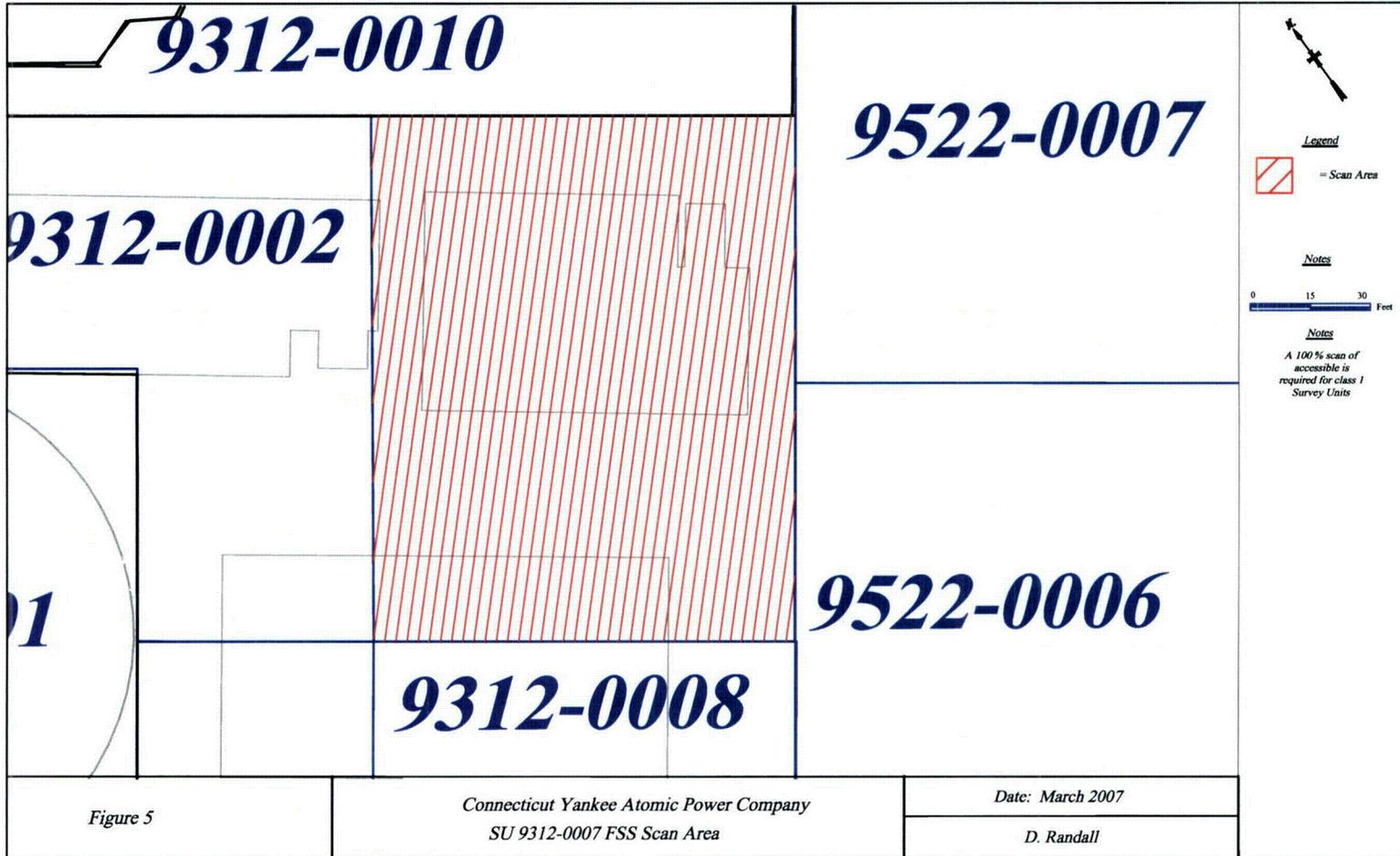
Connecticut Yankee Atomic Power Company
 Site Map With Reference To Survey Unit 9312-0007

Date	By
March 2007	D. Randall









SOUTHWEST SITE STORAGE AREA /
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ATTACHMENT 2 (SCAN RESULTS)

Revision 0

Survey Release Record Scan Area Results

Survey Unit 9312-0007

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9312-07-BL-00-01-0	1/23/2007	13:20:00	1.10E+04			1114	1014
9312-07-SL-00-01-0	1/23/2007	13:21:00	1.14E+04	1.25E+04		1114	1014
9312-07-BL-00-02-0	1/23/2007	13:22:00	1.15E+04			1114	1014
9312-07-SL-00-02-0	1/23/2007	13:23:00	1.17E+04	1.30E+04		1114	1014
9312-07-BL-00-03-0	1/23/2007	13:24:00	9.91E+03			1114	1014
9312-07-SL-00-03-0	1/23/2007	13:25:00	8.03E+03	1.13E+04		1114	1014
9312-07-BL-00-04-0	1/23/2007	13:25:00	1.19E+04			1114	1014
9312-07-SL-00-04-0	1/23/2007	13:26:00	1.19E+04	1.35E+04		1114	1014
9312-07-BL-00-05-0	1/23/2007	13:27:00	1.10E+04			1114	1014
9312-07-SL-00-05-0	1/23/2007	13:28:00	1.08E+04	1.25E+04		1114	1014
9312-07-BL-00-06-0	1/23/2007	13:30:00	9.60E+03			1114	1014
9312-07-SL-00-06-0	1/23/2007	13:31:00	8.41E+03	1.10E+04		1114	1014
9312-07-BL-00-07-0	1/23/2007	13:32:00	8.74E+03			1114	1014
9312-07-SL-00-07-0	1/23/2007	13:33:00	9.24E+03	1.01E+04		1114	1014
9312-07-BL-00-08-0	1/23/2007	13:33:00	1.00E+04			1114	1014
9312-07-SL-00-08-0	1/23/2007	13:35:00	1.12E+04	1.14E+04		1114	1014
9312-07-BL-00-09-0	1/23/2007	13:36:00	9.54E+03			1114	1014
9312-07-SL-00-09-0	1/23/2007	13:37:00	1.04E+04	1.09E+04		1114	1014
9312-07-BL-00-10-0	1/23/2007	13:39:00	7.93E+03			1114	1014
9312-07-SL-00-10-0	1/23/2007	13:40:00	8.00E+03	9.20E+03		1114	1014
9312-07-BL-00-11-0	1/23/2007	13:41:00	1.15E+04			1114	1014
9312-07-SL-00-11-0	1/23/2007	13:42:00	1.23E+04	1.30E+04		1114	1014
9312-07-BL-00-12-0	1/23/2007	13:43:00	1.29E+04			1114	1014
9312-07-SL-00-12-0	1/23/2007	13:44:00	1.10E+04	1.45E+04		1114	1014
9312-07-BL-00-13-0	1/23/2007	13:45:00	1.05E+04			1114	1014
9312-07-SL-00-13-0	1/23/2007	13:46:00	1.12E+04	1.20E+04		1114	1014
9312-07-BL-00-14-0	1/23/2007	13:47:00	8.67E+03			1114	1014
9312-07-SL-00-14-0	1/23/2007	13:49:00	8.56E+03	1.00E+04		1114	1014
9312-07-BL-00-15-0	1/23/2007	13:50:00	9.93E+03			1114	1014
9312-07-SL-00-15-0	1/23/2007	13:51:00	1.07E+04	1.14E+04		1114	1014

Survey Release Record Scan Area Results

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Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9312-07-BC-00-01-0	1/23/2007	10:04:00	9.78E+03			1114	1014
9312-07-SC-00-01-0	1/23/2007	10:07:00	1.00E+04	1.24E+04		1114	1014
9312-07-BC-00-02-0	1/23/2007	10:08:00	1.03E+04			1114	1014
9312-07-SC-00-02-0	1/23/2007	10:12:00	9.65E+03	1.29E+04		1114	1014
9312-07-BC-00-03-0	1/23/2007	10:14:00	9.18E+03			1114	1014
9312-07-SC-00-03-0	1/23/2007	10:16:00	1.05E+04	1.18E+04		1114	1014
9312-07-BC-00-04-0	1/23/2007	10:20:00	1.11E+04			1114	1014
9312-07-SC-00-04-0	1/23/2007	10:23:00	9.01E+03	1.37E+04		1114	1014
9312-07-BC-00-05-0	1/23/2007	10:25:00	8.68E+03			1114	1014
9312-07-SC-00-05-0	1/23/2007	10:30:00	1.03E+04	1.13E+04		1114	1014
9312-07-BC-00-06-0	1/23/2007	10:31:00	1.06E+04			1114	1014
9312-07-SC-00-06-0	1/23/2007	10:38:00	8.74E+03	1.32E+04		1114	1014
9312-07-BC-00-07-0	1/23/2007	10:41:00	8.36E+03			1114	1014
9312-07-SC-00-07-0	1/23/2007	10:44:00	1.05E+04	1.10E+04		1114	1014
9312-07-BC-00-08-0	1/23/2007	10:45:00	1.09E+04			1114	1014
9312-07-SC-00-08-0	1/23/2007	10:48:00	1.00E+04	1.35E+04		1114	1014
9312-07-BC-00-09-0	1/23/2007	10:53:00	9.40E+03			1114	1014
9312-07-SC-00-09-0	1/23/2007	10:56:00	1.07E+04	1.20E+04		1114	1014
9312-07-BC-00-10-0	1/23/2007	10:57:00	1.11E+04			1114	1014
9312-07-SC-00-10-0	1/23/2007	10:58:00	9.01E+03	1.37E+04		1114	1014
9312-07-BC-00-11-0	1/23/2007	11:01:00	1.00E+04			1114	1014
9312-07-SC-00-11-0	1/23/2007	11:04:00	1.06E+04	1.26E+04		1114	1014
9312-07-BC-00-12-0	1/23/2007	11:04:00	1.08E+04			1114	1014
9312-07-SC-00-12-0	1/23/2007	11:06:00	1.12E+04	1.34E+04		1114	1014
9312-07-BC-00-13-0	1/23/2007	11:08:00	1.01E+04			1114	1014
9312-07-SC-00-13-0	1/23/2007	11:10:00	1.12E+04	1.27E+04		1114	1014
9312-07-BC-00-14-0	1/23/2007	11:10:00	1.15E+04			1114	1014
9312-07-SC-00-14-0	1/23/2007	11:13:00	1.06E+04	1.41E+04		1114	1014
9312-07-BC-00-15-0	1/23/2007	11:14:00	1.03E+04			1114	1014
9312-07-SC-00-15-0	1/23/2007	11:16:00	1.15E+04	1.29E+04		1114	1014
9312-07-BC-00-16-0	1/23/2007	11:16:00	1.08E+04			1114	1014
9312-07-SC-00-16-0	1/23/2007	11:18:00	1.02E+04	1.34E+04		1114	1014
9312-07-BC-00-17-0	1/23/2007	10:00:00	7.22E+03			1117	1008
9312-07-SC-00-17-0	1/23/2007	10:08:00	9.12E+03	9.81E+03		1117	1008
9312-07-BC-00-18-0	1/23/2007	10:09:00	1.11E+04			1117	1008
9312-07-SC-00-18-0	1/23/2007	10:10:00	1.13E+04	1.37E+04		1117	1008
9312-07-BC-00-19-0	1/23/2007	10:11:00	1.06E+04			1117	1008
9312-07-SC-00-19-0	1/23/2007	10:12:00	9.79E+03	1.32E+04		1117	1008

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9312-07-BC-00-20-0	1/23/2007	10:13:00	1.04E+04			1117	1008
9312-07-SC-00-20-0	1/23/2007	10:14:00	1.06E+04	1.30E+04		1117	1008
9312-07-BC-00-21-0	1/23/2007	10:15:00	7.67E+03			1117	1008
9312-07-SC-00-21-0	1/23/2007	10:16:00	9.55E+03	1.03E+04		1117	1008
9312-07-BC-00-22-0	1/23/2007	10:17:00	1.15E+04			1117	1008
9312-07-SC-00-22-0	1/23/2007	10:18:00	1.06E+04	1.41E+04		1117	1008
9312-07-BC-00-23-0	1/23/2007	10:19:00	1.07E+04			1117	1008
9312-07-SC-00-23-0	1/23/2007	10:20:00	1.04E+04	1.33E+04		1117	1008
9312-07-BC-00-24-0	1/23/2007	10:21:00	9.33E+03			1117	1008
9312-07-SC-00-24-0	1/23/2007	10:21:00	7.88E+03	1.19E+04		1117	1008
9312-07-BC-00-25-0	1/23/2007	10:22:00	7.89E+03			1117	1008
9312-07-SC-00-25-0	1/23/2007	10:24:00	8.50E+03	1.05E+04		1117	1008
9312-07-BC-00-26-0	1/23/2007	10:24:00	1.04E+04			1117	1008
9312-07-SC-00-26-0	1/23/2007	10:26:00	1.09E+04	1.30E+04		1117	1008
9312-07-BC-00-27-0	1/23/2007	10:26:00	1.03E+04			1117	1008
9312-07-SC-00-27-0	1/23/2007	10:28:00	1.01E+04	1.29E+04		1117	1008
9312-07-BC-00-28-0	1/23/2007	10:28:00	8.25E+03			1117	1008
9312-07-SC-00-28-0	1/23/2007	10:29:00	7.73E+03	1.08E+04		1117	1008
9312-07-BC-00-29-0	1/23/2007	10:30:00	8.25E+03			1117	1008
9312-07-SC-00-29-0	1/23/2007	10:31:00	7.80E+03	1.08E+04		1117	1008
9312-07-BC-00-30-0	1/23/2007	10:31:00	1.04E+04			1117	1008
9312-07-SC-00-30-0	1/23/2007	10:33:00	1.17E+04	1.30E+04		1117	1008
9312-07-BC-00-31-0	1/23/2007	10:34:00	1.10E+04			1117	1008
9312-07-SC-00-31-0	1/23/2007	10:35:00	1.09E+04	1.36E+04		1117	1008
9312-07-BC-00-32-0	1/23/2007	10:36:00	8.27E+03			1117	1008
9312-07-SC-00-32-0	1/23/2007	10:36:00	8.28E+03	1.09E+04		1117	1008
9312-07-BC-00-33-0	1/23/2007	10:38:00	7.76E+03			1117	1008
9312-07-SC-00-33-0	1/23/2007	10:39:00	7.69E+03	1.04E+04		1117	1008
9312-07-BC-00-34-0	1/23/2007	10:40:00	1.03E+04			1117	1008
9312-07-SC-00-34-0	1/23/2007	10:42:00	1.09E+04	1.29E+04		1117	1008
9312-07-BC-00-35-0	1/23/2007	10:43:00	1.08E+04			1117	1008
9312-07-SC-00-35-0	1/23/2007	10:44:00	1.09E+04	1.34E+04		1117	1008
9312-07-BC-00-36-0	1/23/2007	10:45:00	8.20E+03			1117	1008
9312-07-SC-00-36-0	1/23/2007	10:45:00	7.39E+03	1.08E+04		1117	1008
9312-07-BC-00-37-0	1/23/2007	10:46:00	7.66E+03			1117	1008
9312-07-SC-00-37-0	1/23/2007	10:47:00	9.20E+03	1.03E+04		1117	1008
9312-07-BC-00-38-0	1/23/2007	10:48:00	1.04E+04			1117	1008
9312-07-SC-00-38-0	1/23/2007	10:50:00	1.10E+04	1.30E+04		1117	1008
9312-07-BC-00-39-0	1/23/2007	10:50:00	1.09E+04			1117	1008
9312-07-SC-00-39-0	1/23/2007	10:51:00	1.09E+04	1.35E+04		1117	1008
9312-07-BC-00-40-0	1/23/2007	10:52:00	8.31E+03			1117	1008
9312-07-SC-00-40-0	1/23/2007	10:52:00	7.62E+03	1.09E+04		1117	1008
9312-07-BC-00-41-0	1/23/2007	13:18:00	7.87E+03			1117	1008
9312-07-SC-00-41-0	1/23/2007	13:19:00	9.95E+03	1.05E+04		1117	1008

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9312-07-BC-00-42-0	1/23/2007	13:20:00	1.14E+04			1117	1008
9312-07-SC-00-42-0	1/23/2007	13:24:00	1.20E+04	1.40E+04		1117	1008
9312-07-BC-00-43-0	1/23/2007	13:24:00	1.13E+04			1117	1008
9312-07-SC-00-43-0	1/23/2007	13:27:00	1.13E+04	1.39E+04		1117	1008
9312-07-BC-00-44-0	1/23/2007	13:28:00	7.94E+03			1117	1008
9312-07-SC-00-44-0	1/23/2007	13:29:00	8.09E+03	1.05E+04		1117	1008
9312-07-BC-00-45-0	1/23/2007	13:30:00	7.82E+03			1117	1008
9312-07-SC-00-45-0	1/23/2007	13:31:00	7.73E+03	1.04E+04		1117	1008
9312-07-BC-00-46-0	1/23/2007	13:36:00	1.01E+04			1117	1008
9312-07-SC-00-46-0	1/23/2007	13:39:00	1.16E+04	1.27E+04		1117	1008
9312-07-BC-00-47-0	1/23/2007	13:39:00	1.06E+04			1117	1008
9312-07-SC-00-47-0	1/23/2007	13:43:00	1.03E+04	1.32E+04		1117	1008
9312-07-BC-00-48-0	1/23/2007	13:45:00	7.75E+03			1117	1008
9312-07-SC-00-48-0	1/23/2007	13:46:00	8.92E+03	1.03E+04		1117	1008
9312-07-BC-00-49-0	1/23/2007	13:50:00	1.10E+04			1117	1008
9312-07-SC-00-49-0	1/23/2007	13:53:00	1.01E+04	1.36E+04		1117	1008
9312-07-BC-00-50-0	1/23/2007	13:53:00	1.08E+04			1117	1008
9312-07-SC-00-50-0	1/23/2007	13:58:00	1.18E+04	1.34E+04		1117	1008
9312-07-BC-00-51-0	1/23/2007	14:01:00	1.12E+04			1114	1014
9312-07-SC-00-51-0	1/23/2007	14:05:00	1.22E+04	1.38E+04		1114	1014
9312-07-BC-00-52-0	1/23/2007	14:06:00	1.24E+04			1114	1014
9312-07-SC-00-52-0	1/23/2007	14:09:00	1.14E+04	1.50E+04		1114	1014
9312-07-BC-00-53-0	1/23/2007	14:18:00	7.55E+03			1114	1014
9312-07-SC-00-53-0	1/23/2007	14:20:00	8.59E+03	1.01E+04		1114	1014
9312-07-BC-00-54-0	1/23/2007	14:20:00	8.91E+03			1114	1014
9312-07-SC-00-54-0	1/23/2007	14:22:00	8.79E+03	1.15E+04		1114	1014
9312-07-BC-00-55-0	1/23/2007	14:22:00	8.77E+03			1114	1014
9312-07-SC-00-55-0	1/23/2007	14:23:00	9.54E+03	1.14E+04		1114	1014
9312-07-BC-00-56-0	1/23/2007	14:24:00	8.98E+03			1114	1014
9312-07-SC-00-56-0	1/23/2007	14:25:00	8.33E+03	1.16E+04		1114	1014
9312-07-BC-00-57-0	1/23/2007	14:27:00	7.96E+03			1114	1014
9312-07-SC-00-57-0	1/23/2007	14:27:00	9.76E+03	1.06E+04		1114	1014
9312-07-BC-00-58-0	1/23/2007	14:29:00	8.37E+03			1114	1014
9312-07-SC-00-58-0	1/23/2007	14:30:00	8.81E+03	1.10E+04		1114	1014
9312-07-BC-00-59-0	1/23/2007	14:31:00	7.67E+03			1114	1014
9312-07-SC-00-59-0	1/23/2007	14:31:00	9.28E+03	1.03E+04		1114	1014
9312-07-BC-00-60-0	1/23/2007	14:32:00	9.30E+03			1114	1014
9312-07-SC-00-60-0	1/23/2007	14:33:00	8.10E+03	1.19E+04		1114	1014

SOUTHWEST SITE STORAGE AREA /
RRF BLDG. / 115KV EAST FOOTPRINT
SURVEY UNIT 9312-0007

RELEASE RECORD

ATTACHMENT 3 (LABORATORY DATA)

Revision 0



February 2, 2007

Mr. Jack McCarthy
Connecticut Yankee Atomic Power
362 Injun Hollow Rd
East Hampton, Connecticut 06424

Re: Soils PO# 002332
Work Order: 179836
SDG: MSR#07-0054

Dear Mr. McCarthy:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 30, 2007. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4243.

Sincerely,

A handwritten signature in black ink, appearing to read "Cheryl Jones". The signature is fluid and cursive, written over the printed name.

Cheryl Jones
Project Manager

Purchase Order: 002332
Chain of Custody: 2007-00025 and 2007-00026
Enclosures



Connecticut Yankee Atomic Power Co.
Soils PO# 002332
Work Order: 179836
SDG: MSR#07-0054

<u>Laboratory ID</u>	<u>Client ID</u>
179836001	9312-0007-002F
179836002	9312-0007-014F
179836003	9312-0007-001F
179836004	9312-0007-003F
179836005	9312-0007-003FS
179836006	9312-0007-004F
179836007	9312-0007-005F
179836008	9312-0007-006F
179836009	9312-0007-007F
179836010	9312-0007-008F
179836011	9312-0007-009F
179836012	9312-0007-010F
179836013	9312-0007-011F
179836014	9312-0007-012F
179836015	9312-0007-013F
179836016	9312-0007-015F

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General Narrative

**General Narrative
for
Connecticut Yankee Atomic Power Co.
Work Order: 179836
SDG: MSR#07-0054**

February 2, 2007

Laboratory Identification:

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

Summary

Sample receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 30, 2007 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
179836001	9312-0007-002F
179836002	9312-0007-014F
179836003	9312-0007-001F
179836004	9312-0007-003F
179836005	9312-0007-003FS
179836006	9312-0007-004F
179836007	9312-0007-005F
179836008	9312-0007-006F
179836009	9312-0007-007F
179836010	9312-0007-008F
179836011	9312-0007-009F
179836012	9312-0007-010F
179836013	9312-0007-011F
179836014	9312-0007-012F
179836015	9312-0007-013F
179836016	9312-0007-015F

Items of Note

There are no items to note.

Case Narrative

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

Analytical Request

Fourteen soil samples were analyzed for FSSGAM and Strontium-90. Two soil samples were analyzed for FSSALL.

Data Package

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

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



Cheryl Jones
Project Manager

List of current GEL Certifications as of 31 January 2007

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

**Chain of Custody
and
Supporting
Documentation**

Connecticut Yankee Atomic Power Company

Chain of Custody Form

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

No. 2007-00025

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM & Sr-90	FSSALL						Comments:	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)													179836	
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
9312-0007-001F ✓	01-23-07	1322	TS	G	BP	X								
9312-0007-002F ✓	01-23-07	1324	TS	G	BP		X							
9312-0007-003F ✓	01-23-07	1325	TS	G	BP	X								
9312-0007-003FS ✓	01-23-07	1325	TS	G	BP	X								
9312-0007-004F ✓	01-23-07	1327	TS	G	BP	X								
9312-0007-005F ✓	01-23-07	1329	TS	G	BP	X								
9312-0007-006F ✓	01-23-07	1332	TS	G	BP	X								
9312-0007-007F ✓	01-23-07	1333	TS	G	BP	X								
9312-0007-008F ✓	01-23-07	1335	TS	G	BP	X								
9312-0007-009F ✓	01-23-07	1338	TS	G	BP	X								
9312-0007-010F ✓	01-23-07	1340	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-0054 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other			Internal Container Temp.: 8 ° 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"/> Bill of Lading #					
1) Relinquished By <i>[Signature]</i>		Date/Time 1-29-07		2) Received By <i>[Signature]</i>		Date/Time 1-30-07 0930								
3) Relinquished By		Date/Time		4) Received By		Date/Time								
5) Relinquished By		Date/Time		6) Received By		Date/Time								

Connecticut Yankee Atomic Power Company 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556							Chain of Custody Form					No. 2007-00026		
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM & Sr-90	FSSALL						Comments: <div style="text-align: right; font-size: 1.2em;">179836</div>	
Analytical Lab (Name, City, State): General Engineering Laboratories 2040 Savage Road Charleston, SC 29407 ATT: Cheryl Jones (843-556-8171)														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 15 D. <input checked="" type="checkbox"/> 7 D. Other:														
Sample Designation	Date	Time								Comment, Preservation	Lab Sample ID			
9312-0007-011F ✓	01-23-07	1343	TS	G	BP	X								
9312-0007-012F ✓	01-23-07	1345	TS	G	BP	X								
9312-0007-013F	01-23-07	1347	TS	G	BP	X								
9312-0007-014F Ⓟ	01-23-07	1349	TS	G	BP		X							
9312-0007-015F ✓	01-23-07	1352	TS	G	BP	X								
NOTES: PO #: 002332 MSR #: 07-0054 <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA										Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		Internal Container Temp.: 8° Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
1) Relinquished By <i>[Signature]</i>			Date/Time 1-29-07			2) Received By <i>C. Demicob</i>			Date/Time 1-30-07 0930			Bill of Lading #		
3) Relinquished By			Date/Time			4) Received By			Date/Time					
5) Relinquished By			Date/Time			6) Received By			Date/Time					

Figure 1. Sample Check-in List

Date/Time Received: 01.30.07 @ 0930

SDG#: MSR # 07-0054 , MSR # 07-0055

Work Order Number: 179836 , 179837

Shipping Container ID: 798595435030 @ 7°C Chain of Custody # 2007-00026 / 2007-00028
" 11428462 @ 8°C " 25 " 29

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 7°C / 8°C
5. Vermiculite/packing materials is: Wet Dry
6. Number of samples in shipping container: 16 = *5030 / 19 = *8462
7. Sample holding times exceeded? Yes No

8. Samples have:

<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels
<input checked="" type="checkbox"/> custody seals	<input checked="" type="checkbox"/> appropriate sample labels

9. Samples are:

<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking
<input type="checkbox"/> broken	<input type="checkbox"/> have air bubbles

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

11. Description of anomalies (include sample numbers):

Sample Custodian/Laboratory: C. Dennis ADEL Date: 1.30.07

Telephoned to: _____ On _____ By _____

[Fwd: Soil samples]

Subject: [Fwd: Soil samples]
From: Cheryl Jones <cj@gel.com>
Date: Mon, 29 Jan 2007 15:51:31 -0500
To: Amanda Rasco <ama01354@gel.com>

----- Original Message -----
Subject: Soil samples
Date: Mon, 29 Jan 2007 15:42:54 -0500
From: Arthur L. Hammond <Hammond@CYAPCO.com>
To: Cheryl Jones <cj@gel.com>

Cheryl,

We are sending 35 samples to GEL today under two MSRs. MSRs 07-0054 and 07-0055. The requested TAT for the samples is 7 days. The requested analyses is FSSGAM and Sr-90 On all the samples and FSSALL on four (4) of the samples, see attached COCs. It is acceptable to use the traced/untraced Tc-99 process for these samples.

Thank you,

Arthur

--

~~~~~  
Cheryl A. Jones  
Project Manager/PM Team Leader  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC (USA) 29407  
Direct: 843.769.7388  
Main: 843.556.8171 x 4243  
Fax: 843.766.1178  
E-mail: [cj@gel.com](mailto:cj@gel.com)  
Web: [www.gel.com](http://www.gel.com)

|                         |                                               |
|-------------------------|-----------------------------------------------|
| <b>SCAN6974_000.pdf</b> | <b>Content-Type:</b> application/octet-stream |
|                         | <b>Content-Encoding:</b> base64               |

# **Data Review Qualifier Definitions**

## Data Review Qualifier Definitions

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

# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 179836**

**Method/Analysis Information**

|                                          |                                           |
|------------------------------------------|-------------------------------------------|
| <b>Product:</b>                          | <b>Alphaspec Am241, Cm, Solid ALL FSS</b> |
| Analytical Method:                       | DOE EML HASL-300, Am-05-RC Modified       |
| Prep Method:                             | Ash Soil Prep                             |
| Dry Soil Prep GL-RAD-A-021 Method:       | Dry Soil Prep                             |
| Analytical Batch Number:                 | 606029                                    |
| Prep Batch Number:                       | 606003                                    |
| Dry Soil Prep GL-RAD-A-021 Batch Number: | 606001                                    |

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201269930       | Method Blank (MB)                                |
| 1201269931       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201269932       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201269933       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

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

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** 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: 606031

Prep Batch Number: 606003

Dry Soil Prep GL-RAD-A-021 Batch Number: 606001

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201269935       | Method Blank (MB)                                |
| 1201269936       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201269937       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201269938       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

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

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

|                                          |                                          |
|------------------------------------------|------------------------------------------|
| <b>Product:</b>                          | <b>Liquid Scint Pu241, Solid-ALL FSS</b> |
| Analytical Method:                       | DOE EML HASL-300, Pu-11-RC Modified      |
| Prep Method:                             | Ash Soil Prep                            |
| Dry Soil Prep GL-RAD-A-021 Method:       | Dry Soil Prep                            |
| Analytical Batch Number:                 | 606032                                   |
| Prep Batch Number:                       | 606003                                   |
| Dry Soil Prep GL-RAD-A-021 Batch Number: | 606001                                   |

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201269939       | Method Blank (MB)                                |
| 1201269940       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201269941       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201269942       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

Sample 1201269940 (9312-0007-002F) was recounted due to low quench number.

**Miscellaneous Information:**

**NCR Documentation**

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

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

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

|                          |                                                              |
|--------------------------|--------------------------------------------------------------|
| <b>Product:</b>          | <b>Gamma,Solid-FSS GAM &amp; ALL FSS 226 Ingrowth Waived</b> |
| Analytical Method:       | EML HASL 300, 4.5.2.3                                        |
| Prep Method:             | Dry Soil Prep                                                |
| Analytical Batch Number: | 606828                                                       |
| Prep Batch Number:       | 606001                                                       |

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 179836003        | 9312-0007-001F                                   |
| 179836004        | 9312-0007-003F                                   |
| 179836005        | 9312-0007-003FS                                  |
| 179836006        | 9312-0007-004F                                   |
| 179836007        | 9312-0007-005F                                   |
| 179836008        | 9312-0007-006F                                   |
| 179836009        | 9312-0007-007F                                   |
| 179836010        | 9312-0007-008F                                   |
| 179836011        | 9312-0007-009F                                   |
| 179836012        | 9312-0007-010F                                   |
| 179836013        | 9312-0007-011F                                   |
| 179836014        | 9312-0007-012F                                   |
| 179836015        | 9312-0007-013F                                   |
| 179836016        | 9312-0007-015F                                   |
| 1201271727       | Method Blank (MB)                                |
| 1201271728       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201271729       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 13.

**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

| <b>Qualifier</b> | <b>Reason</b>                         | <b>Analyte</b> | <b>Sample</b> |
|------------------|---------------------------------------|----------------|---------------|
| UI               | Data rejected due to high peak-width. | Cesium-137     | 179836009     |
| UI               | Data rejected due to interference.    | Manganese-54   | 179836013     |
| UI               | Data rejected due to low abundance.   | Americium-241  | 179836010     |
|                  |                                       | Cesium-134     | 179836001     |
|                  |                                       |                | 179836002     |
|                  |                                       |                | 179836003     |
|                  |                                       |                | 179836004     |
|                  |                                       |                | 179836006     |
|                  |                                       |                | 179836009     |
|                  |                                       |                | 179836010     |
|                  |                                       |                | 179836011     |
|                  |                                       |                | 179836013     |
|                  |                                       |                | 179836014     |
|                  |                                       |                | 179836015     |
|                  |                                       |                | 179836016     |
|                  |                                       |                | 1201271728    |
|                  |                                       | Manganese-54   | 179836004     |
|                  |                                       | Thallium-208   | 1201271727    |
| UI               | Data rejected due to no valid peak.   | Potassium-40   | 1201271727    |

**Method/Analysis Information**

|                                          |                                  |
|------------------------------------------|----------------------------------|
| <b>Product:</b>                          | <b>GFPC, Sr90, solid-ALL FSS</b> |
| Analytical Method:                       | EPA 905.0 Modified               |
| Prep Method:                             | Ash Soil Prep                    |
| Dry Soil Prep GL-RAD-A-021 Method:       | Dry Soil Prep                    |
| Analytical Batch Number:                 | 606155                           |
| Prep Batch Number:                       | 606003                           |
| Dry Soil Prep GL-RAD-A-021 Batch Number: | 606001                           |

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 179836003        | 9312-0007-001F                                   |
| 179836004        | 9312-0007-003F                                   |
| 179836005        | 9312-0007-003FS                                  |
| 179836006        | 9312-0007-004F                                   |
| 179836007        | 9312-0007-005F                                   |
| 179836008        | 9312-0007-006F                                   |
| 179836009        | 9312-0007-007F                                   |
| 179836010        | 9312-0007-008F                                   |
| 179836011        | 9312-0007-009F                                   |
| 179836012        | 9312-0007-010F                                   |
| 179836013        | 9312-0007-011F                                   |
| 179836014        | 9312-0007-012F                                   |
| 179836015        | 9312-0007-013F                                   |
| 179836016        | 9312-0007-015F                                   |
| 1201270171       | Method Blank (MB)                                |
| 1201270172       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201270173       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201270174       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 10.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

Samples were recounted due to low/high recovery.

**Chemical Recoveries**

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

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

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

**Additional Comments**

The sample and the duplicate, 1201270172 (9312-0007-002F) and 179836001 (9312-0007-002F), did not meet the relative percent difference requirement, however they do meet the relative error ratio requirement with value of 2.69.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
Analytical Method: DOE EML HASL-300, Tc-02-RC Modified  
Analytical Batch Number: 606162

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201270179       | Method Blank (MB)                                |
| 1201270180       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201270181       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201270182       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 13.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

|                                          |                                         |
|------------------------------------------|-----------------------------------------|
| <b>Product:</b>                          | <b>Liquid Scint Fe55, Solid-ALL FSS</b> |
| Analytical Method:                       | DOE RESL Fe-1, Modified                 |
| Prep Method:                             | Ash Soil Prep                           |
| Dry Soil Prep GL-RAD-A-021 Method:       | Dry Soil Prep                           |
| Analytical Batch Number:                 | 606165                                  |
| Prep Batch Number:                       | 606003                                  |
| Dry Soil Prep GL-RAD-A-021 Batch Number: | 606001                                  |

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201270187       | Method Blank (MB)                                |
| 1201270188       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201270189       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201270190       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

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

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

Samples were recounted due to low/high recovery.

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint 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: 606163

Prep Batch Number: 606003

Dry Soil Prep GL-RAD-A-021 Batch Number: 606001

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201270183       | Method Blank (MB)                                |
| 1201270184       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201270185       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201270186       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 8.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid - 3 pCi/g  
**Analytical Method:** EPA 906.0 Modified  
**Analytical Batch Number:** 606167

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201270195       | Method Blank (MB)                                |
| 1201270196       | 179837001(9312-0008-006F) Sample Duplicate (DUP) |
| 1201270197       | 179837001(9312-0008-006F) Matrix Spike (MS)      |
| 1201270198       | Laboratory Control Sample (LCS)                  |

**SOP Reference**

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

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 179837001 (9312-0008-006F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** Liquid Scint C14, Solid All,FSS  
Analytical Method: EPA EERF C-01 Modified  
Analytical Batch Number: 606166

| <b>Sample ID</b> | <b>Client ID</b>                                 |
|------------------|--------------------------------------------------|
| 179836001        | 9312-0007-002F                                   |
| 179836002        | 9312-0007-014F                                   |
| 1201270191       | Method Blank (MB)                                |
| 1201270192       | 179836001(9312-0007-002F) Sample Duplicate (DUP) |
| 1201270193       | 179836001(9312-0007-002F) Matrix Spike (MS)      |
| 1201270194       | Laboratory Control Sample (LCS)                  |

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 179836001 (9312-0007-002F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

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

##### **Preparation Information**

All preparation criteria have been met for these analyses.



# **SAMPLE DATA SUMMARY**

## GEL LABORATORIES LLC

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

### Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#07-0054 GEL Work Order: 179836

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

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

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

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

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



Reviewed by \_\_\_\_\_

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

|                   |                |             |           |
|-------------------|----------------|-------------|-----------|
| Client Sample ID: | 9312-0007-002F | Project:    | YANK01204 |
| Sample ID:        | 179836001      | Client ID:  | YANK001   |
| Matrix:           | TS             | Vol. Recv.: |           |
| Collect Date:     | 23-JAN-07      |             |           |
| Receive Date:     | 30-JAN-07      |             |           |
| Collector:        | Client         |             |           |
| Moisture:         | 8.9%           |             |           |

| Parameter                                             | Qualifier | Result   | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|-------------------------------------------------------|-----------|----------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Alpha Spec Analysis</b>                        |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Alphaspec Am241, Cm, Solid ALL FSS</i>             |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Americium-241                                         | U         | 0.0303   | +/-0.158    | 0.123  | +/-0.158  | 0.327  | pCi/g |    | DXH2    | 02/01/07 | 0743 | 606029 | 1   |
| Curium-242                                            | U         | -0.0361  | +/-0.0751   | 0.0837 | +/-0.0752 | 0.252  | pCi/g |    |         |          |      |        |     |
| Curium-243/244                                        | U         | -0.0502  | +/-0.164    | 0.152  | +/-0.164  | 0.384  | pCi/g |    |         |          |      |        |     |
| <i>Alphaspec Pu, Solid-ALL FSS</i>                    |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Plutonium-238                                         | U         | 0.0727   | +/-0.0998   | 0.0366 | +/-0.100  | 0.151  | pCi/g |    | DXH2    | 01/31/07 | 1554 | 606031 | 2   |
| Plutonium-239/240                                     | U         | 0.00     | +/-0.0566   | 0.00   | +/-0.0566 | 0.0782 | pCi/g |    |         |          |      |        |     |
| <i>Liquid Scint Pu241, Solid-ALL FSS</i>              |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Plutonium-241                                         | U         | -3.0     | +/-6.37     | 5.50   | +/-6.37   | 11.6   | pCi/g |    | DXH2    | 02/01/07 | 0919 | 606032 | 3   |
| <b>Rad Gamma Spec Analysis</b>                        |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma,Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                         |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                          |           | 1.23     | +/-0.169    | 0.0395 | +/-0.169  | 0.0789 | pCi/g |    | MJH1    | 02/02/07 | 1921 | 606828 | 4   |
| Americium-241                                         | U         | 0.0388   | +/-0.0604   | 0.0463 | +/-0.0604 | 0.0925 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                           |           | 0.719    | +/-0.191    | 0.092  | +/-0.191  | 0.184  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                           |           | 0.701    | +/-0.0804   | 0.0217 | +/-0.0804 | 0.0434 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                            | UI        | 0.00     | +/-0.0254   | 0.015  | +/-0.0254 | 0.0299 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                            | U         | 0.00716  | +/-0.0136   | 0.0118 | +/-0.0136 | 0.0235 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                             | U         | 0.000511 | +/-0.0148   | 0.0125 | +/-0.0148 | 0.0249 | pCi/g |    |         |          |      |        |     |
| Europium-152                                          | U         | -0.0201  | +/-0.049    | 0.0323 | +/-0.049  | 0.0646 | pCi/g |    |         |          |      |        |     |
| Europium-154                                          | U         | 0.0172   | +/-0.050    | 0.0373 | +/-0.050  | 0.0746 | pCi/g |    |         |          |      |        |     |
| Europium-155                                          | U         | 0.049    | +/-0.0469   | 0.0346 | +/-0.0469 | 0.0692 | pCi/g |    |         |          |      |        |     |
| Lead-212                                              |           | 1.04     | +/-0.0944   | 0.0179 | +/-0.0944 | 0.0358 | pCi/g |    |         |          |      |        |     |
| Lead-214                                              |           | 0.742    | +/-0.0852   | 0.0224 | +/-0.0852 | 0.0447 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                          | U         | 0.00648  | +/-0.019    | 0.0125 | +/-0.019  | 0.025  | pCi/g |    |         |          |      |        |     |
| Niobium-94                                            | U         | 0.0138   | +/-0.0126   | 0.0111 | +/-0.0126 | 0.0222 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                          |           | 16.8     | +/-1.18     | 0.0876 | +/-1.18   | 0.175  | pCi/g |    |         |          |      |        |     |
| Radium-226                                            |           | 0.701    | +/-0.0804   | 0.0217 | +/-0.0804 | 0.0434 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                           | U         | -0.0161  | +/-0.0125   | 0.0104 | +/-0.0125 | 0.0209 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                          |           | 0.321    | +/-0.0386   | 0.0107 | +/-0.0386 | 0.0214 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>             |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                      |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                          | U         | 0.00439  | +/-0.0156   | 0.0125 | +/-0.0156 | 0.0289 | pCi/g |    | KSD1    | 02/03/07 | 1023 | 606155 | 5   |
| <b>Rad Liquid Scintillation Analysis</b>              |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>LSC, Tritium Dist, Solid - 3 pCi/g</i>             |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Tritium                                               | U         | 0.480    | +/-0.303    | 0.445  | +/-0.303  | 1.01   | pCi/g |    | AXD2    | 02/01/07 | 0130 | 606167 | 7   |

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-002F  
Sample ID: 179836001

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

| Parameter                                | Qualifier | Result  | Uncertainty | LC     | TPU       | MDA   | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|------------------------------------------|-----------|---------|-------------|--------|-----------|-------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Liquid Scintillation Analysis</b> |           |         |             |        |           |       |       |    |         |          |      |        |     |
| <i>Liquid Scint C14, Solid All, FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Carbon-14                                | U         | -0.0109 | +/-0.0671   | 0.0568 | +/-0.0671 | 0.119 | pCi/g |    | AXD2    | 01/31/07 | 1600 | 606166 | 8   |
| <i>Liquid Scint Fe55, Solid-ALL FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Iron-55                                  | U         | 19.0    | +/-62.6     | 40.2   | +/-62.6   | 83.7  | pCi/g |    | MXP1    | 02/03/07 | 0956 | 606165 | 9   |
| <i>Liquid Scint Ni63, Solid-ALL FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Nickel-63                                | U         | -9.21   | +/-11.8     | 10.2   | +/-11.8   | 21.2  | pCi/g |    | MXP1    | 02/01/07 | 1505 | 606163 | 11  |
| <i>Liquid Scint Tc99, Solid-ALL FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Technetium-99                            | U         | -0.157  | +/-0.168    | 0.149  | +/-0.168  | 0.315 | pCi/g |    | KXR1    | 02/04/07 | 2201 | 606162 | 12  |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description                         |
|--------|-------------------------------------|
| 1      | DOE EML HASL-300, Am-05-RC Modified |
| 2      | DOE EML HASL-300, Pu-11-RC Modified |
| 3      | DOE EML HASL-300, Pu-11-RC Modified |
| 4      | EML HASL 300, 4.5.2.3               |
| 5      | EPA 905.0 Modified                  |
| 6      | EPA 905.0 Modified                  |
| 7      | EPA 906.0 Modified                  |
| 8      | EPA EERF C-01 Modified              |
| 9      | DOE RESL Fe-1, Modified             |
| 10     | DOE RESL Fe-1, Modified             |
| 11     | DOE RESL Ni-1, Modified             |
| 12     | 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      | 90        | (15%-125%)        |
| Plutonium-242             | Liquid Scint Pu241, Solid-ALL FS | 88        | (25%-125%)        |
| Strontium-90              | GFPC, Sr90, solid-ALL FSS        | 72        | (25%-125%)        |
| Carrier/Tracer Recovery   | GFPC, Sr90, solid-ALL FSS        | 72        | (25%-125%)        |

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Contact: Mr. Jack McCarthy

Project: Soils PO# 002332

Report Date: February 5, 2007

Client Sample ID: 9312-0007-002F  
Sample ID: 179836001

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

| Parameter               | Qualifier | Result                          | Uncertainty | LC | TPU | MDA | Units      | DF | Analyst | Date | Time | Batch | Mtd |
|-------------------------|-----------|---------------------------------|-------------|----|-----|-----|------------|----|---------|------|------|-------|-----|
| Iron-59                 |           | Liquid Scint Fe55, Solid-ALL FS |             |    | 78  |     | (15%-125%) |    |         |      |      |       |     |
| Nickel-63               |           | Liquid Scint Ni63, Solid-ALL FS |             |    | 80  |     | (25%-125%) |    |         |      |      |       |     |
| Carrier/Tracer Recovery |           | Liquid Scint Ni63, Solid-ALL FS |             |    | 80  |     | (25%-125%) |    |         |      |      |       |     |
| Technetium-99           |           | Liquid Scint Tc99, Solid-ALL FS |             |    | 70  |     | (15%-125%) |    |         |      |      |       |     |
| Carrier/Tracer Recovery |           | Liquid Scint Tc99, Solid-ALL FS |             |    | 70  |     | (15%-125%) |    |         |      |      |       |     |

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - \*\* Analyte is a surrogate compound
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - ND Analyte concentration is not detected above the detection limit
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-014F  
Sample ID: 179836002  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 6.53%

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

| Parameter                                              | Qualifier | Result    | Uncertainty | LC      | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|-----------|-------------|---------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Alpha Spec Analysis</b>                         |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>Alphaspec Am241, Cm, Solid ALL FSS</i>              |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Americium-241                                          | U         | -0.0183   | +/-0.0763   | 0.0753  | +/-0.0763 | 0.236  | pCi/g |    | DXH2    | 02/01/07 | 0743 | 606029 | 1   |
| Curium-242                                             | U         | 0.0251    | +/-0.0665   | 0.0296  | +/-0.0665 | 0.149  | pCi/g |    |         |          |      |        |     |
| Curium-243/244                                         | U         | 0.122     | +/-0.159    | 0.0854  | +/-0.159  | 0.257  | pCi/g |    |         |          |      |        |     |
| <i>Alphaspec Pu, Solid-ALL FSS</i>                     |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Plutonium-238                                          | U         | -0.0342   | +/-0.170    | 0.154   | +/-0.170  | 0.400  | pCi/g |    | DXH2    | 01/31/07 | 1554 | 606031 | 2   |
| Plutonium-239/240                                      | U         | 0.0465    | +/-0.144    | 0.102   | +/-0.144  | 0.296  | pCi/g |    |         |          |      |        |     |
| <i>Liquid Scint Pu241, Solid-ALL FSS</i>               |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Plutonium-241                                          | U         | 0.939     | +/-9.72     | 8.11    | +/-9.72   | 17.2   | pCi/g |    | DXH2    | 02/01/07 | 0935 | 606032 | 3   |
| <b>Rad Gamma Spec Analysis</b>                         |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.536     | +/-0.099    | 0.0327  | +/-0.099  | 0.0653 | pCi/g |    | MJH1    | 02/02/07 | 1922 | 606828 | 4   |
| Americium-241                                          | U         | 0.0208    | +/-0.0194   | 0.0288  | +/-0.0194 | 0.0576 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.423     | +/-0.139    | 0.0736  | +/-0.139  | 0.147  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.474     | +/-0.0552   | 0.0177  | +/-0.0552 | 0.0354 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00      | +/-0.0168   | 0.0131  | +/-0.0168 | 0.0261 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | 0.0101    | +/-0.0161   | 0.0105  | +/-0.0161 | 0.0209 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.00117  | +/-0.0131   | 0.010   | +/-0.0131 | 0.020  | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0169   | +/-0.0337   | 0.0273  | +/-0.0337 | 0.0545 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.00756  | +/-0.0334   | 0.0279  | +/-0.0334 | 0.0558 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0483    | +/-0.038    | 0.0275  | +/-0.038  | 0.0549 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.538     | +/-0.0517   | 0.0152  | +/-0.0517 | 0.0305 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.476     | +/-0.0594   | 0.0199  | +/-0.0594 | 0.0398 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.00296   | +/-0.0116   | 0.0103  | +/-0.0116 | 0.0207 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.000998 | +/-0.0125   | 0.00949 | +/-0.0125 | 0.019  | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 10.4      | +/-0.777    | 0.0777  | +/-0.777  | 0.155  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.474     | +/-0.0552   | 0.0177  | +/-0.0552 | 0.0354 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | 0.00133   | +/-0.0143   | 0.00944 | +/-0.0143 | 0.0189 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.169     | +/-0.0255   | 0.00944 | +/-0.0255 | 0.0189 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.0111    | +/-0.0141   | 0.0104  | +/-0.0141 | 0.024  | pCi/g |    | KSD1    | 02/03/07 | 1023 | 606155 | 5   |
| <b>Rad Liquid Scintillation Analysis</b>               |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>LSC, Tritium Dist, Solid - 3 pCi/g</i>              |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Tritium                                                | U         | 0.136     | +/-0.294    | 0.468   | +/-0.294  | 1.06   | pCi/g |    | AXD2    | 02/01/07 | 0203 | 606167 | 7   |

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-014F  
Sample ID: 179836002

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

| Parameter                                | Qualifier | Result  | Uncertainty | LC     | TPU       | MDA   | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|------------------------------------------|-----------|---------|-------------|--------|-----------|-------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Liquid Scintillation Analysis</b> |           |         |             |        |           |       |       |    |         |          |      |        |     |
| <i>Liquid Scint C14, Solid All, FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Carbon-14                                | U         | 0.00626 | +/-0.0779   | 0.0651 | +/-0.0779 | 0.137 | pCi/g |    | AXD2    | 01/31/07 | 1703 | 606166 | 8   |
| <i>Liquid Scint Fe55, Solid-ALL FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Iron-55                                  | U         | -5.92   | +/-57.1     | 37.4   | +/-57.1   | 78.1  | pCi/g |    | MXP1    | 02/03/07 | 1012 | 606165 | 9   |
| <i>Liquid Scint Ni63, Solid-ALL FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Nickel-63                                | U         | -1.13   | +/-11.1     | 9.36   | +/-11.1   | 19.4  | pCi/g |    | MXP1    | 02/01/07 | 1521 | 606163 | 11  |
| <i>Liquid Scint Tc99, Solid-ALL FSS</i>  |           |         |             |        |           |       |       |    |         |          |      |        |     |
| Technetium-99                            | U         | 0.167   | +/-0.206    | 0.165  | +/-0.207  | 0.349 | pCi/g |    | KXR1    | 02/04/07 | 2218 | 606162 | 12  |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description                         |
|--------|-------------------------------------|
| 1      | DOE EML HASL-300, Am-05-RC Modified |
| 2      | DOE EML HASL-300, Pu-11-RC Modified |
| 3      | DOE EML HASL-300, Pu-11-RC Modified |
| 4      | EML HASL 300, 4.5.2.3               |
| 5      | EPA 905.0 Modified                  |
| 6      | EPA 905.0 Modified                  |
| 7      | EPA 906.0 Modified                  |
| 8      | EPA EERF C-01 Modified              |
| 9      | DOE RESL Fe-1, Modified             |
| 10     | DOE RESL Fe-1, Modified             |
| 11     | DOE RESL Ni-1, Modified             |
| 12     | DOE EML HASL-300, Tc-02-RC Modified |

| Surrogate/Tracer recovery | Test                             | Recovery% | Acceptable Limits |
|---------------------------|----------------------------------|-----------|-------------------|
| Americium-243             | Alphaspec Am241, Cm, Solid ALL   | 82        | (15%-125%)        |
| Plutonium-242             | Alphaspec Pu, Solid-ALL FSS      | 79        | (15%-125%)        |
| Plutonium-242             | Liquid Scint Pu241, Solid-ALL FS | 61        | (25%-125%)        |
| Strontium-90              | GFPC, Sr90, solid-ALL FSS        | 80        | (25%-125%)        |
| Carrier/Tracer Recovery   | GFPC, Sr90, solid-ALL FSS        | 80        | (25%-125%)        |

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Project: Soils PO# 002332

Report Date: February 5, 2007

Client Sample ID: 9312-0007-014F  
Sample ID: 179836002

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

| Parameter               | Qualifier | Result                          | Uncertainty | LC | TPU | MDA | Units      | DF | Analyst | Date | Time | Batch | Mtd |
|-------------------------|-----------|---------------------------------|-------------|----|-----|-----|------------|----|---------|------|------|-------|-----|
| Iron-59                 |           | Liquid Scint Fe55, Solid-ALL FS |             |    | 71  |     | (15%-125%) |    |         |      |      |       |     |
| Nickel-63               |           | Liquid Scint Ni63, Solid-ALL FS |             |    | 86  |     | (25%-125%) |    |         |      |      |       |     |
| Carrier/Tracer Recovery |           | Liquid Scint Ni63, Solid-ALL FS |             |    | 86  |     | (25%-125%) |    |         |      |      |       |     |
| Technetium-99           |           | Liquid Scint Tc99, Solid-ALL FS |             |    | 65  |     | (15%-125%) |    |         |      |      |       |     |
| Carrier/Tracer Recovery |           | Liquid Scint Tc99, Solid-ALL FS |             |    | 65  |     | (15%-125%) |    |         |      |      |       |     |

### Notes:

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- \* A quality control analyte recovery is outside of specified acceptance criteria
  - \*\* Analyte is a surrogate compound
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - ND Analyte concentration is not detected above the detection limit
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-001F  
Sample ID: 179836003  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 8.07%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 1.02     | +/-0.183    | 0.0599 | +/-0.183  | 0.120  | pCi/g |    | MJH1    | 02/02/07 | 1922 | 606828 | 1   |
| Americium-241                                          | U         | 0.0261   | +/-0.0269   | 0.0217 | +/-0.0269 | 0.0434 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.790    | +/-0.277    | 0.119  | +/-0.277  | 0.238  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.654    | +/-0.102    | 0.0271 | +/-0.102  | 0.0542 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.027    | 0.0199 | +/-0.027  | 0.0398 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | -0.00333 | +/-0.0208   | 0.0156 | +/-0.0208 | 0.0312 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.0119   | +/-0.021    | 0.0182 | +/-0.021  | 0.0365 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0741  | +/-0.058    | 0.0353 | +/-0.058  | 0.0706 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.00474 | +/-0.0688   | 0.0574 | +/-0.0688 | 0.115  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0148   | +/-0.0471   | 0.0336 | +/-0.0471 | 0.0671 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 1.01     | +/-0.0991   | 0.0195 | +/-0.0991 | 0.039  | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.741    | +/-0.0928   | 0.0251 | +/-0.0928 | 0.0503 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0294   | +/-0.0188   | 0.0175 | +/-0.0188 | 0.0349 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.00341 | +/-0.0171   | 0.0148 | +/-0.0171 | 0.0296 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 16.7     | +/-0.909    | 0.147  | +/-0.909  | 0.293  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.654    | +/-0.102    | 0.0271 | +/-0.102  | 0.0542 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.00757 | +/-0.0168   | 0.0122 | +/-0.0168 | 0.0244 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.332    | +/-0.049    | 0.015  | +/-0.049  | 0.0301 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | -0.00712 | +/-0.0154   | 0.0138 | +/-0.0154 | 0.0314 | pCi/g |    | KSD1    | 02/03/07 | 1023 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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Address : 362 Injun Hollow Rd

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

Report Date: February 5, 2007

|                   |                |             |           |
|-------------------|----------------|-------------|-----------|
| Client Sample ID: | 9312-0007-001F | Project:    | YANK01204 |
| Sample ID:        | 179836003      | Client ID:  | YANK001   |
|                   |                | Vol. Recv.: |           |

| Parameter                        | Qualifier                 | Result | Uncertainty | LC | TPU              | MDA                      | Units | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|---------------------------|--------|-------------|----|------------------|--------------------------|-------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b>               |        |             |    | <b>Recovery%</b> | <b>Acceptable Limits</b> |       |    |         |      |      |       |     |
| Strontium-90                     | GFPC, Sr90, solid-ALL FSS |        |             |    | 71               | (25%-125%)               |       |    |         |      |      |       |     |
| Carrier/Tracer Recovery          | GFPC, Sr90, solid-ALL FSS |        |             |    | 71               | (25%-125%)               |       |    |         |      |      |       |     |

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-003F  
Sample ID: 179836004  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 9.2%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC      | TPU        | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|---------|------------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |         |            |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |         |            |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |         |            |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.562    | +/-0.092    | 0.0254  | +/-0.092   | 0.0508 | pCi/g |    | MJH1    | 02/02/07 | 1923 | 606828 | 1   |
| Americium-241                                          | U         | 0.0189   | +/-0.0404   | 0.0341  | +/-0.0404  | 0.0681 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.413    | +/-0.135    | 0.0506  | +/-0.135   | 0.101  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.476    | +/-0.062    | 0.013   | +/-0.062   | 0.0259 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.0166   | 0.00952 | +/-0.0166  | 0.019  | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             |           | 0.0204   | +/-0.0125   | 0.00786 | +/-0.0125  | 0.0157 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.00425  | +/-0.00872  | 0.00754 | +/-0.00872 | 0.0151 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0078  | +/-0.0347   | 0.0211  | +/-0.0347  | 0.0422 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.0172   | +/-0.030    | 0.0227  | +/-0.030   | 0.0453 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0118   | +/-0.0403   | 0.027   | +/-0.0403  | 0.0539 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.587    | +/-0.0528   | 0.0127  | +/-0.0528  | 0.0253 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.502    | +/-0.0575   | 0.0148  | +/-0.0575  | 0.0296 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | UI        | 0.00     | +/-0.0093   | 0.00764 | +/-0.0093  | 0.0153 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.00302  | +/-0.0104   | 0.00706 | +/-0.0104  | 0.0141 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 10.4     | +/-0.702    | 0.0617  | +/-0.702   | 0.123  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.476    | +/-0.062    | 0.013   | +/-0.062   | 0.0259 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.00605 | +/-0.0077   | 0.00663 | +/-0.0077  | 0.0133 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.173    | +/-0.025    | 0.00716 | +/-0.025   | 0.0143 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |         |            |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |         |            |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.00879  | +/-0.017    | 0.0132  | +/-0.017   | 0.0301 | pCi/g |    | KSD1    | 02/03/07 | 1023 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-003F  
Sample ID: 179836004

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 77               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 77               |     | (25%-125%)               |    |         |      |      |       |     |

### Notes:

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  - \*\* Analyte is a surrogate compound
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - ND Analyte concentration is not detected above the detection limit
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-003FS  
Sample ID: 179836005  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 10.1%

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

| Parameter                                              | Qualifier | Result  | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|---------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |         |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.689   | +/-0.140    | 0.0654 | +/-0.140  | 0.131  | pCi/g |    | MJH1    | 02/03/07 | 1022 | 606828 | 1   |
| Americium-241                                          | U         | 0.0512  | +/-0.0629   | 0.0531 | +/-0.0629 | 0.106  | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.447   | +/-0.267    | 0.170  | +/-0.267  | 0.340  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.412   | +/-0.0848   | 0.0322 | +/-0.0848 | 0.0644 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | U         | 0.0361  | +/-0.0298   | 0.022  | +/-0.0298 | 0.0439 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | 0.0191  | +/-0.0225   | 0.0201 | +/-0.0225 | 0.0403 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.0104 | +/-0.020    | 0.0151 | +/-0.020  | 0.0302 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | 0.033   | +/-0.0642   | 0.0488 | +/-0.0642 | 0.0976 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.00869 | +/-0.0642   | 0.0508 | +/-0.0642 | 0.102  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0638  | +/-0.0686   | 0.052  | +/-0.0686 | 0.104  | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.524   | +/-0.0746   | 0.0316 | +/-0.0746 | 0.0631 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.500   | +/-0.0965   | 0.0343 | +/-0.0965 | 0.0685 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.013   | +/-0.0255   | 0.0201 | +/-0.0255 | 0.0402 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.0223 | +/-0.0215   | 0.0163 | +/-0.0215 | 0.0325 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 10.7    | +/-1.00     | 0.151  | +/-1.00   | 0.301  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.412   | +/-0.0848   | 0.0322 | +/-0.0848 | 0.0644 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.022  | +/-0.0232   | 0.0167 | +/-0.0232 | 0.0333 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.186   | +/-0.0408   | 0.0154 | +/-0.0408 | 0.0309 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |         |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.00724 | +/-0.0137   | 0.0105 | +/-0.0137 | 0.0243 | pCi/g |    | KSD1    | 02/03/07 | 1023 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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Address : 362 Injun Hollow Rd

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-003FS  
Sample ID: 179836005

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |            |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 84               |     | (25%-125%)               |    |         |      |            |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 84               |     | (25%-125%)               |    |         |      |            |     |

### Notes:

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- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
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The above sample is reported on a dry weight basis.

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-004F  
Sample ID: 179836006  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 8.81%

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

| Parameter                                              | Qualifier | Result    | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|-----------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |           |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |           |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |           |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 1.18      | +/-0.257    | 0.113  | +/-0.257  | 0.227  | pCi/g |    | MJH1    | 02/03/07 | 1023 | 606828 | 1   |
| Americium-241                                          | U         | -0.0331   | +/-0.0717   | 0.0393 | +/-0.0717 | 0.0785 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.813     | +/-0.453    | 0.215  | +/-0.453  | 0.430  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 1.10      | +/-0.176    | 0.0483 | +/-0.176  | 0.0965 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00      | +/-0.071    | 0.0355 | +/-0.071  | 0.0709 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | -0.000283 | +/-0.0336   | 0.0294 | +/-0.0336 | 0.0589 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.0258    | +/-0.0367   | 0.0331 | +/-0.0367 | 0.0661 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | 0.0266    | +/-0.096    | 0.0651 | +/-0.096  | 0.130  | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.0822   | +/-0.122    | 0.095  | +/-0.122  | 0.190  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0585    | +/-0.0958   | 0.0607 | +/-0.0958 | 0.121  | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 1.19      | +/-0.130    | 0.0363 | +/-0.130  | 0.0726 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 1.13      | +/-0.160    | 0.0447 | +/-0.160  | 0.0894 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0384    | +/-0.0343   | 0.0319 | +/-0.0343 | 0.0637 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.0182    | +/-0.0327   | 0.026  | +/-0.0327 | 0.052  | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 18.3      | +/-1.45     | 0.254  | +/-1.45   | 0.508  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 1.10      | +/-0.176    | 0.0483 | +/-0.176  | 0.0965 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.0318   | +/-0.0264   | 0.0209 | +/-0.0264 | 0.0417 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.353     | +/-0.0721   | 0.0285 | +/-0.0721 | 0.057  | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |           |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |           |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.00194   | +/-0.0157   | 0.0129 | +/-0.0157 | 0.0298 | pCi/g |    | KSD1    | 02/03/07 | 1023 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-004F      Project: YANK01204  
Sample ID: 179836006                      Client ID: YANK001  
Vol. Recv.:

| Parameter                        | Qualifier             | Result | Uncertainty | LC | TPU               | MDA | Units                    | DF | Analyst | Date | Time Batch | Mtd |
|----------------------------------|-----------------------|--------|-------------|----|-------------------|-----|--------------------------|----|---------|------|------------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b>           |        |             |    | <b>Recovery %</b> |     | <b>Acceptable Limits</b> |    |         |      |            |     |
| Strontium-90                     | GFPC, Sr90, solid-ALL | FSS    |             |    | 71                |     | (25%-125%)               |    |         |      |            |     |
| Carrier/Tracer Recovery          | GFPC, Sr90, solid-ALL | FSS    |             |    | 71                |     | (25%-125%)               |    |         |      |            |     |

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Address : 362 Injun Hollow Rd

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-005F  
Sample ID: 179836007  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 8.61%

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

| Parameter                                              | Qualifier | Result  | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|---------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |         |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.869   | +/-0.207    | 0.068  | +/-0.207  | 0.136  | pCi/g |    | MJH1    | 02/03/07 | 1023 | 606828 | 1   |
| Americium-241                                          | U         | 0.0521  | +/-0.113    | 0.0938 | +/-0.113  | 0.187  | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.546   | +/-0.334    | 0.161  | +/-0.334  | 0.321  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.648   | +/-0.124    | 0.0352 | +/-0.124  | 0.0703 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | U         | 0.0513  | +/-0.0355   | 0.0269 | +/-0.0355 | 0.0538 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             |           | 0.0894  | +/-0.0421   | 0.0171 | +/-0.0421 | 0.0343 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.0142 | +/-0.0244   | 0.019  | +/-0.0244 | 0.038  | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.022  | +/-0.0702   | 0.053  | +/-0.0702 | 0.106  | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.00937 | +/-0.0787   | 0.0668 | +/-0.0787 | 0.134  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0528  | +/-0.0923   | 0.0598 | +/-0.0923 | 0.120  | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 1.02    | +/-0.105    | 0.0319 | +/-0.105  | 0.0637 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.763   | +/-0.115    | 0.038  | +/-0.115  | 0.076  | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0072  | +/-0.024    | 0.0213 | +/-0.024  | 0.0426 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.0128  | +/-0.0216   | 0.019  | +/-0.0216 | 0.0379 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 15.5    | +/-1.36     | 0.184  | +/-1.36   | 0.367  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.648   | +/-0.124    | 0.0352 | +/-0.124  | 0.0703 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.0182 | +/-0.0204   | 0.0169 | +/-0.0204 | 0.0337 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.314   | +/-0.0571   | 0.0177 | +/-0.0571 | 0.0353 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |         |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.00424 | +/-0.0158   | 0.0127 | +/-0.0158 | 0.0293 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-005F  
Sample ID: 179836007

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 71               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 71               |     | (25%-125%)               |    |         |      |      |       |     |

### Notes:

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- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
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- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
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East Hampton, Connecticut 06424  
Contact: Mr. Jack McCarthy  
Project: Soils PO# 002332

Report Date: February 5, 2007

Client Sample ID: 9312-0007-006F  
Sample ID: 179836008  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 8.44%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.483    | +/-0.160    | 0.0653 | +/-0.160  | 0.131  | pCi/g |    | MJH1    | 02/03/07 | 1024 | 606828 | 1   |
| Americium-241                                          | U         | 0.0165   | +/-0.108    | 0.0901 | +/-0.108  | 0.180  | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.535    | +/-0.329    | 0.137  | +/-0.329  | 0.274  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.541    | +/-0.107    | 0.0355 | +/-0.107  | 0.071  | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | U         | 0.0199   | +/-0.0244   | 0.0207 | +/-0.0244 | 0.0415 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | 0.00249  | +/-0.024    | 0.0206 | +/-0.024  | 0.0412 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.00587  | +/-0.0195   | 0.017  | +/-0.0195 | 0.034  | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | 0.0122   | +/-0.0634   | 0.0474 | +/-0.0634 | 0.0948 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.0579  | +/-0.0746   | 0.0576 | +/-0.0746 | 0.115  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.017    | +/-0.0623   | 0.0574 | +/-0.0623 | 0.115  | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.644    | +/-0.0738   | 0.0278 | +/-0.0738 | 0.0555 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.584    | +/-0.101    | 0.0338 | +/-0.101  | 0.0676 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0025   | +/-0.0222   | 0.0196 | +/-0.0222 | 0.0391 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.00146  | +/-0.0199   | 0.017  | +/-0.0199 | 0.0339 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 11.9     | +/-1.13     | 0.133  | +/-1.13   | 0.266  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.541    | +/-0.107    | 0.0355 | +/-0.107  | 0.071  | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | 0.000469 | +/-0.0184   | 0.0162 | +/-0.0184 | 0.0324 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.203    | +/-0.0486   | 0.0181 | +/-0.0486 | 0.0361 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.0125   | +/-0.0154   | 0.0115 | +/-0.0154 | 0.0262 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-006F  
Sample ID: 179836008

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 87               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 87               |     | (25%-125%)               |    |         |      |      |       |     |

### Notes:

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- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
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- UI Gamma Spectroscopy--Uncertain identification
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- Y QC Samples were not spiked with this compound
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The above sample is reported on a dry weight basis.

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Address : 362 Injun Hollow Rd

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-007F  
Sample ID: 179836009  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 11%

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

| Parameter                                              | Qualifier | Result  | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|---------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |         |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.511   | +/-0.186    | 0.0618 | +/-0.186  | 0.124  | pCi/g |    | MJH1    | 02/03/07 | 1024 | 606828 | 1   |
| Americium-241                                          | U         | -0.0406 | +/-0.100    | 0.0809 | +/-0.100  | 0.162  | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.534   | +/-0.222    | 0.113  | +/-0.222  | 0.225  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.459   | +/-0.090    | 0.0328 | +/-0.090  | 0.0656 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00    | +/-0.0401   | 0.0215 | +/-0.0401 | 0.043  | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | UI        | 0.00    | +/-0.0409   | 0.0165 | +/-0.0409 | 0.033  | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.00976 | +/-0.0219   | 0.0193 | +/-0.0219 | 0.0386 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0163 | +/-0.0772   | 0.0461 | +/-0.0772 | 0.0921 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.0203  | +/-0.0639   | 0.0555 | +/-0.0639 | 0.111  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0515  | +/-0.0597   | 0.0558 | +/-0.0597 | 0.112  | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.722   | +/-0.080    | 0.0264 | +/-0.080  | 0.0528 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.593   | +/-0.0916   | 0.031  | +/-0.0916 | 0.062  | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | -0.0023 | +/-0.022    | 0.019  | +/-0.022  | 0.038  | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.00304 | +/-0.0209   | 0.0168 | +/-0.0209 | 0.0335 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 12.6    | +/-1.17     | 0.136  | +/-1.17   | 0.271  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.459   | +/-0.090    | 0.0328 | +/-0.090  | 0.0656 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | 0.0129  | +/-0.0176   | 0.0162 | +/-0.0176 | 0.0323 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.239   | +/-0.0477   | 0.0158 | +/-0.0477 | 0.0316 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |         |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |         |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.00143 | +/-0.0129   | 0.0106 | +/-0.0129 | 0.0244 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-007F      Project: YANK01204  
Sample ID: 179836009                      Client ID: YANK001  
Vol. Recv.:                                      Vol. Recv.:

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 86               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 86               |     | (25%-125%)               |    |         |      |      |       |     |

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-008F  
Sample ID: 179836010  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 6.7%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 1.05     | +/-0.164    | 0.0507 | +/-0.164  | 0.101  | pCi/g |    | MJH1    | 02/03/07 | 1348 | 606828 | 1   |
| Americium-241                                          | UI        | 0.00     | +/-0.0297   | 0.0253 | +/-0.0297 | 0.0505 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.747    | +/-0.287    | 0.119  | +/-0.287  | 0.238  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.706    | +/-0.101    | 0.0291 | +/-0.101  | 0.0583 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.0279   | 0.020  | +/-0.0279 | 0.0399 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | 0.0126   | +/-0.0194   | 0.0169 | +/-0.0194 | 0.0337 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.00306 | +/-0.0189   | 0.0157 | +/-0.0189 | 0.0315 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0363  | +/-0.0483   | 0.0385 | +/-0.0483 | 0.0769 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.0334  | +/-0.0562   | 0.0459 | +/-0.0562 | 0.0918 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0342   | +/-0.0419   | 0.0388 | +/-0.0419 | 0.0775 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.925    | +/-0.0956   | 0.022  | +/-0.0956 | 0.044  | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.706    | +/-0.0876   | 0.0275 | +/-0.0876 | 0.055  | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0242   | +/-0.0203   | 0.0147 | +/-0.0203 | 0.0294 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.0245   | +/-0.0198   | 0.0146 | +/-0.0198 | 0.0291 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 17.3     | +/-1.19     | 0.130  | +/-1.19   | 0.261  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.706    | +/-0.101    | 0.0291 | +/-0.101  | 0.0583 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.0128  | +/-0.0156   | 0.0134 | +/-0.0156 | 0.0268 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.360    | +/-0.0482   | 0.0148 | +/-0.0482 | 0.0296 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.00236  | +/-0.0159   | 0.013  | +/-0.0159 | 0.0298 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-008F  
Sample ID: 179836010

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |            |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 76               |     | (25%-125%)               |    |         |      |            |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 76               |     | (25%-125%)               |    |         |      |            |     |

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

|                   |                |             |           |
|-------------------|----------------|-------------|-----------|
| Client Sample ID: | 9312-0007-009F | Project:    | YANK01204 |
| Sample ID:        | 179836011      | Client ID:  | YANK001   |
| Matrix:           | TS             | Vol. Recv.: |           |
| Collect Date:     | 23-JAN-07      |             |           |
| Receive Date:     | 30-JAN-07      |             |           |
| Collector:        | Client         |             |           |
| Moisture:         | 6.03%          |             |           |

| Parameter                                              | Qualifier | Result   | Uncertainty | LC      | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|---------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |         |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |         |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |         |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 1.01     | +/-0.152    | 0.0415  | +/-0.152  | 0.083  | pCi/g |    | MJH1    | 02/03/07 | 1348 | 606828 | 1   |
| Americium-241                                          | U         | 0.036    | +/-0.0493   | 0.0377  | +/-0.0493 | 0.0753 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.681    | +/-0.222    | 0.0793  | +/-0.222  | 0.159  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.676    | +/-0.0774   | 0.0193  | +/-0.0774 | 0.0385 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.0179   | 0.0144  | +/-0.0179 | 0.0287 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | 0.0151   | +/-0.0155   | 0.0114  | +/-0.0155 | 0.0228 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.00856 | +/-0.0165   | 0.0113  | +/-0.0165 | 0.0225 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0128  | +/-0.0433   | 0.0285  | +/-0.0433 | 0.057  | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.0207  | +/-0.0452   | 0.037   | +/-0.0452 | 0.074  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.052    | +/-0.0451   | 0.0324  | +/-0.0451 | 0.0648 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.975    | +/-0.0852   | 0.0168  | +/-0.0852 | 0.0337 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.722    | +/-0.0823   | 0.0204  | +/-0.0823 | 0.0408 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.00777  | +/-0.0146   | 0.0113  | +/-0.0146 | 0.0225 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.00152 | +/-0.0115   | 0.0101  | +/-0.0115 | 0.0201 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 16.6     | +/-1.13     | 0.0869  | +/-1.13   | 0.174  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.676    | +/-0.0774   | 0.0193  | +/-0.0774 | 0.0385 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.00734 | +/-0.0114   | 0.00968 | +/-0.0114 | 0.0194 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.285    | +/-0.0349   | 0.011   | +/-0.0349 | 0.0219 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |         |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |         |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | -0.00261 | +/-0.0177   | 0.0151  | +/-0.0177 | 0.0343 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |



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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-010F  
Sample ID: 179836012  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 7.33%

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

| Parameter                                              | Qualifier | Result    | Uncertainty | LC      | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|-----------|-------------|---------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.566     | +/-0.107    | 0.031   | +/-0.107  | 0.062  | pCi/g |    | MJH1    | 02/03/07 | 1349 | 606828 | 1   |
| Americium-241                                          | U         | -0.0131   | +/-0.0424   | 0.0325  | +/-0.0424 | 0.0649 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.525     | +/-0.169    | 0.0688  | +/-0.169  | 0.138  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.458     | +/-0.0646   | 0.0176  | +/-0.0646 | 0.0351 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | U         | 0.0158    | +/-0.0168   | 0.0122  | +/-0.0168 | 0.0244 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             |           | 0.031     | +/-0.011    | 0.0094  | +/-0.011  | 0.0188 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.0107   | +/-0.0136   | 0.00926 | +/-0.0136 | 0.0185 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | 0.00378   | +/-0.0314   | 0.0247  | +/-0.0314 | 0.0494 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | -0.029    | +/-0.0365   | 0.0285  | +/-0.0365 | 0.0569 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0451    | +/-0.0327   | 0.0274  | +/-0.0327 | 0.0549 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.607     | +/-0.0554   | 0.0144  | +/-0.0554 | 0.0287 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.533     | +/-0.0597   | 0.0173  | +/-0.0597 | 0.0346 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0138    | +/-0.0142   | 0.00843 | +/-0.0142 | 0.0168 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.0111   | +/-0.0135   | 0.00885 | +/-0.0135 | 0.0177 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 10.9      | +/-0.815    | 0.0738  | +/-0.815  | 0.147  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.458     | +/-0.0646   | 0.0176  | +/-0.0646 | 0.0351 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | 0.00501   | +/-0.0107   | 0.00844 | +/-0.0107 | 0.0169 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.187     | +/-0.0281   | 0.00924 | +/-0.0281 | 0.0185 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |           |             |         |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |           |             |         |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | -0.000213 | +/-0.0155   | 0.013   | +/-0.0155 | 0.0304 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-010F      Project: YANK01204  
Sample ID: 179836012                      Client ID: YANK001  
Vol. Recv.:                                      Vol. Recv.:

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 63               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 63               |     | (25%-125%)               |    |         |      |      |       |     |

**Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-011F  
Sample ID: 179836013  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 10.1%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC      | TPU        | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|---------|------------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |         |            |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |         |            |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |         |            |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 1.05     | +/-0.150    | 0.0319  | +/-0.150   | 0.0638 | pCi/g |    | MJH1    | 02/03/07 | 1349 | 606828 | 1   |
| Americium-241                                          | U         | 0.0203   | +/-0.0779   | 0.064   | +/-0.0779  | 0.128  | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.683    | +/-0.154    | 0.0698  | +/-0.154   | 0.140  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.628    | +/-0.0723   | 0.017   | +/-0.0723  | 0.0341 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.0245   | 0.0122  | +/-0.0245  | 0.0243 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | -0.0107  | +/-0.0113   | 0.0092  | +/-0.0113  | 0.0184 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | -0.00376 | +/-0.0114   | 0.00937 | +/-0.0114  | 0.0187 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0182  | +/-0.034    | 0.0257  | +/-0.034   | 0.0514 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.0545   | +/-0.0616   | 0.0289  | +/-0.0616  | 0.0578 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0268   | +/-0.0487   | 0.0367  | +/-0.0487  | 0.0734 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.997    | +/-0.0862   | 0.0156  | +/-0.0862  | 0.0313 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.711    | +/-0.0755   | 0.0174  | +/-0.0755  | 0.0349 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | UI        | 0.00     | +/-0.0157   | 0.00885 | +/-0.0157  | 0.0177 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.00128 | +/-0.0104   | 0.0087  | +/-0.0104  | 0.0174 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 17.3     | +/-1.11     | 0.082   | +/-1.11    | 0.164  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.628    | +/-0.0723   | 0.017   | +/-0.0723  | 0.0341 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.00473 | +/-0.00996  | 0.00859 | +/-0.00996 | 0.0172 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.307    | +/-0.0355   | 0.00913 | +/-0.0355  | 0.0183 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |         |            |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |         |            |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.0138   | +/-0.0181   | 0.0134  | +/-0.0181  | 0.0309 | pCi/g |    | KSD1    | 02/03/07 | 1024 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-011F      Project: YANK01204  
Sample ID: 179836013                      Client ID: YANK001  
Vol. Recv.:                                      Vol. Recv.:

| Parameter                        | Qualifier                 | Result | Uncertainty | LC | TPU              | MDA                      | Units | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|---------------------------|--------|-------------|----|------------------|--------------------------|-------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b>               |        |             |    | <b>Recovery%</b> | <b>Acceptable Limits</b> |       |    |         |      |      |       |     |
| Strontium-90                     | GFPC, Sr90, solid-ALL FSS |        |             |    | 71               | (25%-125%)               |       |    |         |      |      |       |     |
| Carrier/Tracer Recovery          | GFPC, Sr90, solid-ALL FSS |        |             |    | 71               | (25%-125%)               |       |    |         |      |      |       |     |

Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy—Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-012F  
Sample ID: 179836014  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 9.01%

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

| Parameter                                              | Qualifier | Result     | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|------------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |            |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |            |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |            |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.872      | +/-0.132    | 0.0398 | +/-0.132  | 0.0796 | pCi/g |    | MJH1    | 02/03/07 | 1350 | 606828 | 1   |
| Americium-241                                          | U         | 0.0275     | +/-0.0699   | 0.0458 | +/-0.0699 | 0.0915 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.448      | +/-0.175    | 0.0922 | +/-0.175  | 0.184  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.818      | +/-0.0948   | 0.022  | +/-0.0948 | 0.044  | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00       | +/-0.0273   | 0.016  | +/-0.0273 | 0.0319 | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             | U         | -0.0037    | +/-0.0149   | 0.0125 | +/-0.0149 | 0.0249 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.0107     | +/-0.014    | 0.0124 | +/-0.014  | 0.0248 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0252    | +/-0.043    | 0.032  | +/-0.043  | 0.0641 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.000514   | +/-0.0492   | 0.0357 | +/-0.0492 | 0.0713 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0368     | +/-0.0482   | 0.0347 | +/-0.0482 | 0.0693 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.941      | +/-0.0881   | 0.0182 | +/-0.0881 | 0.0364 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.844      | +/-0.0931   | 0.0222 | +/-0.0931 | 0.0444 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | -9.960E-05 | +/-0.0141   | 0.0123 | +/-0.0141 | 0.0245 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.00457    | +/-0.0135   | 0.0115 | +/-0.0135 | 0.023  | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 15.6       | +/-1.11     | 0.104  | +/-1.11   | 0.208  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.818      | +/-0.0948   | 0.022  | +/-0.0948 | 0.044  | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | 0.000242   | +/-0.0121   | 0.0105 | +/-0.0121 | 0.021  | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.302      | +/-0.0388   | 0.0119 | +/-0.0388 | 0.0237 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |            |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |            |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.000171   | +/-0.0137   | 0.0115 | +/-0.0137 | 0.0261 | pCi/g |    | KSD1    | 02/03/07 | 1025 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-012F  
Sample ID: 179836014

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU               | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|-------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery %</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 80                |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 80                |     | (25%-125%)               |    |         |      |      |       |     |

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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## Certificate of Analysis

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-013F  
Sample ID: 179836015  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 11%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC      | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|---------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |         |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |         |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |         |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 1.21     | +/-0.163    | 0.0441  | +/-0.163  | 0.0882 | pCi/g |    | MJH1    | 02/03/07 | 1351 | 606828 | 1   |
| Americium-241                                          | U         | 0.061    | +/-0.0497   | 0.0414  | +/-0.0497 | 0.0826 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.767    | +/-0.212    | 0.114   | +/-0.212  | 0.227  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 1.03     | +/-0.113    | 0.0247  | +/-0.113  | 0.0494 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.0253   | 0.0175  | +/-0.0253 | 0.035  | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             |           | 0.0754   | +/-0.0217   | 0.0126  | +/-0.0217 | 0.0252 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.014    | +/-0.0161   | 0.0139  | +/-0.0161 | 0.0278 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.00491 | +/-0.0494   | 0.0358  | +/-0.0494 | 0.0716 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.00029  | +/-0.0503   | 0.0377  | +/-0.0503 | 0.0753 | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0536   | +/-0.0471   | 0.0386  | +/-0.0471 | 0.0772 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 1.12     | +/-0.0956   | 0.0209  | +/-0.0956 | 0.0418 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 1.16     | +/-0.116    | 0.0253  | +/-0.116  | 0.0505 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0204   | +/-0.0213   | 0.0126  | +/-0.0213 | 0.0252 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | -0.00307 | +/-0.0162   | 0.0124  | +/-0.0162 | 0.0247 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 16.1     | +/-1.16     | 0.101   | +/-1.16   | 0.202  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 1.03     | +/-0.113    | 0.0247  | +/-0.113  | 0.0494 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | 0.00267  | +/-0.0192   | 0.0122  | +/-0.0192 | 0.0243 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.351    | +/-0.0412   | 0.0124  | +/-0.0412 | 0.0249 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |         |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |         |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.0136   | +/-0.0123   | 0.00871 | +/-0.0123 | 0.020  | pCi/g |    | KSD1    | 02/03/07 | 1025 | 606155 | 2   |

### The following Prep Methods were performed

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

### The following Analytical Methods were performed

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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Address : 362 Injun Hollow Rd

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-013F  
Sample ID: 179836015

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 98               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 98               |     | (25%-125%)               |    |         |      |      |       |     |

**Notes:**

The Qualifiers in this report are defined as follows :

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  - \*\* Analyte is a surrogate compound
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
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  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - ND Analyte concentration is not detected above the detection limit
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
  - X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
  - Y QC Samples were not spiked with this compound
  - ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
  - h Preparation or preservation holding time was exceeded
- The above sample is reported on a dry weight basis.

# GEL LABORATORIES LLC

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

## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-015F  
Sample ID: 179836016  
Matrix: TS  
Collect Date: 23-JAN-07  
Receive Date: 30-JAN-07  
Collector: Client  
Moisture: 11.9%

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

| Parameter                                              | Qualifier | Result   | Uncertainty | LC     | TPU       | MDA    | Units | DF | Analyst | Date     | Time | Batch  | Mtd |
|--------------------------------------------------------|-----------|----------|-------------|--------|-----------|--------|-------|----|---------|----------|------|--------|-----|
| <b>Rad Gamma Spec Analysis</b>                         |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i> |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>Waived</i>                                          |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Actinium-228                                           |           | 0.714    | +/-0.140    | 0.059  | +/-0.140  | 0.118  | pCi/g |    | MJH1    | 02/03/07 | 1351 | 606828 | 1   |
| Americium-241                                          | U         | 0.0315   | +/-0.024    | 0.0197 | +/-0.024  | 0.0395 | pCi/g |    |         |          |      |        |     |
| Bismuth-212                                            |           | 0.638    | +/-0.207    | 0.110  | +/-0.207  | 0.219  | pCi/g |    |         |          |      |        |     |
| Bismuth-214                                            |           | 0.692    | +/-0.0949   | 0.0264 | +/-0.0949 | 0.0527 | pCi/g |    |         |          |      |        |     |
| Cesium-134                                             | UI        | 0.00     | +/-0.0278   | 0.0185 | +/-0.0278 | 0.037  | pCi/g |    |         |          |      |        |     |
| Cesium-137                                             |           | 0.0877   | +/-0.0304   | 0.0151 | +/-0.0304 | 0.0303 | pCi/g |    |         |          |      |        |     |
| Cobalt-60                                              | U         | 0.0315   | +/-0.0356   | 0.0164 | +/-0.0356 | 0.0327 | pCi/g |    |         |          |      |        |     |
| Europium-152                                           | U         | -0.0149  | +/-0.0482   | 0.0341 | +/-0.0482 | 0.0682 | pCi/g |    |         |          |      |        |     |
| Europium-154                                           | U         | 0.0136   | +/-0.0624   | 0.053  | +/-0.0624 | 0.106  | pCi/g |    |         |          |      |        |     |
| Europium-155                                           | U         | 0.0413   | +/-0.0452   | 0.0305 | +/-0.0452 | 0.0609 | pCi/g |    |         |          |      |        |     |
| Lead-212                                               |           | 0.866    | +/-0.0858   | 0.0178 | +/-0.0858 | 0.0356 | pCi/g |    |         |          |      |        |     |
| Lead-214                                               |           | 0.612    | +/-0.0779   | 0.0247 | +/-0.0779 | 0.0494 | pCi/g |    |         |          |      |        |     |
| Manganese-54                                           | U         | 0.0131   | +/-0.0242   | 0.0155 | +/-0.0242 | 0.0309 | pCi/g |    |         |          |      |        |     |
| Niobium-94                                             | U         | 0.0175   | +/-0.0168   | 0.0135 | +/-0.0168 | 0.0269 | pCi/g |    |         |          |      |        |     |
| Potassium-40                                           |           | 13.2     | +/-0.827    | 0.130  | +/-0.827  | 0.260  | pCi/g |    |         |          |      |        |     |
| Radium-226                                             |           | 0.692    | +/-0.0949   | 0.0264 | +/-0.0949 | 0.0527 | pCi/g |    |         |          |      |        |     |
| Silver-108m                                            | U         | -0.00232 | +/-0.0142   | 0.0123 | +/-0.0142 | 0.0245 | pCi/g |    |         |          |      |        |     |
| Thallium-208                                           |           | 0.301    | +/-0.0429   | 0.014  | +/-0.0429 | 0.0279 | pCi/g |    |         |          |      |        |     |
| <b>Rad Gas Flow Proportional Counting</b>              |           |          |             |        |           |        |       |    |         |          |      |        |     |
| <i>GFPC, Sr90, solid-ALL FSS</i>                       |           |          |             |        |           |        |       |    |         |          |      |        |     |
| Strontium-90                                           | U         | 0.0146   | +/-0.0167   | 0.0123 | +/-0.0167 | 0.028  | pCi/g |    | KSD1    | 02/03/07 | 1025 | 606155 | 2   |

**The following Prep Methods were performed**

| Method        | Description                | Analyst | Date     | Time | Prep Batch |
|---------------|----------------------------|---------|----------|------|------------|
| Dry Soil Prep | Dry Soil Prep GL-RAD-A-021 | JMB1    | 01/30/07 | 1112 | 606001     |

**The following Analytical Methods were performed**

| Method | Description           |
|--------|-----------------------|
| 1      | EML HASL 300, 4.5.2.3 |
| 2      | EPA 905.0 Modified    |
| 3      | EPA 905.0 Modified    |

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## Certificate of Analysis

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

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

Report Date: February 5, 2007

Client Sample ID: 9312-0007-015F  
Sample ID: 179836016

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

| Parameter                        | Qualifier   | Result                    | Uncertainty | LC | TPU              | MDA | Units                    | DF | Analyst | Date | Time | Batch | Mtd |
|----------------------------------|-------------|---------------------------|-------------|----|------------------|-----|--------------------------|----|---------|------|------|-------|-----|
| <b>Surrogate/Tracer recovery</b> | <b>Test</b> |                           |             |    | <b>Recovery%</b> |     | <b>Acceptable Limits</b> |    |         |      |      |       |     |
| Strontium-90                     |             | GFPC, Sr90, solid-ALL FSS |             |    | 80               |     | (25%-125%)               |    |         |      |      |       |     |
| Carrier/Tracer Recovery          |             | GFPC, Sr90, solid-ALL FSS |             |    | 80               |     | (25%-125%)               |    |         |      |      |       |     |

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- ND Analyte concentration is not detected above the detection limit
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

# QUALITY CONTROL DATA

# GEL LABORATORIES LLC

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

## QC Summary

Report Date: February 5, 2007  
Page 1 of 9

Client : Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 179836

| Parmname              | NOM       | Sample Qual | QC        | Units     | RPD%   | REC%  | Range       | Anlst | Date     | Time  |
|-----------------------|-----------|-------------|-----------|-----------|--------|-------|-------------|-------|----------|-------|
| <b>Rad Alpha Spec</b> |           |             |           |           |        |       |             |       |          |       |
| Batch                 | 606029    |             |           |           |        |       |             |       |          |       |
| QC1201269931          | 179836001 | DUP         |           |           |        |       |             |       |          |       |
| Americium-241         | U         | 0.0303      | U         | -0.0117   | pCi/g  | 452   | (0% - 100%) | DXH2  | 02/01/07 | 07:43 |
|                       | Uncert:   | +/-0.158    |           | +/-0.0702 |        |       |             |       |          |       |
|                       | TPU:      | +/-0.158    |           | +/-0.0702 |        |       |             |       |          |       |
| Curium-242            | U         | -0.0361     | U         | 0.00126   | pCi/g  | 214   | (0% - 100%) |       |          |       |
|                       | Uncert:   | +/-0.0751   |           | +/-0.0685 |        |       |             |       |          |       |
|                       | TPU:      | +/-0.0752   |           | +/-0.0685 |        |       |             |       |          |       |
| Curium-243/244        | U         | -0.0502     | U         | 0.125     | pCi/g  | 468   | (0% - 100%) |       |          |       |
|                       | Uncert:   | +/-0.164    |           | +/-0.165  |        |       |             |       |          |       |
|                       | TPU:      | +/-0.164    |           | +/-0.165  |        |       |             |       |          |       |
| QC1201269933          | LCS       |             |           |           |        |       |             |       |          |       |
| Americium-241         | 13.0      |             |           | 12.7      | pCi/g  | 98    | (75%-125%)  |       |          |       |
|                       | Uncert:   |             |           | +/-1.17   |        |       |             |       |          |       |
|                       | TPU:      |             |           | +/-2.02   |        |       |             |       |          |       |
| Curium-242            |           |             | U         | -0.0203   | pCi/g  |       |             |       |          |       |
|                       | Uncert:   |             |           | +/-0.023  |        |       |             |       |          |       |
|                       | TPU:      |             |           | +/-0.0231 |        |       |             |       |          |       |
| Curium-243/244        | 15.6      |             |           | 14.8      | pCi/g  | 95    | (75%-125%)  |       |          |       |
|                       | Uncert:   |             |           | +/-1.26   |        |       |             |       |          |       |
|                       | TPU:      |             |           | +/-2.30   |        |       |             |       |          |       |
| QC1201269930          | MB        |             |           |           |        |       |             |       |          |       |
| Americium-241         |           |             | U         | 0.0301    | pCi/g  |       |             |       |          |       |
|                       | Uncert:   |             |           | +/-0.058  |        |       |             |       |          |       |
|                       | TPU:      |             |           | +/-0.0582 |        |       |             |       |          |       |
| Curium-242            |           |             | U         | -0.00707  | pCi/g  |       |             |       |          |       |
|                       | Uncert:   |             |           | +/-0.0594 |        |       |             |       |          |       |
|                       | TPU:      |             |           | +/-0.0594 |        |       |             |       |          |       |
| Curium-243/244        |           |             | U         | 0.103     | pCi/g  |       |             |       |          |       |
|                       | Uncert:   |             |           | +/-0.116  |        |       |             |       |          |       |
|                       | TPU:      |             |           | +/-0.117  |        |       |             |       |          |       |
| QC1201269932          | 179836001 | MS          |           |           |        |       |             |       |          |       |
| Americium-241         | 14.0      | U           | 0.0303    | 13.0      | pCi/g  | 93    | (75%-125%)  |       |          |       |
|                       | Uncert:   |             | +/-0.158  | +/-1.35   |        |       |             |       |          |       |
|                       | TPU:      |             | +/-0.158  | +/-2.22   |        |       |             |       |          |       |
| Curium-242            |           | U           | -0.0361   | U         | 0.0316 | pCi/g |             |       |          |       |
|                       | Uncert:   |             | +/-0.0751 | +/-0.138  |        |       |             |       |          |       |
|                       | TPU:      |             | +/-0.0752 | +/-0.138  |        |       |             |       |          |       |
| Curium-243/244        | 16.8      | U           | -0.0502   | 17.9      | pCi/g  | 107   | (75%-125%)  |       |          |       |
|                       | Uncert:   |             | +/-0.164  | +/-1.59   |        |       |             |       |          |       |
|                       | TPU:      |             | +/-0.164  | +/-2.90   |        |       |             |       |          |       |
| Batch                 | 606031    |             |           |           |        |       |             |       |          |       |
| QC1201269936          | 179836001 | DUP         |           |           |        |       |             |       |          |       |
| Plutonium-238         | U         | 0.0727      | U         | 0.130     | pCi/g  | 57    | (0% - 100%) | DXH2  | 01/31/07 | 15:54 |

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## QC Summary

Workorder: 179836

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| Parmname                                    | NOM     | Sample | Qual   | QC        | Units    | RPD%  | REC%  | Range         | Anlst | Date     | Time     |
|---------------------------------------------|---------|--------|--------|-----------|----------|-------|-------|---------------|-------|----------|----------|
| <b>Rad Alpha Spec</b>                       |         |        |        |           |          |       |       |               |       |          |          |
| Batch                                       | 606031  |        |        |           |          |       |       |               |       |          |          |
| Plutonium-239/240                           | Uncert: |        |        | +/-0.196  |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-0.197  |          |       |       |               |       |          |          |
|                                             |         | U      | 0.00   | U         | -0.0516  | pCi/g | 200   | (0% - 100%)   |       |          |          |
|                                             | Uncert: |        |        | +/-0.0413 |          |       |       |               |       |          |          |
| QC1201269938 LCS<br>Plutonium-238           | TPU:    |        |        | +/-0.0418 |          |       |       |               |       |          |          |
|                                             |         |        |        | U         | 0.0519   | pCi/g |       | (75%-125%)    |       |          |          |
|                                             | Uncert: |        |        | +/-0.226  |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-0.226  |          |       |       |               |       |          |          |
| Plutonium-239/240                           |         | 12.9   |        | 12.7      | pCi/g    |       | 98    | (75%-125%)    |       |          |          |
|                                             | Uncert: |        |        | +/-1.25   |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-1.95   |          |       |       |               |       |          |          |
|                                             |         |        |        | U         | 0.0132   | pCi/g |       |               |       |          |          |
| QC1201269935 MB<br>Plutonium-238            | Uncert: |        |        | +/-0.143  |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-0.143  |          |       |       |               |       |          |          |
|                                             |         |        |        | U         | -0.0224  | pCi/g |       |               |       |          |          |
|                                             | Uncert: |        |        | +/-0.0767 |          |       |       |               |       |          |          |
| QC1201269937 179836001 MS<br>Plutonium-238  | TPU:    |        |        | +/-0.0767 |          |       |       |               |       |          |          |
|                                             |         | U      | 0.0727 | U         | -0.014   | pCi/g |       | (75%-125%)    |       |          |          |
|                                             | Uncert: |        |        | +/-0.0723 |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-0.0723 |          |       |       |               |       |          |          |
| Plutonium-239/240                           |         | 13.9   | U      | 0.00      | 13.5     | pCi/g |       | 97 (75%-125%) |       |          |          |
|                                             | Uncert: |        |        | +/-0.0566 | +/-1.29  |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-0.0566 | +/-2.03  |       |       |               |       |          |          |
|                                             | Batch   | 606032 |        |           |          |       |       |               |       |          |          |
| QC1201269940 179836001 DUP<br>Plutonium-241 |         | U      | -3.0   | U         | -3.33    | pCi/g | 0     | (0% - 100%)   | DXH2  | 02/02/07 | 08:14    |
|                                             | Uncert: |        |        | +/-6.37   | +/-7.09  |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-6.37   | +/-7.09  |       |       |               |       |          |          |
|                                             |         |        |        |           |          |       |       |               |       |          |          |
| QC1201269942 LCS<br>Plutonium-241           |         | 140    |        | 108       | pCi/g    |       | 77    | (75%-125%)    |       | 02/01/07 | 11:12    |
|                                             | Uncert: |        |        | +/-11.6   |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-15.7   |          |       |       |               |       |          |          |
|                                             |         |        |        |           | U        | -3.23 | pCi/g |               |       |          | 02/01/07 |
| QC1201269939 MB<br>Plutonium-241            | Uncert: |        |        | +/-6.45   |          |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-6.45   |          |       |       |               |       |          |          |
|                                             |         |        |        |           |          |       |       |               |       |          |          |
|                                             |         |        |        |           |          |       |       |               |       |          |          |
| QC1201269941 179836001 MS<br>Plutonium-241  |         | 142    | U      | -3.0      | 138      | pCi/g |       | 97 (75%-125%) |       | 02/01/07 | 10:56    |
|                                             | Uncert: |        |        | +/-6.37   | +/-13.9  |       |       |               |       |          |          |
|                                             | TPU:    |        |        | +/-6.37   | +/-19.8  |       |       |               |       |          |          |
|                                             |         |        |        |           |          |       |       |               |       |          |          |
| <b>Rad Gamma Spec</b>                       |         |        |        |           |          |       |       |               |       |          |          |
| Batch                                       | 606828  |        |        |           |          |       |       |               |       |          |          |
| QC1201271728 179836001 DUP<br>Actinium-228  |         |        | 1.23   |           | 1.05     | pCi/g | 16    | (0% - 100%)   | MJH1  | 02/03/07 | 14:21    |
|                                             | Uncert: |        |        | +/-0.169  | +/-0.171 |       |       |               |       |          |          |
|                                             |         |        |        |           | +/-0.171 |       |       |               |       |          |          |

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## QC Summary

Workorder: 179836

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| Parmname              | NOM    | Sample  | Qual      | QC | Units     | RPD%  | REC% | Range       | Anlst | Date | Time |
|-----------------------|--------|---------|-----------|----|-----------|-------|------|-------------|-------|------|------|
| <b>Rad Gamma Spec</b> |        |         |           |    |           |       |      |             |       |      |      |
| Batch                 | 606828 |         |           |    |           |       |      |             |       |      |      |
| Americium-241         |        | TPU:    | +/-0.169  |    |           |       |      |             |       |      |      |
|                       |        | U       | 0.0388    | U  | 0.0232    | pCi/g | 50   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0604 |    | +/-0.0848 |       |      |             |       |      |      |
| Bismuth-212           |        | TPU:    | +/-0.0604 |    | +/-0.0848 |       |      |             |       |      |      |
|                       |        |         | 0.719     |    | 0.596     | pCi/g | 19   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.191  |    | +/-0.164  |       |      |             |       |      |      |
| Bismuth-214           |        | TPU:    | +/-0.191  |    | +/-0.164  |       |      |             |       |      |      |
|                       |        |         | 0.701     |    | 0.620     | pCi/g | 12   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0804 |    | +/-0.0835 |       |      |             |       |      |      |
| Cesium-134            |        | TPU:    | +/-0.0804 |    | +/-0.0835 |       |      |             |       |      |      |
|                       |        | UI      | 0.00      | UI | 0.00      | pCi/g | 53   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0254 |    | +/-0.0289 |       |      |             |       |      |      |
| Cesium-137            |        | TPU:    | +/-0.0254 |    | +/-0.0289 |       |      |             |       |      |      |
|                       |        | U       | 0.00716   | U  | 0.00661   | pCi/g | 8    | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0136 |    | +/-0.0173 |       |      |             |       |      |      |
| Cobalt-60             |        | TPU:    | +/-0.0136 |    | +/-0.0173 |       |      |             |       |      |      |
|                       |        | U       | 0.000511  | U  | -0.0118   | pCi/g | 218  | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0148 |    | +/-0.0157 |       |      |             |       |      |      |
| Europium-152          |        | TPU:    | +/-0.0148 |    | +/-0.0157 |       |      |             |       |      |      |
|                       |        | U       | -0.0201   | U  | -0.00777  | pCi/g | 89   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.049  |    | +/-0.0447 |       |      |             |       |      |      |
| Europium-154          |        | TPU:    | +/-0.049  |    | +/-0.0447 |       |      |             |       |      |      |
|                       |        | U       | 0.0172    | U  | 0.0117    | pCi/g | 38   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.050  |    | +/-0.0491 |       |      |             |       |      |      |
| Europium-155          |        | TPU:    | +/-0.050  |    | +/-0.0491 |       |      |             |       |      |      |
|                       |        | U       | 0.049     | U  | 0.0383    | pCi/g | 25   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0469 |    | +/-0.0524 |       |      |             |       |      |      |
| Lead-212              |        | TPU:    | +/-0.0469 |    | +/-0.0524 |       |      |             |       |      |      |
|                       |        |         | 1.04      |    | 0.988     | pCi/g | 5    | (0% - 20%)  |       |      |      |
|                       |        | Uncert: | +/-0.0944 |    | +/-0.087  |       |      |             |       |      |      |
| Lead-214              |        | TPU:    | +/-0.0944 |    | +/-0.087  |       |      |             |       |      |      |
|                       |        |         | 0.742     |    | 0.749     | pCi/g | 1    | (0% - 20%)  |       |      |      |
|                       |        | Uncert: | +/-0.0852 |    | +/-0.0829 |       |      |             |       |      |      |
| Manganese-54          |        | TPU:    | +/-0.0852 |    | +/-0.0829 |       |      |             |       |      |      |
|                       |        | U       | 0.00648   | U  | 0.0136    | pCi/g | 71   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.019  |    | +/-0.0164 |       |      |             |       |      |      |
| Niobium-94            |        | TPU:    | +/-0.019  |    | +/-0.0164 |       |      |             |       |      |      |
|                       |        | U       | 0.0138    | U  | 0.00545   | pCi/g | 87   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0126 |    | +/-0.0139 |       |      |             |       |      |      |
| Potassium-40          |        | TPU:    | +/-0.0126 |    | +/-0.0139 |       |      |             |       |      |      |
|                       |        |         | 16.8      |    | 16.8      | pCi/g | 0    | (0% - 20%)  |       |      |      |
|                       |        | Uncert: | +/-1.18   |    | +/-1.28   |       |      |             |       |      |      |
| Radium-226            |        | TPU:    | +/-1.18   |    | +/-1.28   |       |      |             |       |      |      |
|                       |        |         | 0.701     |    | 0.620     | pCi/g | 12   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0804 |    | +/-0.0835 |       |      |             |       |      |      |
| Silver-108m           |        | TPU:    | +/-0.0804 |    | +/-0.0835 |       |      |             |       |      |      |
|                       |        | U       | -0.0161   | U  | -0.0109   | pCi/g | 39   | (0% - 100%) |       |      |      |
|                       |        | Uncert: | +/-0.0125 |    | +/-0.015  |       |      |             |       |      |      |

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| Parmname       | NOM     | Sample Qual | QC        | Units    | RPD%  | REC% | Range       | Anlst | Date     | Time  |
|----------------|---------|-------------|-----------|----------|-------|------|-------------|-------|----------|-------|
| Rad Gamma Spec |         |             |           |          |       |      |             |       |          |       |
| Batch          | 606828  |             |           |          |       |      |             |       |          |       |
| Thallium-208   | TPU:    | +/-0.0125   | +/-0.015  |          |       |      |             |       |          |       |
|                |         | 0.321       | 0.306     | pCi/g    | 5     |      | (0% - 100%) |       |          |       |
|                | Uncert: | +/-0.0386   | +/-0.0408 |          |       |      |             |       |          |       |
|                | TPU:    | +/-0.0386   | +/-0.0408 |          |       |      |             |       |          |       |
| QC1201271729   | LCS     |             |           |          |       |      |             |       |          |       |
| Actinium-228   |         |             | U         | 0.442    | pCi/g |      |             |       | 02/05/07 | 07:45 |
|                | Uncert: |             |           | +/-0.604 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Americium-241  | 23.4    |             |           | 26.2     | pCi/g | 112  | (75%-125%)  |       |          |       |
|                | Uncert: |             |           | +/-3.48  |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Bismuth-212    |         |             | U         | -0.0757  | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-1.16  |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Bismuth-214    |         |             | U         | -0.184   | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.226 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Cesium-134     |         |             | U         | -0.0238  | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.158 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Cesium-137     | 9.48    |             |           | 10.2     | pCi/g | 108  | (75%-125%)  |       |          |       |
|                | Uncert: |             |           | +/-0.786 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Cobalt-60      | 13.7    |             |           | 15.7     | pCi/g | 114  | (75%-125%)  |       |          |       |
|                | Uncert: |             |           | +/-1.24  |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Europium-152   |         |             | U         | 0.116    | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.310 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Europium-154   |         |             | U         | 0.134    | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.315 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Europium-155   |         |             | U         | 0.245    | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.325 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Lead-212       |         |             | U         | -0.0391  | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.198 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Lead-214       |         |             | U         | 0.277    | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.223 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Manganese-54   |         |             | U         | 0.0761   | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.212 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Niobium-94     |         |             | U         | 0.0951   | pCi/g |      |             |       |          |       |
|                | Uncert: |             |           | +/-0.113 |       |      |             |       |          |       |
|                | TPU:    |             |           | +/-0.00  |       |      |             |       |          |       |
| Potassium-40   |         |             | U         | -0.159   | pCi/g |      |             |       |          |       |

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| Parmname                        | NOM    | Sample Qual | QC                                   | Units | RPD% | REC% | Range      | Anlst | Date Time      |
|---------------------------------|--------|-------------|--------------------------------------|-------|------|------|------------|-------|----------------|
| <b>Rad Gamma Spec</b>           |        |             |                                      |       |      |      |            |       |                |
| Batch                           | 606828 |             |                                      |       |      |      |            |       |                |
| Radium-226                      |        | U           | +/-0.961<br>+/-0.00<br>-0.184        | pCi/g |      |      | (75%-125%) |       |                |
| Silver-108m                     |        | U           | +/-0.226<br>+/-0.00<br>0.107         | pCi/g |      |      |            |       |                |
| Thallium-208                    |        | U           | +/-0.122<br>+/-0.00<br>0.027         | pCi/g |      |      |            |       |                |
| QC1201271727 MB<br>Actinium-228 |        | U           | +/-0.120<br>+/-0.00<br>0.00519       | pCi/g |      |      |            |       | 02/03/07 13:52 |
| Americium-241                   |        | U           | +/-0.0433<br>+/-0.0433<br>-0.111     | pCi/g |      |      |            |       |                |
| Bismuth-212                     |        | U           | +/-0.0244<br>+/-0.0244<br>-0.0102    | pCi/g |      |      |            |       |                |
| Bismuth-214                     |        | U           | +/-0.0665<br>+/-0.0665<br>0.0186     | pCi/g |      |      |            |       |                |
| Cesium-134                      |        | U           | +/-0.0263<br>+/-0.0263<br>0.00816    | pCi/g |      |      |            |       |                |
| Cesium-137                      |        | U           | +/-0.00603<br>+/-0.00603<br>0.00131  | pCi/g |      |      |            |       |                |
| Cobalt-60                       |        | U           | +/-0.00557<br>+/-0.00557<br>0.00242  | pCi/g |      |      |            |       |                |
| Europium-152                    |        | U           | +/-0.00675<br>+/-0.00675<br>-0.00564 | pCi/g |      |      |            |       |                |
| Europium-154                    |        | U           | +/-0.0169<br>+/-0.0169<br>-0.0192    | pCi/g |      |      |            |       |                |
| Europium-155                    |        | U           | +/-0.0158<br>+/-0.0158<br>0.00133    | pCi/g |      |      |            |       |                |
| Lead-212                        |        | U           | +/-0.0175<br>+/-0.0175<br>-0.0118    | pCi/g |      |      |            |       |                |
| Lead-214                        |        | U           | +/-0.0156<br>+/-0.0156<br>0.00362    | pCi/g |      |      |            |       |                |
|                                 |        |             | +/-0.0215<br>+/-0.0215               |       |      |      |            |       |                |

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| Parmname                        | NOM       | Sample Qual | QC         | Units    | RPD%     | REC%  | Range       | Anlst       | Date     | Time           |
|---------------------------------|-----------|-------------|------------|----------|----------|-------|-------------|-------------|----------|----------------|
| <b>Rad Gamma Spec</b>           |           |             |            |          |          |       |             |             |          |                |
| Batch                           | 606828    |             |            |          |          |       |             |             |          |                |
| Manganese-54                    |           | U           | 0.000195   | pCi/g    |          |       |             |             |          |                |
|                                 | Uncert:   |             | +/-0.0057  |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.0057  |          |          |       |             |             |          |                |
| Niobium-94                      |           | U           | -0.00422   | pCi/g    |          |       |             |             |          |                |
|                                 | Uncert:   |             | +/-0.00717 |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.00717 |          |          |       |             |             |          |                |
| Potassium-40                    |           | UI          | 0.00       | pCi/g    |          |       |             |             |          |                |
|                                 | Uncert:   |             | +/-0.139   |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.139   |          |          |       |             |             |          |                |
| Radium-226                      |           | U           | 0.0186     | pCi/g    |          |       |             |             |          |                |
|                                 | Uncert:   |             | +/-0.0263  |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.0263  |          |          |       |             |             |          |                |
| Silver-108m                     |           | U           | -0.00139   | pCi/g    |          |       |             |             |          |                |
|                                 | Uncert:   |             | +/-0.00535 |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.00535 |          |          |       |             |             |          |                |
| Thallium-208                    |           | UI          | 0.00       | pCi/g    |          |       |             |             |          |                |
|                                 | Uncert:   |             | +/-0.0116  |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.0116  |          |          |       |             |             |          |                |
| <b>Rad Gas Flow</b>             |           |             |            |          |          |       |             |             |          |                |
| Batch                           | 606155    |             |            |          |          |       |             |             |          |                |
| QC1201270172                    | 179836001 | DUP         |            |          |          |       |             |             |          |                |
| Strontium-90                    |           | U           | 0.00439    | pCi/g    | 161      |       | (0% - 100%) | KSD1        | 02/03/07 | 10:25          |
|                                 | Uncert:   |             | +/-0.0156  |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.0156  |          |          |       |             |             |          |                |
| QC1201270174                    | LCS       |             |            |          |          |       |             |             |          |                |
| Strontium-90                    |           | 1.46        |            | 1.34     | pCi/g    | 92    | (75%-125%)  |             | 02/03/07 | 10:25          |
|                                 | Uncert:   |             |            | +/-0.100 |          |       |             |             |          |                |
|                                 | TPU:      |             |            | +/-0.108 |          |       |             |             |          |                |
| QC1201270171                    | MB        |             |            |          |          |       |             |             |          |                |
| Strontium-90                    |           | U           | -0.00686   | pCi/g    |          |       |             |             | 02/03/07 | 10:25          |
|                                 | Uncert:   |             | +/-0.0108  |          |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.0108  |          |          |       |             |             |          |                |
| QC1201270173                    | 179836001 | MS          |            |          |          |       |             |             |          |                |
| Strontium-90                    |           | 3.20 U      | 0.00439    | 3.18     | pCi/g    | 100   | (75%-125%)  |             | 02/03/07 | 10:25          |
|                                 | Uncert:   |             | +/-0.0156  | +/-0.206 |          |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.0156  | +/-0.227 |          |       |             |             |          |                |
| <b>Rad Liquid Scintillation</b> |           |             |            |          |          |       |             |             |          |                |
| Batch                           | 606162    |             |            |          |          |       |             |             |          |                |
| QC1201270180                    | 179836001 | DUP         |            |          |          |       |             |             |          |                |
| Technetium-99                   |           | U           | -0.157     | U        | -0.0277  | pCi/g | 0           | (0% - 100%) | KXR1     | 02/04/07 23:28 |
|                                 | Uncert:   |             | +/-0.168   |          | +/-0.173 |       |             |             |          |                |
|                                 | TPU:      |             | +/-0.168   |          | +/-0.173 |       |             |             |          |                |
| QC1201270182                    | LCS       |             |            |          |          |       |             |             |          |                |
| Technetium-99                   |           | 13.1        |            | 13.0     | pCi/g    | 99    | (75%-125%)  |             | 02/05/07 | 00:03          |
|                                 | Uncert:   |             |            | +/-0.533 |          |       |             |             |          |                |
|                                 | TPU:      |             |            | +/-0.622 |          |       |             |             |          |                |
| QC1201270179                    | MB        |             |            |          |          |       |             |             |          |                |
| Technetium-99                   |           | U           | 0.158      | pCi/g    |          |       |             |             | 02/04/07 | 23:11          |

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| Parname                         | NOM       | Sample  | Qual | QC        | Units     | RPD%  | REC% | Range       | Anlst | Date     | Time  |
|---------------------------------|-----------|---------|------|-----------|-----------|-------|------|-------------|-------|----------|-------|
| <b>Rad Liquid Scintillation</b> |           |         |      |           |           |       |      |             |       |          |       |
| Batch                           | 606162    |         |      |           |           |       |      |             |       |          |       |
|                                 |           | Uncert: |      | +/-0.165  |           |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-0.165  |           |       |      |             |       |          |       |
| QC1201270181                    | 179836001 | MS      |      |           |           |       |      |             |       |          |       |
| Technetium-99                   |           | 12.5    | U    | -0.157    | 11.0      | pCi/g | 88   | (75%-125%)  |       | 02/04/07 | 23:46 |
|                                 |           | Uncert: |      | +/-0.168  | +/-0.498  |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-0.168  | +/-0.568  |       |      |             |       |          |       |
| Batch                           | 606163    |         |      |           |           |       |      |             |       |          |       |
| QC1201270184                    | 179836001 | DUP     |      |           |           |       |      |             |       |          |       |
| Nickel-63                       |           |         | U    | -9.21     | 5.27      | pCi/g | 0    | (0% - 100%) | MXP1  | 02/01/07 | 16:26 |
|                                 |           | Uncert: |      | +/-11.8   | +/-10.9   |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-11.8   | +/-10.9   |       |      |             |       |          |       |
| QC1201270186                    | LCS       |         |      |           |           |       |      |             |       |          |       |
| Nickel-63                       |           | 563     |      |           | 508       | pCi/g | 90   | (75%-125%)  |       | 02/01/07 | 16:59 |
|                                 |           | Uncert: |      |           | +/-21.7   |       |      |             |       |          |       |
|                                 |           | TPU:    |      |           | +/-28.4   |       |      |             |       |          |       |
| QC1201270183                    | MB        |         |      |           |           |       |      |             |       |          |       |
| Nickel-63                       |           |         | U    | -3.09     |           | pCi/g |      |             |       | 02/01/07 | 16:10 |
|                                 |           | Uncert: |      | +/-10.3   |           |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-10.3   |           |       |      |             |       |          |       |
| QC1201270185                    | 179836001 | MS      |      |           |           |       |      |             |       |          |       |
| Nickel-63                       |           | 567     | U    | -9.21     | 554       | pCi/g | 98   | (75%-125%)  |       | 02/01/07 | 16:43 |
|                                 |           | Uncert: |      | +/-11.8   | +/-29.4   |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-11.8   | +/-35.6   |       |      |             |       |          |       |
| Batch                           | 606165    |         |      |           |           |       |      |             |       |          |       |
| QC1201270188                    | 179836001 | DUP     |      |           |           |       |      |             |       |          |       |
| Iron-55                         |           |         | U    | 19.0      | 18.9      | pCi/g | 0    | (0% - 100%) | MXP1  | 02/03/07 | 11:33 |
|                                 |           | Uncert: |      | +/-62.6   | +/-69.3   |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-62.6   | +/-69.3   |       |      |             |       |          |       |
| QC1201270190                    | LCS       |         |      |           |           |       |      |             |       |          |       |
| Iron-55                         |           | 1190    |      |           | 1150      | pCi/g | 96   | (75%-125%)  |       | 02/03/07 | 11:50 |
|                                 |           | Uncert: |      |           | +/-92.4   |       |      |             |       |          |       |
|                                 |           | TPU:    |      |           | +/-113    |       |      |             |       |          |       |
| QC1201270187                    | MB        |         |      |           |           |       |      |             |       |          |       |
| Iron-55                         |           |         | U    | 18.3      |           | pCi/g |      |             |       | 02/03/07 | 11:01 |
|                                 |           | Uncert: |      | +/-53.3   |           |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-53.3   |           |       |      |             |       |          |       |
| QC1201270189                    | 179836001 | MS      |      |           |           |       |      |             |       |          |       |
| Iron-55                         |           | 1200    | U    | 19.0      | 1160      | pCi/g | 96   | (75%-125%)  |       | 02/03/07 | 11:17 |
|                                 |           | Uncert: |      | +/-62.6   | +/-90.9   |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-62.6   | +/-111    |       |      |             |       |          |       |
| Batch                           | 606166    |         |      |           |           |       |      |             |       |          |       |
| QC1201270192                    | 179836001 | DUP     |      |           |           |       |      |             |       |          |       |
| Carbon-14                       |           |         | U    | -0.0109   | -0.0517   | pCi/g | 0    | (0% - 100%) | AXD2  | 01/31/07 | 21:13 |
|                                 |           | Uncert: |      | +/-0.0671 | +/-0.0701 |       |      |             |       |          |       |
|                                 |           | TPU:    |      | +/-0.0671 | +/-0.0701 |       |      |             |       |          |       |
| QC1201270194                    | LCS       |         |      |           |           |       |      |             |       |          |       |
| Carbon-14                       |           | 6.65    |      |           | 6.54      | pCi/g | 98   | (75%-125%)  |       | 01/31/07 | 22:33 |
|                                 |           | Uncert: |      |           | +/-0.434  |       |      |             |       |          |       |
|                                 |           | TPU:    |      |           | +/-0.446  |       |      |             |       |          |       |

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| Parmname                        | NOM           | Sample Qual | QC                | Units    | RPD%  | REC%  | Range      | Anlst            | Date Time      |
|---------------------------------|---------------|-------------|-------------------|----------|-------|-------|------------|------------------|----------------|
| <b>Rad Liquid Scintillation</b> |               |             |                   |          |       |       |            |                  |                |
| Batch                           | 606166        |             |                   |          |       |       |            |                  |                |
| QC1201270191                    | MB            |             |                   |          |       |       |            |                  |                |
| Carbon-14                       |               | U           | -0.0597           | pCi/g    |       |       |            |                  | 01/31/07 20:10 |
|                                 |               |             | Uncert: +/-0.0694 |          |       |       |            |                  |                |
|                                 |               |             | TPU: +/-0.0694    |          |       |       |            |                  |                |
| QC1201270193                    | 179836001 MS  |             |                   |          |       |       |            |                  |                |
| Carbon-14                       | 7.19          | U           | -0.0109           | 6.92     | pCi/g | 96    | (75%-125%) |                  | 01/31/07 22:15 |
|                                 |               |             | Uncert: +/-0.0671 | +/-0.479 |       |       |            |                  |                |
|                                 |               |             | TPU: +/-0.0671    | +/-0.491 |       |       |            |                  |                |
| Batch                           | 606167        |             |                   |          |       |       |            |                  |                |
| QC1201270196                    | 179837001 DUP |             |                   |          |       |       |            |                  |                |
| Tritium                         |               | U           | 0.452             | U        | 0.369 | pCi/g | 0          | (0% - 100%) AXD2 | 02/01/07 04:13 |
|                                 |               |             | Uncert: +/-0.306  | +/-0.341 |       |       |            |                  |                |
|                                 |               |             | TPU: +/-0.306     | +/-0.341 |       |       |            |                  |                |
| QC1201270198                    | LCS           |             |                   |          |       |       |            |                  |                |
| Tritium                         | 6.39          |             |                   | 6.14     | pCi/g | 96    | (75%-125%) |                  | 02/01/07 05:03 |
|                                 |               |             | Uncert: +/-0.510  | +/-0.513 |       |       |            |                  |                |
|                                 |               |             | TPU: +/-0.513     |          |       |       |            |                  |                |
| QC1201270195                    | MB            |             |                   |          |       |       |            |                  |                |
| Tritium                         |               | U           | 0.0228            | pCi/g    |       |       |            |                  | 02/01/07 03:40 |
|                                 |               |             | Uncert: +/-0.133  |          |       |       |            |                  |                |
|                                 |               |             | TPU: +/-0.133     |          |       |       |            |                  |                |
| QC1201270197                    | 179837001 MS  |             |                   |          |       |       |            |                  |                |
| Tritium                         | 6.48          | U           | 0.452             | 5.16     | pCi/g | 80    | (75%-125%) |                  | 02/01/07 04:46 |
|                                 |               |             | Uncert: +/-0.306  | +/-0.813 |       |       |            |                  |                |
|                                 |               |             | TPU: +/-0.306     | +/-0.814 |       |       |            |                  |                |

**Notes:**

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
  - \*\* Analyte is a surrogate compound
  - < Result is less than value reported
  - > Result is greater than value reported
  - A The TIC is a suspected aldol-condensation product
  - B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
  - BD Results are either below the MDC or tracer recovery is low
  - C Analyte has been confirmed by GC/MS analysis
  - D Results are reported from a diluted aliquot of the sample
  - H Analytical holding time was exceeded
  - J Value is estimated
  - N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
  - ND Analyte concentration is not detected above the detection limit
  - R Sample results are rejected
  - U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
  - UI Gamma Spectroscopy--Uncertain identification
- Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

# GEL LABORATORIES LLC

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

## QC Summary

Workorder: 179836

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| Parmname                                                                         | NOM | Sample Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|----------------------------------------------------------------------------------|-----|-------------|----|-------|------|------|-------|-------|------|------|
| X                                                                                |     |             |    |       |      |      |       |       |      |      |
| Y                                                                                |     |             |    |       |      |      |       |       |      |      |
| QC Samples were not spiked with this compound                                    |     |             |    |       |      |      |       |       |      |      |
| ^                                                                                |     |             |    |       |      |      |       |       |      |      |
| RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL |     |             |    |       |      |      |       |       |      |      |
| h                                                                                |     |             |    |       |      |      |       |       |      |      |
| Preparation or preservation holding time was exceeded                            |     |             |    |       |      |      |       |       |      |      |

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

\*\* Indicates analyte is a surrogate compound.

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

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

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

SOUTHWEST SITE STORAGE AREA /  
RRF BLDG. / 115KV EAST FOOTPRINT  
SURVEY UNIT 9312-0007

RELEASE RECORD

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## **ATTACHMENT 4 (DQA RESULTS)**

SOUTHWEST SITE STORAGE AREA /  
RRF BLDG. / 115KV EAST FOOTPRINT  
SURVEY UNIT 9312-0007

RELEASE RECORD

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

Revision 0

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

Survey Unit: 9312- 0007  
 Survey Unit Name: Radiologically Controlled Area/ RRF Bldg./115kV East Footprint  
 Classification: 1  
 Survey Media: Soil  
 Type of Survey: Final Status Survey  
 Type of Measurement: Gross Measurement  
 Number of Measurements: 15  
 Operational DCGL: 1

#### BASIC STATISTICAL QUANTITIES

|                     | Cs-137    | Sr-90     |
|---------------------|-----------|-----------|
| Minimum Value:      | -1.07E-02 | -7.12E-03 |
| Maximum Value:      | 8.94E-02  | 1.46E-02  |
| Mean:               | 2.22E-02  | 5.26E-03  |
| Median:             | 1.01E-02  | 4.24E-03  |
| Standard Deviation: | 3.38E-02  | 6.73E-03  |

#### RADIONUCLIDE CONCENTRATION (pCi/g)

| NUMBER         | Cs-137    | Sr-90     | Identified? | Identified? |
|----------------|-----------|-----------|-------------|-------------|
| 9312-0007-001F | -3.33E-03 | -7.12E-03 | N           | N           |
| 9312-0007-002F | 7.16E-03  | 4.39E-03  | N           | N           |
| 9312-0007-003F | 2.04E-02  | 8.79E-03  | Y           | N           |
| 9312-0007-004F | -2.83E-04 | 1.94E-03  | N           | N           |
| 9312-0007-005F | 8.94E-02  | 4.24E-03  | Y           | N           |
| 9312-0007-006F | 2.49E-03  | 1.25E-02  | N           | N           |
| 9312-0007-007F | 0.00E+00  | 1.43E-03  | N           | N           |
| 9312-0007-008F | 1.26E-02  | 2.36E-03  | N           | N           |
| 9312-0007-009F | 1.51E-02  | -2.61E-03 | N           | N           |
| 9312-0007-010F | 3.10E-02  | -2.13E-04 | Y           | N           |
| 9312-0007-011F | -1.07E-02 | 1.38E-02  | N           | N           |
| 9312-0007-012F | -3.70E-03 | 1.71E-04  | N           | N           |
| 9312-0007-013F | 7.54E-02  | 1.36E-02  | Y           | Y           |
| 9312-0007-014F | 1.01E-02  | 1.10E-02  | N           | N           |
| 9312-0007-015F | 8.77E-02  | 1.46E-02  | Y           | N           |

Performed By:

Dal Roubal

Date:

3-20-07

Independent Review:

Robert Gill

Date:

3-20-07

SOUTHWEST SITE STORAGE AREA /  
RRF BLDG. / 115KV EAST FOOTPRINT  
SURVEY UNIT 9312-0007

RELEASE RECORD

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

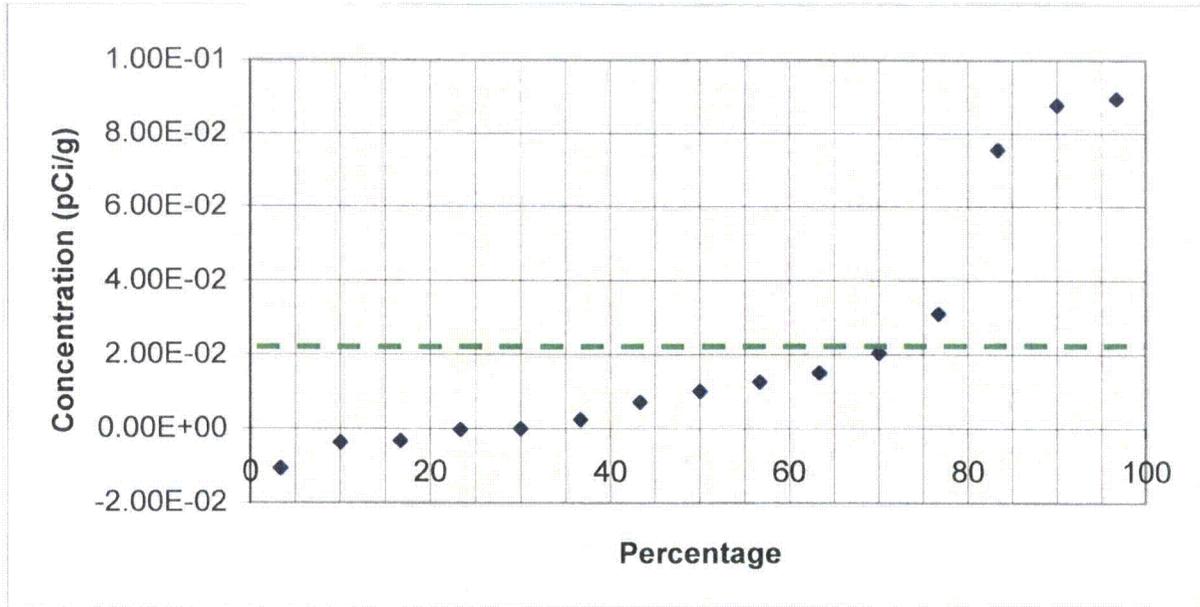
Revision 0

**Quantile Plot For Cesium - 137**

Survey Unit: 9312-0007

Survey Unit Name: Radiologically Controlled Area/ RRF Bldg./ 115kV East Footprint

Mean: 2.22E-02 pCi/g



| Cs-137    | Rank | Percentage |
|-----------|------|------------|
| -1.07E-02 | 1    | 3 %        |
| -3.70E-03 | 2    | 10 %       |
| -3.33E-03 | 3    | 17 %       |
| -2.83E-04 | 4    | 23 %       |
| 0.00E+00  | 5    | 30 %       |
| 2.49E-03  | 6    | 37 %       |
| 7.16E-03  | 7    | 43 %       |
| 1.01E-02  | 8    | 50 %       |
| 1.26E-02  | 9    | 57 %       |
| 1.51E-02  | 10   | 63 %       |
| 2.04E-02  | 11   | 70 %       |
| 3.10E-02  | 12   | 77 %       |
| 7.54E-02  | 13   | 83 %       |
| 8.77E-02  | 14   | 90 %       |
| 8.94E-02  | 15   | 97 %       |

Prepared By: *Earl Penland*

Date: 3-15-07

Reviewed By: *Robert J. A.*

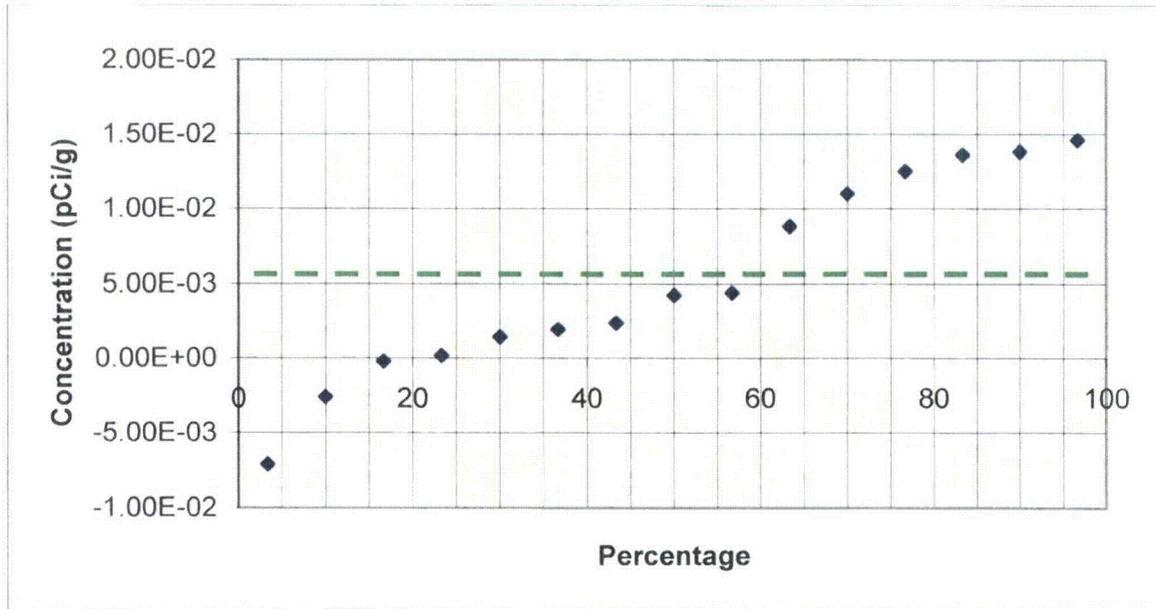
Date: 3-20-07

**Quantile Plot For Strontium - 90**

Survey Unit: 9312-0007

Survey Unit Name: Discharge Canal

Mean: 5.26E-03 pCi/g



| Sr-90     | Rank | Percentage |
|-----------|------|------------|
| -7.12E-03 | 1    | 3 %        |
| -2.61E-03 | 2    | 10 %       |
| -2.14E-04 | 3    | 17 %       |
| 1.71E-04  | 4    | 23 %       |
| 1.43E-03  | 5    | 30 %       |
| 1.94E-03  | 6    | 37 %       |
| 2.36E-03  | 7    | 43 %       |
| 4.24E-03  | 8    | 50 %       |
| 4.39E-03  | 9    | 57 %       |
| 8.79E-03  | 10   | 63 %       |
| 1.10E-02  | 11   | 70 %       |
| 1.25E-02  | 12   | 77 %       |
| 1.36E-02  | 13   | 83 %       |
| 1.38E-02  | 14   | 90 %       |
| 1.46E-02  | 15   | 97 %       |

Prepared By: *Paul Rumball*

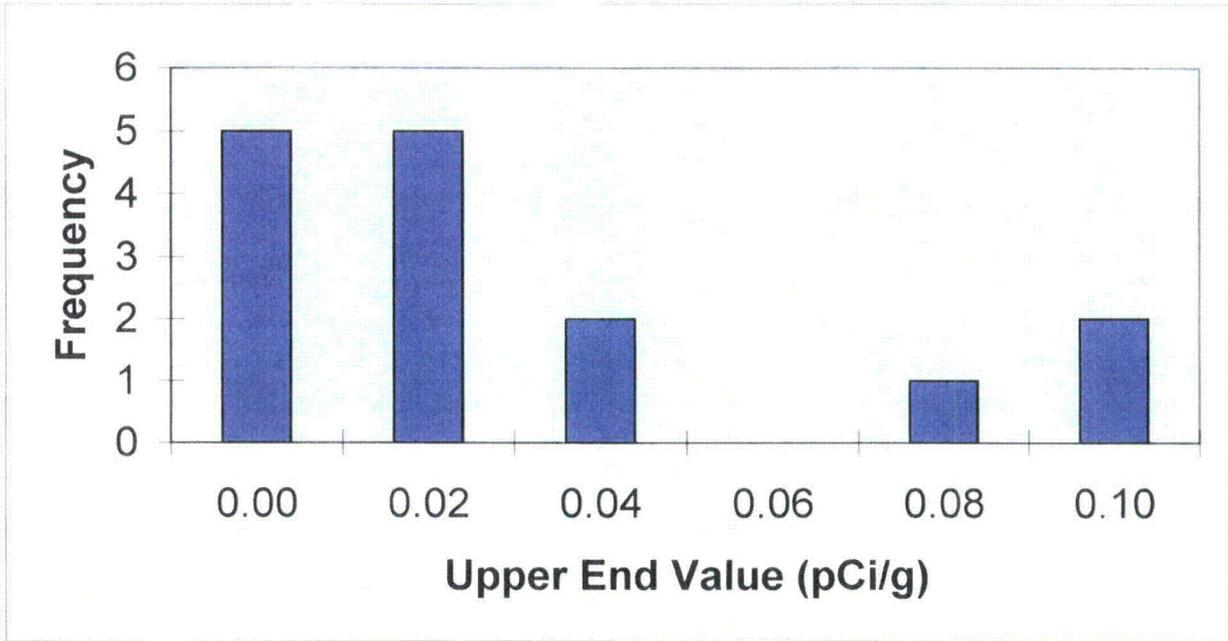
Date: 3-15-07

Reviewed By: *Regina*

Date: 3-20-07

**Frequency Plot For Cesium-137**

Survey Unit: 9312-0007  
 Survey Unit Name: Radiologically Controlled Area/ RRF Bldg./115kV East Footprint  
 Mean: 0.022 pCi/g



| Upper End Value | Observation Frequency | Observation % Frequency |
|-----------------|-----------------------|-------------------------|
| 0.00            | 5                     | 33%                     |
| 0.02            | 5                     | 33%                     |
| 0.04            | 2                     | 13%                     |
| 0.06            | 0                     | 0%                      |
| 0.08            | 1                     | 7%                      |
| 0.10            | 2                     | 13%                     |
| Total           | 15                    | 100%                    |

Prepared By: *Del R. ...*

Date: 3-15-07

Reviewed By: *R. ...*

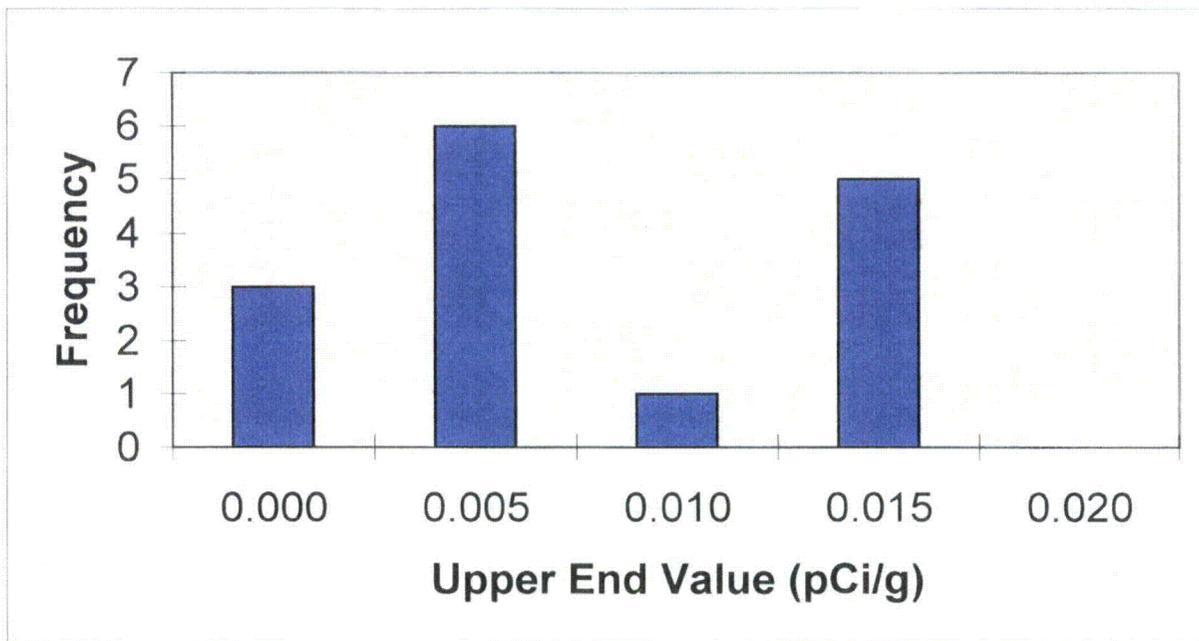
Date: 3-15-07

**Frequency Plot For Strontium - 90**

Survey Unit: 9312-0007

Survey Unit Name: Radiologically Controlled Area/ RRF Bldg./ 115kV East Footprint

Mean: 5.26E-03 pCi/g



| Upper End Value | Observation Frequency | Observation % Frequency |
|-----------------|-----------------------|-------------------------|
| 0.000           | 3                     | 20%                     |
| 0.005           | 6                     | 40%                     |
| 0.010           | 1                     | 7%                      |
| 0.015           | 5                     | 33%                     |
| 0.020           | 0                     | 0%                      |
| Total           | 15                    | 100%                    |

Prepared By: *E. J. Marshall*

Date: 3-15-07

Reviewed By: *Marshall*

Date: 3-20-07

SOUTHWEST SITE STORAGE AREA /  
RRF BLDG. / 115KV EAST FOOTPRINT  
SURVEY UNIT 9312-0007

RELEASE RECORD

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## **ATTACHMENT 4C (SIGN TEST)**

Revision 0

**Sign Test Calculation Sheet For Multiple Radionuclides**

Survey Unit Number: 9312-0007

Survey Unit Name: Radiologically Controlled Area/ RRF Bldg./115kV East Footprint

Classification : 1

TYPE I ( $\alpha$  error):0.05

TYPE I ( $\beta$  error):0.05

| Radionuclides:                       |               | Cs-137                 | Sr-90       |      |  |
|--------------------------------------|---------------|------------------------|-------------|------|--|
| Survey Design DCGL (pCi/g):          |               | 4.75                   | 0.93        |      |  |
| Results Cs-137                       | Results Sr-90 | Weighted Sum ( $W_s$ ) | DCGL-Result | Sign |  |
| -3.33E-03                            | -7.12E-03     | -8.36E-03              | 1.01E+00    | 1    |  |
| 7.16E-03                             | 4.39E-03      | 6.23E-03               | 9.94E-01    | 1    |  |
| 2.04E-02                             | 8.79E-03      | 1.37E-02               | 9.86E-01    | 1    |  |
| -2.83E-04                            | 1.94E-03      | 2.03E-03               | 9.98E-01    | 1    |  |
| 8.94E-02                             | 4.24E-03      | 2.34E-02               | 9.77E-01    | 1    |  |
| 2.49E-03                             | 1.25E-02      | 1.40E-02               | 9.86E-01    | 1    |  |
| 0.00E+00                             | 1.43E-03      | 1.54E-03               | 9.98E-01    | 1    |  |
| 1.26E-02                             | 2.36E-03      | 5.19E-03               | 9.95E-01    | 1    |  |
| 1.51E-02                             | -2.61E-03     | 3.72E-04               | 1.00E+00    | 1    |  |
| 3.10E-02                             | -2.13E-04     | 6.30E-03               | 9.94E-01    | 1    |  |
| -1.07E-02                            | 1.38E-02      | 1.26E-02               | 9.87E-01    | 1    |  |
| -3.70E-03                            | 1.71E-04      | -5.95E-04              | 1.00E+00    | 1    |  |
| 7.54E-02                             | 1.36E-02      | 3.05E-02               | 9.70E-01    | 1    |  |
| 1.01E-02                             | 1.10E-02      | 1.40E-02               | 9.86E-01    | 1    |  |
| 8.77E-02                             | 1.46E-02      | 3.42E-02               | 9.66E-01    | 1    |  |
| Number of Positive Differences (S+): |               |                        | 15          |      |  |

Critical Value: 11

Survey Unit: Meets Acceptance Criterion

Performed By: *Dal Roubell*

Date: 3-15-07

Independent Review: *Tobin M*

Date: 3-20-07

SOUTHWEST SITE STORAGE AREA /  
RRF BLDG. / 115KV EAST FOOTPRINT  
SURVEY UNIT 9312-0007

RELEASE RECORD

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

Revision 0

**Split Sample Assessment Form**

|                     |                     |                                                                                  |
|---------------------|---------------------|----------------------------------------------------------------------------------|
| Survey Area #: 9312 | Survey Unit #: 0007 | Survey Radiologically Controlled Area/ RRF Bldg./115kV East Unit Name: Footprint |
|---------------------|---------------------|----------------------------------------------------------------------------------|

|                                      |                      |
|--------------------------------------|----------------------|
| Sample Plan or WPIR#: 9312-0007 FSSP | SML #: 9312-0007-003 |
|--------------------------------------|----------------------|

Sample Description: Comparison of split samples collected from sample measurement location #3 and analyzed using gamma spectroscopy by an off-site vendor laboratory. The standard sample was 9312-0007-003F the comparison sample was 9312-0007-003FS.

| STANDARD     |                |                |            |                 | COMPARISON     |                |                  |                  |
|--------------|----------------|----------------|------------|-----------------|----------------|----------------|------------------|------------------|
| Radionuclide | Activity Value | Standard Error | Resolution | Agreement Range | Activity Value | Standard Error | Comparison Ratio | Acceptable (Y/N) |
| Cs-137       | 2.04E-02       | 6.25E-03       | 3          | NONE -          | 1.91E-02       | 1.13E-02       | 0.94             | N/A              |
| Co-60        | 4.25E-03       | 4.36E-03       | 1          | NONE -          | -1.04E-02      | 1.00E-02       | -2.45            | N/A              |
| K-40         | 1.04E+01       | 3.51E-01       | 30         | 0.75 - 1.33     | 1.07E+01       | 5.00E-01       | 1.03             | Y                |
|              |                |                |            |                 |                |                |                  |                  |
|              |                |                |            |                 |                |                |                  |                  |
|              |                |                |            |                 |                |                |                  |                  |
|              |                |                |            |                 |                |                |                  |                  |

Comments/Corrective Actions: In consideration of the Cs-137 and Co-60 results, guidance for agreement ranges, obtained from USNRC Inspection Procedure 84750, does not address resolution ratios less than 4, therefore, a determination of acceptability for such ratios cannot be made. Since K-40 was found to be present at an acceptable level of agreement, no further action is warranted.

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

| Resolution |       | Agreement Range |      |
|------------|-------|-----------------|------|
| 4          | 7     | 0.50            | 2.00 |
| 8          | 15    | 0.60            | 1.66 |
| 16         | 50    | 0.75            | 1.33 |
| 51         | 200   | 0.80            | 1.25 |
|            | > 200 | 0.85            | 1.18 |

|                                      |                  |                                 |                  |
|--------------------------------------|------------------|---------------------------------|------------------|
| Performed By:<br><i>Paul Randall</i> | Date:<br>3-15-07 | Reviewed By:<br><i>R. J. M.</i> | Date:<br>3-19-07 |
|--------------------------------------|------------------|---------------------------------|------------------|

WPIR – Work Plan and Inspection Record  
SML – Sample Measurement Location designation

SOUTHWEST SITE STORAGE AREA /  
RRF BLDG. / 115KV EAST FOOTPRINT  
SURVEY UNIT 9312-0007

RELEASE RECORD

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

Revision 0



# DQA Surface Soil Report

## Assessment Summary

Site: 9312-0007 Class1  
Planner(s): DR *DR*  
Survey Unit Name: RCA / RRF Bldg./ 115 kV East Footprint  
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

